D Y PATIL
RAMRAO ADIK INSTITUTE OF TECHNOLOGY
NAVI MUMBAI

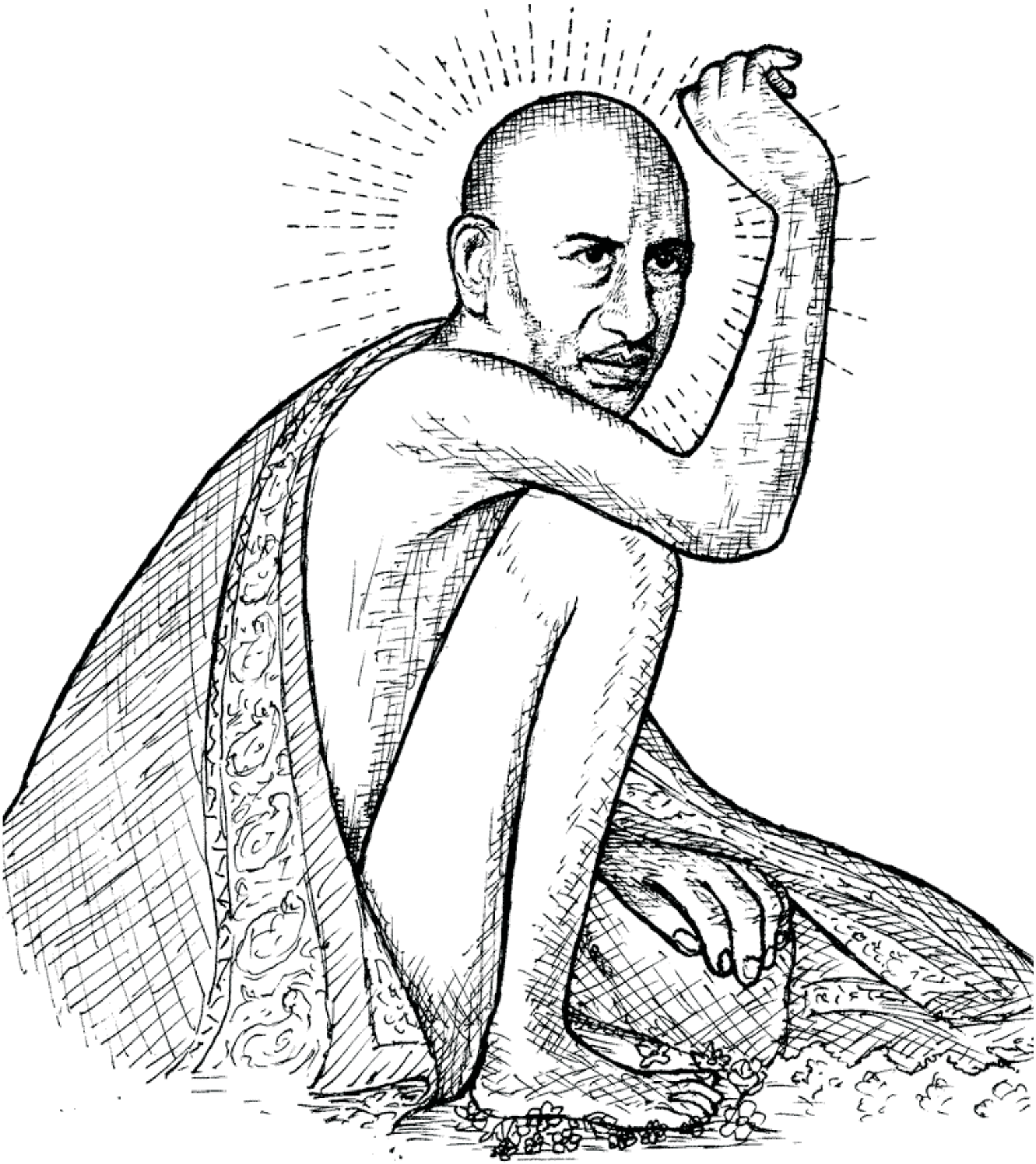
Ramrao Adik Education Society's

Ramrao Adik Institute of Technology

Nerul, Navi Mumbai, Maharashtra - 400 706

Self Study Report
Volume-I

Submitted
to
National Assessment and Accreditation Council
Bangalore, India



|| Sant Shree Gajanan Maharaj ||

ABBREVIATIONS

AICTE	All India Council for Technical Education
AMC	Annual Maintenance Contract
LabVIEW	Laboratory of Virtual Instrumentation Workbench
ABET	Accreditation Board for Engineering and Technology
AO/AAO	Administrative Officer/Assistant Administrative Officer
ARCs	Application Form Receipt Centers
BARC	Bhabha Atomic Research Centre
B.E.	Bachelor of Engineering
BoS	Board of Studies
BSNL	Bharat Sanchar Nigam Limited
BVG	Bharat Vikas Group
CAD	Computer Aided Design
CAP	Centralized Admission Process
CBGS	Credit Based Semester and Grading System
CE	Computer Engineering
CEO	Chief Executive Officer
CMQA	Chief Mentor Quality Assurance
COs	Course Outcomes
CPL	College Premier League
CSI	Computer Society of India
DAC	Data Acquisition Card
DCFs	Digital Course Files
DIP-RAIT	Digital Initiative Program
DQA	Departmental Quality Assurance
DSO	Digital Storage Oscilloscope
DST	Department of Science and Technology
DTE	Directorate of Technical Education
DYPSA	D. Y. Patil Sports Academy
EL	Electronics
EPL	Engineering Premier League
EXTC	Electronics and Telecommunication
FDP	Faculty Development Program
FE	First year of Engineering
GATE	Graduate Aptitude Test for Engineering
HOD	Head of Department
IAS	Indian Administrative Services
ICC	International Chambers of Commerce
ICT	Information & Communication Technology
IEEE	Institute of Electrical and Electronics Engineering
IES	Indian Engineering Services

IETE	Institution of Electronics and Telecommunication Engineers
IIT	Indian Institute of Technology
ILL	Inter Library Loan Service
ILO	International Labor Organization
IN	Instrumentation
IQAC	Internal Quality Assurance Cell
ISA	International Society of Automation
ISTE	Indian Society for Technical Education
IT	Information Technology
ITSA	Information Technology Student Association
JEE	Joint Entrance Examination
KVA	Kilo-Volt-Ampere
LIC	Local Inquiry Committee
LMC	Local Managing Committee
LOI	Letter of Intent
MATLAB	MATrix LABoratory
M.E.	Master of Engineering
MGC-RAIT	Management Governing Council
MOU	Memorandum of Understanding
MPC	Model Predictive Control
MSBTE	Maharashtra State Board of Technical Education
UoM	University of Mumbai
NI	National Instruments
NI ELVIS	Educational Laboratory Virtual Instrumentation Suite
NI MyRIO	My-Reconfigurable Input/Output
NIT	National Institute of Technology
NPTEL	National Programme for Technology Enhanced Learning
OBC	Other Backward Class
OBE	Outcome-based Education
OCA	ORACLE Certified Administrator
OCP	ORACLE Certified Professional
OPAC	Online Public Access Catalogues
PEO	Programme Education Objectives
PET	PhD Entrance Test
PG	Postgraduate
Ph.D.	Doctor of Philosophy
PI	Principal Investigator
PLC	Programmable Logic Controller
POs	Program Outcome
QMS-RAIT	Quality Management System
QAMS	Quality Assurances and Management System
R&D	Research and Development

RAA	RAIT Alumni Association
RAES	Ramrao Adik Education Society
RAIT	Ramrao Adik Institute of Technology
SC	Scheduled Caste
SE	Second year of Engineering
SINE	Society for Innovation and Entrepreneurship
STTP	Short Term Training Programme
SUC	Student Union Council
TCS	Tata Consultancy Services
TE	Third year of Engineering
TIME	Triumphant Institute of Management Education
TW	Term Work
UG	Undergraduate
UGC	University Grants Commission
VJTI	Veermata Jijabai Technological Institute

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D Y PATIL
RAMRAO ADIK INSTITUTE OF TECHNOLOGY
NAVI MUMBAI

Ref.No.: D18/NAAC/586 **Date:** 07/10/2015

To
The Director,
National Assessment and Accreditation Council,
P. O. Box No. 1075, Nagarbhavi,
Bangalore -560072,
Karnataka, India

Sub: Submission of **Self Study Report [SSR]** of Ramrao Adik Institute of Technology, Nerul, Navi Mumbai – 400706. [Tracking ID –MHCOGN24630]

Ref: Your letter No – NAAC/CAPU/WR/MHCOGN24630/1st Cycle – Prof/ 2015 dated 15th June 2015

Sir,

We are pleased to submit the SSR, Five Hard copies and one Soft copy (CD) of our Institute to the **National Assessment and Accreditation Council, Bangalore.** The Self Study Report has been prepared in accordance with the guidelines prescribed by **National Assessment and Accreditation Council** for the Accreditation of Affiliated College.

Sr.No.	Particular	Details
1.	Name of the Institute	Ramrao Adik Institute of Technology
2.	Email-ID	principal@rait.ac.in hodet@rait.ac.in hodin@rait.ac.in
3.	Website	http://www.rait.ac.in
4.	A & A Fee Demand Draft No. & Date	Demand Draft No. 868131 dated 07/10/2015 for a sum of Rs/- 3,42,000/- { Including service tax @14%} of HDFC Bank Payable at Bangalore

This is for your information and necessary action.

Thanking You,

Dr. Ramesh Vasappanavara, Ph.D.
Principal

Encl: 1. DD No.868131 dated 07/10/2015 for Rs. 3,42,000/-
2. Declaration by Head of Institution
3. AISHE Certificates for four years
4. SSR (5 hard copies + 1 soft copy)

Dr. D. Y. Patil Vidyanagar,
Sector-7, Phase-1, Nerul,
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Preface

D Y PATIL
RAMRAO ADIK
INSTITUTE OF
TECHNOLOGY
NAVI MUMBAI

Preface

"Learning gives Creativity, Creativity leads to Thinking,

Thinking provides Knowledge, Knowledge makes you Great."

ABDUL KALAM (1931 – 2015)

With a dream of providing quality education to Indian youth, at par with the best universities across the globe, Padamshree Dr. D.Y. Patil set out to open educational institutions that provide graduation and higher degrees in a variety of fields across Maharashtra, his home state, in the early eighties. Till date, 169 colleges have been thrown open across Maharashtra. Ramrao Adik Institute of Technology (RAIT), opened in 1983 in Navi Mumbai, is one such institute under Dr. D.Y. Patil University campus of Navi Mumbai. The need of the hour at that time (mid-eighties) was quality engineers in streams like Computer and Electronics to feed the demands of growing activity in software industry and communication industry boom in India and elsewhere. When the campus at Nerul became operational in 1989, ample space became available and soon after three more branches Electronics & Telecommunications, Information Technology and Instrumentation were added. RAIT has been recognized by apex educational bodies such as AICTE, Director of Technical Education (DTE) and University of Mumbai. On 27th June 2008, RAIT was affiliated on permanent basis with University of Mumbai. Due to excellent infrastructure facilities and availability of qualified faculty, University of Mumbai has selected RAIT as one of the centres for conducting PG courses in all the five branches and Ph.D programmes in two branches, viz., Computer Engineering, Electronics and awaiting final go ahead in Instrumentation branch.

With liberal support and constant encouragement from the top management, RAIT has continuously seen rising popularity amongst discerning students and their parents and today stands tall in reputation as a quality institution that provides good infrastructure and teaching/learning opportunities as well as holistic growth and good employability under competitive market conditions.

The last few years have been particularly significant to RAIT in the evolution chart of the institution. There has been a renewed enthusiasm and resolve to streamline, upgrade and infuse quality in all aspects of functioning at RAIT – academic, co-curricular/sports/arts, administration and environmental and societal concern and last and uppermost- the student readiness to take up professional tasks. Many potent and some novel ideas drawn from rich experience of senior professors were introduced in a phased manner to infuse quality and robustness which is now showing a rich harvest in terms of visible results. All of these are discussed in the Self Study Report at appropriate places but just to give a feel we mention some in the following paragraphs.

The first step was essentially streamlining of essential routine tasks that have clear cut deadlines; such as - admission process, class scheduling, examination conduction and

liaison work. With some clear thinking and good planning this aspect was brought to near clockwork like precision and today do not require any intervention from seniors. Classrooms and Laboratories were next equipped to suit present day standards so that practical learning of students was raised by a quantum.

With the functioning of college on smooth rails, RAIT under the team led by Principal, RAIT embarked on a journey to improve quality in teaching/learning, administration, innovative student project work and finally research. One of the first steps was introduction of Digital Course File (DCF) – a succinct repository of all teaching/learning activities; ready to be evaluated and assessed for quality assurance and subsequently remedial and corrective steps through QMS-RAIT, the internal quality assurance cell at RAIT. This innovative practice has gone beyond its intended purpose by way of reduction in use of paper and thus the green environment issue and also fire safety. The QMS team now finds it easy to find patterns of significance through dedicated software and thus functions efficiently on quality assurance issues. The digital drive has gone beyond DCF and even administration is using this in the form of e-kiosks for several routine tasks such as – bonafide certificate, railway concession form, exam results etc. Using e-kiosks students have saved a lot of time as lengthy queues are avoided in office and again environmental friendly due to paperless transactions. As part of quality drive, RAIT has adopted practices and provisions for existing faculty to upgrade their qualifications and skill through seminars, orientation programs, topical/skill development workshops and also done fresh induction of teaching staff chosen on merit. Research activities are now being boosted at RAIT with the help of its internal staff and dedicated funding from its own budget (1.75 crores for 2015-16). These are being augmented by involvement of external experts drawn from leading research organisations through MOUs and collaborative understandings. All teaching staff members are apprised of their obligations towards quality at RAIT towards teaching/learning and research. With QMS-RAIT cell functioning in full measure, we are continuously seeing improvements and this has led to better public perceptions of RAIT in the eyes of students and their parents and also academic auditors and other agencies that conduct nation vide surveys of technical educational institutes.

We now look forward to evaluation from NAAC to provide us a gauge to measure our strengths and weaknesses and show us in a mirror that reflects our size and strength and guides us on the path to progress in the near future.

PRINCIPAL

Introduction

D Y PATIL
RAMRAO ADIK
INSTITUTE OF
TECHNOLOGY
NAVI MUMBAI

About RAIT….

RAIT has a well-defined Vision, Mission and Quality Policy from the very first point of its establishment in 1983 and all the stakeholders are encouraged to follow the practices laid out therein. RAIT has seen a sustained growth since 1983 both in terms of scope and more importantly in quality of teaching and learning. Its presence amongst technical institutes as perceived in the eyes of aspiring students and technical education experts has also seen a corresponding raise owing to sustained efforts on the part of Management and staff. Today we can say that - as envisaged by the founders, RAIT is fulfilling a need that enriches and empowers our society towards modernization and enables nation building as the facts below will reflect.

RAIT is one of the oldest and finest colleges of Navi Mumbai. Located in the spacious and lush green campus of Dr. D. Y. Patil Vidyapeeth Campus, RAIT provides state-of-the-art amenities, which combined with the experienced teachers and amicable environment ensures an all round development of its students. The institute is affiliated to the University of Mumbai since 1983. It is recognized by All India Council for Technical Education (AICTE), Director of Technical Education, Maharashtra (DTE), and by National Board of Accreditation.

To move forward in this path, RAIT has adopted several practices and teaching innovations and above all, a resolve to implement meticulously what is considered good for education of the student community; thus paving the way for a promising future. Various committees are set up to ensure the smooth functioning of the institute. Regular and periodic meetings are held among the committees which involve the Management, faculty and staff to address essential issues and to ensure proper coordination among the various departments, committee conveners and administrative staff. Counsellors are appointed to counsel the students and redress their grievances if any. The college also has a full-fledged redressal committee to address the grievances of faculty and students. These functions are constantly monitored and modified according to the needs and situations. At RAIT, we believe that an institution grows only when it makes appropriate changes from time to time. Such a change is possible, only if, there is a feedback system. RAIT follows an efficient system of collecting feedback about faculty performance from the students. The faculty appraisals are collected and reviewed periodically by Quality Assurance Team of RAIT functioning with a senior professor taking the role of Chief Mentor for Quality Assurance. Several measures are adopted from time to time and for encouragement towards adopting these quality measures, the performing faculty receives recognition from Management for their academic performance. Likewise, the performers amongst students and university rank holders are rewarded with scholarships and tuition fees waivers.

1.1 History

Ramrao Adik Institute of Technology was first established in 1983 with two departments namely Electronics and Computer Engineering. It was located in Belapur, Navi Mumbai and then was shifted to D Y Patil Vidyapeeth Campus, Nerul in 1989. After approval of University of Mumbai, DTE and AICTE for Electronics

and Computer Engineering in 1983, institute got a permanent affiliation from the year 2004. Instrumentation department started in 1998 and Information Technology in 1999. Electronics and Telecommunication branch started in 2001. Computer and Electronics departments got NBA approval in 2005 while Electronics and Electronics & Telecommunication departments in 2012. Now, RAIT is imparting quality education in five branches of engineering that are currently in high demand and still experiencing growth; namely Computer, Information Technology, Electronics, Electronics & Telecommunication and Instrumentation Engineering. RAIT is offering 3 programs i.e Under Graduation (B.E.) Program, Post Graduation (M.E.) Program and Doctorate (Ph.D.) Program. While UG and PG programmes are offered by all branches, PhD programs are offered by Electronics, Computer.

1.2 Objectives

Our vision, mission and goals are encoded in succinct statements.

Vision: To foster and permeate higher and quality education with value added engineering, technology programs, providing all facilities in terms of technology and platforms for all round development with societal awareness and nurture the youth with international competencies and exemplary level of employability even under highly competitive environment so that they are innovative adaptable and capable of handling problems faced by our country and world at large.

Mission: The institution is committed to mobilize the resources and equip itself with men and materials of excellence thereby ensuring that the Institution becomes pivotal center of service to Industry, academia, and society with the latest technology. RAIT engages different platforms such as technology enhancing Student Technical Societies, Cultural platforms, Sports excellence centers, Entrepreneurial Development Center and Societal Interaction Cell. To develop the college to become an autonomous Institution & deemed university at the earliest with facilities for advanced research and development programs on par with international standards. To invite international and reputed national Institutions and Universities to collaborate with our institution on the issues of common interest of teaching and learning sophistication.

Goals: We at RAIT assure our main stakeholders of students 100% quality for the programs we deliver. This quality assurance stems from the teaching and learning processes we have at work at our campus. The teachers are handpicked from reputed institutions like IIT/NIT/UoM, etc. and they inspire the students to be innovative in thinking and practical in approach. We have installed internal procedures to upgrade the skill set of instructors by sending them to training courses, workshops, seminars and conferences. We have also a full-fledged course curriculum and deliveries planned in advance for a structured semester program. These and other tools help us to ensure high quality of teaching. Each classroom is equipped with internet and other digital learning resources where e-learning resources like NPTEL and webinars enhance the learning beyond what is routinely possible by conventional methods.

To have a higher reach amongst students from diverse backgrounds, a stimulating classroom environment and availability of lecture notes and digital resources prepared by instructor, facilitate the assimilation process from the comfort of home. In addition, students are provided with good number of assignments that trigger his/her thinking process. The internal tests involve a process that uses an objective test paper that would gauge the understanding of concepts by the students. The QA process also ensures that the learning process is effective through guidance offered by QA team. The summer internships and project work based training, tunes the learning process to include practical and industry relevant aspects. Various technical events, seminars and conferences make the student learning complete.

1.3 Departments and Courses Details

Total intake of each course and department is shown in following tables.

Under Graduation (B. E.) Program:

Sr. No.	Department	Regular Shift Intake	Second Shift Intake
1	Computer Engineering	120	60
2	Electronics Engineering	180	60
3	Electronics & Telecom. Engineering	180	60
4	Instrumentation Engineering	120	-
5	Information Technology	120	-

Post Graduation (M. E.) Program:

Sr. No.	Department	Intake
1	Computer Engineering	36
2	Electronics Engineering	18
3	Electronics & Telecom. Engineering	18
4	Instrumentation Engineering	18
5	Information Technology	18

Doctorate (Ph. D.) Program:

Sr. No.	Department	Intake
1	Computer Engineering	10
2	Electronics Engineering	10

Details of number of students and faculties in all departments and courses are shown in table given below:

Sr. No.	Name of the Department	Year of Establishment	Courses	No. of students 2014-15	Faculties
1	Computer Engineering	1983	B.E. M.E.	717 65	42

			Ph.D.	08	
2	Electronics Engineering	1983	B.E. M.E. Ph.D.	761 29 08	37
3	Engineering Sciences.	1983	-	-	34
4	Electronics and Telecom Engineering	2001	B.E. M.E.	900 36	44
5	Instrumentation Engineering	1998	B.E. M.E.	504 25	27
6	Information Technology	1999	B.E. M.E.	493 21	30

1.4 Infrastructure

The policy followed at RAIT is to provide infrastructure in key areas that is more than the norms. Class rooms and laboratory sizes are large enough to accommodate modern interior design, all ICT aids and latest equipments from time to time. All laboratories are equipped with latest equipments which mimic those in industries. Update and replace policy based on progress, technology developments is followed in laboratories. At RAIT, space is provided for functioning of Quality Management Service (QMS-RAIT), Women‟s Grievance Redressal Unit, Placement Unit, First Aid facility, Canteen, Cool water facility and clean washrooms on every floor.

RAIT has one of the largest in-campus sports facilities and has open spaces in and around the college building to host many co-curricular and extra-curricular programs. It also has a huge conference room, a 800 capacity auditorium and herbal garden with more than 50 varieties of plants. Special time and efforts are spared for the upkeep and safety of all these facilities. RAIT library is spacious and well equipped with technical books, journals and books on motivational and general skill development. It also has taken steps to add a technology museum, named “SciTech RAIT”, where the exhibits encourage students to explore extra-curricular facts about subjects they learn in class rooms. With high speed Wi-Fi now available in the whole campus, digital resources are within reach of staff and students, which are utilized for accessing NPTEL videos, e-journals, and webinars.

1.5 Teaching & Learning Innovations

At RAIT, we are constantly innovating and have shown eagerness to introduce best practices that positively impact teaching, learning, administration as well as environmental and societal concerns. Introduction of the „Digital Initiative Program at RAIT‟ or DIP-RAIT has reduced the use of paperwork considerably. DIP-RAIT has also had a positive impact on the students and faculty who are now finding more time to focus on the primary function of teaching and learning. RAIT has introduced Quality Management and Assurance Services or QMS-RAIT, to have audit, analysis and subsequent corrective measures, to constantly enhance quality and upgrade the activities that impact teaching/learning and overall development of students. The student‟s feedback, obtained digitally and processed in a way to reach the top Management and then flow down to students with desirable changes, is an important

ingredient in the QA process. RAIT also takes feedback from its Alumni members who meet regularly in the campus.

Innovations introduced during the last four years which have created a positive impact on the functioning of the college are listed in following table:

Sr. No.	Details of the innovation	Description	Year of Execution
1	Internet	To learn from experts across the globe such as NPTEL videos.	2011-12
2	Presentations	To make student learn well planned presentation skills to prepare and present.	
3	Projects (for Life Long Learning)	To work on real time or research oriented projects and learn the methodology of analyzing, designing, implementing, testing and validating skills.	
4	Digital Course File (DCF)	To keep all digitized records of teaching/learning activity and to avoid the need for storing massive paper records.	
5	Seminars and expert lectures	To get the knowledge about the advancements happening in various Technological fields and the approaches followed by individuals	2012-13
6	Internships	To get practical knowledge and industrial exposure	
7	Organizing Technical Events	To add leadership qualities, group management skills and to improve self confidence and personality	
8	Hands on Workshops for practical-oriented subjects	To acquire the skills required for bridging industry expectations.	
9	Smart Boards	To save running notes of individual lecture, which are accessible in successive lectures.	
10	Sponsorship to conferences, workshops	To encourage higher learning for teaching staff	2013-14
11	Project Competitions	To justify the worthiness of the project for practical use.	
12	Publishing newsletters and booklets	To develop imagination, writing and oratory skills.	
13	Online feedback system	To improve the evaluation process of individual course and teacher.	

14	Virtual class room through Webinar	To interact with remote talents and to acquire knowledge in specific domains.	2014-15
15	Involvement in SciTech Exhibition	To learn to map the technology to our day today life and to project the technical things in a non-technical way so that a common man will understand the use of technology.	
16	e-Attendance	To introduce on-line student and staff attendance system.	
17	e-Kiosks	To ease and accelerate the student–administration interface.	
18	Digital Notice Boards	To make students familiar with mission, vision of the institute and all important notices, rules which they should follow.	
19	Digital Academic Calendars	To schedule all the major events such as commencement and conduction of examinations, technical events, seminars etc. and display on digital media.	

1.6 Student Mentoring

All attention is paid to make students life on campus a comfortable and productive one. Student mentoring is done by interaction with class counsellors and HODs. The deserving students receive financial aid and incentives. The academic quality is monitored by QMS-RAIT to maintain high standards in teaching/learning. Mock interviews are arranged for professional development of students and preparing them to take up skilled jobs or become entrepreneurs.

It is because of all facilities, an ample funding, and an emphasis on all-round development of students - that RAIT is able to host every year a spectrum of activities- sports events (Stamina, EPL, Olympia), cultural (Kalaraag), technical events (IEEE Brackets, ISA-Genesis, Niyantran), CSI publication (Cozine), Students Union (Horizon, Shiv jayanti, Ganeshutsav, Teachers day, Tie day, Entrepreneurship program (Motif) and many Social Wing off campus programs.

Lectures and guidance sessions are provided to students who wish to continue their studies for competitive exams. The students are also counselled on coping up with stress via yoga. Student‟s grievances and suggestions are looked into by a high level committees set up. As stated above, online student‟s feedback is given a serious review by QMS-RAIT. RAIT also holds annual meetings with its Alumni and receives valuable feedback from them on how to improve functioning of the college.

1.7 Training and Placement

RAIT has an excellent track record in finding placement for all its students. Our passed out students can now be found in leading corporate and business houses, with remuneration packages at par with international standards. At RAIT, students are exposed to opportunities towards the end of the 6th Semester or during the beginning of the 7th, and get selected in campus interviews with attractive packages.

The placement cell is involved in:

- Organizing in-plant training programs for hands-on experience
- Organizing programs to enhance soft-skills
- Career counseling for pursuing higher studies in India and abroad
- Conducting entrepreneurship development programs to motivate aspiring students
- Providing information of Companies in which students are placed

RAIT‟s high standards and close relationship with the industry brings some of the best recruiters to the campus. Organizations that regularly participate in campus recruitment include Infosys, TCS, HCL, Mahindra Satyam, L&T Infotech, Nomura, J. P. Morgan, Morgan Stanley, Nvidia, Microsoft, Oracle and other national and multinational corporations. Details of Number of students placed in a few of high profile recruiters in the last four years are placed in the table given below:

Sr. No.	Year	CE	EL	ET	IN	IT	Total
1	2014-15	113	94	104	17	55	383
2	2013-14	87	71	60	21	47	286
3	2012-13	80	61	61	23	40	265
4	2011-12	129	61	68	35	109	402

1.8 Research & Development Activities

Recognising the fact that research has a positive impact on augmenting the problem solving resources and skills available with the faculty and through them the students, RAIT has embarked on promotion of research activities. We are at present at a stage where research activities at RAIT are growing at a rapid pace. A modest beginning was made in 2012 and now with faculty recognized and research facilities available,

RAIT has been recognized as research centre of University of Mumbai for the Department of Electronics Engineering and also Computer Engineering. Recently, Instrumentation Engineering at RAIT has also been accorded this status. In addition to this research centre, the institute has working understanding with many research institutions like BARC, TCS, TIFR, IITB etc. which can provide facilities and avenues for conducting research. MOUs entered with above organizations will augment the hardware and software base that can be used by researchers. The institute has a well structured and active Research Monitoring and Grants Committee to monitor and address issues related to research.

Following measures are taken by the institution to facilitate smooth progress and implementation of research schemes/projects:

- Checking the viability and relevance/utility of Research Projects
- Autonomy to the Principal Investigator (PI)
- Timely availability of resources
- Adequate infrastructure and human resource support
- Incentives and facilities for carrying out research work
- Support in terms of technology and information needs

A strong desire to see the results of R&D efforts implemented in the field has led RAIT to develop some really innovative and useful projects in-house for use by the college itself. Since the entire conception to deployment cycle is completely within reach inside RAIT, these projects have the unique advantage of constant up-gradation with ease. Some in-house projects successfully developed by collaborative efforts of faculties and students and funding support from management are listed below:

- Digital Notice Boards
- Digital Course File (DCF)
- e-Attendance
- e-Page RAIT
- e-Bonafide, Railway Concession
- Biogas Car
- Generation of Bio-Methane from kitchen waste by Anaerobic Digestion
- Up gradation of multi loop process kit to enhance experimental and in house R&D facility

RAIT has allocated a budget of 35.85 Cr. The institute has sanctioned a budget of Rs 1.75 Cr towards research and development for all departments for the academic year 2015-16.

The institute believes that this is the age of inter disciplinary research. To foster this research culture among the various departments, the institute encourages their faculty members to carry out interdisciplinary research work within RAIT and also with other organizations/institutions. The Research Monitoring Committee has set up some directives for the utilization of common resources and equipments to facilitate their optimal use. The institution receives grants or finances from industries and reputed organizations for developing their research facility. Separate funds are allocated to each department every year for the procurement and maintenance of equipments/computers and software required by the students and research scholars in their research.

1.9 Awards and Recognitions

RAIT got recognition for starting PhD in Electronics and Computer Engineering branches in 2012 and now Instrumentation department in 2015. Institute got recognition by NBA for Electronics and Computer Engineering in 2005 and

Electronics and Electronics and Telecommunication in 2012 and plans are on to obtain renewal for NBA Accreditations.

RAIT provides state-of-the-art amenities, which combined with the experienced teachers and amicable environment ensure an all round development of students. There have been several rank holders and meritorious students at the university level over the years proving that we indeed provide holistic education. The performers amongst students and university rank holders are rewarded with scholarships and tuition fees waivers. The curricular and extra-curricular activities by students are rewarded by college as well as University of Mumbai.

The performing faculty also receives recognition from Management for their academic performance. The faculties regularly update and upgrade their skills with workshops, seminars and paper presentations. Faculty members are handpicked from prestigious institutions like IIT, IISC, NIT, UoM, etc., to inspire the students to be innovative, leaders, thinkers who ideate and provide practical solutions to problems. The college motivates the faculty to excel in their teaching /research and also encourages them by awarding cash prizes who have produced highest pass percentage during college day celebrations.

1.10 Leadership and Governance

The RAIT Management with open arms provides resources as well as personal guidance to provide quality education to Indian youth and continues to act as a beacon to make RAIT a centre of excellence which is ultimately a contribution to society and national progress. Management believes in giving freedom to the Institute to develop and carry out all academic and research activities and provides funding for deployment of innovative ideas constantly coming up by students and faculties. As a result of full support from the Management, RAIT has developed to its present position and is poised to move upwards.

From top to bottom, all play their role in systematic functioning of the college in a participative manner. This helps students and young faculty members to learn and imbibe leadership qualities. Even though guidelines and resources come from the top but administration and execution of functional steps and quality assurance takes place through HODs. All the inmates of RAIT, Principal, CMQA, HODs, faculty and students as well as Registrar and his team play their respective roles in the running of RAIT.

1.11 Innovations and Best Practices

Adoption of „Innovations and Best Practices" at RAIT is a serious affair that figures uppermost to the institute stakeholders. Keeping the environmental impact of an establishment in mind, RAIT has tailored its best practices namely; digitization for paperless activities referred as DIP-RAIT and the way of conducting quality assurance activities summarized in QMS-RAIT.

The innovations span not only the full spectrum of teaching/learning process, but also administration and management. DIP-RAIT is a drive towards paperless records of the teaching/learning activity. This is a green initiative to reduce usage of papers.

Some of the innovations in recent times are:

- Introduction of Digital Course Files (DCFs) in place of bulky manuals of teaching/learning activities conducted by them.
- Introduction of on-line student and staff attendance system.
- Introduction of e-kiosks to ease and accelerate the student–administration interface.
- Encouraging higher learning for both students (extra and expert lectures) and teaching staff (sponsorship to conferences, workshops etc.).
- Use of high technology aids in teaching (ICT enabled classrooms, web-based seminars, NPTEL courses etc.)
- Development and deployment of digital notice boards and digital academic calendar for reaching digitization to next level.
- Use of digital boards to save running notes of individual lecture, which are accessible in successive lectures.
- Incorporation of digital feedback system which has improved the evaluation process of individual course and faculty.

There is the need to monitor everything periodically and also take steps to continuously improve the quality of equipment, staff and the services rendered by them. The goal of QMS-RAIT is to maintain and enhance quality at RAIT. The academic staff members of RAIT are given a copy of QMS-RAIT document for constant reference to keep them in step with the quality policies pursued at RAIT.

1.12 Road Ahead

Students, faculty and administration staff are all working towards modernization and betterment of RAIT in unison. They have expressed happiness in adopting digitization and other innovations as this has both eased their working process and enhanced the output. RAIT management always whole-heartedly supports and provides necessary resources towards adoption of best practices on the way of progression. This has always contributed a lot towards RAIT‟s upward climb in the ratings. However we want to move forward and look forward to better and more productive measures. Hence we look forward to receiving valuable feedback and suggestions from NAAC.

We believe NAAC accreditation will facilitate the following in next five years down the line:

- Institution to know its strengths, weaknesses, and opportunities through an informed review process and to carry out necessary corrective measures for betterment.
- Identification of internal areas of planning and resource allocation in the campus.
- Funding agencies look for objective data for performance funding.
- Institution to adopt innovative and modern methods of pedagogy smoothly.
- New sense of direction and identity for institution.
- With reliable information on quality education offered, a facelift in society.
- Higher acceptability with top employers - national and global.

- Move towards better Intra and inter-institutional interactions.
- Better mobility of our graduates to pursue higher education and research work across the country and world.

With RAIT measuring up to standards of accrediting bodies like NAAC, this journey towards making RAIT a better educational institution will be carried forward.

Milestones of RAIT

1983	• Inception of RAIT with B.E. program in Electronics and Computer Engineering • UoM, AICTE and DTE approval
1998	• B.E. program initiation in Instrumentation Engineering
1999	• Intake increase in Instrumentation Engineering for BE program from 40 to 60 • B.E. program initiation in Information Technology
2001	• B.E. program initiation in Electronics and Telecommunication Engineering
2004	• Permanent affiliation by UoM
2005	• NBA accreditation for Electronics and Computer Engineering departments • P.G. program initiation in Electronics and Computer Engineering
2011	• P.G. program initiation in Electronics and Telecommunication Engineering
2012	• P.G. program initiation in Instrumentation Engineering and Information Technology • NBA accreditation for Electronics Engineering, Electronics & Telecommunication Engineering departments • PhD program initiation in Electronics and Computer Engineering • Intake increase in Computer Engineering for ME program from 18 to 36, Instrumentation Engineering and Information Technology for BE program from 60 to 120 • Start of Second Shift in BE Electronics and Telecommunication Engineering of Intake 60
2013	• Start of Second Shift in BE Computer Engineering of Intake 60 • Intake increases in Electronics and Telecommunication Engineering and Electronics Engineering program for BE program first shift from 120 to 180
2014	• Start of Shift in BE Electronics Engineering of Intake 60
2015	• Approval for PhD program initiation in Instrumentation Engineering Department

Honors to RAIT

2010	• Oracle Center for Excellence
2011	• Virtual Laboratory-Nodal Center of IITB
2012	• Awarded Research Center by UoM
2013	• E-Yantra Laboratory • Ranked 33rd in Engineering institute survey done by Times of India
2014	• Ranked 31st in Engineering institute survey done by Times of India • IBM Center for Excellence
2015	• Gauranga Soft-tech Pvt. Ltd. Collaboration • TCS collaboration

The Committees

D Y PATIL
RAMRAO ADIK
INSTITUTE OF
TECHNOLOGY
NAVI MUMBAI

The Committees

Governing Body		
Sr. No.	**Name**	**Designation**
1.	Dr. Vijay D. Patil	Chairman
2.	Dr. Ajeenkya D. Patil	Member
3.	Dr. Mrs. Nandita Palshetkar	Member
4.	Mrs. Shivani Vijay Patil	Member
5.	Mr. P. V. Bhagwat	Member
6.	Dr. H. J. Nain	Member
7.	Mr. Dinesh J. Parekh	Member
8.	Nominee of D.T.E.	Member
9.	Nominee of A.I.C.T.E	Member
10.	Dr. Ramesh Vasappanavara	Principal & Member Secretary
Local Management Committee		
Sr. No.	**Name**	**Designation**
1.	Dr. Vijay D. Patil	Chairman
2.	Mr. P. V. Bhagwat	Nominee of Secretary
3.	Dr. Ramesh Vasappanavara	Principal & Member Secretary
4.	Dr. Shyam More	Member
5.	Mr. D. D. Kolte	Member
6.	Mr. Manoj Jalnawala	Member
7.	Dr. M. D. Patil	Member
8.	Dr. Mrs. Leena Ragha	Member
9.	Mr. Sharad P. Jadhav	Member
10.	Mr. Sunil M. Gaikwad	Member

NAAC Steering Committee		
Sr. No.	**Name**	**Designation**
1.	**Dr. Ramesh Vasappanavara**	**Principal**
2.	**Dr. Mukesh D. Patil**	**Convener**
3.	**Dr. Manmohan Singh Bhatia**	**Member**
4.	**Dr. Mrs. Leena R. Ragha**	**Member**
5.	**Dr. Vishwesh A Vyawahare**	**Member**
6.	**Dr. Suhas D. Shete**	**Member**
7.	**Mr. Sharad P. Jadhav**	**Joint – Convener**
8.	**Mrs. Dipti S. Jadhav**	**Member**
9.	**Mr. Tushar Ghorpade**	**Member**
10.	**Mr. Sachin Umbarkar**	**Member**
11.	**Mr. Bhushan Devare**	**Member**
12.	**Mr. Jitendra Sonawane**	**Member**
13.	**Ms. Sneha Patkar**	**Member**
14.	**Ms. Sarika Kadam**	**Member**
15.	**Mr. Sunil M. Gaikwad**	**Member**
16.	**Mr. Tanmay Sinnarkar**	**Admin Staff Representative**

Executive Summary

D Y PATIL
RAMRAO ADIK
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Executive Summary

From its inception in 1983, Ramrao Adik Institute of Technology (RAIT) has a well-defined Vision, Mission and Quality Policy that are encoded into succinct statements. These statements are prominently displayed on all floors to act as a beacon to propel us towards fulfilling our short and long term goals. Imparting quality education in five branches of engineering that are currently in vogue and still experiencing growth; namely Computer, Information Technology, Electronics, Electronics & Telecommunications and Instrumentation Engineering, RAIT is fulfilling a need that enriches and empowers our society towards modernisation and enables nation building.

CRITERION I: CURRICULAR ASPECTS

All stakeholders in the organisation (students in particular) are constantly reminded of the Vision and Mission through prominent electronic display boards that attract their attention. Additional communication is carried out regularly by Principal and Senior Professors in their contact hours with students. All teaching staff is handed over a copy of the 'Quality Policy' which is described in the QMS-RAIT document and covers all aspects of teaching/learning. The faculty are encouraged to follow the practices laid out therein.

Our faculty takes part in curriculum development in University of Mumbai (UoM) meetings to ensure parity with other institutions. In the last four years 36 faculty members participated in this endeavour with UoM teams. The most important task of 'Curriculum-execution' is meticulously planned by Departmental Quality Assurance (DQAs) headed by heads of each department at the beginning of each semester. In particular, the Course Outcomes(COs) as laid out by University of Mumbai are augmented if necessary and mapped on to Program Outcomes (POs) as laid out by RAIT to ensure our students acquire the necessary skills through these courses. With Digital Course File (DCF) system in place, the tracking of all indices that reflect quality teaching (course plan, theory and Lab. work, attendance, CO-PO mapping, conducting tests, assignments, evaluation and grading etc.) takes place rigorously. To cover the gap, if any, between industry-needs and course content, regular seminars and expert talks are arranged in RAIT both for local as well as global scenario. The flexibility necessary to fine tune the teaching/learning process to cover all above aspects is provided to the teaching faculty.

Besides a rich spectrum of elective courses, RAIT takes special efforts for providing additional skill development opportunities to students via dedicated workshops, industry pedagogical programs and the like. About 60 such events took place since 2011. The details of enrichment courses can be seen in Table attached to 1.3. This

important activity makes the students at RAIT 'Industry ready' and enhances their employment potential. Pressing societal, environmental and ethical awareness and education and more importantly holistic growth is provided to students at RAIT by arranging special dedicated seminars on matters such as – environmental education, plagiarism, gender equality issues, human rights, stress management, besides other, that surface from time to time.

At RAIT we believe that students, who are the purpose of the institution, are often the best mirrors to reflect back the realised curriculum achievements and shortcomings. The student feedback, a mandatory part of DCF, is taken as the starting point of information travelling all the way up to the top ladder of Quality Management Services (QMS-RAIT). The Principal and CMQA along with HODs delineate salient points brought to the fore by feedback and also internal quality checks and plan out corrective measures as deemed necessary. The top management is apprised of these quality assurance activities and it is from them that flow of additional resources takes place to remove any shortfalls.

CRITERION II: TEACHING, LEARNING & EVALUATION

Being the primary function for running RAIT, this criterion is given high priority and thus special attention and activity status - from admission of the students to their graduation. For us, Director of Technical Education (DTE) governs all rules and regulations for admission to BE and ME courses and RAIT admission cell looks after publicity and transparency of admission process for all its stages/rounds. The division of seats in open/management quota is 80/20 percent. The steps followed are described in detail in SSR. Admission to the PhD programs is carried out as per UoM rules (UoM Circular No. 441 of 2005). The year to year changes in student profile give RAIT valuable indication on trends that are a reflection of socio-economic factors that drives choice of careers of post high school students.

In Navi Mumbai region, RAIT fares the best in regard to quality of students at BE entry level in comparison to other colleges in its vicinity. RAIT makes provisions in teaching/learning practice to deal with high/low scoring students admitted so that no one is put to disadvantage in the learning processes. Admission norms for special categories (SC/ST, OBC, Women, Differently abled, Economically weaker and Minority sections) are all followed meticulously. As a result of the policies and practices followed at RAIT, the observed trends in admissions over the last few years show a consistent upward trend (refer Table in 2.1). RAIT functioning in regard to quality teaching/learning and also the beneficial enrichment and skill value addition courses run by all departments at RAIT has resulted in its bagging good ranking in national lever surveys of engineering colleges. The special needs of the differently-

abled students are looked after adequately on a case to case basis by relevant members of various committees setup for this purpose.

The knowledge gap of enrolled students, due to their past learning and acquired skills at the time of joining RAIT, is taken care of by a variety of steps. These beginning with orientation, followed by close interaction with class counsellors who apprise HODs of the needs of weak and also bright students, enrolment in skill development programs and participation in a variety of co-curricular and extra-curricular programs and well planned technical enrichment courses like MATLAB, LabVIEW, QUALNET and NPTEL courses. RAIT spares no effort to sensitize its staff on societal and environmental issues. Male/female equality, religious equality, women grievance redressal, blood donation, smoking free campus and freedom from stress via yoga are some prominent activities in this regard.

Advanced learners move beyond the confines of courses and want to learn further. At RAIT we assist such learners on academic, research and career planning. They are provided guidance for competitive exams like GATE, CAT, etc. and higher participation in workshops/symposia with paper writing and oral presentation and also participation in innovative project competitions. Timely counselling of students with poor attendance and poor test results with involvement of their parents has resulted in avoidance of drop-out students. Economically weaker students are provided with textbooks and notes to cover up part of the burden they bear.

The teaching/learning process followed at RAIT is described in detail in QMS-RAIT document along with justifications and is not repeated here. The process is perfectly tailored to make it student centric- all that is beneficial directly or indirectly to students, is given high priority by management with faculty instructions that they follow through.

RAIT takes steps to nurture critical thinking, creativity and scientific temper to transform them into life-long learners. From discussions with faculty of problems that have solutions, the students are encouraged to move on to open problems which may have solutions that need skills beyond course content and sometimes solutions that are not known. By taking on such problems the students learn the art of digging the answers on their own. Scientific temper or attitude is best acquired via interactions with senior lecturers who are invited to RAIT on a regular basis to describe their research and more importantly the methodologies they adopt in their work. Adequate resources in RAIT library and technology aides in classrooms and labs ensure the best learning practices (details in SSR). Guidance of teaching faculty through QMS-RAIT on a regular basis ensures quality assurance and up-gradation of teaching/learning process. Flexibility, coupled with guidance from experienced faculty in QMS-RAIT, enables faculty to overcome challenges in completing courses without dilution in course content.

Quality of teaching staff is a valuable resource and RAIT has a 9 PhDs on its staff and is taking steps to increase this number further. For expansion, RAIT appoints teachers through a strict induction process with participation of senior faculty, CMQA and finally Principal. University norms are followed and the induction process goes beyond that to assess the learning graph and research potential of new inductees. They are given good pay scales and adequate incentives by way of reduced loads during pursuance of PhDs to promote their qualifications. This has ensured high satisfaction levels and high staff retentivity at RAIT. Teaching staff is liberally given opportunities to participate in quality improvement and orientation programs as the Table attached in section 2.4.3 reflects. Several faculty members of RAIT have received awards for their teaching/learning activities and research and project work with students as reflected in Table in section 2.4.5.

For each course taught to them, students evaluate the course content, course delivery and also depth of knowledge and then provide valuable feedback via an on-line process described in QMS-RAIT. The DCF files maintained by each teaching staff contains all details of teaching/learning and also feedback from students and teaching faculty and this helps CMQA and Principal to take remedial measures to ensure upkeep of quality education. The student evaluation guidelines laid down by UoM are followed and the whole process is now conducted in a well tempered and precisely monitored fashion. Formative and summative evaluation of students in teaching, laboratory work and projects is also conducted in a closely monitored process by staff appointed by heads of each department. Each department at RAIT has well thought out Program Outcomes that ensure their graduates are industry ready and up to date in their learning. The process of mapping course outcomes to these program outcomes ensures that outcome based education is in place.

CRITERION III: RESEARCH, CONSULTANCY AND EXTENSION

Recognising that research has a positive impact on problem solving skills of staff and students, RAIT has embarked on research promotion. From a modest beginning in 2012, when it got recognition as a research centre in Electronics and Computer engineering with 10 seats each, RAIT has this year added another branch; namely Instrumentation engineering again with 10 seats and awaits the formal recognition letter from UoM.

Conducting high quality research is an expensive affair, especially for an unaided institution like RAIT. However, it has allocated a budget of Rs. 1.75 crores (~5%) of its annual budget for research. To strengthen the research base and add experimental facilities and hardware over and above those that exist in its laboratories, RAIT has entered into many collaborative tie-ups in the form of MoUs and understandings with

giants like BARC, TCS, TIFR and also industries that are close by (Gauranga Pvt. Ltd.).

RAIT has a well structured high level committee to monitor and promote research and address to problems that researchers face (Table in section 3.1.2). This committee lays down guidelines and norms from time to time and ensures their compliance. With setting up a body to accept research proposals from staff and students to encourage maximal participation, they are scrutinised for viability, relevance and applicability. 'Do it yourself from conception till end and see a regular use in the field' is a philosophy that has stood RAIT in good stead. At something like half to one-third of the cost it has now used 'in-house research outcomes' to satisfaction of all stakeholders- students, faculty, administrative staff and management. Many such examples are cited in QMS-RAIT document and in this report.

Development of Scientific temper and research culture is given a prominent place in the yearly planning to accommodate expert, skill enhancement and guest lectures which are described in other sections of this report. To promote acceleration of this culture of thinking, experienced researchers have been inducted in the recent past. The number of teaching staff with PhDs has more than doubled in recent years and students now have the benefit of learning directly through interaction with these qualified staff. RAIT is also liberal in easing out teaching burden for faculty (5-8%) who are actively engaged in their research to acquire their doctoral degrees. They are given leave and other incentives to participate in seminars/symposia across the country ad abroad to present their research work.

The resources available to RAIT are judiciously divided into Administrative expenditure, Academic expenditure and R&D expenditure. Through careful planning, the funding under R&D has seen a continuous upward trend (6 times increase in last five years!). Seed money for research projects, to the tune of 100% of the cost for low/moderate priced ones and something like 10-20% for higher priced ones with the faculty to arrange the rest from other agencies including Ramrao Adik Education Society (RAES). With a good track record to show now, research at RAIT proposes to fan out and tap national level agencies like DST, UGC, BRNS and the like to raise the pedestal further for research capabilities at RAIT.

CRITERION IV: INFRASTRUCTURE AND LEARNING

The policy followed at RAIT since inception has been to provide infrastructure in key parameters/areas that is more than the norms (of say AICTE). As detailed in Table 4.1, RAIT is still comfortable on these issues after twenty five years of running in the same building. Class rooms and laboratory sizes are large enough to accommodate modern interior design, smart boards, projectors and sound amplifiers, and the same

applies to laboratories which need to add latest equipments from time to time. At RAIT, space is provided for functioning of IQAC, Grievance Redressal Unit, Women's Cell, Placement Unit, Health Centre, Canteen, Cool water facility and neat and clean spacious M/F washrooms on every floor. The floor-wise plan of building in enclosed with the report at the end of Criterion 4.

Management of RAIT has been very liberal on this regard. RAIT has one of the largest in-campus sports facilities and has open spaces in and around the college building to host many co-curricular and extra-curricular programs. It also has a plus 100 capacity seminar room, a 650 capacity auditorium and a controlled atmosphere herbal garden with rare species spread over 1200 sq. m. Recent addition to these facilities is an ultra-modern Virtual Classroom. For the upkeep of all these facilities, RAIT has given relevant maintenance contracts for equipments and also taken the professional services of M/S BVG for security and cleaning operations on the campus. There is a separate provision in the budget for these activities and also for maintenance of computers and laboratory equipment. The details for these are given in the report at appropriate places.

It is because of above facilities, an ample funding, and an emphasis on all-round development of students that RAIT is able to host every year a spectrum of activities-sports events (Stamina, EPL, Olympia), cultural (Kalaraag), technical events (IEEE-Whizion, Inventia, ISA-Genesis, Niyantran), CSI publication (Cozine), Students Union (Horizon, Shiv jayanti, Ganeshutsav, Teachers' day, Tie day, Saree day), Entrprenership program (Motif) and many Social Wing off campus programs.

RAIT library is spacious, air conditioned and well equipped with technical journals and books. It has allocated space for on-line computer browsing (digital browsing) with 10 high range Lenovo desktops. RAIT proposes to add a separate section with books on popular science, technology popularisation and motivational and general skill development. It also has taken steps to add a technology museum where key breakthroughs of each discipline taught here shall be explained through videos and working models. The RAIT library has taken steps to tie up with other technical libraries to augment its services and also extend its working hours especially in the preparatory leave period for the benefit of students. With high speed Wi-Fi now available in the campus, digital teaching/learning resources are within reach of staff and students on the click of a button. These are being utilised for access to NPTEL courses, e-journal, webinars, and monographs and reports. Students are the main beneficiaries of these infrastructural and e-educational facilities which show up directly in quality enhancement in the student projects and technical papers written and presented by them and indirectly, all these efforts lead to their overall personality development as well as to bolster their professional outlook and also their presentation and oratory skills.

CRITERION V: STUDENT MENTORING AND SUPPORT

All attention is paid to make the students' life on campus a comfortable and productive one. Before their entry to RAIT, students are handed over a copy of prospectus which clearly specifies all the information on organisation, functioning and activities so that they are apprised of the life ahead. Student mentoring on all fronts to tackle their academic, emotional and even personal problems is done through close interaction with class counsellors and also senior staff through their HODs. The deserving students receive financial aid and incentives from RAIT in many forms (described in section 5.1.2). Financial aid to about 50% of RAIT students from state government and also various scholarships from business houses like TATA is being availed. An insurance cover is provided to all students at no extra cost to them by RAIT and also on campus medical help.

The academic quality is monitored by QMS-RAIT and this cell takes care of maintaining high standards in teaching/learning. The department wise pass percentage for RAIT graduate engineering students, in the last few years is consistently close to or above UoM averages (refer Table 5.41).

Professional development of students and their readiness to take up either skilled jobs with leading professional companies or becoming entrepreneurs is given highest priority. RAIT, through its Placement Cell, conducts many events and even mock interviews by industry people to prepare students to face the highly competitive professional atmosphere prevalent today. RAIT has set up Entrepreneur Development Cell called MOTIF to encourage and help students to give concrete shape to their potent ideas for large scale technology development – need of the hour for our nation's growth.

Personality development via participation in sports, cultural (including fine arts) and quiz competitions/debates and also writing skills via publishing for society magazines on present day latest developments is a regular feature at RAIT. Hence, ***Professional and Personality*** development goes hand in hand at RAIT. The achievements of some RAIT students in sports and performing arts with details are described in relevant section 5.3.1 in Criterion 5 of this SSR report.

RAIT also provides help to students who wish to continue their studies. Lectures and guidance for competitive exams like GATE, UPSC, GRE, CAT, TOEFEL, GMAT, IELTS and AMCAT are arranged on campus. The students are also counselled on coping up with psycho-social disorders and also on stress relief via yoga. The departmentwise figures for employment of students from campus, those who seek admission for higher degrees and available figures on those who start their enterprise are given in section 5.2.1.

Student's grievances and suggestions are looked into by a high level organised set up headed by Principal RAIT and mentioned in 5.1.10. This cell works with many committees that report to Proctor RAIT who takes suitable action as deemed fit.

Student's feedback is done on-line and given a serious review by QMS-RAIT which looks after quality in teaching/learning. This process begins with student's perception and finally ends with them as beneficiaries and is described in QMS-RAIT document. Finally, RAIT also holds annual meetings with its Alumni and receives valuable feedback from them which is also a mature source for information on how to improve functioning of the college.

CRITERION VI: GOVERNANCE, LEADERSHIP AND MANAGEMENT

The founders of RAIT had a noble dream in mind- providing quality education to Indian youth. They spared no efforts and with open arms provided resources as well as personal guidance to fulfil this dream and continue to act as a beacon to make RAIT a centre of excellence. The Vision and Mission statements (prominently displayed at RAIT), clearly state the goal of providing quality education in five branches of engineering to its inmates who can then contribute to society and national progress.

We aim for holistic growth of students, and this requires extra effort and resources. From the top to the bottom, all play their role and to assist this (define and divide responsibilities), RAIT has a well structured and participative functioning method. This way of functioning provides students and young faculty members to learn and imbibe leadership qualities through participation in organising, quality assessment and feedback incorporation through improved procedures as stated in our Quality Management Policy document or QMS-RAIT.

The Principal RAIT is the executive head under whose leadership all the committees function. The style is distributive and participative management with sufficient flexibility built into the system to accommodate changes and adapt whenever the need arises. This way of functioning with students as an integral part, gives them opportunities to develop their leadership qualities. The HODs also empower senior faculty to carry out specific tasks and this way the faculty are also mentored to handle management and leadership issues. Guidelines and resources come from the top but administration and execution of functional steps and quality assurance takes place through heads of various departments. All the inmates of RAIT, Principal, CMQA, HODs, faculty and students as well as Registrar and his team play their respective roles in the running of RAIT.

The feedback process from students and faculty on conduction of academic and administrative issues is given high priority by CMQA and Principal who then take remedial measures as the situation demands. The Management Governing Council at RAIT (MGC-RAIT) has been and still is very liberal in providing resources needed to augment existing resources to scale up on quality services at RAIT. With such a smooth functioning that is well audited internally, we at RAIT are now planning to scale up R&D activities and have made an outlay of Rs. 3 crores in 2015-16 from internal funds. Further details and specific points on this issue are given in Criterion 5 of this report.

Faculty empowerment figures high on this list as it is through them that students will get better teaching/learning environment. Faculty is encouraged to acquire higher degrees, participate in symposia/workshops, conduct R&D, do better quality projects with students and are provided many incentives which include reduced teaching load during conductance of research activities, travel and leave for attending symposia, seed money for R&D projects, monetary award for writing good quality research papers, etc. All these measures, good pay scales, medical concession at D.Y. Patil Hospital and many more incentives mentioned in the report have lead to better retention of trained teaching staff at RAIT. Further, addition of new teaching staff through a rigorous induction process that stresses on merit and gives due credit to R&D capabilities has led to better faculty quality indices in the recent past. The faculty appraisal system, conducted by CMQA under Principal RAIT, is transparent and gives opportunities for staff to point out all contributions made to the college in any sphere of activity – teaching, workshop/symposia organisation, administration improvement, examination conduction, etc., and also tries to assess the extent and worth of contributions made by them. They are apprised of the reports received from CMQA and Principal with clear guidelines of which areas they need to put in more effort. They are, if required, suggested to participate in specific skill development courses at UoM or Indian Institute of Technology, Bombay (IITB) or elsewhere with active knowledge of HOD concerned.

Quality assurance is a process that needs constant watch and uplifting of professionals engaged in the functioning of the institution and QMS-RAIT is responsible for all quality assurance activities at RAIT whether it is academic, administration or cultural. The structure of functioning at QMS-RAIT is also distributive and participative and involves people from all levels. The internal audits carried out at least biannually by CMQA are tuned to include essential points of importance stressed by external auditors from time to time. This ensures that we are in step with educational reforms prevalent countrywide and also ready to take up future challenges to become an institution with international flavour in the near future.

RAIT is particularly proud to introduce technology assisted administration under its Digital Initiative Program (DIP-RAIT) program to make administration a smoother and pleasant affair for all students and the staff dealing with administration. Through in-house technology developed by RAIT students, routine procedures like issue of Transfer certificate, Leaving certificate, Railway concession, and their examination results are now made available through Digital Kiosks (like ATMs in banks) and this has made life easy for both students and working staff and saves them valuable on-campus time. More details of this activity and its impact are given in this SSR report.

CRITERION VII: INNOVATIONS AND BEST PRACTICES

Adoption of ‘Innovations and Best Practices’ at RAIT is a serious affair that figures uppermost to the QMS-RAIT team. The eagerness to introduce practices which positively impact teaching/learning, administration and societal concerns has led us to

constantly monitor and adapt to these well thought out innovations and best practices. Keeping the heightened global concerns on environmental impact of an establishment in mind, RAIT has tailored its best practices namely; DIP-RAIT and to a large extent the way of conducting quality assurance activities summarized in QMS-RAIT also in a digital format.

RAIT has a strong green footprint in the sprawling campus of 68 acres that is open to sky to the extent of 65%. With more than 800 trees to provide fresh air, clean well maintained campus and a bio-gas plant that converts organic waste into bio-CNG, RAIT has done a its share towards achieving carbon neutrality. RAIT is also proud of the large and well maintained herbal garden with more than 50 rare species of plants that need controlled atmosphere for its growth. It has done water harvesting and possesses two bore wells to provide water to its large garden areas. RAIT has used solar electricity for garden area lighting and plans to add wind-mills for augmenting this electricity saving measures. The RAIT building is designed to be naturally well lit and also has heat resistant design on its exterior to reduce the cost of electricity further under its requirements for lighting and air conditioning.

QMS-RAIT, the internal quality assurance wing at RAIT works towards ensuring high quality in all spheres of activities; teaching/learning, course planning, conduction of tests and examinations and goes beyond to include administration as well as environmental and societal benefit activities. The academic staff members of RAIT are given a copy of QMS-RAIT document for constant reference to keep them in step with the quality policies pursued at RAIT. RAIT practices a participative and distributive management as stressed in QMS-RAIT document giving everyone an opportunity to make their contributions towards improving the functioning of the institution. Students' feedback is an important aspect of QMS activities and the same applies to feedback obtained from Alumni of RAIT.

Students, faculty and other staff working towards making RAIT a modern and efficient place to work in have all expressed happiness over both DIP-RAIT and QMS-RAIT, the two prominent innovative practices adopted at RAIT in the recent past.

RAIT management has expressed happiness and whole-heartedly supported and provided necessary resources towards adoption of the two innovations and best practices described above. Perhaps this has contributed towards RAIT experiencing an upward climb in the ratings and surveys conducted by various agencies countrywide. With RAIT measuring up to standards of accrediting bodies like NAAC this journey towards making RAIT a better educational institution will be carried forward.

SWOC for RAIT

Strengths:

- Adequate infra-structure with liberal funds to pursue initiatives to uplift the multifarious activities covering teaching/learning, advanced projects, R&D and societal and environmental based activities pursued at each of the six departments at RAIT. A stable and conducive environment leading to better quality project work done by graduate students that gives them opportunity to gain hands-on experience.
- Recruitment of qualified teaching staff through a strict merit based induction. Constant encouragement to further enhance the skill set of teachers to become up-to-date with present day technologies.
- Tailor-made learning add-ons for slow learners and also bright students to improve their performances. This leads to lower dropouts and higher performance levels at the university level examinations.
- Technology aided learning (web-courses like NPTEL, on-line resources, Learning Management System) to bridge the gap between curriculum and the industry needs. Digital recording through ICT smart boards for ease of learning beyond college hours.
- Expanding R&D base through collaborations with research organizations to enable higher quality interdisciplinary projects.
- An active Placement Cell with active and collaborative preparatory exercises to gear up employment readiness of students. This activity is showing good response from all concerned.

Weaknesses

- Shortage of avenues to gain first-hand experience with the fast growing technology areas in the branches. The gap between curriculum up-gradation and industry needs is becoming larger day by day.
- Adequate R&D exposure to make life-long learners out of students through exposure to open ended problems. Quite often time constraints prevent this important activity from happening.
- Introducing course related teaching styles that are more palatable to students with known handicaps in particular areas such as language and mathematics.

Opportunities

- To provide adequate opportunities to register holistic growth of students with a diversity of backgrounds and competencies through exposure to multifarious activities.
- To provide skills that help students to become successful professionals and pioneer entrepreneur enterprises.
- To utilize feedback and help rendered by the large Alumni base of RAITians.
- To slowly equip the laboratories with latest equipment to enable quality research and also interdisciplinary research.

Challenges

- To adapt to quick and unprecedented developments in technologies to stay abreast and take on professional roles.
- To cope up with increasing competitive employment scenarios in professional organizations.
- Finding time and avenues for learning beyond classrooms (remote access to dedicated pedagogical resources).
- Build a collaborative culture amongst departments and across disciplines.
- To climb the ladder towards making our institution one of quality and repute to attract brighter students and also students from neighbouring countries

Profile of the Institute

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RAMRAO ADIK
INSTITUTE OF
TECHNOLOGY
NAVI MUMBAI

Profile of the Institute

1. Profile of the Affiliated College

1. Name and Address of the College

Name:	Ramrao Adik Institute of Technology		
Address:	Dr. D. Y. Patil Vidyanagar, Sector-7, Nerul, Navi Mumbai		
City:	Navi Mumbai		
Pin:	400 706	**State:**	Maharashtra
Website:	http://www.rait.ac.in		

2. For Communication:

Designation	Name	Telephone	Mobile	Fax
Principal	Dr. Ramesh Vasappanavara	O:022-27709574 R: --	9930776803	27709573
	Email: principal@rait.ac.in			
Vice Principal	Dr. Mukesh D. Patil	O:022-27709574 R: --	9987527625	27709573
	Email: hodet@rait.ac.in			
Steering Committee Coordinator	Mr. Sharad P. Jadhav	O:022-27709574 R: --	9769441164	27709573
	Email: hodin@rait.ac.in			

3. Status of the Institution:

Affiliated College ☑
Constituent College ☒
Any other (specify) ☒

4. Type of Institution:

a. By Gender

i. For Men ☒
ii. For Women ☒
iii. Co-education ☑

b. By Shift

i. Regular ☑
ii. Day ☒
iii. Evening ☒

5. *It is a recognized minority institution?*

Yes	☒
No	☑

If yes specify the minority status (Religious/linguistic/ any other) and provide documentary evidence. ***NA***

6. *Sources of funding:*

Government	☒
Grant-in-aid	☒
Self financing	☑
Any other	☒

7. a. Date of establishment of the college: **September 1983**
   b. University to which the college is affiliated /or which governs the college (If it is a constituent college): **University of Mumbai**
   c. Details of UGC recognition:

Under Section	Date, Month & Year (dd-mm-yyyy)	Remarks(If any)
i. 2 (f)		Institute is recognized by University of Mumbai *(Ref.Annexure 3)*
ii. 12 (B)		

d. Details of recognition/approval by statutory/regulatory bodies other than UGC (AICTE, NCTE, MCI, DCI, PCI, RCI etc.)

Under Section/ Clause	Recognition/Approval details Institution/Department Programme		Day, Month and Year (dd-mm-yyyy)	Validity	Remarks
AICTE	U.G.	CE	7th April 2015	2015-16	Institute is recognized by AICTE since 1995
		EL			
		ET			
		IN			
		IT			
	P.G.	CE			
		EL			
		ET			
		IN			
		IT			
	Ph.D.	CE			
		EL			

8. ***Does the affiliating university Act provide for conferment of autonomy (as recognized by the UGC), on its affiliated colleges?***

Yes ☑ No ☒

If yes, has the College applied for availing the autonomous status?

Yes ☒ No ☑

9. ***Is the college recognized***

a. by UGC as a College with Potential for Excellence (CPE)?

Yes ☒ No ☑

If yes, date of recognition: …… (dd/mm/yyyy)

b. for its performance by any other governmental agency?

Yes ☒ No ☑

If yes, Name of the agency …… and

Date of recognition: …… (dd/mm/yyyy)

10. ***Location of the campus and area in sq.mts:***

Location *	Urban
Campus area in sq. mts.	40000
Built up area in sq. mts.	18500

11. ***Facilities available on the campus (Tick the available facility and provide numbers or other details at appropriate places) or in case the institute has an agreement with other agencies in using any of the listed facilities provide information on the facilities covered under the agreement.***

- Auditorium/seminar complex with infrastructural facilities ☑
- Sports facilities ☑
  - * Play ground ☑
  - * Swimming pool ☑
  - * Gymnasium ☑
- Hostel ☒
  - * Boys hostel ☒
    - i. Number of hostels
    - ii. Number of inmates
    - iii. Facilities (mention available facilities)
  - * Girls hostel ☒

i. Number of hostels
ii. Number of inmates
iii. Facilities (mention available facilities)

* Working women's hostel ☒
- i. Number of hostels
- ii. Facilities (mention available facilities)
- Residential facilities for teaching and non-teaching staff (give numbers available - cadre wise) ☒
- Cafeteria ☑
- Health centre ☑

(First aid, Inpatient, Outpatient, Emergency care facility, Ambulance)

Health centre staff

Qualified Doctor:	Full time:	☑	Part-time:	☒
Qualified Nurse:	Full time:	☒	Part-time:	☑

The D. Y. Patil Medical college and Hospital is located near to RAIT and owned by same Management. All facilities exist in Hospital. Facilities like banking, post office, book shops, bank and post office facilities is next to RAIT within 1000 mtrs. distance

- Transport facilities to cater to the needs of students and staff ☒
- Animal house ☒
- Biological waste disposal ☑
- Generator or other facility for management/regulation of electricity and voltage ☑
- Solid waste management facility ☑
- Waste water management ☑
- Water harvesting ☑

12. Details of programmes offered by the college (Give data for current academic year)

Sr. No.	Programme Level	Shift	Name of the Programme/ Course	Duration	Entry Qualification	Medium of instruction	Sanctioned/ approved Student strength	No. of students admitted
1	Under-Graduate (BE)	1st	CE	4 years	10+2	English	120	127
			EL	4 years	10+2	English	180	177
			ET	4 years	10+2	English	180	177
			IN	4 years	10+2	English	120	120
			IT	4 years	10+2	English	120	125
2.	Under-Graduate (BE)	2nd	CE	4 years	10+2	English	60	60
			EL	4 years	10+2	English	60	58
			ET	4 years	10+2	English	60	57
3.		1st	CE	2 years	BE	English	36	14

	Post-Graduate (ME)		EL	2 years	BE	English	18	14
			IN	2 years	BE	English	18	10
			IT	2 years	BE	English	18	7
			ET	2 years	BE	English	18	18
4.	Ph.D.	--	CE	5 years	ME, M.Tech.	English	10	8
			EL	5 years	ME, M.Tech.	English	10	8

13. Does the college offer self-financed Programmes?

Yes ☑ No ☒

If yes, how many? 12

14. New programmes introduced in the college during the last five years if any?

Yes ☑ No ☒ Number: 5

Sr. No.	Course	Programme	Year of Start
1	M.E.	Electronics & Telecommunication Engineering	2011-12
2	M.E.	Instrumentation Engineering	2012-13
3	M.E.	Information Technology	2012-13
4	Ph. D	Electronics Engineering	2012-13
5	Ph. D	Computer Engineering	2012-13

15. List the departments: (respond if applicable only and do not list facilities like Library, Physical Education as departments, unless they are also offering academic degree awarding programmes. Similarly, do not list the departments offering common compulsory subjects for all the programmes like English, regional languages etc.)

Faculty	Departments (eg. Physics, Botany, History etc.)	UG	PG	Research
Engineering & Technology **U.G.:** 5 **P.G.:** 5 **Ph.D.:** 2	Computer Engg.	☑	☑	☑
	Electronics Engg.	☑	☑	☑
	Instrumentation Engg.	☑	☑	☒
	Information Technology	☑	☑	☒
	Electronics & Telecommunication Engg.	☑	☑	☒

16. Number of Programmes offered under (Programme means a degree course like BA, BSc, MA, M.Com…) B.E.

a.	Annual System	02
b.	Semester System	10
c.	Trimester System	☒

17. Number of Programmes with

a.	Choice Based Credit System	☒
b.	Inter/Multidisciplinary Approach	☒
c.	Any other (specify and provide details)	10*

****Credit Based Grading System***

18. Does the college offer UG and/or PG programmes in Teacher Education?

Yes ☐ No ☐

If yes,

a. Year of Introduction of the programme(s).....(dd/mm/yyyy) and number of batches that completed the programme

b. NCTE recognition details (if applicable) **N.A.**
Notification No.: .....
Date: ..... (dd/mm/yyyy)
Validity:.....

c. Is the institution opting for assessment and accreditation of Teacher Education Programme separately?

Yes ☒ No ☑

19. Does the college offer UG or PG programme in Physical Education?

Yes ☒ No ☑

If yes,

a. Year of Introduction of the programme(s).....(dd/mm/yyyy) and number of batches that completed the programme

b. NCTE recognition details (if applicable) **N.A.**
Notification No.: .....
Date: ..... (dd/mm/yyyy)
Validity:.....

c. Is the institution opting for assessment and accreditation of Physical Education Programme separately?

Yes ☐ No ☐

20. Number of teaching and non-teaching positions in the Institution

Positions	Teaching faculty						Non teaching staff		Technical staff	
	Professor		Associate Professor		Assistant Professor					
	*M	*F	*M	*F	*M	*F	*M	*F	*M	*F
Sanctioned by the UGC / University / State Government/AICTE	8	2	--	--	64	140	59	4	29	4
* *Approval process by University is in Process*										
Yet to recruit										
Sanctioned by the Management/ society or other authorized bodies *Recruited*	--	--	--	--	--	--	--	--	--	--
Yet to recruit										

***M-Male *F-Female**

21. Qualifications of the teaching staff:

Highest qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.	--	--	--	--	--	--	--
Ph.D.	8	2	--	--	1	3	14
M.Phil.	--	--	--	--	--	6	6
PG	--	--	--	--	63	131	194
Temporary teachers							
Ph.D.	--	--	--	--	--	--	--
M.Phil.	--	--	--	--	--	--	--
PG	--	--	--	--	---	--	--
Part-time teachers							
Ph.D.	--	--	--	--	--	--	--
M.Phil.	--	--	--	--	--	--	--
PG	--	--	--	--	--	--	--

22. Number of Visiting Faculty /Guest Faculty engaged with the College.

Number of Visiting Faculty/ Guest Faculty engaged with Institute: 0

23. Furnish the number of the students admitted to the college during the last four academic years.

U.G.:

Categories	2015-16		2014 -15		2013- 14		2012 – 13		2011 – 12	
	Year 1		Year 2		Year 3		Year 4		Year 5	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
SC	60	24	63	41	73	30	54	14	35	19
ST	3	4	5	4	9	2	11	2	7	1
OBC	106	57	97	65	103	47	80	36	68	26
General	305	110	329	162	355	166	309	126	187	88
Others (DT/NT)	25	17	41	18	38	16	34	15	14	68
SBC	9	8	11	6	11	3	7	4	5	5

P.G.:

Categories	2014-15		2013-14		2012-13		2011-12	
	Year 1		Year 2		Year 3		Year 4	
	Male	Female	Male	Female	Male	Female	Male	Female
SC	5	9	7	4	6	11	1	0
ST	--	--	--	--	--	--	--	--
OBC	5	12	4	3	0	7	--	--
General	11	26	33	45	28	40	17	52
Others (DT/NT)	2	4	0	3	--	--	--	1
SBC	1	0	0	2	--	--	--	--
MINORITY	--	--	2	3	--	--	--	--

24. Details on students enrollment in the college during the current academic year:

Type of students	UG	PG	M. Phil.	Ph.D.	Total
Students from the same state where the college is located	772	70	--	16	858
Students from other states of India	100	5	--	0	105
NRI students	--	--	--	--	--
Foreign students	--	--	---	--	--
Total:	872	75	--	16	963

25. Dropout rate in UG and PG (average of the last two batches)

UG	2013-14 :	1%	**PG**	2013-14 :	--
	2014-15 :	1%		2014-15 :	--

26. Unit Cost of Education

(Unit cost = total annual recurring expenditure (actual) divided by total number of students enrolled)

(a) Including the salary component — **Rs. 106447/-**

(b) Excluding the salary component — **Rs. 58480/-**

27. Does the college offer any programme/s in distance education mode (DEP)?

Yes ☒ No ☑

If yes,

a) Is it a registered centre for offering distance education programmes of another University - **N.A.**

Yes ☐ No ☐

b) Name of the University which has granted such registration. – **N.A.**

c) Number of programmes offered- **N.A.**

d) Programmes carry the recognition of the Distance Education Council.

Yes ☐ No ☐

28. Provide Teacher-student ratio for each of the programme/course offered -

Sr. No	Course	Ratio	
		U.G.	P.G.
1	Computer Engineering	15:1	12:1
2	Electronics Engineering	15:1	12:1
3	Instrumentation Engineering	15:1	12:1
4	Information Technology	15:1	12:1
5	Electronics & Telecommunication Engg.	15:1	12:1

29. Is the college applying for

Accreditation :	*Cycle 1:*	☑	*Cycle 2:*	☒	*Cycle 3:*	☒	*Cycle 4:*	☒

Re-Assessment :	☒

(Cycle 1 refers to first accreditation and Cycle 2, Cycle 3 and Cycle 4 refers to re- accreditation)

30. Date of accreditation* (applicable for Cycle 2, Cycle 3, Cycle 4 and re-assessment only) ----- N.A.

Cycle 1: …… (dd/mm/yyyy)
Accreditation Outcome/Result……...
Cycle 2: …… (dd/mm/yyyy)
Accreditation Outcome/Result……...
Cycle 3: …… (dd/mm/yyyy)
Accreditation Outcome/Result……...

* *Kindly enclose copy of accreditation certificate(s) and peer team report(s) as an annexure.*

31. Number of working days during the last academic year

188

32. Number of teaching days during the last academic year

(Teaching days means days on which lectures were engaged excluding the examination days)

138

33. Date of establishment of Internal Quality Assurance Cell (IQAC)

01/08/2012

34. Details regarding submission of Annual Quality Assurance Reports (AQAR) to NAAC. - N.A

AQAR	(i)	.....	(dd/mm/yyyy)
AQAR	(ii)	.....	(dd/mm/yyyy)
AQAR	(iii)	.....	(dd/mm/yyyy)
AQAR	(iv)	.....	(dd/mm/yyyy)

35. Any other relevant data (not covered above) the college would like to include. (Do not include explanatory/descriptive information)

- A very good learning atmosphere facilitated with ICT based e-learning modules emulating the IIT system of education.
- The academic performance of student is excellent and many students secure university rank. These students are rewarded with scholarships and tuition fees waivers.
- Wholesome education with 360° learning facilities.
- The RAIT offers an outstanding learning environment which encourages them to pursue higher education (M.S/M.Tech/M.B.A.) and research in foreign universities.
- RAIT is in constant interaction with the industry through the vibrant training and placement cell that provides us a realistic view of the demands of the industry.

- There are plethoras of MNC's like TCS, Infosys, Wipro etc. that depend upon RAIT for recruiting our students.
- Provides state-of-art amenities, which combined with the experienced teachers and amicable environment ensure an all-round development of students.
- The faculties are handpicked from reputed institutes like IITs, NITs, IIITs and universities of repute.
- The RAIT implements good HR policy to encourage faculty to undergo various workshop/seminars/conferences & support them for publications in reputed conference and journal.
- Faculty members are also motivated to pursue their higher education and the performing faculty also receives recognition from management for their academic performance.
- Various clubs including SUC,IEEE, CSI, ISA , ITSA, IETE, Motif, Kalarag and Sports Clubs, ISTE Chapter, to nurture the science and creative talents of the students and promote their active participation in co-curricular and extra-curricular activities.
- Spacious and well stacked Library with nearly 36,996 Volumes, National journals, e-journals and NPTEL videos.
- Quality Improvement Cell for continuous improvement in Teaching-Learning process.
- The RAIT is committed to provide best of the facilities in terms of infrastructure and academic fronts.
- Conducive Environment for academics, coupled with overall personality development leading to placements, higher studies and entrepreneurship
- The additional sports facilities of international repute like Dr. D.Y. Patil Sports stadium aid in all round development of a student.
- RAIT sponsors and supports extensively students an extra-curricular activity for their overall development as it is firmly believes that these activities make students better equipped to take up leadership practices.
- RAIT believes that its students should be inspiring and aware of happenings around them with a keen sense of societal commitment.
- The respective MoUs have been entered with giants like TCS, Gauranga Softech and Yokogawa.

Criterion I
Curricular Aspects

D Y PATIL
RAMRAO ADIK
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Criterion I: Curricular Aspects

1.1 Curriculum Planning and Implementation

1.1.1 State the vision, mission and objectives of the institution, and describe how these are communicated to the students, teachers, staff and other stakeholders.

Vision

To foster and permeate higher and quality education with value added engineering, technology programs, providing all facilities in terms of technology and platforms for all round development with societal awareness and nurture the youth with international competencies and exemplary level of employability even under highly competitive environment so that they are innovative adaptable and capable of handling problems faced by our country and world at large.

Mission

The institution is committed to mobilize the resources and equip the institution with men and materials of excellence. To ensure that the institute becomes pivotal center of service to industry and academia and society, with the latest technology and student forums of technology enhancing technical societies, cultural platforms, sports excellence centers and Entrepreneurial Development Center. To develop the institute to become an autonomous institution and deemed university at the earliest with facilities for advanced research and development programs on par with international standard. To invite international and reputed national institutions and universities to collaborate with our institute on the issues of common interest of teaching and learning sophistication.

ज्ञानधीनं जगत् सर्वम।

Knowledge is supreme.

Our Quality Policy

It is our earnest endeavour to produce high quality engineering professionals who are innovative and inspiring, thought and action leaders, competent to solve problems faced by society, nation and world at large by striving towards very high standards in learning, teaching and training methodologies.

Our Motto: If it is not of quality, it is NOT RAIT!

Dr. Vijay D. Patil
President, RAES

Goals & Objectives:

Short Term

- To produce engineering and technology professionals who are innovative and inspiring thought leaders, adept at solving problems faced by our nation and world by providing quality education.
- To assure our main stakeholders of students 100% quality for the programmes we deliver.
- To provide students skills that make them thought and action leaders with right attitude and concern towards challenges faced by society , country and the world.
- To mobilize the resources and equip the institution with men and materials of excellence so that the institute becomes pivotal center of service to Industry and academia and society, with the latest technology.
- To work closely with all stake holders like industry, academia and research groups to foster knowledge generation, acquisition, dissemination using best available resources to address the challenges being faced by our country and World.
- To have a full fledged course curriculum and deliveries feedback mechanisms of learning processes thereby ensuring the fulfillment programme educational objectives and ensure same quality of teaching independent of any individual instructor.
- To expand the areas of engineering and technology by adding new programmes like Mechanical, Civil and other branches at Ph.D., M.E. and B.E. level.
- To install the internal procedures to better the skill set of instructors by sponsoring them to training courses, workshops, seminars and conferences and encourage faculty to enhance and improve their academic qualifications and skills.
- To establish and deploy effective learning process in the campus comprising a clean and stimulating classroom environment and availability of lecture notes and digital resources prepared by instructor.
- To ensure learning process to include practical and industry relevant aspects by employing project based training and organizing advanced technology training programmes and organizing internships as per the needs of industry and the society.

Long Term

- To become one of the best and reputed engineering institutions in the country and most sought after destination for discerning students across country and globe.

- To achieve the status of autonomy for academic pursuits so as to provide current curricula to the students to provide competent manpower to industry and academia across the world.
- To become a university of international standards with Indian ethos that can meet all the aspirations of the people of this country and the world.
- To contribute to social and economical growth of the society and country.

Communication with stakeholders

The Mission Statement has been displayed at many places within the campus for wider publicity. The institute academic council and the Principal assisted by HODs prepared and promulgated implementation strategy to convert mission and goals to operational processes and the same has been conveyed to entire faculty and heads of the departments for implementation and practice. New recruits as teaching faculty are given orientation programmes at the beginning of each semester. The Institute Academic Council (CAC) conducts regular meetings with the teaching staff and non-teaching staff and highlights the objectives and goals of the department. Students are also briefed by the Principal, respective Heads of the Departments (HODs) and student counsellors during their monthly meetings.

1.1.2 How does the institution develop and deploy action plans for effective implementation of the curriculum? Give details of the process and substantiate through specific example(s).

- In the beginning of each semester, each department conducts departmental academic meeting under the supervision of HOD and Departmental Quality Assurance (DQA) for all the faculty members. In this meeting the following points are discussed and action plan is drawn and required actions are taken:
  - The syllabus for new subject is evaluated to find out the best fit faculty to handle the subject for the ensuing semester.
  - The subject experts from the Institution interacts with Chairman and members of Board of Studies (BOS) of University of Mumbai (UoM) and come to common understanding regarding the content, delivery, and evaluation scheme for the subject.
  - The training needs of the faculty, if any, are identified and suitable training action is initiated by HOD. Accordingly concerned faculty member is deputed to undergo enhancement training at reputed institutions such as IITs, NITs, Universities and Institutes of repute.
- The institute under the supervision of Chairman of BOS, also conducts orientation and refresher programmes, when ever assigned.
- The group of faculty in consultation with HODs decides the course objectives and outcomes for the subject. For this, the course objectives and outcomes prescribed by university in curriculum and syllabus book are adopted. In addition, a few course objectives and outcomes are also included by the faculty concerned to better the compliance of Programme Educational Objectives (PEOs) of the department.

- HOD assisted by DQA prepares time table to reflect the theory and practical and tutorial loads assigned for each subject.
- The lesson plans and lecture schedules are so designed so as to take care of weekly loads prescribed by curriculum designers.
- The content of lectures is appropriately chosen so as to meet the course objectives set for the course by the curriculum designers and the faculty.
- The tutorials for subject are planned as per curriculum and based on the complexity of the subject additional tutorial periods and weakness removal classes are planned.
- In order to enhance the learning process and provide additional practice of problem solving, the faculty gives three assignments for a semester. These assignments are evaluated and given due weightage in the assessment.
- The entire campus is provided with 135 Mbps broadband Wi-Fi internet connection. Hence each class room is equipped with internet connection, LCD projector, Laptop and audio-visual aids.
- The delivery of content by the faculty is carried out by extensive usage of Information for Communication Technology (ICT). In this process the faculty deploys well prepared lecture notes through digital presentations (PowerPoint, Beamer) using LCD projectors and uses internet facility to deliver expert lectures viz. NPTEL, webinars, etc. Further each department is provided with interactive smart board through which students can get access to running notes.
- Towards the end of semester, student feedback is taken using online feedback system. In feedback, the questions are mapped to course objectives prescribed by university and faculty in consultation with HODs and DQA. Further students give feedback on regularity of the faculty, quality of content delivery by the faculty, and extent to which Course Outcomes (COs) have been achieved.
- The feedback is analysed and the corrective measures are initiated by HODs and Chief Mentor Quality Assurance (CMQA). The meeting of HODs, DQA and faculty is held to plan the implementation of corrective measures in the form of additional contact hours, weakness removal classes, additional tutorials and additional assignments, etc. Further expert lectures are organised based on the need.
- The faculty concerned prepares course outcomes and programme outcomes mapping table and assigns weightages to each of the CO against the Programme Outcomes (POs) and calculates CO-PO attainment.
- The performance of the students at the end of semester examination is analysed and the faculty concerned prepares corrective actions to be taken based on the student feedback. Based on this, HOD prepares actions/improvements to be taken report and submits to CMQA. This report is studied and points highlighted are implemented in the ensuing semester for continuous betterment of learning process.

1.1.3 What type of support (procedural and practical) do the teachers receive (from the University and/or institution) for effectively translating the curriculum and improving teaching practices?

- University provides the designed and detailed syllabus for each programme. This syllabus gives details of hours per week to be conducted for theory and practical. Also it provides the course objectives, outcomes, and evaluation scheme for each course.
- At institute level, teachers and HODs have detailed discussion on the course curriculum. Academic calendar is drawn for each semester. DQA does the resource mapping and schedule of lectures, time table and resources like teaching and non-teaching personnel, laboratory equipments and project work.
- Based on the course plan, the content development and evaluation procedures are developed by individual faculty in consultation with peers and HODs.
- The delivery mechanism involves an extensive use of ICT such as LCD projectors, laptops, internet, interactive boards and online resources like NPTEL, webinars, etc.
- Teaching faculty plans tutorials, assignments, class attendance, laboratory work, evaluation and corrective mechanism.

1.1.4 Specify the initiatives taken up or contribution made by the institution for effective curriculum delivery and transaction on the Curriculum provided by the affiliating University or other statutory agency.

HODs and DQA conduct the meeting with the faculty to select the suitable faculty for the content delivery of each course. The faculty prepares the course plan, practical plan and schedule using the syllabus provided by UoM. The faculty decimates the COs and POs to the students at the beginning of semester. The faculty designs and develops the test papers, tutorials, assignments that cover all the syllabus and evaluation. The test papers are designed considering all the COs and concerned POs.

For the better delivery of content, the faculty uses smart boards, ICT like audio-visual equipments, internet, webinars and NPTEL, expert lectures, Digital Library, project-based learning. Further, faculty carries out the continuous assessment of laboratory work and theory by assignments.

1.1.5 How does the institution network and interact with beneficiaries such as industry, research bodies and the university in effective operationalisation of the curriculum?

The HODs and subject experts from our institute interact with the Dean, Faculty of Technology (FoT) and concerned Chairman, BOS of UoM for designing of curriculum for Under Graduate (UG), Post Graduate (PG) and PhD. The faculty has designed the syllabus and curriculum for Master of Engineering (ME) (Instrumentation Engineering) Programme. HODs and faculty organize the orientation programmes, and interact with BOS regarding the content delivery and development and evaluation. Our faculty participates actively in preparation of

Question Paper banks for UoM in consonance with content and course objectives and in the evaluation process.

Experts from industry are appointed as programme/course advisors for each department through HODs for advising in the matter of current trends and requirements of industry. Expert lectures and guest lecturers from industry like TCS, Infosys, Reliance, Texas, Siemens, L & T Automation, Yokogawa, etc. are organized for delivering talks on advance topics with industry perspective. Industrial internships are encouraged for providing experiential learning. Workshops and seminars are organized on regular basis to provide hands-on practice. Training programmes on the equipments used by industry are organized. Memoranda of Understanding (MoUs) with giants like TCS, Infosys, IBM, Oracle, Gauranga softtech, and working level understanding with Siemens, Yokogawa, Texas Instruments, National Instruments, are signed for advance training programmes.

We have working understanding with Indian Institute of Technology, Bombay (IITB), Mumbai and established an advanced research laboratory called „e-yantra" for research and development and project work for UG and PG students. RAIT has been selected as one of the Nodal Centers for Virtual Laboratory project of IITB, Mumbai and established Virtual Laboratory. The institute has been selected as the implementation partner by IITB, for high performance computing facility. It has actively participated with BARC research groups in establishing on-campus alternate energy platforms in the form of Biogas and Bio-CNG. A few of faculty members provide consultancy and invited as expert speakers at Government College of Engineering, Pune, SGGS IE & T, Nanded, VJTI, Mumbai and ISRO, Trivandrum and other institutes in the vicinity.

1.1.6 What are the contributions of the institution and/or its staff members to the development of the curriculum by the University? (number of staff members/departments represented on the Board of Studies, student feedback, teacher feedback, stakeholder feedback provided, specific suggestions etc).

RAIT faculty, in consultation with experts from IITs and industry as set up by Dean FOT, Chairman, BOS, is actively contributing in the introduction of new courses, revision of syllabi, and design of scheme of evaluation for UoM. The faculty plays an important role in conducting orientation programmes along with the Chairman, BOS. RAIT faculty assists Chairman, BOS in preparing the Question Paper bank. The details of the faculty from departments and the nature of involvement in the development of curriculum by university for last four years are shown in Table 1.1.

Table 1.1: Contribution of the staff members to the development of the curriculum.

Sr. No.	Branch	Name(s) of faculty	Nature of involvement/work in University
1.	CE	Dr. Leena Ragha	Design of Question Bank in CN,AT,CV,AI & Robotics, SPCC,TCS,DSIP, DC,MSD,IP,IPA,HPC(ME),PC(ME),ML(ME), PCA(ME),DMABI(ME),
2.		Dr. A.V.Vidhate	Design of Question Bank in WP,WEG,CNDP,WN,NDM(ME)
3.		Snehal Gaikwad	Design of Question Bank in COA
4.		Vanita Mane	Design of Question Bank in CP -2,DS, CV, CS(ME)
5.		Aditi Chhabria	Design of Question Bank in DSF,OOSE
6.		Namita Pulgam	Design of Question Bank in CG
7.		Rajashree Shedge	Design of Question Bank in ADBMS
8.		Nilesh Marathe	Design of Question Bank in SAN(ME), PC(ME)
9.		Tushar Ghorpade	Design of Question Bank in ML(ME)
10.	EL	Dr. Vishwesh A. Vyawahare	Design of Syllabus and Question Bank in APED, PE-II
11.		Dr. Mukesh D. Patil	Design of Syllabus and Question Bank for DSPP, EIM, PCS, SS, FD, SMS
12.		S. J. Petkar	Design of Question Bank in DLDA,PCS,CSE,DD-I and DD-II,DCD,EI ROBOTICS
13.		Poornima Talwai	Design of Question Bank in CN,DC,FCE,WCOM,ANT,CTSS,DTSS,ACT, ADC,CT
14.		S. M. Labde	Design of Question Bank in FD,CTSS,ROBOTICS,PE,DSD-II
15.		P.M.Dhotre	Design of Question Bank in EDLC,ECAD,BEC,LICD,ECCF,AIS
16.		Trupti Agarkar	Design of Question Bank in CO,DC,MPP,ESRTP
17.		Smitha Raveendran	Design of Question Bank in DSD,CO,CTSS,DTSS,DD-I and DD-II
18.		Shweta Ashtekar	Design of Question Bank in MPMC-I and MPMC-II,CN,ESRTP,MPP, CO,ANT
19.		Sushama P. Kodagali	Design of Question Bank in AVLSI,MMD,VLSI Design
20.		Divya Shah	Design of Question Bank in MSVHDL,VLSI Design, Advanced VLS Design, DSD-I and DSD-II,DCD, Basic VLSI Design
21.		Prasad A Pathak	Design of Question Bank in

			EME,MWDC,CO,MPP
22.		Sujata D. Medgudale	Design of Question Bank in MWDC,EPD,DIP,DCCT,DCOM,EME
23.		Vaishali S. Jadhav	Design of Question Bank in ECCF,ADC,PE,CT
24.		Kapila Moon	Design of Question Bank in LICD,DC,DLIC,CS,CSA
25.		Dolly Kalav	Design of Question Bank in BEE,ED,DEC
26.		Lekha Ravindran	Design of Question Bank in BEE,PED,EM,PE,ETI,EN,EEMAM
27.		Clara. M. Arackel	Design of Question Bank in BEE,PED,EM,PE,EN
28.		Pankaj A. Saraf	Design of Question Bank in BEE,EIS
29.		Archana Khodke	Design of Question Bank in VLSI Design, PADC
30.		Shilpa Achaliya	Design of Question Bank in EN,EWT,SS,DTSP,MPMC-I,MAP
31.		Rupali Gulande	Design of Question Bank in DE,MPP
32.	ES	Dr. S.D. Shete	Design of syllabus and question bank for AC-I and AC-II
33.		Dr. Arpita Palchoudhary	Design of syllabus and question bank for Communication Skills (CS)
34.		Sanjay Talokar	Design of syllabus and question bank for Engineering Mechanics (EM)
35.	ET	Dr. Mukesh D. Patil	Design of Syllabus and Question Bank for CS, EIM.
36.		Geeta Devurkar	Design of Question Bank in SC, RADAR Engg.
37.		M. M. Dongre	Design of Question Bank in PCE, ME
38.		Kirti Rathi	Design of Question Bank in EDC-I and II, DLDA, AE-II, DE, MP, PCT
39.		Vijay Dahake	Design of Question Bank in Digital Telephony, AME, PCE
40.		Sujata Kadam	Design of Question Bank in DSPA, DT, DCE
41.		Shital Mali	Design of Question Bank in SP, A&D IC, PCE
42.		Prajakta Papalkar	Design of Question Bank in IP
43.		Bhushan Devare	Design of Question Bank in PCE
44.		R. S. Patil	Design of Question Bank in EPD
45.	IN	Dr. Mukesh D. Patil	Design of Syllabus and Question Bank for PMO, DSP, TR-I, MCT
46.		Gargi Phadke	Design of Question Bank in DSP,FCS,ACS,IP
47.		Diptee Patil	Design of Question Bank in

			PED,SCCD
48.		Shamal Salunkhe	Design of Question Bank in Control System Design
49.		Shirish S.Kulkarni	Design of Question Bank in Transducer I & II,CSD,ASSPS,MCS,ISD
50.		Sharad P. Jadhav	Design of Syllabus and Question Bank in IPC,APIC,PPI,SMS-I,PIS
51.		R. S. Patil	Design of Question Bank in Microcontroller –I
52.	IT	Dipti Jadhav	Design of Question Bank in E-Business Techniques (ME)
53.		Anitha Senthi	Design of Question Bank in SPM
54.		Nilima Dongre	Design of Question Bank in DSMR(ME)

RAIT follows extensive feedback and corrective actions that are necessary, based on feedback for each semester of academic year. The feedback from students comprises of following:

- Feedback on quality and content of the teaching and learning process.
- Feedback on attainment of CO-PO.

Feedback received is analyzed and corrective actions are planned by the CMQA assisted by HODs as stipulated in Quality Management System (QMS-RAIT) document.

The performance of the faculty is evaluated by the feedback taken at the end of each semester. HODs also submit the feedback for each semester to Principal and CMQA and also submit feedback from outgoing students each year highlighting the improvements that are required.

Feedback from the stakeholders is obtained from the departmental advisors, employers and experts during the workshops and seminars regarding the enhancement and changes required in the syllabus. Accordingly the matter is taken up with the Chairman, BOS.

1.1.7 Does the institution develop curriculum for any of the courses offered (other than those under the purview of the affiliating university)by it? If 'yes', give details on the process ('Needs Assessment', design, development and planning) and the courses for which the curriculum has been developed.

No. **C**urriculum development is under purview of UoM.

1.1.8 How does institution analyze/ensure that the stated objectives of curriculum are achieved in the course of implementation?

The course objectives are stated in the syllabus books promulgated by UoM. The weekly loads and practical work and scheme of evaluation, etc are stated in it. The faculty, in consultation with HOD, and subject experts decides if any additional course objectives are to be included.

The Chairman, BOS conducts orientation courses for the faculty handling the subject and curriculum planners will provide guidelines regarding the content, delivery, extent of subject to be covered under each topic, evaluation and testing procedures and laboratory works, etc.

HOD concerned holds a meeting with the faculty handling the subject before course commencement and decides the mapping of COs and POs. Further, based on the number of hours assigned by university, they decide the weightage to be given to each of the CO-PO mappings. Similarly the faculty concerned provides weightages to laboratory experiments, assignments, internal assessment and term work depending on the weightages allocated in the course curriculum.

Analysis of student performance and feedback from students on CO and PO attainment and faculty performance ensures effective implementation of curriculum and achievement of stated course objective. The process is as explained below.

- The course plans and lecture schedules are prepared based on the loads allocated by curriculum designers. Hence adherence to plans and schedules ensure adequate contact hours for delivery of content.
- Time Tables are prepared as per workload both for theory and practical sessions thus assuring the desired exposure to students to attain course objectives.
- The question papers are set to test the attainment of specific COs and the student‟s performance directly measures the learning process efficacy. Each question individually maps to a CO and hence performance of students directly measures the attainment of the respective CO.
- Assignments and tutorials are also designed keeping in mind the contribution of each topic to CO and hence performance is a measure of CO attainment.
- Laboratory sessions are also designed to reflect the relationship with CO.
- Evaluation process of above test process makes it possible to identify the weak students and additional contact hours and weakness removal classes are held so as to improve the understanding of the topic and thus enhance the performance.

The feedback given by students at the end of each semester on the CO attainment and on the performance of the faculty is analyzed by HOD, DQA and CMQA teams to bring in modifications to curriculum handling regarding quality, content and delivery mechanisms.

1.2 Academic Flexibility

1.2.1 Specifying the goals and objectives give details of the certificate/diploma/ skill development courses etc., offered by the institution.

- **Innovative thinking:** Innovative project work based on industrial problem is assigned to the students. In order to inculcate innovative and project based learning, project competition is organized every year. For the innovative project work, the advanced research laboratory with dedicated facility is available to students. The software like Oracle, IBM, MATLAB, LabVIEW, Qualnet, Xilinx, Microwind, EM^3 are available to the students. Students are encouraged for internships to work on industrial problems.

- **Pivotal centre to industry :** The institute conducts value added courses, training programmes to provide hands-on work experience by means of

  - Summer internship
  - Training programmes by industries like TCS, Yokogawa, Oracle, Siemens and Texas Instruments.

- Soft skill programmes are organized for better oral and written communications. Productivity improvement programmes like handling of stress in work by Prajapita Brahama Kumaris, ethics and art of living programmes by Vivekananda Mission are organized.

- Joint training programmes for experiential learning are organized with the experts from BARC, IITs, TIFR, and UoM.

1.2.2 Does the institution offer programmes that facilitate twinning /dual degree? If 'yes', give details.

No.

1.2.3 Give details on the various institutional provisions with reference to academic flexibility and how it has been helpful to students in terms of skills development, academic mobility, progression to higher studies and improved potential for employability. Issues may cover the following and beyond:

The syllabus includes theory as well as laboratory sessions with reference to academic flexibility.

- **Range of Core / Elective options offered by the University and those opted by the institute:** Affiliating University provides a number of elective subjects in each programmes and some are adopted by the institute. The details of branch-wise and semester-wise electives offered are appended in Table 1.2.

Table 1.2: Semester-wise elective subjects.

Sr.No.	Branch	Semester	Elective Subject
1.	CE	BE (VI)	Project Management
2.		BE (VII)	E Commerce, Soft Computing
3.		BE (VIII)	Advanced Internet Technology(AIT), Human Computing Interaction (HCI), Computer Vision (CV)
4.		ME (I)	Cryptography and Network Security (CNS), High Performance Computing, Software Testing, Machine Learning
5.		ME (II)	E Commerce, Emerging Wireless Technology and Future Mobile internet, Storage Area Network
6.	EL	BE (VII)	Image Processing, Wireless Communication
7.		BE (VIII)	Advanced Networking, Electronics Product Design
8.		ME (I)	Advanced Digital Communication, Advanced Digital Image Processing
9.		ME (II)	Advanced Networking Techniques, Modeling and Synthesis with VHDL
10.	ET	BE (VII)	Data compression and Encryption (DCE), Neural Network and Fussy Logic
11.		BE (VIII)	Satellite Communication (Satcom), Image Processing (IP)
12.		ME (I)	Advance Satellite Communication (ASC), Speech Processing (SP), Embedded System (ES)
13.		ME (II)	Advance Antennas and Array (AAA), Network Security (NS)
14.	IN	BE (VII)	Image Processing (IP), Functional Safety (FS), Process Modeling and Optimization (PMO)
15.		BE (VIII)	Nuclear Instrumentation (NI), Power Plant Instrumentation (PPI), Optimal Control Theory (OCT)
16.		ME (I)	Bio-instrumentation and Imaging, Advanced Electronic Circuits for Instrumentation and Control Applications
17.		ME (II)	Advanced Nuclear Instrumentation, Fuzzy logic Neural Network and Control
18.	IT	BE (VII)	E-Commerce & E-Business
19.		BE (VIII)	Soft Computing
20.		ME (I)	Usability Engineering, E-Business Techniques
21.		ME (II)	Virtualization and Cloud Computing, Ethical hacking and digital Forensic

The elective courses and their curriculum are so designed to offer extensive academic rigor towards progression to higher studies such as ME/MTech/MS/MBA and PhD and enhancing of employment potential. These additional courses and experiments in labs are specifically designed to develop skills set among students. For examples, the

additional experiments and project works handled by students and summer internship are geared to enhance skills set for better employability.

- **Choice Based Credit System and range of subject options:** The institution does not follow Choice based credit system as controlling university has not yet offered the schemes.
- **Courses offered in modular form:** The curriculum is so designed that all course structures are fully modular.
- **Credit transfer and accumulation facility:** The credit transfer and accumulation is available only at the end of first year as per UoM rules and regulations.
- **Lateral and vertical mobility within and across programmes and courses:** By virtues of electives offered vertical mobility is operational in each of the department. However, the lateral mobility is permitted only at the end of first year of UG.

The elective courses are multidisciplinary in nature. Accordingly students taking up these courses opt for higher education in the branches other than the branch of their graduation. For example, migration for one branch to another branch has been successfully under taken by students.

- **Enrichment courses:** In conformity with goals and objectives, the institute organizes several enrichment courses. The details are provided in Table 1.3.

Table 1.3: Enrichment courses for all students.

Sr.No.	Speakers	Details	Year
1.	Brahma Kumaris	Stress Free Workshop	2013-14
2.	Ramakrishna Mission	Stress Management Workshop	2013-14
3.	Dr Zakir Taquvi (Ex NASA)	Research Trends in Aeronautics Engineering	2014-15
4.	Sahaja Yoga Team	Sahaj Yoga Meditation for Students & Faculties	2014-15
5.	Mr. Sekhar Basu, BARC Director	India‟s Nuclear power program	2014-15
6.	Mrs Jayanti Chavan	Success Mantra for Life	2014-15
7.	Mr. Mihir Mankad	An Effective Public Speaking	2014-15

1.2.4 Does the institution offer self-financed programmes? If 'yes', list them and indicate how they differ from other programmes, with reference to admission, curriculum, fee structure, teacher qualification, salary etc.

All the courses offered by institute are self financed courses expect in case SC/ST/VJ/NT/OBC/SBC Students. Government of Maharashtra through Samaj-Kalyan offers a tuition fees for the students admitted under quota.

There is no difference in admission procedure, fee structures, curriculum, and Teacher qualification as per AICTE and UoM norms with details as given below:

- The admission is through Central Admission Process (DTE-CAP).
- The curriculum followed is as specified by UoM.
- The fee is decided by the Shikshan Shulka Samiti (SSS) of Maharashtra State.
- The necessary qualification and pay scale of the faculty members are as per the rules and regulations of UoM and AICTE.

1.2.5 Does the college provide additional skill oriented programmes, relevant to regional and global employment markets? If 'yes' provide details of such programme and the beneficiaries.

The details of additional skill oriented programmes for regional and global employment markets are given in Table 1.4.

Table 1.4: Details of skill development courses.

Sr.No.	Branch	Skills Development Course	Beneficiaries	Remarks
1.	CE	NS2 and its Application	150	2010-2011
2.		Android Workshop in Collaboration with "monsterindia.com"	120	2011-2012
3.		Workshop on Ethical Hacking	111	
4.		Configuration of CISCO Router	30	
5.		Web Development	100	
6.		Workshop on Cloud Computing and Grid Computing	50	2012-2013
7.		Workshop on LATEX	90	
8.		Workshop on Linux	150	
9.		Web Designing and Development	150	
10.		Institute Level Project Competition	20 Project Groups	
11.		Matlab for Pattern Recognition	120	
12.		Inter-department Technical Programming Competitions on C, C++, Java, Networking and web Designing	278	2013-2014
13.		Institute Level Project Competition	20 Project Groups	
14.		Linux Enterprise Technologies and Server Application	30	
15.		Advanced Web Technology	60	2014-2015
16.		NS2 and its Applications	145	
17.		Advanced features of Matlab for Computer Vision	120	

18.		Institute Level Project Competition	20 Project Groups	
19.		Development on IBM Cloud	50	
20.		Development on IBM COGNOS	50	
21.		Designing using IBM RSA	50	
22.	EL	One day workshop on Scientific Report Writing	30	2010-2011
23.		Training program on QualNet software	75	2011-2012
24.		Scientific Report Writing using Latex for ME students	14	2012-2013
25.		Simulation and control of Magnetic Levitation System	30	2012-2013
26.		National workshop on Application of Fractional Calculus	35	2012-2013
27.		Scientific Report Writing using Latex for BE students	100	2012-2013
28.		Scientific Report Writing using Latex for ME students	14	2012-2013
29.		Scientific Report Writing using Latex for BE students	100	2012-2013
30.		NSCFET	150	2013-2014
31.		Scientific Report Writing using Latex for ME students	14	2013-2014
32.		Embedded system Design on MSP 430 in collaboration with Texas Instruments	35	2013-2014
33.		Scientific Report Writing using Latex for BE students	100	2014-2015
34.		Scientific Report Writing using Latex for ME students	14	2014-2015
35.		Modern Digital Design with Krypton	35	2014-2015
36.		Embedded system Design on MSP 430 in collaboration with Texas Instruments	35	2014-2015
37.		Robotics Workshop	70	2014-2015
38.		Visual TCAD Software Demo	25	2014-2015
39.		Scientific Report Writing using Latex for ME-Students	28	2014-2015
40.		Scientific Report Writing using Latex for EXTC	20	2014-2015
41.		INO: India based Neutrino Observatory	70	2014-2015
42.		Embedded GPU System	40	2014-2015
43.		Internet on Things	90	2014-2015

44.		COMSOL Multyphysics	35	2014-2015
45.		Teaching Power Electronics using MATLAB/Simulink	52	2014-2015
46.		Digital Circuits Implementation using CPLD and FPGA	35	2014-2015
47.		Ardiuno and Aurum	50	2014-2015
48.		Robotics (IEEE)	20	2014-2015
49.		Embedded Systems Fundamentals	80	2014-2015
50.	ET	Training program on QualNet software	75	2011-2012
51.		Robotics Workshop	45	2014-2015
52.		Global Overview of Developments in Microwave & Millimeter Wave Communication as on today	80	2014-2015
53.		Workshop on Robotics	85	2014-15
54.		Workshop on Raspberry Pi	125	2014-15
55.		Scientific Report Writing using Latex for ME EXTC	18	2014-15
56.		Embedded GPU System	38	2014-15
57.		Internet on Things	45	2014-15
58.		COMSOL Multiyphysics	35	2014-15
59.		Embedded Systems Fundamentals	60	2014-15
60.	IN	Basics of MATLAB & its applications	25	2011-12
61.		MATLAB & Simulink Fundamentals & applications	20	2011-12
62.		Basics of MATLAB & its applications	25	2012-13
63.		MATLAB & Simulink Fundamentals & applications	30	2012-13
64.		LabView Software & NI ELVIS hardware	30	2013-14
65.		Siemens Hands on Training on PLC & SCADA	70	2013-14
66.		Basics of MATLAB & its applications	40	2013-14
67.		MATLAB & Simulink Fundamentals & applications	35	2013-14
68.		Yokogawa DCS	59	2014-15
69.		Siemens Training on “Basic Automation” PLC & SCADA	75	2014-15
70.		Basics of MATLAB & its applications	44	2014-15

71.		MATLAB & Simulink Fundamentals & applications	35	2014-15
72.		Embedded Systems with application to Instrumentation & Control	25	2014-15
73.	IT	Advances networking and mobile computing	60	2010-11
74.		NS2	84	2011-12
75.		Cloud computing and Grid computing	91	2012-13
76.		Implementation of Cloud Computing	60	2012-13
77.		Software Reliability	121	2013-14
78.		Cloud computing	70	2013-14
79.		Dive in Technology	84	2013-14
80.		Network Security and CISCO router configuration	94	2013-14
81.		Linux Configuration	92	2014-15
82.		Network Security and Digital Forensics	46	2014-15

1.2.6 Does the University provide for the flexibility of combining the conventional face-to-face and Distance Mode of Education for students to choose the courses/combination of their choice" If 'yes', how does the institution take advantage of such provision for the benefit of students?

No

1.3 Curriculum Enrichment

1.3.1 Describe the efforts made by the institution to supplement the University's Curriculum to ensure that the academic programmes and Institution's goals and objectives are integrated?

The Institution follows curriculum provided by the university which is mandatory. However UoM while setting up of the curriculum has given freedom to introduce our own COs and POs so as to meet the objectives and vision of the institution. This additional objectives are chosen after careful analysis of requirement felt by the faculty and the enhancements required to meet the stated objectives to meet mission and vision. These additional COs and POs are introduced so as to ensure wider acceptance of graduates from this institution for credits transfer when they take up higher studies. The details of additional COs and POs introduced by various departments are highlighted in Table 1.5.

Table 1.5: Programme-wise COs and POs.

Sr. No.	Dept	Number of additional COs	Number of mappings by these additional COs with POs
1	CE	29	116
2	EL	33	132
3	ES	24	96
4	ET	32	128
5	IN	23	92
6	IT	20	107

1.3.2 What are the efforts made by the institution to enrich and organize the curriculum to enhance the experiences of the students so as to cope with the needs of the dynamic employment market?

The students are made employable by giving:

- More emphasis on interactive teaching, using ICT like interactive smart boards, LCD projectors.
- Small group teaching for better understanding of the topic and for clearing the doubts of the students.
- Remedial teaching for weak students to enhance their knowledge, better understanding and learning experience

Skill development programmes are regularly organized in consultation with experts from the industry and academic advisers. Soft skill enhancement programmes are conducted regularly by Training and Placement Cell (TPC). The institute also organizes training programmes related to enrichment of curriculum to meet the needs of industry.

1.3.3 Enumerate the efforts made by the institution to integrate the cross cutting issues such as Gender, Climate Change, Environmental Education, Human Rights, ICT etc., into the curriculum?

The curriculum includes subjects on environment education, as environmental sciences. The experts from various organizations are invited to deliver lectures on the topics of code of conduct, art of living, stress removal and handling, and gender equality amongst other topics of importance.

The Social Wing of RAIT handles projects involving upkeep and care of environment by designing and executing projects such as ban of plastics, girl/women empowerment, adult education, reaching out to underprivileged students and adopting parent deprived children, etc.

RAIT, as part of Quality Assurance Mechanism has integrated green environment by a programme titled Digital Initiative Programme (DIP) that includes paperless student administration and service, spearheaded by RAIT Kiosks. The Digital Course File

(DCF) is a major initiative towards RAIT efforts to reduce consumption of paper and thus contribute to conservation of trees and major contribution towards ICT.

Various training programme are organized for ICT by experts from industry and academia. The curriculum involves project work and includes several projects such as Biogas from kitchen waste, thus reducing the carbon footprint of RAIT.

1.3.4 What are the various value-added courses/enrichment programmes offered to ensure holistic development of students?

- Moral and ethical values: Yoga and spiritual courses are conducted by Prajapita Bhramha Kumari. (Refer Table 1.3).
- Employable and life skills: Motivational and distressing sessions, soft skill training program, art of living workshops are organized by the Vivekanand Mission. Experts from IITs, BARC, TIFR deliver the experts talks for increasing employability of students. (refer Table 1.4)
- Better career options: Indian Navy, TCS, ORACLE organize workshops and training programmes.
- Community orientation: community awareness programmes, outreach programmes are conducted by social wing RAIT.

1.3.5 Citing a few examples enumerate on the extent of use of the feedback from stakeholders in enriching the curriculum?

Feedback obtained from the students is analyzed in the departmental meeting with DQA. This feedback is implemented in the teaching-learning process. Representatives of the employment industry and academic advisors give feedback to enrich curriculum. The schematic of the feedback mechanism is depicted in Fig. 1.1.

Fig. 1.1: Feedback mechanism employed at RAIT.

The feedback given by students, industrial experts, and academic advisors are communicated to the Chairman, BOS, and Dean, FoT.

Based on this feedback, institute organizes industry relevant hands on training on workshop on PCB design, workshop on Raspberry Pi, Linux, Network Security, PLC programming, basics of DCs and SCADA etc.

1.3.6 How does the institution monitor and evaluate the quality of its enrichment programmes?

- Periodic evaluation of theory, practical and assignments is done regularly. Student feedback is also taken into consideration to evaluate enrichment programme.
- Each enrichment programme includes faculty counselors who monitors the attendance, coverage of content and grasp of participants and suggests corrections to be adopted for ongoing course.
- RAIT depends on feed back given by recruiters and employers to decipher the quality of skills development and value added enrichment courses conducted.
- The course in charge based on the feedback from students, faculty and recruiters and employers finalizes changes required for ongoing as well as future courses and submits a report to HOD and CMQA.

1.4 Feedback System

1.4.1 What are the contributions of the institution in the design and development of the curriculum prepared by the University?

When new course is introduced or syllabus is revised, RAIT faculty actively takes part in the formation of syllabus in consultation with experts from IITs and industry. RAIT faculty has liaison with the Dean, FoT and Chairman, BOS, in formulating syllabus, curriculum, scheme of evaluation, etc. RAIT faculty plays an important role in conducting orientation programmes along with the Chairman, BOS. The faculty assists Chairman of BOS in preparing the Question Paper bank. The details of the faculty from departments and the nature of involvement in the development of curriculum by university are shown in the Table 1.6.

Table 1.6: Design and Development of the curriculum.

Sr. No.	Branch	Name(s) of faculty	Nature of involvement/work in University
1.	CE	Dr. Ramesh Vasappanavara	LIC - Member
2.		Dr. Leena Ragha	Design of Syllabus for CN (IT)
3.	EL	Dr. Vishwesh A. Vyawahare	Design of syllabus for PE-II,FOMC(GCOEP),
4.		Poornima Talwai	Design of syllabus for DC,ADC,ANT
5.		Dr. M. D. Patil	Design of syllabus for

			PCS, DSPP, EIM, AIS
6.	ES	Dr. S.D. Shete	Chairman of the design of syllabus for AC-I, AC-II
7.		Dr. Arpita Palchoudhary	Design of syllabus for CS (FE Sem II)
8.		Sanjay Talokar	Design of syllabus for EM (FE Sem I)
9.	ET	Dr. M. D. Patil	Design of syllabus for CS, EIM
10.	IN	Dr. M. D. Patil	Design of syllabus for TR-I, PMO, DSP, MCT
11.		Shirish S.Kulkarni	Design of syllabus for Transducer I & II, CSD, ASSPS, MCS, ISD
12.		Sharad P. Jadhav	Design of syllabus for IPC, APIC, PPI, SMS, PIS
13.	IT	Nilima Dongre	Design of syllabus for SNMR
14.		Anitha Senathi	Design of syllabus for SPM
15.		Dipti Jadhav	Design of syllabus for SPA,OOPM

1.4.2. Is there a formal mechanism to obtain feedback from students and stakeholders on Curriculum? If 'yes', how is it communicated to the University and made use internally for curriculum enrichment and introducing changes/new programmes?

Yes. Details of the feedback mechanisms at RAIT are already explained in Criterion 1.3.5.

RAIT follows extensive feedback and corrective actions necessary based on feedback for each semester. The feedback from students comprises following:

- Feedback on quality and content of the teaching and learning process.
- Feedback on attainment of COs with POs.

Feedback received is analyzed and corrective actions are planned by CMQA assisted by HODs as stipulated in QMS- RAIT document.

Teacher"s feedback is taken during the conduction of orientation programme. Also the semester feedback report submitted to HODs by individual faculty. HODs also submit the feedback from outgoing students each year highlighting the batch progress.

Stakeholder"s feedback is obtained from the departmental advisors, employers and experts during the workshops and seminars regarding the enhancement and changes required in the syllabus. Accordingly the matter is taken up with Chairman of BOS.

Suggestions expressed at teacher-student interactions are evaluated and taken up for the change in curriculum and referred to the university bodies to do the needful.

1.4.3 How many new programmes/courses were introduced by the institution during the last four years? What was the rationale for introducing new courses/programmes?) Any other relevant information regarding curricular aspects which the college would like to include.

The details of new courses introduced in RAIT are given in the Table 1.7.

Table 1.7: New courses introduced.

Ph.D. Program			
Sr. No.	**Branch**	**New Course Introduced**	**Year**
1	CE	Ph.D. in Computer Engineering	2012-13
2	EL	Ph.D. in Electronics Engineering	2012-13
3	IN	Ph.D. in Instrumentation	2015, Subject to Approval of UoM
M.E. Program			
4	ET	M.E. in Electronics and Telecommunication	2011-12
5	IN	M.E. in Instrumentation	2012-13
6	IT	M.E. in Information Technology	2012-13

Electronics and Telecommunication, Electronics Engineering, Computer Science and Instrumentation are having enormous demand for quality researchers and qualified research students find ample of opportunities and job openings in academic institutions and Industry. Also there is a tremendous scope for higher studies in multidisciplinary branches. Hence the institute has added these PG and Ph.D. programmes.

Since there is a huge industrial area around the Mumbai region, hence skilled manpower in Instrumentation Engineering is in demand. So to fulfill the needs of industry, the institute has increased the number of seats in UG programme of Instrumentation Engineering.

There is big software/IT hub around the Mumbai region and thus there is a huge demand for IT professionals. Most of our students get recruited in campus interviews. Hence institute has increased the number of seats for UG, PG and Ph.D. programmes in Computer Engineering and Information Technology.

Criterion II

Teaching-Learning and Evaluation

D Y PATIL
RAMRAO ADIK
INSTITUTE OF
TECHNOLOGY
NAVI MUMBAI

Criterion II: Teaching - Learning and Evaluation

2.1 Student Enrollment and Profile

2.1.1 How does the college ensure publicity and transparency in the admission process?

Director of Technical Education, Maharashtra State (MS-DTE) governs the admission to all the branches. The institute has its own admission cell to provide information regarding the admission procedure to parents and candidates. The Institute follows the reservation quota rules as per the norms for the students in the reserved category and there is 100% transparency in the procedure. For admission in 20% management seats, there is a central admission cell and admission is based on eligibility Criterion set by DTE. All applications received at the institute level are processed and filled on merit basis. DTE also publishes database of available seats in the institute.

The process adopted for publicity and transparency of admission is shown in Fig. 2.1.

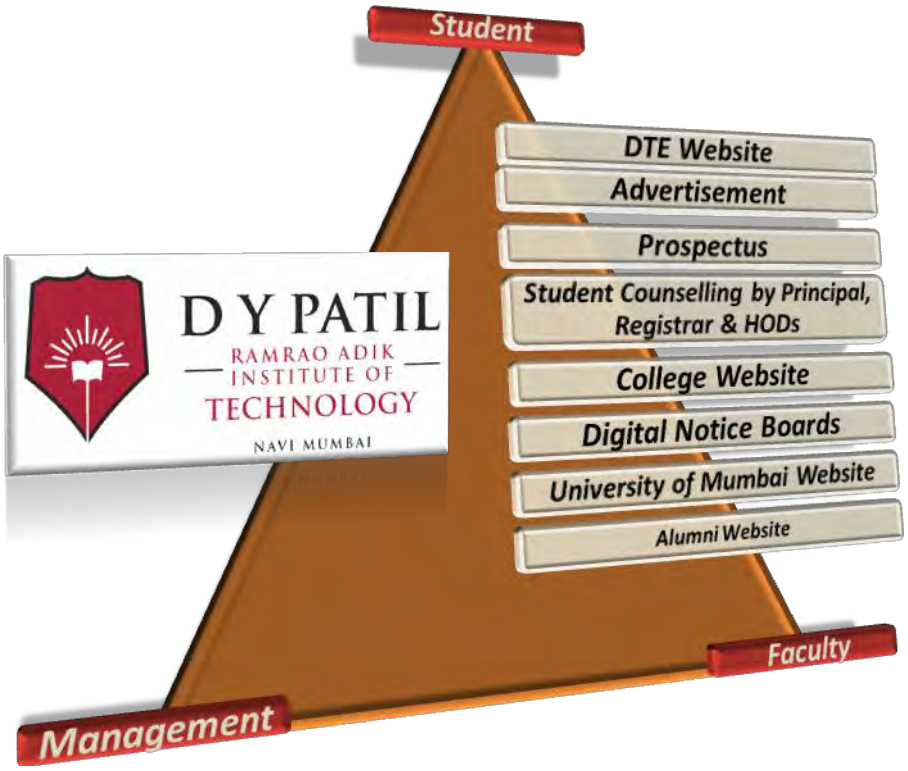


Fig. 2.1: Process adopted for publicity and transparency of admission.

The institute prospectus provides all the academic, administrative and fee structure information related to admission process. The notification contains detailed information about number of seats, different courses, eligibility for admission, process of admission and academic information on the institutional website. The referral of alumnus also helps in admission procedure. A digital display at the entrance of the college, and on all the floors is used for displaying the total number of seats in each

department. All notice boards are also used to display the notification and details of admission procedures. The institute also provides extensive counseling by Principal, Registrar and HODs for prospective students.

2.1.2 Explain in detail the Criterion adopted and process of admission (Ex. (i) merit (ii) common admission test conducted by state agencies and national agencies (iii) combination of merit and entrance test or merit, entrance test and interview (iv) any other) to various programmes of the Institution.

The institute follows the admission process as per the guidelines given by MS-DTE. Centralized Admission Process (CAP) of DTE governs the eligibility Criterion for selection of students to first year, direct second year and Master of Engineering. The procedure is as below:

Under Graduate Admissions:

Students to UG programme offering B. E. degree are admitted through following two categories.

Category 1:

Admission after passing 12th examination and Joint Entrance Examination (JEE), MS-DTE has set the well tested regulations for admission of students to various colleges/branches. The detailed procedure is as follows:

- Issue of notification- published in the leading Newspaper and websites: http://www.dte.org.in.
- Availability of online prospectus and applications.
- Filling of Online Application Form for Centralized Admission to Engineering/Technology by eligible candidates.
- Conducting the Joints Entrance Examinations and publishing the results.
- Publishing counseling dates and schedule on the websites as well as in newspapers. Document Verification & Confirmation of Online Application form at Application Form Receipt Centers (ARCs).
- Display of Provisional Merit List of candidates who have confirmed the online Application Form on website: www.dtemaharashtra.gov.in/fe2014.
- Submission of Grievances (if any) at ARC.
- Display of Final Merit List of candidates on website.
- Filling and Confirmation of Option form for Round I by candidate through his/her Login.
- Display of Allotment of CAP Round I on website.
- Reporting to respective Institutes as per allotment of CAP Round I.
- Filling of Online Option Form for CAP Round II by candidate through his/her Login.
- Confirmation of Option form for Round II by candidate through his/her Login.
- Display of Allotment of CAP Round II on website.
- Reporting to respective Institutes as per allotment of CAP Round II.

- Filling of Online Option Form for CAP Round III by candidate through his/her Login.
- Display of Allotment of CAP Round III on website.
- CAP Round IV by counseling and reporting to respective Institute.

Category 2:

Direct admission to second year of UG programme for Diploma passed students. There is a provision for Diploma holders for admission in the second year of the B. E. Program under lateral entry scheme. The admission is based on the marks obtained in Diploma examinations conducted by Maharashtra State Board of Technical Education (MS-BTE). These admissions also are also governed centrally at the state level, the detailed information of which is available on the website: http://www.dte.org.in.

Branch Transfer:

The branch transfer to second year of a particular branch is exercised by the college for the eligible and desiring students in case there is vacancy due to dropout students in the first year examinations. The vacancies available in each branch are published on notice board for students after publications of first year results and availability of mark sheets. A sub-committee of College Academic Council (CAC) comprising of Principal, Registrar, and HODs go through the applications and bring out a merit list for each branch. The rules for this are published on the college website http://www.rait.ac.in as academic rules and regulations document.

Post Graduate Admissions:

MS-DTE has set regulations for admission of students to various PG programmes at colleges. The details about sequence of steps to be followed are listed below:

Filling up and submission of "Online Application form" provided on the web site http:// www.dtemaharashtra.gov.in and Document verification and in person confirmation of application form at ARC for GATE candidates (sponsored/Non-sponsored category)

- Declaration of Provisional merit lists for all GATE candidates. (Sponsored and Non-sponsored)
- Submission of grievance applications, if any, at ARC
- Display of Final Merit Lists on website http:// www. dtemaharashtra.gov.in
  Display of Institute wise Seat Distribution for Round I (Sponsored/Non sponsored & NRI)
- Online Submission and Confirmation of Option form for CAP Round I by all GATE (Sponsored and Non-sponsored), candidates
- Revised Allotment of Sponsored/Non Sponsored category seats to candidates (Round 1)
- Reporting and Securing Admission by the Sponsored/Non-Sponsored candidates and at the revised allotted institutes.
- Online Submission and Confirmation of Option form for CAP Round II by all GATE (Sponsored and Non-sponsored),

- Allotment of Sponsored/Non-Sponsored category seats to candidates (Round II)
- Reporting and Securing Admission by the Sponsored/Non-Sponsored candidates at the allotted institutes.
- Display of Institute wise vacant seats for CAP Round III by Counseling arisen due to non-reporting/non-allotment of CAP Round II
- Round of admission by counseling (CAP Round-III) in person at DTE specified CAP center
- Reporting to the institute as per allotment in Counseling Round (CAP Round-III)

In case of vacancy due to non-availability of sponsored and non-sponsored category candidates, college authorities release an advertisement seeking admission in M.E. Programmes. The sub-committee of CAC comprising of Principal, Registrar, and HODs select the candidate based on merit.

Ph. D. Admission:

Admissions to Ph. D. programmes are carried out as per the rules and regulations stipulated by UoM for regular students. Institute follows the guidelines provided by University of Mumbai in Circular No. 441 of 2005, as per Ordinance 5473, 5474, 5476, 5478, 5480 and 5482 for PhD degree course in various subjects of technology.

2.1.3 Give the minimum and maximum percentage of marks for admission at entry level for each of the programmes offered by the college and provide a comparison with other colleges of the affiliating university within the city/district.

Because of excellent infrastructure, ample opportunity to excel academically, all-round development, and with 80%-85% of campus placement, RAIT is one amongst top colleges of the region. Thus, RAIT enjoys high position amongst discerning students from all strata of society. The details of maximum and minimum marks of students admitted in various branches as per category are provided in Table 2.1, 2.2, 2.3 and 2.4.

Table 2.1: UG program admission details.

Sr. No.	UG Programme	Year of Admission	Max. Marks of Admitted Students		Min. Marks of Admitted Students	
			CET	AIEEE	CET	AIEEE
1	Computer Engineering	2011-12	151	138	82	103
		2012-13	155	155	98	112
		2013-14	137	156	83	110
		2014-15 JEE (Composite)	95.68		78.23	
2	Computer Engineering	2011-12	---	---	---	---
		2012-13	---	---	---	---

	(Second Shift)	2013-14	123	107	82	82
		2014-15 JEE (Composite)	92		73.18	
3	Electronics Engineering	2011-12	142	175	76	91
		2012-13	134	125	75	78
		2013-14	143	111	72	70
		2014-15 JEE (Composite)	88.51		55.50	
4	Electronics Engineering (Second Shift)	2011-12	---	---	---	---
		2012-13	---	---	---	---
		2013-14	---	---	---	---
		2014-15 JEE (Composite)	80.52		46.15	
5	Electronics and Telecommunication Engineering	2011-12	164	141	79	98
		2012-13	149	144	86	97
		2013-14	143	139	79	100
		2014-15 JEE (Composite)	92.12		70.75	
5	Electronics and Telecommunication Engineering (Second Shift)	2011-12	---	---	---	---
		2012-13	126	110	80	82
		2013-14	114	103	79	70
		2014-15 JEE (Composite)	87.58		57.70	
6	Instrumentation Engineering	2011-12	120	97	88	75
		2012-13	116	113	71	60
		2013-14	108	82	59	56
		2014-15 JEE (Composite)	82.21		18.01	
7	Information Technology	2011-12	120	101	96	80
		2012-13	125	116	79	80
		2013-14	121	115	76	91
		2014-15 JEE (Composite)	90.14		72.00	

Table 2.2: UG program (Direct 2nd year) admission details.

Sr. No.	(2nd Year)UG Programme	Year of Admission	Max. Marks of Admitted Students	Min. Marks of Admitted Students
1	Computer Engineering	2011-12	90.13%	56.55%
		2012-13	86.70%	62.71%
		2013-14	86.17%	79.81%

		2014-15	87.69%	75.35%
2	Computer Engineering (Second Shift)	2011-12	---	---
		2012-13	---	---
		2013-14	---	---
		2014-15	84.39%	67.23%
3	Electronics Engineering	2011-12	86.85%	68.67%
		2012-13	87.42%	61.77%
		2013-14	87.73%	66.17%
		2014-15	89.45%	58.36%
4	Electronics and Telecommunication Engineering	2011-12	90.42%	66.79%
		2012-13	89.33%	61.52%
		2013-14	86.38%	70.96%
		2014-15	88.40%	65.03%
5	Electronics and Telecommunication Engineering (Second Shift)	2011-12	---	---
		2012-13	---	---
		2013-14	86.00%	73.27%
		2014-15	85.83%	62.57%
6	Instrumentation Engineering	2011-12	86.81%	72.00%
		2012-13	85.40%	56.65%
		2013-14	84.12%	54.81%
		2014-15	85.41%	58.88%
7	Information Technology Engineering	2011-12	90.20%	65.93%
		2012-13	88.69%	64.63%
		2013-14	88.69%	66.65%
		2014-15	88.44%	68.44%

Table 2.3: PG program admission details.

Sr. No.	PG Programme	Year of Admission	Max. Marks of Admitted Students	Min. Marks of Admitted Students
1	Computer Engineering	2011-12	75.00	40.00
		2012-13	80.00	40.00
		2013-14	468 GATE Score	22 GATE Score
		2014-15	317 GATE Score	5.18 GATE Score
2	Electronics Engineering	2011-12	52.00	40.00
		2012-13	51.00	40.00
		2013-14	341 GATE Score	28 GATE Score
		2014-15	325 GATE Score	3.50 GATE Score
3	Electronics and Telecommunication Engineering	2011-12	63.20	40.00
		2012-13	57.00	42.00
		2013-14	382 GATE Score	32 GATE Score
		2014-15	428 GATE Score	4.72 GATE Score
4	Instrumentation Engineering	2011-12	---	---
		2012-13	85.00	40.00
		2013-14	378 GATE Score	29 GATE Score
		2014-15	18.16 GATE	3.67 GATE Score

			Score	
5	Information Technology Engineering	2011-12	---	---
		2012-13	56.00	46.00
		2013-14	61 GATE Score	27 GATE Score
		2014-15	74.33 GATE Score	1.51 GATE Score

Table 2.4: PhD program admission details.

Sr. No.	Ph. D. Programme	Year	Max. Marks of Admitted Students	Min. Marks of Admitted Students
1	Computer Engineering	2012-2013	66.17%	35.33%
		2013-2014	77.16%	51.25%
2	Electronics Engineering	2012-2013	72.20%	46.83%
		2013-2014	69.00%	43%

The exact nature of admission in other colleges around the region is not available with this institution. Owing to the RAIT enjoying high perception amongst students, RAIT admission each year is near 100% and the seats get filled immediately after Government run professional engineering institutes exhaust their open quota seats.

2.1.4 Is there a mechanism in the institution to review the admission process and student profiles annually? If 'yes' what is the outcome of such an effort and how has it contributed to the improvement of the process?

Yes, the institute has a mechanism to review the admission process and student profile annually.

As MS-DTE governs the engineering admission process in the state, the institute follows rules, regulations and guidelines set up by the Government of Maharashtra. This admission process cannot be amended by the institution.

However, student profiles are reviewed annually. Such data is analyzed and presented in CAC meetings. The measures to attract better cream of students are discussed and implemented every year. The institute has an active and informative website wherein development, learning, and training programs are displayed prominently for dissemination amongst students. RAIT takes up following steps to review student profile:

- After analysis of student profile, suitable remedial classes for enhancing communication skills, additional weakness removal classes for mathematics etc. are conducted.
- Student association members interact with fresh batch of students and encourage them to take up extracurricular activities of their choice in the area of sports, culture, literary, social, professional activity, etc.
- Throughout the programme spread over four years, several enhancement courses are conducted such as art of living, stress removal, aptitude test, so that students are successful in handling problems of their profession when they join the work places.

- Industry giants like Siemens, Yokogawa, Texas Instruments, and Tata Consultancy Services (TCS) conduct technology enhancement courses regularly to make our students industry ready.
- The institute has set up a counseling program wherein students get ample feedback on their performance and their readiness and opportunities available for them to get gainful employment. Further, parents are also informed on regular basis by class counselors about the performance and progress of their wards in each semester on regular basis.

With above stated proactive measures, the prospective students are well informed and motivated to take admission at RAIT. The measures initiated have reached prospective students and parents, thereby ensuring steady and continuous improvement in quality of incoming students. As a consequence there is a substantial improvement in the academic performance and overall development of the students resulting in higher employability in reputed companies.

2.1.5 Reflecting on the strategies adopted to increase/improve access for following categories of students, enumerate on how the admission policy of the institution and its student profiles demonstrate/reflect the National commitment to diversity and inclusion.

- ***SC/ST***
- ***OBC***
- ***Women***
- ***Differently abled***
- ***Economically weaker sections***
- ***Minority community***
- ***Any other***

- Admissions are done as per Government of Maharashtra reservations policies prevailing at the time of admission.
- Separate counseling sessions are conducted for OBC/SC/ST students with different cut off marks. Details regarding schemes of Government for financial assistance to such students also are explained.
- As per Government admission rules certain fix percentage of quota is reserved for girl students in every branch of the college. Further, there is a women Grievances redressal cell headed by a lady professor and a suggestion/complaint box is provided in the campus to deal with any shortcomings/complaints in this regard.
- Special counseling sessions are conducted for the persons with physical disabilities and also for those who are outstanding achievers in sports and extracurricular activities.
- Economically weaker section students are given counseling regarding various government schemes of financial assistance and also about the bank loan facility which is available from nationalized bank to aid them for higher education.
- There is a special quota for the candidates of Jammu and Kashmir as per DTE norms.

- Tuition Fee Waiver Scheme (TFWS) for the students is in practice as per AICTE norms.
- RAIT conducts regular weakness removal classes and enrichment courses and also value added courses based on analysis of students admitted. Owing to proactive measures adopted by the institute, the prospective students belonging to weaker sections take admission since they are assured of corrective measures adopted by RAIT.

2.1.6 Provide the following details for various programmes offered by the institution during the last four years and comment on the trends. i.e. reasons for increase / decrease and actions initiated for improvement.

Details of the various programs offered by the institution during the last four years with comments are tabulated below.

Table 2.5: The details of various programs offered by the institute.

Program	Branch	No. of Applications	No. of Students admitted			
			2014	2013	2012	2011
UG	Computer Engineering	Admission Process carried out by Institute is as per norms of Government and students are admitted as per their allocation after CAP rounds	126	125	125	127
	Computer Engineering (Second Shift)		59	59	---	---
	Electronics Engineering		173	180	128	127
	Electronics Engineering (Second Shift)		52	---	---	---
	Electronics and Telecommunication Engineering		174	185	127	116
	Electronics and Telecommunication Engineering (Second Shift)		56	58	60	---
	Instrumentation Engineering		110	122	125	54
	Information Technology		122	124	127	62
Program	**Branch**	**No. of Applications**	**No. of Students admitted**			
			2014	**2013**	**2012**	**2011**
PG	Computer Engineering	Online Admission Process By CAP	29	36	35	36
	Electronics Engineering		14	14	14	17
	Electronics and		18	18	18	18

	Telecommunication Engineering					
	Instrumentation Engineering		08	17	18	---
	Information Technology		06	15	07	---
Program	**Branch**	**No. of Applications**	**No. of Students admitted**			
			2014	**2013**	**2012**	
PhD	Computer Engineering	As per MU Guidelines	---	05	03	
	Electronics Engineering		---	03	05	

RAIT conducts several enrichment courses and value added courses and skills development courses each semester for the benefit of students to overcome their shortcomings if any, as well as prepare them to handle the profession beyond college on leaving the institution. The details of enrichment courses are given in Table 1.3 of Criterion 1. The details of skills development courses being conducted are presented in Table 1.4 of Criterion 1.

Table 2.6: The details of value added courses are shown below.

Sr. No.	Branch	Value Added Courses Name of the Course	Conducted By	Year
1.	Computer Engineering	Oracle Corporation	Oracle Certified Associate(OCA) Promatric Testing Centre	Aug 2012 to Oct 2012 Jan2013 to March 2013 Aug 2013 to Oct 2013 Aug 2014 to Oct 2014 Jan 2015 to March 2015
2.		IBM SEED Program for Business Intelligence Using IBM Cognos BI	Mapleton Infotech Pvt. Ltd., Dadar (west), Mumbai	Jan 2014
3.		IBM SEED Rational Suite Enterprise(RSA)	Mapleton Infotech Pvt. Ltd., Dadar (west), Mumbai	Jan 2014

4.		IBM SEED Program for Enterprise Application Development & Deployment for Cloud Environment	Mapleton Infotech Pvt. Ltd., Dadar (west), Mumbai	Jan 2014
5.	Electronics Engineering	Embedded Systems	Mr. Jagdish Bisawa	Feb 2015
6.		Embedded GPU System	Mr. Viraj Padte	Mar 2015
7.		COMSOL Multyphysics	Mr. Ajay S. S.	Sept 2014
8.	Electronics, Electronics & Tele communications, Instrumentation Dept	INO: India based Neutrino Observatory	Prof. Naba Mondal	April 2015
9.	Electronics & Telecommunications	Embedded Systems	Mr. Jagdish Bisawa	Feb 2015
10.		Internet of Things	Mr. Ankur S.	Mar 2015
11.	Instrumentation Engineering	Siemens training on "Basic Automation"	Sitrain Siemens, Navi Mumbai	2013
12.		Yokogawa DCS	Yokogawa, Bangalore	Sept 2014
13.		Siemens hands on training on PLC and SCADA	Siemens Navi Mumbai	Jan 2014
14.		NI Hardware and LABVIEW software	National Instruments, Bangalore	Nov 2014
15.	Information Technology	Oracle Certified Associate(OCA)	Oracle Corporation	Aug 2012 to Oct 2012 Jan2013 to March 2013 Aug 2013 to Oct 2013 Aug 2014 to Oct 2014 Jan 2015 to March 2015
16.		"How to enable cloud"	EMC^2	Jan 2013
17.		Linux Configuration	Prof. D. Ambawade	Oct 2013

18.		Network security	ITSA/TCS experts	Oct 2014

Electronics and Telecommunication, Electronics Engineering, Computer Science and Instrumentation are having enormous demand for quality researchers and qualified research students find ample of opportunities and job openings in academic institutions and Industry. Also there is a tremendous scope for higher studies in multidisciplinary branches. Hence the institute has added these PG and Ph.D. programmes.

Since there is a huge industrial area around the Mumbai region, hence skilled manpower in Instrumentation Engineering is in demand. So to fulfill the needs of industry, the institute has increased the number of seats in UG programme of Instrumentation Engineering.

There is big software/IT hub around the Mumbai region and thus there is a huge demand for IT professionals. Most of our students get recruited in campus interviews. Hence college has increased the number of seats for UG, PG and Ph.D. programmes in Computer Engineering and Information Technology.

2.2 Catering to Student Diversity

2.2.1 How does the institution cater to the needs of differently-abled students and ensure adherence to government policies in this regard?

- The institute is fully adhering to government policies regarding the needs of differently-abled students (As per the Mumbai University Circular: URL:http://www.mu.ac.in/coebenefit102.pdf: No. Exam/COE/Benefit/102 of 2012).
- The institute caters to the needs of differently-abled (permanent and temporary disability) students as per the requirements of the individual student. In addition, the institute makes special arrangements for these students in midterm and university examination as per the UoM guidelines. Attendant help is provided as on demand.
- We have the medical facilities and attachments of the D. Y. Patil Medical College and hospital for the differently–abled students with availability of stretchers, wheelchairs, ambulance and other paramedical equipments.
- Class counselors and members of Women‟s Grievance Redressal Cell ensure adherence to policies for differently-abled students.

2.2.2 Does the institution assess the students' needs in terms of knowledge and skills before the commencement of the programme? If 'yes', give details on the process.

MS-DTE is the authority controlling admissions to the first year of engineering. In addition, the admission process is carried out through combined merit list drawn on the basis of marks obtained in Joint Entrance Examination (JEE), which is an all India

level entrance test and 12th board marks. Considering these scores, the institute assesses the student needs in following ways:

- The qualifying marks and overall ranking in the merit list of the students gives an idea about the caliber of the students for entry-level analysis.
- Institute organizes orientation programme for newly admitted students and their parents to help them understand the engineering curriculum.
- Introductory lectures for all subjects are devoted to discuss and understand special needs of the students.
- The weaker students are traced out by the teachers by the analysis carried out on the database of admitted students, which are provided special cared by arranging special doubt clearing and weakness removal classes so that they can cope with their academic demands. These students are thoroughly counseled by the senior faculty in particular subjects.
- Students from rural/vernacular background are identified by faculty and special lectures are held for improving the confidence in oral and written communication amongst students.
- Regular health camps are arranged to monitor their health.
- Regular moral boosting sessions are arranged for them.
- Wellness and stress removal lectures are being conducted for students.
- Class counselors are appointed at the beginning of term and wide publicity is given to all the students. Counselors hold monthly meeting or as and when students call for advice and provide counseling on personal as well as professional matters.

2.2.3 What are the strategies adopted by the institution to bridge the knowledge gap of the enrolled students (Bridge/Remedial/ Add-on/Enrichment Courses, etc.) to enable them to cope with the programme of their choice?

- The institute takes efforts for enabling the students to cope up with the fast developments in syllabus of various subjects as well as takes efforts in improvement of their general academic quality. These strategies adopted by the institution are listed as follows:
- The institute organizes an orientation programme for newly admitted students and their parents to understand the engineering curriculum of first year before commencement of engineering programmes.
- During orientation programmes students group associations and Head of Departments, concerned faculty apprise incoming students about opportunities available for developing into a professional with all-round leadership quality.
- Class counselors interact with students with a view to ascertain special needs such as weakness in mathematics, language skills, etc.
- The above stated interaction between faculty, students associations and counselors with parents and fresher students help the counselors to identify the needs of the students regarding enhancement classes for the weakness removal.
- Incoming students, based on their interest can select one of the technical societies such as CSI, IEEE, ISA, IETE, ISTE, ITSA, etc. for acquiring additional technical skills.

- Students also enroll for one or more extracurricular activities like sports, Kalaraag, Wall magazine etc. for ensuring all-round development and participation in extra and co-curricular activities.
- Depending on language skill aspirants and number of students from rural area, personality development programmes for enhancing communication skill is organized.
- Training is provided to students to enhance their soft-skills, group discussions skills, aptitude test capabilities as well as interview techniques. The Institute conducts soft skill development Programmes on a regular basis.
- The institute also arranges add-on courses in collaboration with industries, such as workshops on Robotics, PCB designing, Arduino, Raspberry-Pi, etc., to bridge the knowledge gap. Additional technical courses beyond the syllabus like C, C++, CCNA, Linux, and QualNet, MATLAB, LabVIEW are organized by the institute. NPTEL lecture videos are made available to all students.

2.2.4 How does the college sensitize its staff and students on issues such as gender, inclusion, environment etc.?

- Male and female staff members in our institution are treated in an equal manner ensuring gender equality.
- The staff members and students are treated equally in religious aspects and secular objectives are followed by RAIT administration.
- Women Grievances Redressal Cell (WGRC) is active and it functions separately for the benefit of the women employees and girl students.
- Additional academic help through weakness removal classes are provided for the benefit of the economically and socially weaker sections of students.
- Blood donation camp is regularly organized by Social Wing of RAIT. In addition Social Wing of RAIT conducts several programs for societal inclusion such as adult education, training programmes for underprivileged girls and boys etc.
- Our campus is smoke-free and there is a total ban on plastics. We observe Environmental Day as Green Day. The Social Wing has conducted environmental activities such as beach cleaning at Dadar Chaupati Mumbai and railway station cleaning programmes at Nerul.
- Seminars are conducted on Women Empowerment.
- Regular yoga and wellness classes are arranged for the students and faculty in order to maintain their health and moral character.
- The women employees‟ day is conducted and celebrated once in a year. The institution also takes some initiatives to conduct conferences and workshops on women empowerment programs. Successful women professionals are invited from different fields of interest to share their experiences and knowledge in the same context.

2.2.5 How does the institution identify and respond to special educational/learning needs of advanced learners?

- RAIT learning and teaching process concentrates on identifying students with advanced learning capabilities as well. The students with advanced skills are identified by counselor of each class based on the performance, academic behavior of students, initiative taken by students in solving problems, submission of assignments, project works and practical work in laboratories.
- HODs assign senior faculty members to assist the advanced learners with extra care for their academic excellence.
- Faculty members teach and guide separately for preparation of GATE, CAT and IES etc.
- The assignments, self study, web based learning, and project works are some of the tools and medium chosen by professors to meet the expectations of advanced learners.
- Students are encouraged to present papers on technological advancements at National and International Conferences and events.
- Workshops and guest lectures are periodically organized by inviting reputed faculty from IITs, NITs and other institutes of repute.
- Advanced learners are provided opportunity to take part in workshops and seminars and also encouraged to take part in competitions and paper presentations.
- High impact communication English courses and soft skills courses are conducted in order to further increase their employability skills.
- Project work that are innovative and requiring original thinking are allocated to students of this category.
- Summer internships and teaching and laboratory assistant positions are offered for enhancing their understanding by offering more contact hours.

2.2.6 How does the institute collect, analyze and use the data and information on the academic performance (through the programme duration) of the students at risk of drop out (students from the disadvantaged sections of society, physically challenged, slow learners, economically weaker sections etc. who may discontinue their studies if some sort of support is not provided)?

- The college adopts a system wherein class of students is allocated to a faculty to counsel them in all aspects such as attendance, marks, providing proper guidance to the academically poor students.
- Slow learners are identified after observing their performance in class tests and mid-semester exams.
- Teachers provide learning material for slow learners.
- All the staff members maintain a good relation with the students and deal with their problems in a sympathetic manner.
- Attendance and progress reports of the students are sent to their parents and are given full freedom to meet the Principal and faculty members as and when required.

- Academically poor students have a tendency to miss the classes so such students are fully motivated by the faculty and absentees are regularly monitored and intimation is given to their parents through phone. They are provided with prescribed text book to ease out their burden.

2.3 Teaching-Learning Process

2.3.1 How does the college plan and organize the teaching, learning and evaluation schedules? (Academic calendar, teaching plan, evaluation blue print, etc.)

Teaching Process

UoM has laid down the number of days that would be available for teaching and evaluation. The subject teacher and the departments take utmost care to complete teaching and evaluation within the stipulated time by adhering to the following strategies:

- At the onset of each semester the requirements of faculty according to the new/current syllabus are considered and if required, new faculty members are recruited maintaining the required student-teacher ratio.
- The requirement for instruments/equipments/softwares as per the new/current syllabus is collected from faculty and the purchase procedure is carried out.
- Conditions of the existing instruments/equipments are inspected before the commencement of each semester and maintenance work is undertaken.
- At the start of each semester, academic calendar is prepared and HOD assigns the responsibility of each activity to the faculty concerned.
- HODs, with the help of DQA, distribute the workload, after which the timetable is prepared by timetable committee in consultation with other departments.
- Books needed for the current curriculum are procured in the library with the cooperation of library coordinator of each department.
- Faculty members update their existing course files which consist of teaching plan, lecture schedule, course objectives, COs, results analysis of subjects, previous years question papers, list of reference books, continuous evaluation sheets and notes.
- The timetable is displayed on notice boards and the institute website in advance. Class counselors are appointed for each class and contact details are displayed on notice board.
- Instruction delivery takes place according to the timetable with the commencement of semester.
- Class counselor and Academic Monitoring Committee (AMC) ensure smooth instruction delivery.
- Records of lectures delivered as per the time table are maintained.

Learning Process

- Students performances are continuously evaluated by tutorials, mid semester tests and remedial actions are undertaken as deemed necessary.
- Extra lectures are allocated in the timetable to cover the curriculum in more elaborated way as per the subject requirement.
- Result of mid-semester tests is analyzed and weak students are identified and counseled and provided the necessary help.
- List of students with poor attendance is prepared twice in a semester and their parents are intimated highlighting the student‟s status.
- Teachers counsel students having poor attendance and performance. They also conduct meetings with their parents periodically. Thus, parents are kept informed about their ward regularly.
- Revision and remedial classes are conducted towards the end of the course.
- Open house sessions are conducted for students having poor attendance.
- Submission is done in the allotted time and term work marks are evaluated based on continuous assessment.
- UoM examination schedule is displayed on notice board and examinations are conducted as per the university rules and regulations.
- Result analysis is carried out after declaration of the university result; its record has been kept and the institute seeks guidelines from it for further improvement.
- Co-curricular and extra-curricular activities are organized to supplement the curriculum.

Evaluation Scheme

The syllabus is published by UoM and it allocates 3 to 4 lectures per week of 60 minutes each and provides evaluation scheme for all subjects. A sample data sheet issued by UoM is as follows:

As per guidelines issued by University of Mumbai for Evaluation System of each individual subject varies somewhat in the pattern but the categorization is same the guidelines are given below:

- ***Internal Assessment (IA):*** Two tests must be conducted which should cover at least 80% of syllabus. The average marks of both the tests will be considered for final Internal Assessment.
- ***End Semester Examination:***
  Question paper will comprise of 6 questions, each carrying 20 marks. The students need to solve total 4 questions. Question No.1 will be compulsory and based on entire syllabus. Remaining question (Q.2 to Q.6) will be selected from all the modules.
- ***Term Work/ Tutorial:*** At least 03 assignments covering entire syllabus must be given during the class wise tutorial. The assignments should be students centric and an attempt should be made to make assignments more meaningful, interesting and innovative. Term work assessment must be based on the overall performance of the student with every assignment graded from time to

time. The grades will be converted to marks as per credit and grading system manual and should be added and averaged. Based on above scheme grading and term work assessment should be done.

- ***Practicals:*** At least 10 experiments covering entire syllabus should be set to have well predefined inference and conclusion. Computation/simulation based experiments are also encouraged. The experiments should be students centric and attempt should be made to make experiments more meaningful, interesting and innovative. These guidelines are followed rigorously.

2.3.2 How does IQAC contribute to improve the teaching –learning process?

- The Internal Quality Assurance Cell (IQAC) christened as Quality Management System (QMS-RAIT), monitors the entire academic programme through its members. The QMS-RAIT is headed by CMQA and work under overall coordination of Principal for quality assurance of programmes.
- QMS-RAIT of the institute, with all the HODs as members, co-ordinates and monitors the total academic activities with quality initiatives. The development of academic and administrative activities and the infrastructural growth through the collaborations with research and consultancy are rigorously implemented on the basis of IQAC parameters.
- The syllabus delivered, lesson plan and the DCF prepared by the staff are reviewed once in each semester and through class counselor meetings the implementation and its effectiveness is cross checked.
- DCFs are checked by HOD with DQA members once in a month to ensure coverage of syllabus, content delivery and evaluation processes to ensure quality assurance practices set up by QMS.
- Internal audit of teaching and learning process is carried out by QMS and CMQA of RAIT. QMS members will audit DCFs at the end of semester for compliance of quality issues by all faculty members.
- Students provide feedback freely so that the actual classroom difficulties are noted and rectified by taking immediate and appropriate action, thus ensuring better course objectives being met.
- QMS is a cell which keeps close vigil to maintain and sustain the quality parameters throughout the year in all spheres of academic activity.
- Based on the feedback provided by the students, the faculty concerned is counseled for improving their performance through written feedback by CMQA, thus ensuring shortcomings are overcome before they go the next class.

2.3.3 How is learning made more student-centric? Give details on the support structures and systems available for teachers to develop skills like interactive learning, collaborative learning and independent learning among the students?

- RAIT has promulgated Learning-Centric Teaching Learning processes that work on the principle of outcome based learning and teaching methodology.
- Students are encouraged for self learning, i.e., they learn from library, internet and through departmental activities such as project works, web-based learning,

expert lectures, and student driven seminars and host of technical conferences and societies and functions.

- To enhance the teaching skills of faculty at the starting of every academic year, Faculty Development Programme (FDP) is organized every year with resource persons from UoM, BARC, IITs, NITs.
- Before commencement of each academic year, a meeting of all faculty members is convened by the QMS team and workshops are conducted on the nuances of teaching techniques for achieving better COs.
- Some practical applications and theoretical aspects are taught to the students through LCD Projectors and using broadband internet available in the class rooms.
- Tutorial classes are incorporated in the timetables.
- In the language lab students are given opportunity to participate in seminars, group discussions, etc, thereby enhancing their confidence and interpersonal skills.
- Personality development activities are conducted to all the students, covering areas such as stress handling, art of living etc.
- Well established laboratories and good library facility is provided to students to enable independent learning.
- Wi-Fi connection is available in the college so that students and faculty can update their knowledge by using online resources.
- The students are encouraged to participate in all the departmental association technical activities.

2.3.4 How does the institution nurture critical thinking, creativity and scientific temper among the students to transform them into life-long learners and innovators?

- Extensive problem solving skills are practiced during tutorial hours.
- Mini projects and final projects are designed and developed as a part of creativity, innovation and idea mapping.
- Many students participate at national and international level conferences and workshops to exhibit their scientific temperament and talent.
- Students are encouraged to participate in industrial exhibitions for technical exposure.
- Subject-wise quizzes are conducted to improve analytical skills, logical skills and reasoning abilities of the students.
- Mock interviews are conducted by the in-house and outside experts.
- Students contribute creative articles in the in-house magazines published by various departments.
- Participatory learning through group discussions, role play, case study, debates, field visits, model making supplement class room teaching are conducted regularly.
- To encourage the scientific temper among students, the faculty members engage them in various practical works in their labs and in writing of papers.

- To sharpen the critical thinking among students, various group disscusions, debates and seminars are organized in which students explore new ideas with the help of the expert views of eminent professionals.
- To give better exposure to almost all the students and young faculty members, QMS-RAIT has come-up with innovative ideas in introducing institutional tie-up with prestigious institutes and universities.

2.3.5 What are the technologies and facilities available and used by the faculty for effective teaching? Eg: Virtual laboratories, e-learning - resources from National Programme on Technology Enhanced Learning (NPTEL) and National Mission on Education through Information and Communication Technology (NME-ICT), open educational resources, mobile education, etc.

Apart from traditional classroom teaching practices, the teachers are encouraged to use ICT-enabled teaching pedagogy. The teacher uses the interactive whiteboard in ways that engage students, including student use of the board and actions based on student responses.

The teacher encourages students to use online resources and helps build online research skills, resulting in acquiring quality information. The teacher asks students to use technology to complete assignments that ask for problem solving and creativity on a regular basis. Technologies and facilities available and used by the faculty:

- Computers with internet facility in all departments.
- Use of multi-media projectors.
- E-Learning, E-Library.
- Open educational resources.
- Use of power point presentation.
- Language laboratory.
- NPTEL Videos.
- Smart Class rooms with smart boards, Laser Disc Projectors, multi-media projectors.
- Use of virtual laboratories
- Use of virtual class room.
- Webinar based learning.
- An innovative learning and teaching forum for exchange of technical information amongst teachers and students.

2.3.6 How are the students and faculty exposed to advanced level of knowledge and skills (blended learning, expert lectures, seminars, workshops etc.)?

- The Staff members are encouraged to participate in conferences and workshops and to publish papers in reputed journals like IEEE, Springer, and Elsevier etc.
- Guest lectures, workshops and seminars are organized by inviting expert lectures on advanced topics for the benefit of students as well as faculty members.

- The students are given opportunity to present seminars, present papers and to prepare live projects for which the institute provides the entire expenditure for projects.
- The institute arranges lectures to all faculty members with the resource persons from eminent engineering colleges across the India, IITs, NITs and BARC, etc.
- Teachers deliver content beyond the syllabus in the classrooms so that student would come to know recent advances in technology.
- Different training programs are conducted in institute for student as well for faculty members, which is a joint venture of institutional committee and professional organizations like Texas Instrument, National Instruments and Gaurang TechSoft, TCS, Oracle, etc.

2.3.7 Detail (process and the number of students \benefitted) on the academic, personal and psycho-social support and guidance services (professional counseling/mentoring/academic advise) provided to students?

RAIT has an active guidance and counseling mechanism for students on academic, personal and psycho-social support. Various mechanisms are highlighted below:

- The analysis of students are carried out based on urban, rural, spoken verbal and vernacular languages by counselors and correction are applied in the form weakness removal courses in the area likes mathematics, communication skills, etc. Around 900 students benefit from this mechanism.
- Counselors are appointed for a class and monthly meetings are held with the students to identify their problems. Around 3000 student have received benefit from this mechanism.
- WGRC handles issues related to women, especially girls and conducts regular advice and counseling sessions. Around 1500 students have received benefit from this mechanism.
- Professional counselors and experts are invited for conducting special training on wellness among students once in a semester. Around 3000 students benefited from this mechanism.

2.3.8 Provide details of innovative teaching approaches/methods adopted by the faculty during the last four years? What are the efforts made by the institution to encourage the faulty to adopt new and innovative approaches and the impact of such innovative practices on student learning?

All the academic activities in the institute are overseen by a highest body called CAC and CMQA. The institute has made substantial and continuous growth to ensure innovation in teaching- learning methodology. In fact, it has shifted the focus from teacher centered pedagogy to learner based program primacy by introducing, internships, industrial training, mini-projects, role play etc., along with the conventional lectures, student participation in seminars, quiz programmes and group discussions. Further, they are trained for the use of the latest technologies i.e. audio visual in teaching learning process. One of the best teaching cultures of the institute is to promote innovative pedagogy. Besides, the teachers use the following methods:

- Interactive method: case study, brain storming, focused group discussions, quiz and questions on previous chapter.
- Project based learning: helps the students to pool the findings, burn with the new ideas and arrive at cognitive solutions.
- Experimental and experiential learning: Industrial visits and participating in symposia and project work competitions. Students are participated at various project competitions and won prizes held at prestigious institutions such as IIT Mumbai, COE Pune.
- ICT based Learning: Use of LCD projectors and internet helps the learners to come closure to the knowledge pool for achievement of academics. All the classrooms have been provided with broadband and audio-visual equipments.

2.3.9 How are library resources used to augment the teaching- learning process?

The faculty members of the institute use the library resources to enhance the teaching learning process in the following way:

- The RAIT library is air conditioned and provides excellent ambience to read and study. The library can accommodate about 200 students at a time.
- The institute library has a collection of reference books, handbooks of different subjects.
- E-journals, hard bound journals, magazines and newspapers are available in the library. The institute has membership of IITB, Mumbai library and British council library for accessing rare and expensive resources.
- The college central library has NPTEL videos, educational CDs having lectures by renowned Professors.
- Internet and Wi-Fi facility is provided to all the students and staff.
- Students are provided with the book bank facility.
- Question paper sets of all subjects of previous UoM examinations are available in the central library.
- Old project reports of students are maintained in the departmental libraries which are referred regularly by students of the department.
- Institute library is open from 08.30AM to 06.30PM hours daily during normal working days. However during examinations and preparation days, the library is open from 08.00AM to 08.00 PM on all days to meet the increase in demand from students.
- Institute provides the books for the competitive examinations like UPSC, GATE, IES etc., and also Schaums series publications for numerical problem solving.

2.3.10 Does the institution face any challenges in completing the curriculum within the planned time frame and calendar? If 'yes', elaborate on the challenges encountered and the institutional approaches to overcome these.

Yes, the institute faces some minor challenges in completing the curriculum within the planned time-frame and calendar. These are listed below:

Challenges:

- Although lesson plans are prepared by faculty as per teaching scheme mentioned in UoM of syllabus, some subjects require more time depending upon the difficulty level of the subject and grasping speed of the students.
- State Government‟s procedure for first year and direct second year admissions affects students‟ academics, since their admission dates are fluctuating.
- University provides ninety days of semester which includes holidays, co-curricular and extra-curricular activities along with regular teaching.

To overcome the Challenges:

- Extra lectures are allocated in regular timetable and on weekends.
- For direct second year students extra lectures are conducted to cover the syllabus.

2.3.11 How does the institute monitor and evaluate the quality of teaching learning?

The Institute monitors and evaluates the quality of teaching-learning in the following ways:

- The institute takes online feedback once in a semester from students pertaining to each faculty. This feedback after analysis and recommendations of HOD and CMQA are handed over to the concerned faculty for improvement.
- The faculty members analyze their feedback and discuss it with the HOD and accordingly corrective and preventive measures are carried out if necessary.
- The institute takes care of academic monitoring through AMC. Regular meetings are conducted along with the committee members, HODs and the Principal to undertake necessary action for smooth conduction.
- Class Counselors along with the help of subject teachers ensure that instruction delivery is carried out regularly and uniformly.

2.4 Teacher Quality

2.4.1 Provide the following details and elaborate on the strategies adopted by the college in planning and management (recruitment and retention) of its human resource (qualified and competent teachers) to meet the changing requirements of the curriculum

The details of the present permanent faculty in the institute are given in Table 2.7.

Table 2.7: The details of no. of permanent teachers.

Highest Qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent Teachers							
D.Sc./D.Litt.	--	--	--	--	--	--	--
Ph.D.	8	2	--	--	1	3	14
M. Phil.	--	--	--	--	--	6	6
PG	--	--	--	--	40	101	141
UG/ Pursuing PG	--	--	--	--	23	30	53
Total	8	2	--	--	64	140	214

Strategies for recruitment

RAIT believes in selecting inspiring teachers who motivate students by innovative thinking and practical examples in their approaches. RAIT follows UoM and AICTE rules for selecting its faculty. The underlying principle is to maintain or better the student teacher ratio set as prescribed by the AICTE and NBA authorities.

- The requirement of faculty is prepared by HODs based on analysis of the need carried out by survey and a consolidated list of requirement is forwarded to Principal. Accordingly strategies are adopted by RAIT for the recruitment of new faculty.
- Prior to the beginning of the academic year the roster is prepared and sent to UoM for approval and an advertisement is released.
- If the requirement arises in between and there is not sufficient time available for following university process, ad-hoc appointments are carried out by RAIT through local boards to meet the urgent academic loads.
- Faculty members recruited through local boards are ratified by university authorities as and when the regular board is formulated by UoM.
- The local selection board consists of Professors and HODs and one external professor from outside the institute. For university ratification, board comprises of a member nominated by UoM.

Strategies for Retention

RAIT believes very strongly that knowledge of job at hand is a greatest motivator, in addition to pay and perks offered to teaching faculty and staff. The salient features are:

- All qualified faculty are given 6th pay commission pay and other financial dues such as DA, etc., are paid regularly. The yearly increments are given on due date without fail.
- All faculty members are regularly sent to enrichment courses, conferences, and workshops to update their technical skills. It is a policy of RAIT that each faculty has to undergo at least one knowledge enhancement training programme in a year.
- Faculty members are deputed to undergo ME/MTech, MPhil, and PhD courses to enhance their academic qualifications.
- An incentive ranging from Rs 2,500 to 10,000 is awarded for publications in journals, conferences, and books.
- For reputed journals an incentive of Rs 10000 is awarded.
- Faculty members are deputed to international conferences for paper presentations.
- Women faculty members are provided with statutory maternity special leaves and also additional privileges for the post-delivery period.
- Promotions to qualified faculty are offered in time subject to availability of vacancies.

Thus with the above proactive and sound HR policy towards pay & perks and promotions, coupled with incentives and knowledge enhancing training programmes, the teaching faculty are content and satisfied. Indeed, the attrition rate for the last 5 years is near zero, allowing RAIT to achieve progress.

2.4.2 How does the institution cope with the growing demand/ scarcity of qualified senior faculty to teach new programmes/ modern areas (emerging areas) of study being introduced (Biotechnology, IT, Bioinformatics etc.)? Provide details on the efforts made by the institution in this direction and the outcome during the last three years.

All the departments have organized several workshops/seminars on the latest subjects pertaining to their respective fields:

- This has helped the faculty a lot to update their knowledge in the concerned subjects.
- To attract the new faculty and to retain the existing teachers, the college provides incentives like sponsoring for higher education and providing special on-duty (OD) leaves for research scholars.
- Faculty members are deputed to various conferences/seminars/workshops organized by other institutes by granting OD and bearing all the expenditures.
- When there is a requirement for any emerging subjects, the college even arranges guest lecturers with experts in respective fields.

2.4.3 Providing details on staff development programmes during the last four years elaborate on the strategies adopted by the institution in enhancing the teacher quality

a) Nomination to staff development programmes

Table 2.8: The details of nominated faculty for faculty development programme.

Academic Staff Development Programmes	Number of faculty nominated				
	CE	EL	ET	IN	IT
Refresher courses	1	--	--	--	4
HRD Programmes	3	13	1	--	4
Orientation Programmes	40	35	39	11	23
Staff training conducted by the University	9	10	10	6	02
Staff training conducted by the Other institutions	74	120	70	17	37
Summer / winter schools, workshops, etc.	58	80	60	34	75
Total	116	258	180	68	145

b) Faculty Training programmes organized by the institution to empower and enable the use of various tools and technology for improved teaching-learning

Teaching learning methods/approaches:

At the beginning of a semester, HODs and senior professors conduct a series of training programmes involving faculty members to bring out methodologies to be adopted for outcome based engineering education. During this session, senior faculty members advice the teachers about the quality and content delivery, and evaluation for a specific course to maximize CO-PO attainment. The key and essential concepts for a specific subject and also judiciously chosen questions and problems that will ensure students to assess themselves about the extent of learning are prepared and shared with students.

Handling new curriculum:

- RAIT deputes senior faculty members to teach new courses and curriculum.
- The faculty members are also deputed to attend refresher or orientation course conducted by university or other institutions.
- Junior faculty members are also attached with senior faculty member for picking up the subject capability progressively, so that they are in position to handle the subject independently.

Content/knowledge management:

- To enhance the knowledge of the faculty they are sent to national and international seminars. Special programmes and visits are organized for the faculty members for new projects to acquire emerging trends.
- Faculty members are encouraged to refer several text and reference books and research papers to adequately enhance their quality of teaching.

Selection, development and use of enrichment materials:

- The institute has a well-equipped library with access to learning materials like NPTEL videos for faculty and students. The Institute also appoints consultants in order to arrange faculty development Programmes and improve industry Institute interaction.
- Faculty members are encouraged to use broad band internet available in class rooms together with LCD projector and laptop to demonstrate complex concepts and working models using internet.

Assessment:

- Assessment of students understanding is carried out through mid-semester tests, tutorials, mock practical examination and oral examinations. Online feedback is collected from students twice in a semester regarding instruction delivery.
- Faculty members are encouraged to interact with students actively and get first hand information on whether the students are grasping the subject being taught.

Cross cutting issues:

- Seminars and workshops are conducted wherein experts from various fields are invited to share and deliver their knowledge and experience. Interdisciplinary seminars and workshops are organized on regular basis for the students to develop skills across branch domains.
- The faculty members are encouraged to attend and handle courses of multi disciplinary nature.
- Projects involving many disciplines and expertise are taken up in-house and faculty members are encouraged to engage in these activities.

Audio-visual Aids/multimedia:

- All the classrooms in the institute are equipped with LCD projectors for effective teaching learning process. Faculty members are encouraged to use NPTEL videos and webinars.
- RAIT has procured studio equipment for archiving important lectures to be used later by students using internet as per their convenience from their homes and making these lectures available through webinars worldwide.

OERs:

- Open Educational Resources (OER) are freely accessible, openly licensed documents and media that are useful for teaching, learning, and assessing as well as for research purposes.
- RAIT maintains its own webinar site for dissemination of online lectures.

Teaching learning material development, selection and use:

- RAIT has built huge library and online resources to provide faculty members to broaden their content development platforms and lecture materials.
- Running notes and notes compiled by faculty members contain the best contents drawn from wide selection of books, research papers and web based resources.
- RAIT has also invested in smart boards where from students can download the running notes of the teachers as it is presented in the class.

c) Percentage of faculty:

- Percentage of faculty invited as resource persons in Workshops/ Seminars/ Conferences organized by external professional agencies: **10.40%.**
- Percentage of faculty participated in external Workshops/ Seminars/ Conferences recognized by national/ international professional bodies: **42.74%.**
- Percentage of faculty presented papers in Workshops/ Seminars/ Conferences conducted or recognized by professional agencies: **87.54%.**

2.4.4 What policies/systems are in place to recharge teachers? (eg: providing research grants, study leave, support for research and academic publications teaching experience in other national institutions and specialized programmes industrial engagement etc.)

- In order to progress the academic development of the faculty members, the management provides them study leave to pursue higher studies.
- Necessary financial assistance with duty leave is provided by the institution to the faculty members in order to attend important national/international seminars/conferences and specialized training programmes.
- The institution also organizes workshops, seminars, conferences of national and international level for the knowledge upgradation of faculty members.
- Institute allows faculty members to organize and participate in various technical events so that they can gain the knowledge in different areas of technology.
- Specialized programs are conducted in the institute regularly by eminent professional institutes and firms like Siemens, Yokogawa, TCS, Texas Instruments, etc.

2.4.5 Give the number of faculty who received awards / recognition at the state, national and international level for excellence in teaching during the last four years. Enunciate how the institutional culture and environment contributed to such performance/achievement of the faculty.

The college motivates the faculty to excel in their teaching /research and also encourages them by awarding cash prizes who have produced highest pass percentage during college day celebrations.

Table 2.9: The details of awards & recognitions at state, national & international level.

Sr. No.	Name of Faculty	Department	Award	Year
1.	Dr. Leena Ragha	CE	Excellence in Research by RAES	2013-14
2.	Dr. Leena Ragha		Star Performer by RAES	2013-14
3.	Dr. Leena Ragha		Excellence in Research by RAES	2014-15
4.	Dr. A.V.Vidhate		Excellence in Research by RAES	2013-14
5.	Dr. A.V.Vidhate		Star Performer by RAES	2013-14
6.	Dr. A.V.Vidhate		Excellence in Research by RAES	2014-15
7.	Vanita Mane		Best Teacher by RAIT, SUC	2012-13
8.	Vanita Mane		Best Teacher by RAIT, SUC	2013-14
9.	Vanita Mane		Excellence in Research by RAES	2013-14
10.	Vanita Mane		Star Performer by RAES	2013-14
11.	Vanita Mane		Excellence in Research by RAES	2014-15
12.	Aditi Chhabria		Institutional Contribution by RAES	2013-14
13.	Aditi Chhabria		Excellence in Research by RAES	2013-14
14.	Aditi Chhabria		Star Performer by RAES	2013-14
15.	Aditi Chhabria		Excellence in Research by RAES	2014-15
16.	Aditi Chhabria		Institutional Contribution by RAES	2014-15
17.	Namita Pulgam		Excellence in Research by RAES	2013-14

18.	Namita Pulgam		Best Teacher by RAIT, SUC	2014-15
19.	Namita Pulgam		Institutional Contribution by RAES	2014-15
20.	Puja Padiya		Excellence in Research by RAES	2013-14
21.	Puja Padiya		Star Performer by RAES	2013-14
22.	Puja Padiya		Excellence in Research by RAES	2014-15
23.	Rajashree Shedge		Excellence in Research by RAES	2013-14
24.	Rajashree Shedge		Star Performer by RAES	2013-14
25.	Rajashree Shedge		Institutional Contribution by RAES	2013-14
26.	Rajashree Shedge		Excellence in Research by RAES	2014-15
27.	Nilesh Marathe		1st Prize –Robotics Teacher Competition Phase One (IITB)	2013-14
28.	Nilesh Marathe		Excellence in Research by RAES	2013-14
29.	Nilesh Marathe		Star Performer by RAES	2013-14
30.	Nilesh Marathe		Institutional Contribution by RAES	2013-14
31.	Nilesh Marathe		Institutional Contribution by RAES	2014-15
32.	Nilesh Marathe		Excellence in Research by RAES	2014-15
33.	Tushar Ghorpade		Excellence in Research by RAES	2013-14
34.	Tushar Ghorpade		Star Performer by RAES	2013-14
35.	Tushar Ghorpade		Institutional Contribution by RAES	2013-14
36.	Tushar Ghorpade		Institutional Contribution by RAES	2014-15
37.	Tushar Ghorpade		Excellence in Research by RAES	2014-15
38.	Smita Bharne		Young Investigator Award by	2012-13

			International Conference on Computer Science and Engineering	
39.	Smita Bharne		Institutional Contribution by RAES	2013-14
40.	Smita Bharne		Excellence in Research by RAES	2013-14
41.	Smita Bharne		Excellence in Research by RAES	2014-15
42.	Jyoti Joshi		Excellence in Research by RAES	2014-15
43.	Smita Bhoir		Institutional Contribution by RAES	2013-14
44.	Smita Bhoir		Excellence in Research by RAES	2014-15
45.	Preeti Patil		Excellence in Research by RAES	2014-15
46.	Dr. Vishwesh A.Vyawahare	EL	Best Paper and Poster	2012-13
47.	Dr. Vishwesh A.Vyawahare		Best Paper Award „Chrysalis“	2003-04
48.	Dr. Vishwesh A.Vyawahare		Excellence in R& D Award	2014-15
49.	Dr. Vishwesh A.Vyawahare		Excellence in R& D Award	2015-16
50.	Dr. Mukesh D. Patil		Gold Medal in B.E. (Instrumentation)	1994-95
51.	Dr. Mukesh D. Patil		R& D Award,RAIT	2014-15
52.	Dr. Mukesh D. Patil		University level winner in Avishkar, Best Poster Award	2012-13
53.	Dr. Mukesh D. Patil		Excellence in Research and Paper Presentation award by R&D, Ist Postion	2012-13, 2013-14 2015-16
54.	Dr. Mukesh D. Patil		Pillar of Strength	2014-15 2015-16
55.	Poornima Talwai		Excellence award for heading the exam cell as COE	2014-15
56.	Poornima Talwai		Life time Achievement award – completing 20 years in RAIT	2011-12
57.	Poornima Talwai		Excellence in R& D Award	2013-14 2015-16

58.	Sharmila Petkar		Best Poster,VJTI	2013-14
59.	Sharmila Petkar		Life time Achievement award – completing 20+ years in RAIT	2009-10
60.	Sharmila Petkar		Gold Medal in B.E.	1988-89
61.	Divya K. Shah		IIT Mumbai	2014-15
62.	Divya K. Shah		Project Competition in RAIT	2014-15
63.	Divya K. Shah		Excellence in R& D Award	2012-13 2013-14 2014-15 2015-16
64.	Shweta Ashtekar		E-Yantra project competition by IIT Mumbai PIIT Rasayani	2012-13
65.	Shweta Ashtekar		E-Yantra project competition by IIT Mumbai VIT Mumbai	2012-13
66.	Shweta Ashtekar		Excellence in R& D Award	2012-13 2013-14 2014-15 2015-16
67.	Chaurasiya Rohit		Project Competition in RAIT	2014-15
68.	Chaurasiya Rohit		Excellence in R& D Award	2015-16
69.	Amruta Chintawar		e-yantra project competition by IIT Mumbai, at PIIT,Rasaini	2012-13
70.	Amruta Chintawar		e-yantra project competition by IIT Mumbai, at VIT,Mumbai	2012-13
71.	Amruta Chintawar		Excellence in R& D Award	2015-16
72.	Trupti P. Agarkar		International Conference on Computer, Electrical and Electronics Engineering. IETE-CYNOSURE -2013	2013-14
73.	Trupti P. Agarkar		Excellence in R& D Award	2012-13 2013-14 2014-15 2015-16

74.	Prasad Pathak		Best Paper & Poster	2012-13
75.	Sushma Kodagali		Excellence in R&D	2014-15
76.	Kausar M. Fakir		Excellence in R&D	2014-15
77.	Sachin Umbarkar		First Rank Holder "Topper Award"	2011-12
78.	Sachin Umbarkar		Student Travel Grant Award" For Best paper, PPPS-2013	2013-14
79.	Dr. S. D. Shete	ES	Best teacher award	2011-12
80.	Dr. S. D. Shete		Certificate of Academic Excellence "2 Star Performer"	2012-13
81.	Dr. S. D. Shete		Dronacharya Award	2012-13
82.	Dr. S. D. Shete		Pillar of Strength	2013-14
83.	Dr. S. D. Shete		Lifetime Achievement Award	2014-15
84.	Mr. V. Y. Barve		Best teacher award	2013-14
85.	Mr. Balachandran		Best teacher award	2014-15
86.	Mr. N. R. Dasre		Best teacher award	2012-13
87.	Dr. M. D. Patil	ET	Gold Medal in B.E. (Instrumentation), NMU, Jalgaon	1994-95
88.	Dr. M. D. Patil		5 star Performer	2012-13
89.	Dr. M. D. Patil		University level winner in Avishkar	2012-13
90.	Dr. M. D. Patil		Best Poster Award, FDA, China	2012-13
91.	Dr. M. D. Patil		Excellence in Research and Paper Presentation award by R&D, Ist Postion	2012-13
92.	Dr. M. D. Patil		Excellence in Research and Paper Presentation award by R&D, Ist Postion	2013-14
93.	Dr. M. D. Patil		Pillar of Strength	2014-15
94.	Dr. M. D. Patil		Excellence in Research and Paper Presentation award by R&D, Ist Position	2014-15
95.	Geeta Devurkar		HRV study - First prize	2011-12
96.	Amruta Chintawar		Teacher"s Robotics Project competition	2012-13
97.	Amruta Chintawar		Teacher"s Robotics Project competition	2012-13
98.	Amruta Chintawar		Excellence in Research and Paper Presentation award by	2012-13

			R&D,RAIT.	
99.	Amruta Chintawar		Star Performance award by R&D, RAIT.	2012-13
100.	Amruta Chintawar		IIIrd Prize in e-yantra competition held by IIT Bombay	2012-13
101.	Poonam Ghadge		Teacher"s Robotics Project competition	2012-13
102.	Poonam Ghadge		Teacher"s Robotics Project competition	2012-13
103.	Mr. M. M. Dongre		2 star Performer	2012-13
104.	Mr. M. M. Dongre		R & D Excellence	2012-13
105.	Mr. M. M. Dongre		R & D Excellence	2013-14
106.	Mrs. Prajkta Papalkar		Best Teacher	2012-13
107.	Mrs. Prajkta Papalkar		Academic Excellence	2012-13
108.	Sujata Kadam		Best Teacher	2013-14
109.	Kirti Rathi		R & D Excellence	2012-13
110.	Kirti Rathi		Best Teacher Award	2013-14
111.	Vijay Dahake		R & D Excellence	2012-13
112.	Vijay Dahake		Best Teacher Award	2013-14
113.	Vrishali Patil		Best Teacher Award	2014-15
114.	Kausar Fakir		R & D Excellence	2012-13
115.	Gargi S.Phadke	IN	Project competition "Avishkar"	2014-15
116.	M N Parihar		Appreciation prize for project by Srijan a state level project competition held at Nashik	2014-15
117.	Dr Siuli Das		Best Paper Award in ICEEE	2013-14
118.	Gargi S.Phadke		Paper Presentation award by R&D,RAIT.	2012-13
119.	Shamal Shalunkhe		Excellence in Research Paper Presentation award by R&D,RAIT.	2012-13
120.	Sharad Jadhav		Excellence in Research Paper Presentation award by R&D,RAIT.	2012-13
121.	Sharad Jadhav		Star Performance award by R&D,RAIT.	2012-13
122.	Shirish Kulakarni		Favorite teacher award by SUC ,RAIT	2012-13

123.	Diptee Patil		Favorite teacher award by SUC ,RAIT	2013-14
124.	Shirish Kulakarni		Favorite teacher award by SUC ,RAIT	2014-15
125.	Gargi Phadke		Paper Presentation award by R&D,RAIT	2013-14
126.	Poonam Waje		Paper Presentation award by R&D,RAIT	2013-14
127.	Sharad Jadhav		Paper Presentation award by R&D,RAIT	2013-14
128.	Dr. Ramesh Vasappanavara	IT	Flag Officers Commendation for Dedication and Devotion to Duty	2011-12
129.	Vijaylaxmi Bittal		KSCST Project Award	2010
130.	Vijaylaxmi Bittal		Jed-I Project Challenge	2011
131.	Vijaylaxmi Bittal		Impress IT Project Challenge	2011
132.	Vijaylaxmi Bittal		Excellence in R&D	2014
133.	Reshma Gulwani		Excellence in R&D	2012
134.	Reshma Gulwani		Best Teacher Award	2012
135.	Reshma Gulwani		Best Teacher Award	2013
136.	Ms.ReshmaGulwani		Excellence in R&D Awards in R & D	2014
137.	Dipti Jadhav		Star Performer Award	2013
138.	Dipti Jadhav		Excellence in R&D	2013
139.	Dipti Jadhav		Excellence in R&D	2014
140.	Nilima Dongre		Star Performer	2013
141.	Swapnil Shinde		Best Paper of Track Award in IEEE conference ICATE-2013	2013
142.	Swapnil Shinde		Excellence in R&D	2012
143.	Swapnil Shinde		Excellence in R&D	2013
144.	Swapnil Shinde		Excellence in R&D	2014
145.	Jyoti Kundale		Excellence in R&D	2013
146.	Ravita Mishra		Excellence in R&D	2013
147.	Ravita Mishra		Excellence in R&D	2014

148.	Anitha Senathi		Appreciation Award for Digital Course File Research Project	2014
149.	Anita Patil		Best Teacher Award	2014

2.4.6 Has the institution introduced evaluation of teachers by the students and external Peers? If yes, how is the evaluation used for improving the quality of the teaching-learning process?

- The institute has a well defined central feedback system for the evaluation of faculty. Evaluation is done on the basis of class interaction, punctuality and delivery of the course content for each semester. The self-appraisal forms are filled by respective faculty, and verified by higher authorities.
- RAIT, realize on students feedback for regularity, preparedness, coverage of content and transfer of knowledge by the faculty. In addition to faculty feedback, students also provide feedback on COs and POs based on which assessment is made on the efficient delivery of content by the faculty.
- Dean R & D, provides a feedback on research and publication of the concerned faculty.
- Principal, Registrar and HODs provide the feedback on faculty contribution to college matter.
- Academic audit undertaken by the institute twice in year also provides a feedback by peers on teaching and learning process.
- Employee Performance Index (EPI) for each subject is aggregated by taking into account result, publications, feedback, contribution to the department, contribution to the institute, etc.
- Correction Mechanism – Calculation of EPI the subject taught by the faculty and CMQA feedback for that subject helps to plan enhancement, skill up gradation programme and also suggest tips on good teaching skills.

2.5 Evaluation Process and Reforms

2.5.1 How does the institution ensure that the stakeholders of the institution especially students and faculty are aware of the evaluation processes?

The regulations, curricular and syllabus of all the programmes offered by the institute are available on the institute and the affiliated university websites. The regulations contain the details of the evaluation process. The officer-in-charge of the examination cell follows the guidelines of Controller of Examination (COE) of UoM to conduct

examinations.

For Faculty:

- Evaluation process is a part of academic regulation formed by institute and statutory bodies.
- Statutory bodies like UoM, Members of BOS who designs the syllabus for each branch will decide the COs and POs for each subject.
- Scheme of evaluation for both theory and practical designed by BOS of

respective department, are published and discussed with the faculty members of respective department for the respective subject.

- Faculty members are deputed to orientation program before commencement of the semester. After the discussion held in the orientation program about handout, scheme of evaluation, weightage for each chapter as well as their mapping with the CO and PO are shared.

For Students:

- During the orientation program held in the institute for the newly admitted students, they are updated about the attendance requirements as well as the passing marks requirements and the grading systems for the internal assessments and this is strictly maintained as per the norms provided by UoM.
- Scheme for evaluation of theory and practical are elaborated to students.
- In case of any doubt, students are encouraged to clarify by discussing with the teachers.
- Copy of handout containing scheme of evaluation for theory, practical, academic calendar is provided to each student during orientation program.

2.5.2 What are the major evaluation reforms of the university that the institution has adopted and what are the reforms initiated by the institution on its own?

Major evaluation reforms adopted are:

- The credit based grading system is introduced for UG and PG degrees by UoM.
- The evaluation processes are digitized by use of DCF. The faculty members periodically enter the details of attendance, mid-term marks, laboratory performance, and assignments grades of the students.

- The institute appoints examiners for the oral and practical examinations as per the university directives.
- The institute deputes faculty members as a examiners to evaluate answer sheets to the university.

2.5.3 How does the institution ensure effective implementation of the evaluation reforms of the university and those initiated by the institution on its own?

University Evaluation Reforms:

- The institute conducts all examination as per university schedule. To conduct examination, the institute has well equipped infrastructure. The examination conduction is effectively monitored to follow guidelines of the university.
- The institute has taken following measures for the effective implementation of the evaluation reforms introduced by the university:

- The institute has examination coordinators from each department for smooth conduction of the examination.
- The examination committee meets periodically to discuss all the examination related matters.
- At institute level, mid-term tests are conducted as per university norms and results of the same are declared within eight days. The students can see their evaluated answer sheets and discuss the same with concerned faculty for clarification regarding the parameters taken into consideration for assessments.
- Oral and practical marks are jointly evaluated by internal and external examiners.
- For smooth conduction of university theory examination, an internal squad comprising of senior faculty members are appointed. Appropriate measures provided by UoM are taken into action time to time.

2.5.4 Provide details on the formative and summative assessment approaches adopted to measure student achievement. Cite a few examples which have positively impacted the system.

Formative Evaluation Process:

The goal of formative evaluation of the students is to monitor their learning ability. Formative evaluation helps students to gain confidence and to achieve good results in the summative examination. The performance of the students evaluated and is used by faculty to improve their teaching and thereby improving student‟s learning. Formative evaluation is carried out considering the following parameters.

- **Term Test:** During the semester, two term tests are conducted so that faculty could get an idea about where students are lagging and according to which the remedial schedule is prepared.
- **Assignments:** To increase the problem solving capability, assignments are given to the students. This also helps the students to prepare for the university examination.
- **Industrial visits:** In order to understand the current industrial trends in technology, students are encouraged to visit industries in and around Mumbai.
- **Mini projects/Projects:** Students are assigned with some small projects in third year and major project work in the final year so that they can implement the knowledge gained previously by working on some live projects.
- **Mock Practical/Oral Examinations:** In order to prepare for the examinations of various subjects mock practical/oral examinations are conducted and students also get to know about the examination process and evaluation.
- **Workshops and Seminars:** Different workshops and seminars are organized by the institute to bridge the gap between academics and industry. They also get awareness of the global overview of the developments in technological aspects.
- **Organizing technical events:** RAIT have technical committees/student chapters/faculty chapters like IEEE, CSI, ISTE, IETE, ISA, ITSA which continuously encourage the students to organize and participate in various technical events.

- **Curriculum based Assessment:** The curriculum design takes care of evaluation scheme that lays importance of meeting CO and PO. The formative assessment is spread over midterm test, assignments, tutorials and term work to measure attainment of CO and PO.
- **Social Activities:** RAIT had formed a wing to look after social activity and has undertaken many activities like teaching underprivileged children, awareness drives through seminar and street plays, various environmental activities like clean up drive, promoting renewable energy resources and many more activities.
- **Students attendance monitoring:** Student attendance is continuously monitored so that students are able to complete the norms defined by the UoM for eligibility to appear for the end semester examinations. This attendance is continuously monitored and a report of the same is provided to the parents from time to time.
- **Online Feedback:** Institute has digitalized feedback system where student provide the feedback of each subject, and this feedback is taken into consideration while assigning that subject to the faculty next time.
- **Intra-collegiate project work competitions:** Every year institute organize the Intra-collegiate project competition so that the students of lower class get exposure to the evolving technologies and future growth in the technology.

Summative Evaluation process:

The goal of summative evaluation is to evaluate student‟s performance at the end of semester by comparing it against some standard or benchmark. The institute facilitates the university to conduct summative evaluation at the end of each semester through the following:

- Theory examination
- Practical/Oral examination
- Project work
- Term work

2.5.5 Detail on the significant improvements made in ensuring rigor and transparency in the internal assessment during the last four years and weightages assigned for the overall development of students (weightage for behavioral aspects, independent learning, communication skills etc.

- The internal assessment system is transparent. Internal assessment of the student is evaluated based on of attendance, laboratory work, assignment, tutorials, term test etc.
- After the test examination, the model answers and marking scheme are discussed by the faculty with the students.
- The attendance record of each student is maintained and due weightage is given for attendance in theory class and practical sessions, performance in tests/tutorials and timely submissions.
- The institute encourages independent learning through project and paper presentations by students.

- 10 grace marks are approved by university for outstanding extracurricular performance.

2.5.6 What are the graduates attributes specified by the college/ affiliating university? How does the college ensure the attainment of these by the students?

The following are the graduate attributes specified by the college:

Engineering Knowledge: To apply the basic concepts to find solution for engineering problem by using basics from science, mathematics, engineering etc.
Problem Analysis: To analyze a problem, discuss the problem find the most prominent solution, depending upon the solution available conduct experiment and interpret data necessary for the problem outcome.
Design / Development of Solutions: To design and conduct experiments, model and analyze physical system, components or process to meet desired needs.
Conduct Investigations of Complex Problems: To conduct independent research for information required in engineering problem solving, identify, formulate and solve engineering problems.
Modern Tool Usage: To use modern engineering techniques, tools, skills and computing tools necessary for engineering practice.
The Engineer and Society: To predict the impact of engineering solutions in a global and societal context.
Environment & Sustainability: To incorporate economic, environmental and safety considerations in design process.
Ethics: To execute professional and ethical responsibility.
Individual and Team Work: To work on practical assignments, projects to enhance interpersonal and leadership skills.
Communication: To communicate effectively through engineering drawing, written reports and oral presentations.
Project Management and Finance: To understand engineering and management principals and apply this to own work, as a member and leader in a team to manage project.
Life-long Learning: To recognize the need for and an ability to engage in life-long learning, the institute follows the curriculum which ensures the attainment of graduate attributes. Co-curricular and extra-curricular activities are also carried out to attain the graduate attributes. These activities are planned at the beginning of each semester and mentioned in the Academic Calendar of institute. Each department has well defined course objectives, course outcomes, Programme outcomes and Programme education objectives. The institute has set up a well equipped language laboratory, and research laboratory.

2.5.7 What are the mechanisms for Redressal of grievances with reference to evaluation both at the college and University level?

- At the college level, the answer sheets of internal assessment are shown to students after evaluation to bring out any discrepancies if any, to the concerned teacher and necessary corrections are made.

- At university level, if there are any discrepancies the students are entitled to apply for retotaling, photocopy and revaluation. The university takes the necessary steps. If there is no change, earlier marks are awarded to the students. If there is any change in the marks, the revised mark sheet is issued to the student as per the norms specified by UoM.
- If the student is not satisfied with the revaluation process, he/ she can apply for grievance cell of UoM. Then grievance cell takes the appropriate action as per rules.

2.6. Student performance and Learning Outcomes

2.6.1 Does the college have clearly stated learning outcomes? If 'yes' give details on how the students and staff are made aware of these?

- The institute has well defined learning outcomes. The vision and mission of the institute emphasizes on promoting value education through motivated trained faculty to prepare the students to accept the challenges of varying globalization.
- The vision and mission statements are displayed on the college website and at various key positions on each floor of the institute and also on Digital Notice Boards.
- PEOs, POs and COs have been defined by every department. PEOs and POs are printed in laboratory journals and COs are discussed by faculty in the classrooms.
- At the end of every semester, all the departments evaluate POs and COs by using tools like attendance, tutorials, mid-term results, assignments, mock orals, practical work like lab performance and also the norms that are provided

2.6.2 Enumerate on how the institution monitors and communicates the progress and performance of students through the duration of the course/programme? Provide an analysis of the students results/achievements (Programme/course wise for last four years) and explain the differences if any and patterns of achievement across the programmes/courses offered.

Each student is aware of the marks obtained in the internal exams as the scripts are distributed in the class. The marks are also communicated to the parents by sending them the details through post.

- Twice in a semester the attendance details is displayed and sent the same to students through post. The defaulter students are counseled by their Class Counselor. These details are also communicated to the parents.
- The college has a system where the faculty can enter the attendance in DCF every day. The students are made aware about their progress by the faculty and they are advised to take corrective measures and it is regularly informed to parents.

Analysis of the Students Results:

Table 2.10: Overall pass percentage (Department wise/Year wise).

Program	Branch	Passing Percentage			
		2014-15	2013-14	2012-13	2011-12
UG	Computer Engineering	100%	90.7%	89.3%	85.9%
	Electronics Engineering	79%	83%	72%	83.33%
	Engineering Science	50.56%	46.5%	51.5%	41%
	Electronics and Telecommunication Engineering	94.3%	89.25%	87%	83%
	Instrumentation Engineering	90.66%	87.17%	69.31%	91.80%
	Information Technology	96.01%	99%	96%	97%
Program	**Branch**	**Passing Percentage**			
		2014-15	**2013-14**	**2012-13**	**2011-12**
PG	Computer Engineering	82.14%	85.71%	91.14%	100%
	Electronics Engineering	64.28%	92.85%	100%	100%
	Electronics and Telecommunication Engineering	94.74%	57.89%	62.50%	61.22%
	Instrumentation Engineering	62.5%	70.5%	80%	NIL
	Information Technology	84%	80%	86%	NIL

2.6.3 How are the teaching, learning and assessment strategies of the institution structured to facilitate the achievement of the intended learning outcomes?

- A Class Counselor collects the academic data of the students in the semester as well as at the end semester examination.
- The attainment of POs is monitored twice in an academic year. The academic audit is conducted once per semester by the internal auditors.
- The academic audit reports are discussed in the department meeting. Proper action is planned with suggestions from HODs and Principal to overcome the shortcomings mentioned in the report for the subsequent semester and evaluation sheet is generated.
- If there is a discrepancy in the targeted and attained level of outcome as observed by individual faculty or mentioned in academic audit report, a critical analysis is carried out by each concerned faculty to find out the causes.

- Due to the use of DCF iteration work is reduced as there is no manual generation or corrections.
- Such findings are discussed in the departmental meeting and common causes for low attainment of outcomes are discussed.
- An appropriate action plan is prepared covering conduction of remedial classes, addressing weak students, repeating the difficult topics and inviting guest lecturers etc.
- A close monitoring is done for the implementation of the suggestions to finally crosscheck the improvement in the attainment.

2.6.4 What are the measures/initiatives taken up by the institution to enhance the social and economic relevance (student placements, entrepreneurship, innovation and research aptitude developed among students etc.) of the courses offered?

- The students are provided pre-placement training at the end of third year to help them to secure quality jobs in the industry.
- Several seminars and workshops are conducted to create awareness of entrepreneurship.
- Also there is a Entrepreneurship Development Cell (EDC) in institute, which continuously motivates and provides some guidance by organizing various workshops, seminars, expert talks delivered by eminent persons from IIT Mumbai e-cell (Entrepreneurship cell).
- Advanced laboratories, innovation and research center are established to increase the creativeness of the students.
- Institute assigns projects of social and economic relevance and a national level project competition is also organized, so that students can know the technology in other fields also.

2.6.5 How does the institution collect and analyze data on student performance and learning outcomes and use it for planning and overcoming barriers of learning?

- Institute collects and analyzes the data on student academic performance for the mid-term and end semester examinations. Based on the results, more attention is given to the academically weak students.
- Institute collects feedback of students on CO and PO attainment.
- Class Counselor regularly conducts the meeting with the students to discuss the issues related to academic as well as nonacademic matters. Based on this feedback, adequate actions are taken. The issues which are beyond the capacity of the class counselor are brought to the notice of HOD. Further, HOD discusses some important policy related matters with the Principal.
- Remedial classes are conducted for the weak students to overcome the barriers of learning.
- Teachers ensure that students attend their classes regularly. Attendance is monitored by each individual faculty as well as class counselor.
- Teachers ensure that every student actively takes part in all-round development activities organized by college.
- Parents are regularly informed about the academic performance of the student.

2.6.6 How does the institution monitor and ensure the achievement of learning outcomes?

The institute aspires to have a transformational impact on students through comprehensive education by inculcating qualities of competence, confidence and excellence. RAIT depends on extensive feedback mechanism to measure the efficacies of learning and teaching processes employed. The objectives of RAIT as reflected in its mission and vision statements are summarized below:

- To make its students employable.
- The college endeavors that its students should become valuable global citizens.
- To make the students academically sound with practical and problem solving approaches, so that they can solve the problems faced by society, country and world at large.
- The college ensures that by the time the student finishes his/her education in the college, he/she attains all these specified attributes including social ethics with responsibility.

Feedback Mechanisms at RAIT:

The details of feedback obtained are outlined in Section 1.3.5, the sources of feedback is shown below for ready reference:

- Student feedback on teaching faculty on content and delivery.
- Student feedback on CO-PO attainment.
- Feedback from Dean R&D on publications and research work done by teaching staff.
- Employee Performance Index (EPI) for each subject is aggregated taking into account:

  - Publications.
  - Feedback from students.
  - Calculation of Evaluative Performance Index for each subject.
  - Contribution to the department and institute.
- HODs feedback to CMQA and Principal once in a semester on semester.
- CMQA feedback to HODs and Principal to faculty on corrective Mechanism
- Students feedback on entire course work given to HOD on passing out.
- Alumni feedback during visit to college.
- Employers feedback.

Corrections applied to Teaching Mechanisms based on feedback:

The feedback received at each stage is evaluated by CMQA and CAC as the case be, and a comprehensive plan is drawn regarding:

- Changes to be brought in teaching process.
- Changes in curriculum.
- Enhancement in equipments, softwares and hardwares.
- Improvements in learning process.

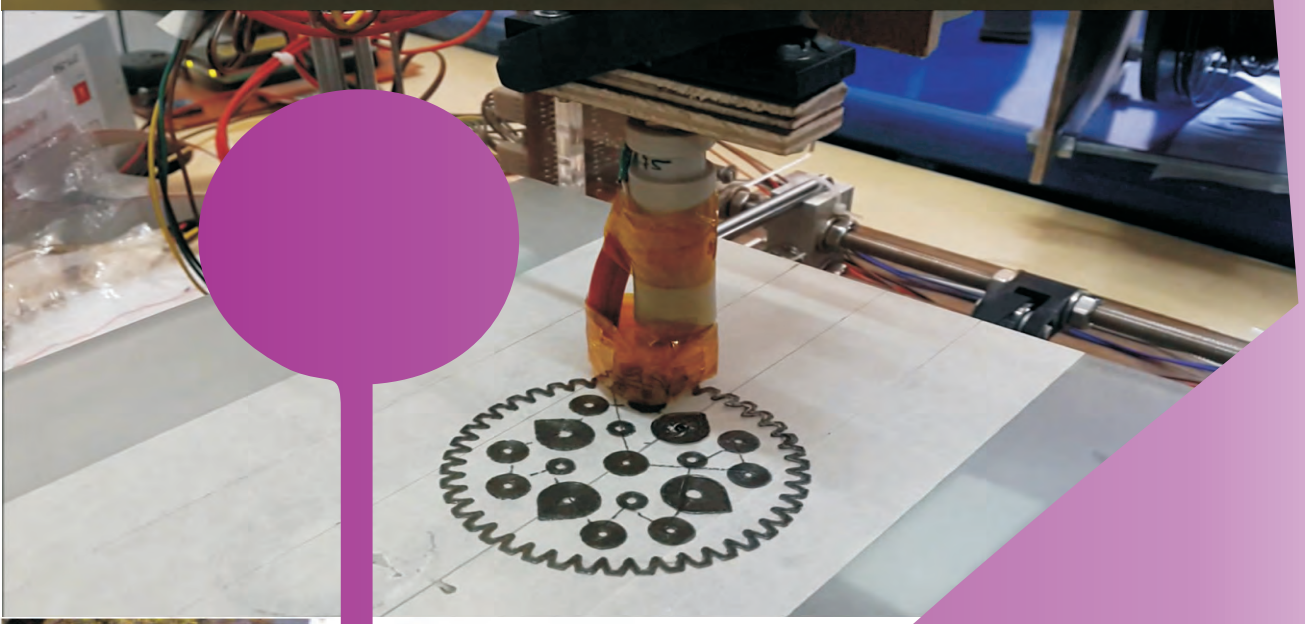
- Improvements in testing and evaluation process.
- Enhancements in leadership and skill set for enhancing employable skills.

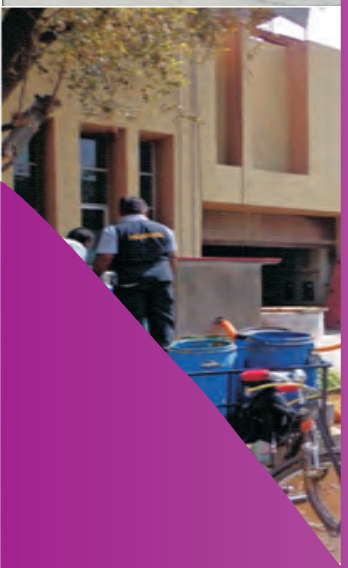
2.6.7 Does the institution and individual teachers use assessment/ evaluation outcomes as an indicator for evaluating student performance, achievement of learning objectives and planning? If 'yes' provide details on the process and cite a few examples. Any other relevant information regarding Teaching-Learning and Evaluation which the college would like to include.

- The evaluation outcomes are surely an indicator for achieving learning outcomes (PO) and any other relevant information regarding teaching-learning process.
- CO-PO attainment summary is reviewed and analyzed.
- Improvement areas are identified from the analysis done.
- Improvements are implemented to increase the CO-PO attainment.
- Once this process is followed for four to five years and POs are reasonably attained, the institute redefines the POs based on department mission of future times.

Criterion III

Research, Consultancy and Extension





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RAMRAO ADIK INSTITUTE OF TECHNOLOGY
NAVI MUMBAI

Criterion III: Research, Consultancy and Extension

3.1 Promotion of Research

3.1.1 Does the institution have recognised research centre/s of the affiliating university or any other agency/organisation?

Recognising the fact that research has a positive impact on augmenting the problem solving resources and skills available with the faculty and through them the students, RAIT has embarked on promotion of research activities. We are at present at a stage where research activities at RAIT are growing at a rapid pace.

A modest beginning was made in 2012, when RAIT showed capability of handling research in two of its departments; namely Electronics Engineering and Computer Engineering. With faculty recognized and research facilities available, RAIT has been recognized as research centre of University of Mumbai for the Department of Electronics Engineering and also Computer Engineering. Recently, Instrumentation Engineering at RAIT has also been accorded this status. The details are given in Table 3.1.

Table 3.1: Research centers in RAIT.

Sr. No.	Department	Research centre established in	No. of research scholars sanctioned	Degree awarded	Admission via.
1	Computer	2012	10	PhD	PET (UoM), GATE, PET Exempted
2	Electronics	2012	10	PhD	PET (UoM), GATE, PET Exempted
3	Instrumentation (Approved by LIC, formal letter from UoM due)	2015	10	PhD	PET (UoM), GATE, PET Exempted

The research scholars in these research centres comprise of students and faculty members of this institute as well as other institutes. These research scholars are working in the areas of Electronics, Communication Engineering, Computer Science, Instrumentation and related areas.

In addition to this research centre, the institute has working understanding with many research institutions like BARC, TCS, TIFR, IITB, Mumbai and some private organisations like Gauranga Softtech, Navimumbai which can provide facilities and avenues for conducting research. MoUs entered with above organisations will augment the hardware and software base that can be used by researchers. Setting of

advanced research facility is an expensive exercise, and quite often beyond the budget of any unaided institution. Hence, RAIT is in the process of tying up research collaboration with TIFR based Indian Neutrino Observatory at Theni, Tamil Nadu and also with BARC, Mumbai. The joint research activities will involve sponsoring of Graduate and Doctoral students of the institute to work on specific technical problems at the INO and other laboratories/facilities.

3.1.2 Does the institute have a research committee to monitor and address the issues of research? If so, what is its composition? Mention a few recommendations made by the committee for implementation and their impact.

Yes, the institute has a well structured and active research monitoring and grants committee to monitor and address issues related to research. The composition of the committee is given in Table 3.2.

Table 3.2: Members of research monitoring and grants committee.

Sr. No.	Members of Research Monitoring and Grants Committee	Post
1	Principal	Chairman
2	Dean R & D	Member Secretary
3	Heads of Departments	Member
4	Professors	Member
5	Two experts below the rank of Professor nominated by the Principal	Member
6	One expert in the area of specialisation nominated by the Principal for appointing examiners for M.E. (Stage I) seminars and Ph.D. (A.P.S.)	Invited Member

Salient tasks/responsibilities of this committee include the following:

- To monitor the research activities carried out in the institute.
- To ensure that the M.E./Ph.D. students are provided with the necessary facilities and infrastructure required in their research.
- To ensure the smooth conduction of M.E. and Ph.D. seminars with subject expert as external examiners.
- To check that the Journal and Conference/Symposium communications sent by the students and faculty are of good quality and free from any kind of plagiarism.
- With the help of subject experts, suggestions/advice are given and counseled to M.E./Ph.D. students for the successful completion of their project work.

- To inform the faculty and students any new rules and regulations from the university regarding M.E. and Ph.D. (i.e. Entrance Tests, Template for the thesis/report, etc.)
- To take note of any grievances of the research students and take necessary actions.

Recommendations made by the Research Committee at RAIT

- All the research scholars and M.E. students should submit the synopsis of their proposed work (duly signed by the supervisor) at the commencement of the work.
- All the research scholars should give a progress seminar during each academic year.
- A systematic record of the meeting (contact hours) between the student and supervisor be maintained (with issues/points discussed).
- All the progress seminar reports and M.E. reports should be prepared in the LaTeX typesetting system.
- Any research student (M.E./Ph.D.) interested in communicating or submitting paper to any journal or conference should get his/her paper examined for quality and any kind of plagiarism using the available online services and the report of this be duly signed by the student, the supervisor and member of R & D committee.
- The committee recommended the college administration to purchase professional software for the plagiarism verification.
- Following guidelines were provided by the committee as one of the preconditions for submission of thesis:

  - For M.E. students: Publication of at least one paper (based on the work) in any conference of international repute.
  - For Ph.D. students: Publication of at least two papers in indexed refereed journals with good impact factors and at least two papers in conferences of international repute (based on the research work conducted by them).

Impact of these suggestions was noticed as given below:

- Increase in the general awareness on the benefits of research and active steps towards identifying problems and research methods that can be taken up using existing infrastructure within RAIT or the collaborating institutions.
- Enhancement in the quality of research projects at the M.E. level way above and beyond the scope of laboratory work.
- An increase in the number of quality publications from the research students of the institute.
- Awareness in the researchers for the plagiarism issues and increase in the originality (results literature survey) in their communicated papers. Initiation for procurement of software for protection against plagiarism.
- Increase in the interaction between research students and their supervisors.
- Various departments organized the workshops on „Report Writing with LaTeX". The research students adapted to this new typesetting system producing quality seminar reports.

- Confidence to set up technology base for incubation of technology for potent technology ideas.
- Resulted in increase in research and consultancy activities amongst faculty and researchers with industry and academic institutes of repute.

3.1.3 What are the measures taken by the institution to facilitate smooth progress and implementation of research schemes/projects?

Checking the viability and relevance/utility of Research Projects:

Before any research scheme/project is embarked upon, it is checked by the R & D committee for viability, relevance and utility. This evaluation considers the availability of resources that are absolutely necessary, the access to these resources, time required to conduct the research and some more factors. This review avoids a lot of uncertainty usually associated with research projects that are not completed because the researchers did not take into account the non-viability of the research project. Surprises are welcome but not projects doomed from the beginning. The possible scenarios of outcome of research are also seen by this committee and they accordingly give guidelines for termination of research projects when the outcomes sought after, reach a logical conclusion.

Autonomy to the Principal Investigator (PI):
The institute believes in the philosophy that genuine research happens only if the researcher is given complete freedom in implementing his/her ideas. Full autonomy is provided to the PI in regards to the choice of project details/ideas, funding agency, selection of project staff and the procurement of equipments and software.

Timely availability of resources:

The institute is committed to development of an environment that is conducive for research among its faculty and students. With this motive the institute always welcomes the demand for any particular resource from its researchers.

The institute encourages its researchers to come forward with their requirements related to research. Following line of action is followed by the institute:

- The researcher writes an application to the chairman of research committee (endorsed by the HOD) and Supervisor.
- Depending on the urgency of the requirement of that particular resource, the chairman consults the subject expert regarding its necessity.
- After checking its availability in the local/international market, the research committee directs the stores/procurement section to invite quotations (or direct procurement, as the situation demands).

All the above administrative steps are executed in the shortest possible period to ensure that the researcher in need gets the resource/equipment at the earliest.

Adequate infrastructure and human resource support:

The college is actively involved in equipping itself with state of the art laboratories and workshops. This infrastructure is available to any researcher 24/7 on demand. Preference is given to the research student for utilization of any equipment in any lab. The institute encourages its research students to take responsibility of their research labs and this has resulted into the development of a "lab ownership" culture among the researchers.

The labs have highly skilled and have experienced supporting staff with knowledge about their role as a lab attendant/assistant. This skilled manpower proves to be an important factor in developing the research culture in the institute.

In addition to the above, the college routinely inducts new skilled persons as per the requirement making sure their shortage does not hamper the research activities.

Incentives and facilities for carrying out research work:

The institute always encourages its faculty members and students to undertake/pursue/involve in research activities. Following practice is followed in the institute:

- Faculty members pursuing Ph.D./M.E. in this or other institutes are given one or two days off to visit their institute and carry out research.
- These faculty members are given reduced teaching load and are also spared from the administrative duties.
- Faculty members and researchers are given full expenses, special leaves for attending conferences /seminars and workshops.
- RAIT exhibits flexibility towards teaching load for faculty who are involved in active research.
- For conference and seminar papers faculty are provided assistance for travelling to enable them to present and defend their work.
- An incentive for publication of papers in reputed conferences and journals such as IEEE, Elsevier, Springer, etc up to Rs. 10,000/- is provided.
- For project, principal investigator and his collaborator are given incentives to further their research efforts.

Support in terms of technology and information needs:

The institute is committed to give its research students and faculty members all the necessary technological support and information requirement. The institute provides this support with the following ways:

- Procurement of new equipments/machines/laptops/servers/book as demanded.
- Procurement of latest software.
- Facilitate timely auditing and submission of utilization certificate to the funding authorities.
- Subscription to various international journals and e-databases.
- Uninterrupted 135 Mbps internet in the institute premises.
- Organize national and international level workshops, STTPs, conferences.

3.1.4 What are the efforts made by the institution in developing scientific temper and research culture and aptitude among students?

The institution has made systematic and serious efforts in inculcating the research culture among its students. Scientific temper is an attitude of objective and logical thinking. If a student uses the scientific method in his/her daily life decision making process knowingly or unknowingly then we can say that he/she has scientific temper. This scientific temper is different from the normal day-to-day thinking in the way that it is objective and precise. We look for signs of the following traits to ascertain scientific temper or scientific attitude; healthy skepticism, universalism, freedom from prejudice or bias, objectivity, open mindedness and humility, willingness to suspend judgment without sufficient evidence, rationality, perseverance, positive approach to failure and criticism.

As stated above, scientific temper building is like altering modes of thinking about the inference drawing from inputs received by our senses. Obviously this is time consuming as this is counterintuitive, abstract and different from normal layman way of analysing. RAIT takes the following steps to inculcate this habit:

- Introduction to open ended problems in each field.
  - Since the running answers are many, each individual can use her/his modes of thinking to come up with answers. On comparison she/he learns the depth of his answer. This in a way is her/his first exposure towards development of scientific temper.
  - Students recognize and list the open problems (unsolved) dug out by previous researchers in any area.
  - Presentation through seminars of possible solution strategies to the identified open problems is then given.

- Follow the scientific method as recommended by established and time tested procedures when dealing with technical matters to propagate scientific temper.
- Students are given a particular idea and are motivated to define the problem on their own by thinking way beyond the textbooks, to find different ways to solve the problem and to choose the optimal option by referring to scientific papers for understanding of current research developments. Thus scientific temper helps to fill the gap between the textbooks and current research in technologies.
- To foster research thinking among students monthly research forums are conducted wherein researchers present their ideas and approach that is discussed and feedback obtained from senior researcher and professors.
- The scientific temper can be sniffed off or inherited by contact with people who already have scientific temper. RAIT has taken many steps to ensure this happens. Some of these are listed below:
  - The institute has inducted a good number of faculty members from the reputed institutes like IITs, NITs, and Government Engineering Colleges. These faculty members have been hand-picked by the institute based on

their research background and dedication to carry out original research. Students are getting exposed to various research ideas under the guidance of these faculty members.

- Faculty members are encouraged to pursue higher studies (M.E./Ph.D.) so as to introduce them to research. These faculty members, after completion of their higher education use their research experiences to motivate the students to carry out original research.
- Students at all the level (B.E./M.E.) are encouraged to carry out in-house projects. This helps them to explore more on the innovative projects leading to good engineering research.
- Guest lectures by various experts and researchers working in the frontier research area are regularly organized both at the institute and the department level. Students get rare opportunities to closely listen and interact with such eminent researchers and get to know about the various avenues/open research problems in their fields.

- Students are encouraged to publish papers based on their work in international/national conferences and competitions organized across the country.
- The institute holds a project competition for all its B.E. students. 8-10 best projects from each department are selected. These project groups then exhibit and explain and demonstrate their work to a team of judges comprising of subject experts. Based on the quality of work and the presentation, prizes are awarded to the outstanding projects.
- Students are encouraged to undertake summer internships in leading research organizations like BARC, IIT where they work on the latest research problems.
- Institute has initiated a new project of establishing a Science and Technology (SciTech) Exhibition in its campus. The main objective of this project is to involve students in preparing various exhibits like posters, working prototype of different concepts/ideas in their field, etc. This activity has inculcated the culture of collaborative research among the students.
- Involvement of students in the outreach research programs like (e-yantra, JAC, Nodal centre by IITs).

3.1.8 Enumerate the efforts of the institution in attracting researchers of eminence to visit the campus and interact with teachers and students.

The institute encourages its departments to invite researchers of eminence of national and international repute to visit the campus as visiting professors for expert talks in workshops and for research collaborations presentations.

These efforts are enumerated in the respective profiles of the departments which are a part of the SSR- Volume II.

Presence of such persons on the campus gives the opportunity to the faculty and students to interact with them. It also helps the faculty to get information about the latest research developments in their domain areas. The institute manages all their logistic arrangements and travel costs. A list of expert lectures organised at the institute and department level is given in the departmental sections of SSR- Volume II.

3.1.9 What percentage of the faculty has utilized sabbatical leaves for research activities? How has the provision contributed to improve the quality of research and imbibe research culture on the campus?

The institute provides sabbatical leaves to its faculty members who are pursuing PhDs. This leave is utilized by them for carrying out research work. The teaching faculty on the sabbatical leave is paid his/her full salary and this leave is in addition the other allowed leaves. This practice has helped in the speedy completion of PhDs of faculty members and also resulted in the enhancement of the quality of their research work. Also, this lucrative offer has motivated other faculty members to join PhD programs in reputed institutes thereby inducing the research culture among the teachers. There is more intense technical interaction amongst faculty members on topics that fall in their interest area and this has resulted in a broader base of topics that the faculty becomes familiar with.

We had envisaged and now practice that about 5 to 10% of faculty members can proceed on sabbatical leave but should the need arise, this number has flexibility of a few percent.

3.1.10 Provide details of the initiatives taken up by the institution in creating awareness/advocating/ transfer of relative findings of research of the institution and elsewhere to students and community (lab to land).

The institute strongly believes that there is a need to create awareness about the latest developments in science and technology in the students and the society at large.

To achieve this institute has initiated following practices:

- The research papers that fall in the category of seminal, review, heavily cited path breaking and those that cover futuristic development are discussed in ME and sometimes BE classes to encourage the students to learn the process of thinking on their own.
- RAIT conducts pedagogical lectures that are dedicated towards discussion of open yet deep problems that run across disciplines. This „puzzle solving" flavour really motivates students to dig deep to come up with out of the box solutions.
- Organization of guest lectures by various experts on their research for faculty and students.
- Encouraging the faculty members to deliver expert lectures in their area of research in the neighboring institutions.
- Organizing visits of the students and faculty members to renowned research organizations like BARC.
- Organizing various technical festivals thereby introducing the students to different aspects of technological advances.
- Encouraging the involvement of students in projects in the domain of nonconventional energy sources, energy conservation like Biogas, Biodiesel etc.
- Involvement of students in the setting up of exhibition on SciTech Exhibition at the campus.

- Active involvement and participation of the students and faculty members in the national events like Indian Science Congress etc.
- Encouraging the faculty members to deliver lecture in the science awareness programs organized by the popular radio channel "D.Y. Patil Radio" (Dnyan Vani).
- RAIT has plans to put a permanent exhibition where important breakthroughs representing milestones in technology use with masses related to each department will be displayed as exhibits via models, videos and photographs together with interesting anecdotes related to lives of inventors who made the developments.
- All encouragement and support is given to students to display their creative skills by way of exhibits and also written articles or webinars.
- Each person who publishes a paper is required to give a brief talk to broad audience for the purpose of knowledge dissemination. The people who acquire a higher degree M.E. or PhD are required to present their findings in RAIT seminars.
- RAIT plans to regularize discussions of researchers with senior faculty on issues pertaining to problems faced by them during their research activities through research forum meetings „Manthan", conducted under the aegis of Dr. A. P. J. Abdul Kalam Centre of Advanced Research at RAIT.
- Students are encouraged and coached to compete in competitions like Aavishkar: an annual research competition organized at State level.

3.2 Resource Mobilization for Research

3.2.1 What percentage of the total budget is earmarked for research? Give details of major heads of expenditure, financial allocation and actual utilization.

RAIT has allocated a budget of 35.85 Cr as given in Table 3.3. The institute has sanctioned a budget of Rs 1.75 Cr towards research and development for all departments for the academic year 2015-16 as tabulated in Table 3.8. In turn each department has been provided with a research and development budget up to 50 Lakhs each for R&D activities and purchase of specialised hardware and software as given in Table 3.5 and 3.6.

Table 3.3: Total budget.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Budget(Cr)	17.61	18.54	20.29	24.57	33.80	35.85

RAIT budget for **Administrative expenditure** such as Advertisement Expenses, Bank Interest, commission & charges, building maintenance expenses, Electricity charges, Electrical maintenance expenses, Generator Expenses, Water charges,

Employers contributions to PF, office & miscellaneous expenses, Postage, Telephone & Internet Expenses, Repairs & Maintenance, salary & honorarium, Security Service Charges, Staff Welfare Expenses, Student Welfare, Guarding Charges, Rent Rates & taxes Paid, Fees concession to students, Gratuity Payment, Lift Maintenance, Painting Expense, Plumbing material charges, Supervision charges, Sweeping & Cleaning, PF Admin Charges etc are shown in Table 3.4:

Table 3.4: Administrative budget.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Budget(Cr)	13.6	14.37	16.38	19.98	27.83	29.00

RAIT budget towards **Academic activities** such as Affiliation /Application & Registration charges, Inspection fees, Computer Maintenance Expenses, Examination Expenses, Examination Remuneration, Laboratory & Office Renovation Expenses, Lab Recurring Expenses, Printing & Stationary, Equipment Maintenance, Electronic Lab Recurring Expenses etc. are shown in Table 3.5:

Table 3.5: Academic budget.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Budget(Cr)	3.54	3.28	2.94	3.52	4.64	5.1

Table 3.6: Laboratory expenditure (in lakhs) – department wise.

Department/Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (Budgeted)
Computer	10.75	29.33	11.37	19.52	23.02	40
Electronics	18.54	62.75	53.34	47.62	43.25	40
Engineering Science	2.21	5.56	4.73	1.26	1.07	05
Electronics & Telecommunication	11.51	32.02	27.22	23.13	19.66	40
Instrumentation	8.95	15.29	14.13	20	31.42	35
Information Technology	7.06	10.03	6.07	9.18	15.85	34
Total	59.02	154.98	116.86	120.71	134.27	194

Table 3.7:Academic activities – Miscellaneous expenditure.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (budgeted)
Expenditure(Cr)	2.94	1.73	1.77	2.31	3.3	3.16

The budget details for **R&D activities** of RAIT such as News paper & Periodicals / Magazines: Journals & Subscription, Seminar & Conferences Expenses, News paper & Periodicals , Travelling & Conveyance Expenses, Transports, etc are given in Table 3.8:

Table 3.8: R&D budget

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Budget(Cr)	0.48	0.89	0.96	1.07	1.33	1.75

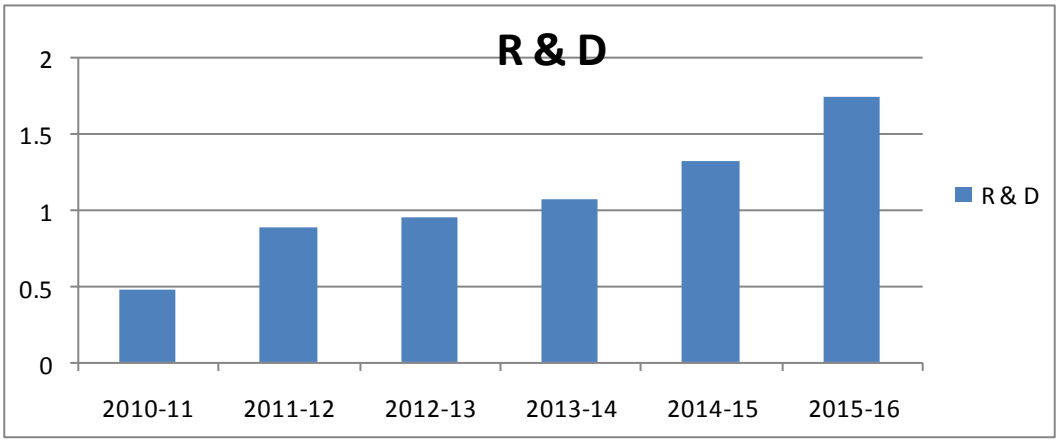


Fig. 3.1: Year wise growth of research funding.

The budget (in Lakhs) sanctioned for the R&D activities such as seminars, STTPs, workshop, conferences etc. The details of the total budget earmarked for research for the last five years are given in Table 3.9.

Table 3.9: Department wise R & D expenditure (in Lakhs).

Department/ Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 Budgetd
Computer	8.3	16.57	12.37	16.52	14.38	25
Electronics	11.01	22.7	27.92	25.91	23.85	29
Engineering Sciences	3.05	3.19	3.42	7.95	9.33	13

Electronics & Telecom	9.23	19.18	18.16	14.71	19.07	25
Instrumentation	5.66	8.55	8.22	11.82	18.94	23
Information Technology	5.98	7.43	9.73	10.6	15.49	20
Interdisciplinary R&D Projects	8.47	11.1	15.35	19.45	32.11	40.3
Total	51.7	88.72	95.17	107	133.05	175.3

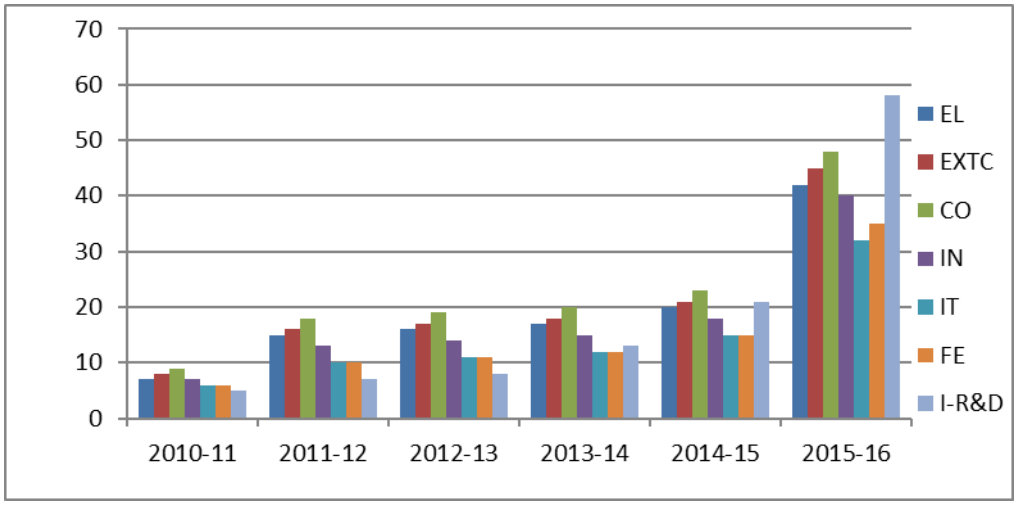


Fig. 3.2: Year wise R & D budget.

Budget related to other research activities:

- Research on biogas Generation from Kitchen waste is given in Table 3.10.

Table 3.10: Biogas Generation Budget.

Year	2012-13	2013-14	2014-15	2015-16
Budget (Rs)	1154534	1049643	952784	700000

- Membership of Oracle WDP 2011-12: 1,04,282/-
- One year membership fee for Database Program 2013-14: 1,25,855/-
- Oracle UNPROTECTED Exam 2013-14: 1,80,082/-
- Renewal of membership with Oracle 2014-15: 1,24,429/-
- Professional membership of IEEE, IETE, CSI, ACM, Digital Library: 500000/-

Laboratory Expenses (Rs):

Table 3.11: Department wise laboratory expenses (Rs).

	2010-11	2011-12	2012-13	2013-14	2014-15
Computer	1536629	4190225	1624262	2779087	3288732
Electronics	2649239	8965188	7620410	6803749	6179230
Engineering Sciences	316000	79512	67585	180756	153643
Electronics & Telecom	1645015	4575033	3888778	3304461	2809642
Instrumentation	1279549	2183871	2018908	2858298	4488949
Information Technology	1008881	1433549	867667	1312517	2265639

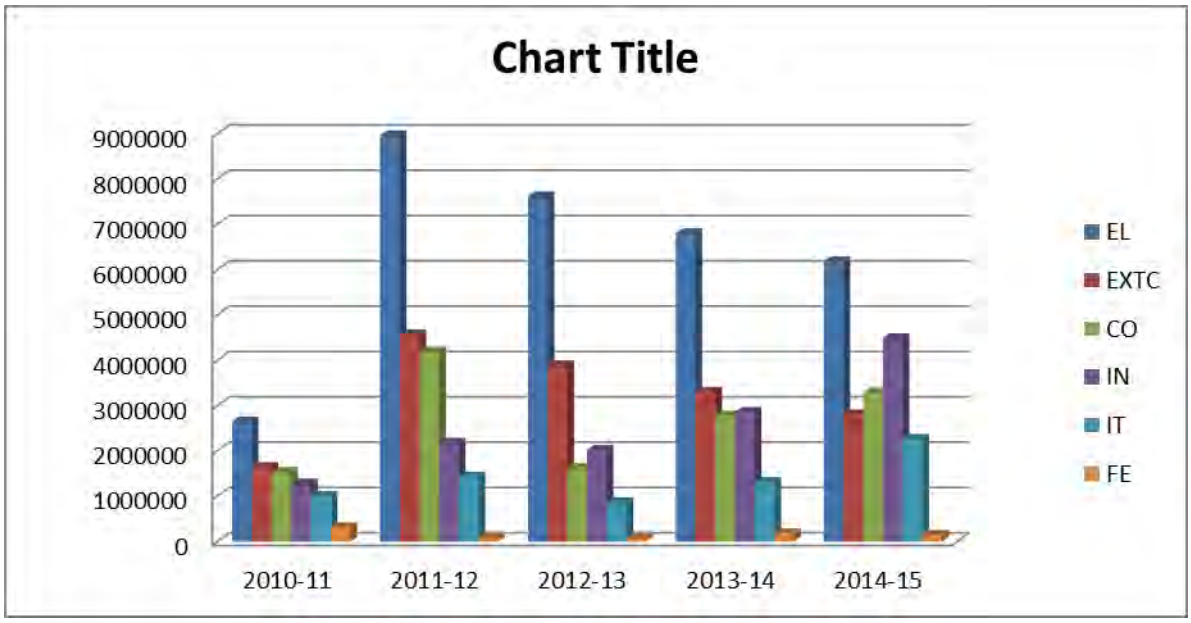


Fig. 3.3: Year wise laboratory expenses.

3.2.2 Is there a provision in the institution to provide seed money to the faculty for research? If so specify the amount disbursed and the % of the faculty that has availed the facility in the last four years.

The institution has a scheme for providing the funding for research activity by its faculty members and students. The proposal and the estimate of expenditure for the research project are sent for approval to the R & D committee. Based on its recommendations, advance seed money of about 10% of total project cost is disbursed to the faculty member/ department. Further grants are provided based on the need and

progress of the project. The faculty are encouraged to obtain project grants from other governmental agencies like DST, AICTE, BRNS, UoM, etc. There is no upper limit for the number of proposals from the faculty member in any department. The detail of the granting of seed money provided to departments is in Table 3.12.

Table 3.12: Seed money for research.

Sr. No.	Research Facility	Seed money (Lakhs)
1	Bio-Gas	11
2	Bio Car Bio-CNG	4
3	Quad Copters	0.6
4	Control loop experiment	0.52
5	Virtual lab	0.40
6	Digital Notice Boards	5
7	3D printer	0.36
8	PID controller	0.72
9	Thermal Furnace	0.40
10	Gas Chromatograph	3.5
11	Lab-VIEW DAQ	0.25
12	Funding for presentation of research findings-visits to abroad	2.0
13	Education Technology Research initiative	3.0
14	High speed computing initiative	3.0
15	IT Android Experimentation / Research	2.0
16	CSE Image processing / Adhoc sensors	3.0
17	Digital Course File & Education Technology	5.0

Department-wise major equipments for research and laboratory work are tabulated in Tables 3.13 to 3.18.

Table 3.13: Research facilities in department of Computer Engineering.

Sr. No.	Research Facility (Equipment, Software)	Year of procurement	Cost in Rs.	Details
1	E-IEEE	Annual	652410	Used for research activities of faculty and PG, PhD student
2	E-Springer	Annual	207460	
3	E-Science Direct	Annual	498498	
4	Qualnet 5.0	2011	100000	M/s Nihon Commu. Solution Pvt. Ltd.
5	Cisco Router based Network	2011	100000	Cisco Systems India Pvt.Ltd.
6	Computers Intel-I3, 4GB RAM, 500 GB HDD	2013	646400	Used for research activities of faculty and UG,PG, PhD student
7	MATLAB tool kit	2014	100000	Computational and Simulational Software
8	IBM SEED Softwares(Cognos,Cloud,Rational Suit)	2014	563500	Mapleton Infotech Pvt.Ltd.

Table 3.14: Research facilities in department of Electronics Engineering.

Sr. No.	Research Facility (Equipment, Software)	Year of procurement	Cost in Rs.	Details
1	Microwind Package	2011	200000	M/s Techno Scientic Co. Mumbai
2	Proteus VSM	2011	258325	M/s Techno Scientic Co. Mumbai
3	Xilinx	2011	26700	M/s Techno Scientic Co. Mumbai
4	Virtex 5 MX5VFK-LX 50	2011	78000	M/s Techno Scientic Co. Mumbai
5	DSP TMS 320X	2011	70000	M/s Techno Scientic Co. Mumbai
6	Spartan 6 FG 900	2011	94000	M/s Techno Scientic Co. Mumbai
7	Qualnet 5.0	2011	100000	M/s Nihon Commu. Solution Pvt. Ltd.
8	NI LabVIEW	2013	100000	National Instruments, Bangalore
9	NI ELVIS board	2013	50000	National Instruments, Bangalore

10	NI MyRIO 1900	2014	29000	National Instruments, Bangalore
11	NI CDAQ	2014	25000	National Instruments, Bangalore
12	MATLAB	2014	200000	ADCC, Mumbai

Table 3.15: Research facilities in department of Engineering Sciences.

Sr. No.	Research Facility (Equipment, Software)	Year of procurement	Cost in Rs.	Details
1	Online Biogas analyser	2013-14	2.4	Chemtron science laboratories pvt ltd Navi Mumbai Analysis of CH_4, H_2S, Nitrogen in line with the gas flow.
2	Biogas Generation plant	2012-13	18	Generation of bio gas from kitchen wastes
3	Mixer for Bio Gas Plant	2014-15	0.73	Infed Pvt Ltd
4	Auto CAD Software	2012-13	2.7	Autodesk, used for designing, documenting and drafting of systems
5	HP Screw Compressor	2012-13	2	Compression of biogas to 200 bar
6	C S Cylinders	2013-14	0.28	Chemtron science laboratories pvt ltd Navi Mumbai Storing of high pressure biogas
7	Analyser to PC connection S0ftware	2013-14	0.38	Chemtron science laboratories pvt ltd Navi Mumbai Data logging from analyser to PC
8	Biogas collection Dome in MS-FRP	2014-15	3.67	Avi plast pvt ltd

Table 3.16: Research facilities in department of Electronics and Telecommunication Engineering.

Sr. No.	Research Facility (Equipment, Software)	Year of procurement	Cost in Rs.	Details
1	Microwind Package	2011	215800	M/s Techno Scientic Co. Mumbai

2	Proteus VSM	2011	200000	M/s Techno Scientic Co. Mumbai
3	Xilinx	2011	30000	M/s Techno Scientic Co. Mumbai
4	Virtex 5 MX5VFK:LX 50	2011	75562	M/s Techno Scientic Co. Mumbai
5	DSP TMS 320X	2011	71750	M/s Techno Scientic Co. Mumbai
6	Spartan 6 FG 900	2011	94370	M/s Techno Scientic Co. Mumbai
7	Klystron based Microwave test bench	2011	67500	M/s Techno Scientic Co. Mumbai
8	Gun based Microwave test bench	2011	66211	M/s Techno Scientic Co. Mumbai
9	Qualnet 5.0	2011	200000	M/s Nihon Commu. Solution Pvt. Ltd.
10	RF Circuit Design	2011	165112	S. A. Vision , Pune
11	Microwave test Bench	2011	184875	M/s Techno Scientic Co. Mumbai
12	Satellite Lab. Kit	2011	188000	M/s Techno Scientic Co. Mumbai
13	Antenna Trainer Kit	2011	146000	M/s Techno Scientic Co. Mumbai
14	NI Lab VIEW	2013	100000	National Instruments, Bangalore
15	NI ELVIS board	2013	100000	National Instruments, Bangalore
16	NI MyRIO 1900	2014	29000	National Instruments, Bangalore
17	NI DAQ	2014	25000	National Instruments, Bangalore
18	MATLAB	2014	200000	ADCC, Mumbai

Table 3.17: Research facilities in department of Instrumentation Engineering.

Sr. No.	Research Facility (Equipment, Software)	Year of procurement	Cost in Rs.	Details
1	Lab-VIEW Software	2012-13	319798	Simulation software
2	MATLAB Software	2013-14	173331	Computation and simulation software
3	NI myRIO Board,	2014-15	100010	Hardware Implementation
4	NI Compact DAQ	2014-15	68507	Hardware interface

5	ELVIS Board	2012-13	173884	Hardware Implementation
6	PLC kit - Allen Bradley RX LOGIX 1400	2010-11	438875	Process Control
7	Temperature Chamber model	2013-14	49275	System Modelling and Calibration
8	Robotics kit	2014-15	325000	Automation
9	PIC 18F kit	2014-15	71400	Embedded Interfacing
10	Valve Coeff. (Cv) testing setup	2009-10	52250	Process Control

Table 3.18: Research facilities in department of Information Technology Engineering.

Sr. No.	Research Facility (Equipment, Software)	Year of procurement	Cost in Rs.	Details
1	High End Desktop systems (616 B and PG Research Lab)	2013-14	576576	Intel core i3 4th gen 4130T 2gb DDR3 RAM 500 GB SATA HDD
2	High End Desktop Systems (616 A)	2011-12	464760	Core2Duo Processor 2GB RAM
3	IBM SEED Softwares (Cognos, Cloud, Rational Suit)	2014-15	590000	Mapleton Infotech Pvt.Ltd.
4	Matlab Toolkit	2014-15	100000	ADCC, Mumbai
5	Desktops in E:yantra Lab	2013-14	140000	4 high end desktops
6	Qualnet 5.0	2011-12	72500	M/s Nihon Commu. Solution Pvt. Ltd.
7	Linux Redhat 6.0	2014-15	15000	Nutex Technology

3.2.3 What are the financial provisions made available to support research projects by students?

The institute provides financial support to the undergraduate and graduate students to take care of expenses incurred for their projects. This support is provided both at the institute and department level. The details are as given in Table 3.19.

Table 3.19: Financial support to students for research projects.

Department/Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Computer	25000	45000	70000	60000	100000	400000
Electronics	15500	38000	50000	13600	114100	300000
Electronics & Telecom	18000	55000	60000	75000	70000	300000
Instrumentation	22500	38000	56000	65000	104000	300000
Information Technology	12500	40000	69500	50000	300000	300000

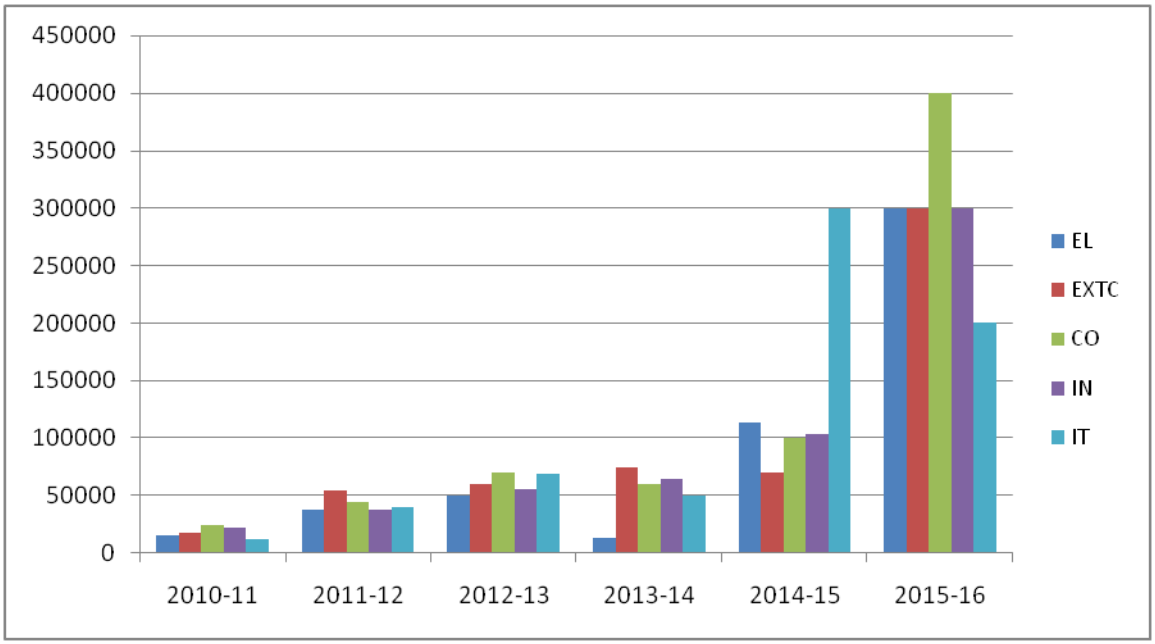


Fig.3.4 : Research project budget.

The institute has a practice of sanctioning a budget as per the projected plan based on the planning done by all the departments put together. From a budget of Rs 50 lakhs for the academic year 2010-11 it has grown to 1.75 Crores at present.

3.2.4 How does the various departments/units/staff of the institute interact in undertaking interdisciplinary research? Cite examples of successful endeavours and challenges faced in organizing interdisciplinary research.

The institute believes that this is the age of interdisciplinary research. To foster this research culture among the various departments, the institute encourages their faculty members to carry out interdisciplinary research work. The institute also promotes the faculty members to carry out inter disciplinary research projects with other organisations/institutions.

The details of the interdisciplinary research projects carried out in the institute is tabulated in Table 3.20.

Table 3.20: Interdisciplinary research projects.

Sr.No.	Title of the project	Departments Involved	Year	Status
1	Biogas Generation	Instrumentation, Electronics, Engg. Science	2013-14	Ongoing
2	Car Parameters Monitoring	Instrumentation, Electronics, Computers, EXTC, IT	2013-14	Completed Successfully
3	Online Attendance	Computers, IT	2013-14	Completed Successfully
4	Blood Sugar Monitoring using Image processing	Computer Science and D.Y. Patil Medical Hospital	2013-14	Completed Successfully
5	Coupled tank setup (Control)	Instrumentation, Electronics	2014-15	Completed Successfully
6	Quad copter	Instrumentation, EXTC Electronics, Computers	2014-15	Completed Successfully
7	Remote Triggered control of DC motor	Instrumentation, Electronics, EXTC, Computers	2014-15	Ongoing
8	Throbbing Measuring Instrument	Instrumentation , D. Y. Patil Medical Hospital	2014-15	Ongoing
9	Bio Gas Purification	Instrumentation , Mechanical, First year	2014-15	Ongoing
10	Education Technology	Computer Science, First Year	2014-15	Ongoing

The aforementioned interdisciplinary projects are in progress. Some of the challenges faced by the groups like unavailability of personnel with domain specific knowledge, unavailability of components in the local market, etc are handled and taken care of at various levels. As expected, the main difficulty is integration of various parts developed across departments to ensure overall performance and meeting of device level specifications. This is handled by experienced professors at RAIT who can co-opt members from other institutions.

3.2.5 How does the institution ensure optimal use of various equipments and research facilities of the institution by its staff and students?

The research monitoring committee has set up some directives for the utilization of common resources and equipments to facilitate their optimal use. These rules are also followed for the instruments and resources at the department level. Using these rules/directives, any resource or equipment is allocated to a faculty or student depending on the urgency of the work completion, nature of the experimentation, etc. These facilities are also available to the students and faculty members after the

college hours and on weekends and holidays. A log book or issue register for each of the major equipment is maintained.

3.2.6 Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facility? If yes, give details.

Yes, the institute has received grants and funding for the projects. The details are as follows in Tables 3.21 to 3.26.

Table 3.21: Special grants for developing research facility in Department of Computer Engineering.

Sr.No.	Project Title	Funding Source	Grant Received (Rs)
1	RAIT website	R&D RAES	120000
2	Detection of Glucose content in Blood Serum through Colour Analysis	R&D RAES	40000
3	Competent system for fear detection using physical parameters	R&D RAES	40000
4	OCR for printed marks gazette with staff lines	R&D RAES	40000
5	Faculty Profile Management	R&D RAES	50000
6	Feedback System	R&D RAES	60000
7	Digital Course File	R&D RAES	50000
8	Library Management Software	R&D RAES	30000
9	Administration Software	R&D RAES	30000
10	Moodle	R&D RAES	40000
11	Programming feedback System	R&D RAES	40000
12	CO-PO Feedback System	R&D RAES	50000

Table 3.22: Special grants for developing research facility in Department of Electronics Engineering.

Sr. No.	Title of project	Funding source	Grant Received (Rs)
1	Eye Controlled Wheel Chair	Ramrao Adik Education Society	20200/-
2	Virtual Digital Circuit Design Laboratory	Ramrao Adik Education Society	40200/-
3	FPGA Implementation of Fractional-Order Operators	Ramrao Adik Education Society	10,000/-
4	Vedic Mathematics Sutra Implementation Using FPGA	Ramrao Adik Education Society	15000/-
5	Fractional Calculus Implementation Using Microcontroller	Ramrao Adik Education Society	15000/-
6	Quadcopter	Ramrao Adik Education Society	20,000 /-
7	Tree Climbing Robot	Ramrao Adik Education Society	40,000/-
8	Intelligent car parking system	Ramrao Adik Education Society	15,000/-
9	Autonomous vehicle for optimum navigation	Ramrao Adik Education Society	25,000/-
10	Biogas Car	Ramrao Adik Education Society	2,00,000/-
11	Solar panel conditioning unit	Ramrao Adik Education Society	40,000/-
12	Accelerometer based wheelchair	Ramrao Adik Education Society	20000/-
13	Microcontroller based PCB milling machine	Ramrao Adik Education Society	33,000/-
14	Staircase climbing fire fighting robot	Ramrao Adik Education Society	25000/-
15	Universal wireless automatic meter reading system	Ramrao Adik Education Society	22000/-

Table 3.23: Special grants for developing research facility in Department of Engineering Sciences.

Sr.No.	Project Title	Funding Source	Year	Grant Received (Rs)
1	Generation of Bio:Methane from kitchen waste by Anaerobic Digestion.	RAES Navi Mumbai	2013-15	900000
	Purification of Bio-Methane by using various indigenous methods.	RAES Navi Mumbai	2013-15	
	Qualitative & Quantitative analysis of various gases.	RAES Navi Mumbai	2013-15	
2	Generation of Bio:Methane from kitchen waste by Anaerobic Digestion.	RAES Navi Mumbai	2013-15	
	Purification of Bio:Methane by using various indigenous methods.	RAES Navi Mumbai	2013-15	
	Qualitative & Quantitative analysis of various gases.	RAES Navi Mumbai	2013-15	
3	Generation of Bio-Methane from kitchen waste by Anaerobic Digestion.	RAES Navi Mumbai	2013-15	
	Purification of Bio:Methane by using various indigenous methods.	RAES Navi Mumbai	2013-15	
	Qualitative & Quantitative analysis of various gases.	RAES Navi Mumbai	2013-15	
4	Pollution measurement of water and air from various sources by using different type of sensors	RAES Navi Mumbai	2013-15	

Table 3.24: Special grants for developing research facility in department of Electronics and Telecommunication.

Sr.No.	Project Title	Funding Source	Grant Received (Rs)
1	Design of controller for Indian Railways	Gauranga Electronics, Navi Mumbai	1,00,000

2	LabVIEW based MPC for laboratory base setup	University of Mumbai	35000
3	3D Printer	Principal RAIT	40000
4	Quadcopter	Principal RAIT	35000
5	Design of ratio controller for hybrid biogas generation	President RAES	200000
6	E-yantra project	President RAES	20000
7	E-yantra project	President RAES	20000

Table 3.25: Special grants for developing research facility in department of Instrumentation Engineering.

Sr. No.	Title of project	Funding Source	Grant Received (Rs)
1	LabVIEW based MPC for laboratory base setup	University of Mumbai	35000
2	SCCD Mini Project	R&D funds from Principal, Ramrao Adik Institute of Technology	50000
3	LabVIEW based design and development of PI controller for dynamic level control of tank	R&D funds from Principal, Ramrao Adik Institute of Technology,	50000
4	Design & Development of low cost heart throbbing activity monitoring systems	Dr D Y Patil Medical Research Centre, Navi Mumbai	20000
5	Universal Remote using Arduino Python server	ISA Ramrao Adik Institute of Technology	5000
6	Home automation Systems using Raspberry Pi	President RAES	15000
7	Robotics based simultaneous localization & mapping	ISA Ramrao Adik Institute of Technology	5000
8	Water Level controlling using LabVIEW	R&D funds from Principal, Ramrao Adik Institute of Technology	4000
9	Internet of things for Multidisciplinary automation	R&D funds from Principal, Ramrao Adik Institute of Technology	5000

10	Development of constant phase element sensor to detect milk adulteration.	R&D funds from Principal, Ramrao Adik Institute of Technology	50000
11	Design of Smith Predictor controller for Thermal chamber	R&D funds from Principal, Ramrao Adik Institute of Technology	40000
12	Image Processing based Automatic Coin Sorting	ISA Ramrao Adik Institute of Technology	5000
13	Design & Development of wireless control of chemical batch process using ARM	R&D funds from Principal, Ramrao Adik Institute of Technology	25000
14	Design & Simulation of Mapping & localization of unknown environment using Robotics	President RAES	20000
15	PID based Level Control	R&D funds from Principal, Ramrao Adik Institute of Technology	14000
16	SCCD Mini Project Competition	R&D funds from Principal, Ramrao Adik Institute of Technology	30000
17	Temperature and Pressure Control of boiler using ON-OFF Controller	ISA Ramrao Adik Institute of Technology	8000
18	SCCD Mini Project Competition	R&D funds from Principal, Ramrao Adik Institute of Technology	20000
19	SSCD Mini Project Competition	R&D funds from Principal, Ramrao Adik Institute of Technology	10000

Table 3.26: Special grants for developing research facility in department of Information Technology.

Sr.No.	Project Title	Funding Source	Year	Grant Received (Rs)
1	Railway Concession	Ramrao Adik Education Society	2013-14	50000
2	Digital Course File	Ramrao Adik Education Society	2010-11	110000
3	e-Attendance	Ramrao Adik Education Society	2013-14	50000

4	e-Bonafide	Ramrao Adik Education Society	2014-15	50000
5	Biogas Car	Ramrao Adik Education Society	2013-14	200000
6	e-Page RAIT	Ramrao Adik Education Society	2013-14	50000

3.2.7 Enumerate the support provided to the faculty in securing research funds from various funding agencies, industry and other organisations. Provide details of ongoing and completed projects and grants received during the last four years.

- The Research Monitoring Committee duly provides information and announcements regarding various funding agencies/industries/research organisations.
- The committee also helps the faculty members to identify thrust areas in research specific for an agency to attract the requirement funding.
- The institute bears all the expenses required for initial submission (like reimbursement of application fees, postal charges, and printing) of the proposal.
- The institute utilizes the vast network of its strong alumni, placed at key positions in reputed industries, for procuring research funding from them.
- The details of the research grants received from AICTE, UOM, etc.are given in Table 3.27.
- Institute have signed MoUs with many industries/institutions. The details are given in Table 3.28.

Table 3.27: Projects applied to AICTE under RPS scheme.

Sr. No.	Faculty Name	Project Name	Funding Agencies	Cost (Lakhs)
1	Dr. Ramesh Vasapannavara	Advance computer Research areas	AICTE	1.50
2	Dr. Satish Devane	Development and Modernisation of Network Laboratory	AICTE	18.50
3	Dr. Satish Devane	Agent based reconfigurable routing for MPLS Network	AICTE	8.24
4	Dr. Leena Ragha	Detection of glucose content in blood serum through colour analysis	RAES	0.5
5	Dr. M. D. Patil	Multispectral Image Registration and Fusion	AICTE	9.0
6	Dr. M. D. Patil	Design and deployment of model predictive controller for single loop process setup	University of Mumbai	0.35

7	Dr. J. S. Bora	Temperature Control of thermal chamber	RAES	0.40
8	Mrs. Gargi Phadke	Improved weighted histogram for illumination invariant mean shift tracking	RAES	0.20
9	Mr. S.P. Jadhav	PID based Level Control	RAES	0.50
10	Mrs. Divya Shah	Fractional order controller implementation using FPGA	University of Mumbai	0.69

Table 3.28: MOUs Signed with different Companies.

Sr.No.	Company Name	Company Person	Designation	Date of Sign
1	IBM	Kunal Dureja	Country Manager	15/09/2014
2	Oracle	Shruti Chaudhry	Marketing Head	24/09/2014
3	Gauranga Soft Tech Pvt. Ltd.	Mr. Ramanan Nagarajan	CEO/Director	04/06/2015
4	TCS	Mr. Gaurav Gandhi	AIP Head India West	July 2015

3.3 Research Facilities

3.3.1 What are the research facilities available to the students and research scholars within the campus?

The institute allocates separate funds to each department every year for the procurement and maintenance of equipments/computers and software required by the students and research scholars in their research. The detailed list of research facilities available are given in Table 3.29 to 3.33.

Table 3.29: Research facilities for students in Department of Computer Engineering.

Sr. No.	Lab No.	Lab Name	Lab Details	Cost
1.	516A	Network and Security	IBM PIV NETVISTRA, 2.4ghz, 1GB RAM DDR1, 40GB HDD, CRT VOLOR MONITOR, WIN XP	930000
2	516B	Microprocessor	HP Compaq, 3.0ghz, 512MB RAM, 8GB HDD, 15" TFT,WIN XP	250000
3	517	Computer Graphics	DELL PIV OPTIPLRX 360 DT, DUAL CORE, 2.2ghz, 1GB DDR2, 1GB SD RAM, 160GB	710000

			HDD	
4	518	Design Lab	DELL PIV OPTIPLRX 360 DT, DUAL CORE, 2.2ghz, 1GB DDR2, 1GB SD RAM, 160GB HDD	710000
5	519	Database and Data Mining	DELL PIV OPTIPLRX 360 DT, DUAL CORE, 2.2ghz, 1GB DDR2, 1GB SD RAM, 160GB HDD	710000
6	520	Programming Lab	DELL PIV OPTIPLRX 360 DT, DUAL CORE, 2.2ghz, 1GB DDR2, 1GB SD RAM, 160GB HDD	770000
7	513A	Project Lab	HP C2D, 2.93ghz, 2GB RAM, 320 GB HDD, 18.5" TFT	860000
8	513B	Intelligent System Lab	HP I3, 3.4ghz, 2GB RAM, 500GB HDD, 18.5" TFT	1040000
9	501A1	PG Lab1	HP C2D 2.93 Ghz,2 GB RAM, 320 GB HDD, 18.5 TFT	545000
10	501A2	PG Lab1	DELL PIV OPTIPLRX 360 DT, DUAL CORE, 2.2ghz, 1GB DDR2, 1GB SD RAM, 160GB HDD	450000
11	521	Server Room	PROXI SERVER IBM X SERIES X225 SERVER, OIV 2.4 Ghz,XEON DP, 512X4 RAM, 250 GB HDD SUSE OS	50,000
			WINDOWS SERVER IBM X 3400 SERVER, INTEL XEON 2.0 Ghz, 8 GB RAM, 300GB HDD, WIN 2003	196560
			Web Server Ibm X 3400 M3, Intel Xeon 4ce560, Ddr3 6gb Ram, 500 Gb Hdd	165968
			Data Base Server Ibm 300 M3 Server, Intel Xeon E34030, 500gb Sata Hdd, 6 Gb Ram	42450
			Laptops	176000
12	522	PG Lab2	DELL PIV OPTIPLRX 360 DT, DUAL CORE, 2.2ghz, 1GB DDR2, 1GB SD RAM, 160GB HDD	180000

13	012 B	E-Yantra Lab	Intel® Core I3-320 CPU@3.0Ghz, 4GB RAM, 500GB HDD,21"TFT Monitor, Keyboard,Mouse, Windows 7 OS	500000

Table 3.30: Research facilities for students in Department Electronics Engineering.

Sr. No.	Lab Room No.	Lab Name	Details of Lab	Lab Cost (Rs.)
1.	008	BEE Lab	DC motor-06,3phase induction motor:2,function generator-12,CRO-06,Dual p/w -7,single phase X"mer-03,3phase to 1phase X"mer-03,AC/DC Analog meter-17+26-33,digital multimeter-26	440000
2.	012	E-Yantra Lab	Fire Bird V-2560,Spark V robot , Android Device, Begale board PC"s-03, Lab View Kit -01, DSO -01, zigbee model -10 ,spark V robot-10 LCD display-09, speaker-07, soldering iron-04, Arduion boards -7, Krypton-11	500000
3.	204	Signal Processing lab	PC"s -12 , Microprocessor Kit -11 , Dyna kits 85/86-6+6-12 Dyna 51 kits:8, printer-01 ,Microwind package, Spartan-6, VTU XC3S400 board,Daughter board, Protius VSM(S/W)	1500000
4.	205	VLSI & Embedded system lab	PC"s -27,vertex-5 board-01, DSP TMS 320X-01 ,Mike studio master Matlab and Xilinx S/W(25 users) Easy Arm kits -05 for embedded system	1640000
5.	211	ED Lab	CRO-21,function generator -24, Regulated Dual DC Power Supply-27, Digital Multimeter-06,DC trainer kit-06, Practical kit-28,IC tester-02	1200000
6.	401-A	PG - Lab	PC"s -14 with Matlab and Xilinx S/W Printer - 01,	716000
7.	408	Control lab	CRO-03,function generator 04, power supply -06, multimeter-10 A/C drives motor kit-02,CRO-05, power supply-03	370000

		Power Electronics Lab	A/C drives motor kit-02,Trainer kit-18,Digital multimeter-08,CRO11,DC Power supply-10,Fun.generator-4,	560000
8.	411	Digital Lab	Digital trainer kit-43,CRO-07, Function generator-05,Dual power supply-02,power supply- 08 , SIENCE TEC -10 ,OHP-01	470000
9.	413	Basic Communication Lab and Advanced Communication Lab	CRO-7,Fun generator -10,power supply-10,DSO-01, trainer kit(old)-24,trainer kit(new)-16,basic communication kit-11,DC current meter-30, AC current meter:20 AC/DC voltmeter-40	880000

Table 3.31: Research facilities for students in Department of Engineering Sciences.

Sr. No.	Lab Room No.	Lab Name	Details of Lab	Lab Cost (Rs.)
1.	212 B	ETNL Language Lab	Software licensed for one teacher console and 10 student consol i.e. 1+10	55000
2	002 A,B	Applied Chemistry Lab	Chemicals and glassware (year2010-11)	78856
3	113 A,B	Applied Physics Lab	Thevenins and Law trainer kits - 8, Thevenins and Law Trainer II - 2, Series and Parallel resonance - 2, Characteristics of Transistors - 2, Rectifiers - 2, Semiconductor models - 2, Micrometers - 10, Voltmeters - 10, mAmmeter -10, Function generator - 5	110340
4	113 A,B	Applied Physics Lab	CRO - 20 MHz - 05	92500
5	113 A,B	Applied Physics Lab	Hysteresis Loop Tracer - 2, Fiber Optic communication trainer - 2, Sodium Vapour Lamps - 4, Transformer 35 watts - 4, Diffraction Grating - 2	89150
6	212 A	AutoCAD Lab	HP Laser jet 5200 Printer speed up to 35ppm - 01	76000
7	212 A	AutoCAD Lab	HP Desktop Pro 3300MP Core i3 3rd Generation processor 3220, 4GB DDR3 RAM, 500GBHDD, 21.5 TFT Monitor, 1GB RAM Dedicated Graphic Card Mouse & Keyboard - 30	1291500

8	212 A	AutoCAD Lab	Windows 7 starter pack - Oem pack - 30	91350
9	113 A,B	Applied Physics Lab	Cubic Model set – 2, Ultrasonic interferometer for liquid 2 MHz – 1, Hall effect set – 2, Energy band gap set up with digital meter – 2, Photodiode apparatus with digital meter ps – 2	118495
10	212 A	AutoCAD Lab	HP Desktop Core I3 4GB RAM & 21 TFT Monitor– 20	922635
11	212 A	AutoCAD Lab	Graphic card 1 GB – 20	55550
12	212 A	AutoCAD Lab	Microsoft window 7 or 88 SL Licence	118776

Table 3.32: Research facilities for students in Department of Electronics and Telecommunication Engineering.

Sr. No.	Lab Room No.	Lab Name	Details of Class Room	Total cost (Rs.)
1	119-B	PG lab	PCs- 5, Printer - 01	250000
2	201	Microprocessor & Microcontroller lab	PCs - 20 with internet connection, Printer - 01 (Dot matrix) Microprocessor- kits 8085/86 :20 Microcontroller -Dyna 8051 kits - 12 Embedded system - (VSoft) Arm kits-10 Software - ARM Sim, MPLAB:IDE, MCU 8051 IDE - 08 PCs, MATLAB, EMU 8086-06, VSM Proteus- 10 users (licensed version), Lab view - 05 users (licensed version)	1450000
3	202	Digital of Signal Processing lab	PCs- 20 with internet connection, Printer - 01 (HP laser) Software - Emulator 8086:15 PCs, MATLAB -20 PCs, Xilinx s/w - 05users, Qual Net - 20 users	1425000
4	208	Electronics Workshop lab	CRO- 29, Function generator - 16+02, Regulated Dual DC Power Supply- 27, Power supply - 22, Digital & Linear IC trainer kit:03, Digital Multimeter-06, Analog micrometer/ voltmeter/ millimetre -02/15/11, LCR Q	1150000

			meter - 01, Digital IC power supply- 03	
5	308	Advanced communication lab	CRO-07, DSO-01, Function generator -27, power supply-02, Trainer kits- Antenna - 01(old)+(02)new, Fiber optic - 03, SATCOM :01(old) + (01) new, TV - 01, Microwave test bench set up- 02 sets (klystron & Gun based), Optical / Microwave power meter - 01/02, Spectrum analyzer - 01, RF mixer/RF filter: 01, Colour pattern generator -01 RFCD kits- 01(old)+(01)new	2460489
6	311	Communication lab & TV, Video, Antenna lab	CRO-09, DSO-01, Power supply - 10, Analog & Digital trainer kit - 85, DMM - 03	2200000

Table 3.33: Research facilities for students in Department of Instrumentation Engineering.

Sr. No.	Lab Room No.	Name of Lab	Details of Lab	Lab Cost (Rs.)
1	111	Transducer lab	Flow Meter, Dead Weight tester, Thermocouple , RTD, Thermistor , Humidity trainer kit etc.	1790039
2	108	Control lab	Synrco Transmitter & Receiver	764915
3	011	Industrial Automation	PLC, PLC trainer kit.	638875
4	112A	Biomedical & Analytical Instrumentation	UV:VIS Spectrometer, Flame Photometer, Conductivity meter, Densitometer, ECG	633625
5	112B	Project Lab	DSO, 8051 kits, PIC 18F controller	766706
6	011	Process Instrumentation Lab	Forbes:marshal heat exchanger, CV-test, FOUJI compressor, Pneumatic set up	2176918
7	112C	Computational lab	PCs, Lab View software, My RIO, DAC cards, ELVIS board	2735259
8	012	E-Yantra R&D Lab	Robotics kit, DSO etc	500000

Table 3.34: Research facilities for students in Department of Information Technology

Sr. No.	Lab Room No.	Lab Name	Details of Lab	Lab Cost (Rs.)
1.	613A	Project Lab	PCs--- 15 (HP Commercial Desktop), HP Corei3, Intel Pentium 4th Generation Processor 3240, 4CB DDR3 RAM, 500 GB HDD, Keyboard, Mouse with HP Compaq, 18.5" TFT Monitor, Turbo C, Java, MS office 2007, prolog ,Microsoft Window 7, oracal,matlab2013, printer-01,Internet.	5,86,683
2.	613B	Computer Simulation Lab	PCs--- 15(HP Commercial Desktop), HP Corei3, Intel Pentium 4th Generation Processor 3240, 4CB DDR3 RAM, 500 GB HDD, Keyboard, Mouse with HP Compaq, 18.5" TFT Monitor, Turbo C, Java, MS office 2007, prolog ,Microsoft Window 7, oracal,matlab2013, printer-01,Internet.	9,10.489
3.	616A	Database lab	PC"s –20(HP Compaq), Pentium® dual core CPU 3.20GHz, 2GB RAM, 320GB Hard17" TFT Monitor, Turbo C, Java, MS office 2007, Microsoft Window 7, Red Hat 6.0,oracal, Ubuntu-14.04,matlab2013,printer-01, Internet	5,26,849
4.	616B	Data Mining Lab	PC"s –20(HP Pro 3330), Pentium® l core i3,CPU 3.20GHz,4GB RAM, 500GB Hard17" TFT Monitor, Turbo C, Java, MS office 2007,prolog ,Microsoft Window 7,Red hat 6.0, Ubuntu-14.04, oracal,matlab2013, printer-01, Internet	7,47,879
5.	617B	Advanced Network Lab	PC"s –24(IBM Thin Centre), Intel Pentium Architecture, 80GB Hard disk,1 GB RAM 15" TFT Monitor DVD R/W. Turbo C, Java, MS office 2007, prolog ,Microsoft Window 7, oracal, printer-01, Internet,	10,10,569
6.	621	Server Room/Research Lab	Laptop-06:Intel(R) corei3-4005CPU@1.70GHz ,4Gb RAM,500GB HDD, VGA Com,6 cell Battery, 64-bit, Windows 8.1	205000

7.	618	Software Testing Lab	PCs-24(HP Compaq),HP Compaq XL808AV,Pentium® core2 dual CPU 3.20GHz,2GB RAM , 320GB Hard17" TFT Monitor,printer -01, Turbo C, Java, MS office 2007, prolog ,Microsoft Window 7,Red hat 6.0, oracal, printer-01,Internet.	6,19,801
8.	619	Cloud Computing Lab	PCs-24(HP Commercial Desktop), HP Corei3, Intel Pentium 4th Generation Processor 3240, 4CB DDR3 RAM, 500 GB HDD, Keyboard, Mouse with HP Compaq, 18.5" TFT Monitor, Turbo C, Java, MS office 2007, prolog ,Microsoft Window 7, oracal,matlab2013, printer-01,Internet.	9,10,489
9.	620	Computer Graphics Lab	PCs-24(HP Compaq), HP Compaq dx 2080 MT,Intel Pentium Architecture, 80GB Hard disk,1GB RAM 21" TFT Monitor DVD/CD R/W, Turbo C, Java, MS office 2007, Ubuntu14.04, prolog ,Microsoft Window 7, oracal,matlab2013, printer-01,Internet	10,76,089
10	601B	Programming Lab	PC"s–4 , (HP Commercial Desktop), HP Corei3, Intel Pentium 4th Generation Processor 3240, 4CB DDR3 RAM, 500 GB HDD, Keyboard, Mouse with HP Compaq, 18.5" TFT Monitor, Turbo C, Java, MS office 2007, prolog ,Microsoft Window 7, oracal,matlab2013, printer-01,Internet.	1,49,383
11.	601A	PG Research Lab	PCs--- 06 (HP Commercial Desktop), HP Corei3, Intel Pentium 4th Generation Processor 3240, 4CB DDR3 RAM, 500 GB HDD, Keyboard, Mouse with HP Compaq, 18.5" TFT Monitor, Turbo C, Java, MS office 2007, prolog ,Microsoft Window 7, oracal,matlab2013, printer-01,Internet.	2,10,000

Criterion IV

Infrastructure and Learning Resources

D Y PATIL
RAMRAO ADIK INSTITUTE OF TECHNOLOGY
NAVI MUMBAI

Criterion IV: Infrastructure and Learning Resources

4.1 Physical Facilities

4.1.1 What is the policy of the Institution for creation and enhancement of infrastructure that facilitate effective teaching and learning?

The policy followed at RAIT from its inception is not only meeting the norms and requirements of guiding and regulating bodies like AICTE but goes beyond them to accommodate future plans and expansion. Some of the key parameters for creation and enhancement of infrastructure that facilitate effective teaching and learning are given below in Table 4.1. Others can be found in the sections that follow.

Table 4.1: Key parameters of infrastructure.

Sr. No.	Item	Area required as per AICTE, 2011.	RAIT Figures
1	Land Area	2.5 Acres	5 Acres
2	Carpet area /class room	66 sq. m.	66 sq. m.
3	Total classrooms UG	37	37
4	Total classrooms of PG	5	5
5	Administrative Area	• Principal: 30 sq.m • Board Room: 20 sq.m • Office all incl.: 150 sq.m • Department office: 10 sq.m • Cabins of HOD: 10sq.m • Faculty rooms: 5 Sq.m • Central Stores: 30 sq.m • Security: 10 sq.m • Housekeeping: 10 sq.m • Pantry for Staff: 10 sq.m • Examination Control: 30 sq.m • Placement office: 30 sq.m	• Principal: 45 sq.m • Board Room: 28 sq.m • Office all incl.: 250 sq.m • Department office: 15 sq.m • Cabins of HOD: 28 sq.m • Faculty rooms: 100 sq.m • Central Stores: 60 sq.m • Security: 40 sq.m • Housekeeping: 30 sq.m • Pantry for Staff: 15 sq.m. • Examination Control: 50 sq.m • Placement office: 40 sq.m
6	Carpet Area for Toilet	Ladies & Gents: 350 sq.m	Ladies & Gents: 450 sq.m
7	Carpet Area for Girls Common Room	75 sq.m	100 sq.m
8	Numbers of PCs: students	Ratio = 1:4	Ratio = 1:4
9	Faculty: Student ratio	1:15 (UG)	1:15 (UG)
10	Essential &	• Water Supply	• Water Supply: Yes

	Desirable Norms	• Staff Quarters • Electrical Supply • Sewage disposal • Telephone Fax • Vehicle Parking • Institute website • First Aid • Institute Website • Fire Safety • Road Suitability • General notice Board • Transport • Post and Banking/ATM • CCTV Security • LCD projector in Classrooms • Insurance for Students • Display of Course and approved Intake in the institute at the entrance of the Institute.	• Staff Quarters: No • Electrical Supply: Yes • Sewage disposal: Yes • Telephone Fax: Yes • Vehicle Parking: Yes • Institute website: Yes • First Aid: Yes • Institute Website: Yes • Fire Safety: Yes • Road Suitability: Yes • General notice Board: Yes • Transport: Yes • Post and Banking/ATM: No • CCTV Security: Yes • LCD projector in Classroom: Yes • Insurance for Students: Yes • Display of Course and approved Intake in the institute at the entrance of the Institute: No

It goes without saying that RAIT got a well-designed building shown in Fig. 4.1 which serves the purpose from its completion days in 1989. The building fulfils the norms and more importantly has many unique features that makes environment friendly and safe. The classrooms are well lighted, airy and cool. The building interior and heat resistant exterior is designed and constructed to cut down the lighting and cooling budget and also besides the saving on frequent painting to maintain an acceptable look for a long duration.

Safety of people and equipment has been on top priority at RAIT. Fire Safety equipment is installed in each floor and kept ready for use in case of the emergency. Emergency evacuation plans in case of fire are displayed at site. Data safety is also ensured via power backups. All these efforts have resulted in a clean and accident free environment inside the campus.

Fig. 4.1: Main building.

The management interacts frequently with teachers, alumni, students and parents to understand the trends and requirements for creation and enhancement of the infrastructure-especially those that concern teaching/learning as well as health and environmental issues. As a result of this, RAIT has undergone renovation and all the classrooms and laboratories have been upgraded and equipped with the modern digital teaching aides ICT, smart boards, Wi-Fi connection facility, etc.

The institute has planned for future expansions and/or additional needs that may arise with the passage of time to promote a good teaching-learning environment. Creation and enhancement of the infrastructure that was embarked upon in recent past continues unabated. A new and important initiative to create infrastructure facilities for Research & Development and Industrial Consultancy is now underway and the budget for this has been adequately enhanced.

At RAIT we are aware that, upkeep and maintenance is the key to proper utilization of infra-structural facilities. For cleanliness of institute building and garden area the institute has full-fledged maintenance department (BVG Pvt. Ltd) with required technical support staff (about 175 maintenance staff). Timely maintenance of all the buildings is carried out as and when required.

RAIT aims at all-round development of students, sports and cultural activities are an important part of it. RAIT is fortunate to have the best sports facilities in our country. For example, the RAIT campus which is contained within D.Y. Patil Group, has second largest international stadium shown in Fig. 4.2. It has an Olympic size swimming pool and a world class gymnasium besides having 6 tennis courts and 3 indoor badminton courts. It also has 3 squash courts and 2 basketball fields. There is a cricket ground for academy adjacent to RAIT where interested people can receive formal coaching.

Fig 4.2: International stadium.

4.1.2 Detail the facilities available for

a) Curricular and co-curricular activities – classrooms, technology enabled learning spaces, seminar halls, tutorial spaces, laboratories, botanical garden, Animal house, specialized facilities and equipment for teaching, learning and research etc.

Both the curricular and co-curricular activities are given adequate space, time and resources for its smooth functioning. The curricular activities planning, execution and monitoring is done by HODs of concerned departments with DQA and overseen by CMQA and Principal directly. These activities are having well defined academic calendar that has set deadlines with starting/ending dates.

Following Table 4.2 lists the number of classrooms, laboratories and tutorial rooms available in the institute for all UG and PG courses which are well satisfying AICTE norms. The average size of the classroom (Fig. 4.3) as well as laboratory in RAIT is 66 sq. m.

Table 4.2: Details of number of classrooms and laboratories.

Sr. No.	Branch	Under Graduate			Post Graduate	
		No. of Classrooms	No. of Labs	No. of Tutorial Rooms	No. of PG Tutorial Rooms	No. of Labs
1	Computer Engineering	6	10	2	1	2
2	Electronics	6	14	2	1	1
3	Engineering Sciences	11	8	1	NA	NA
4	Electronics & Telecommunication	6	10	2	1	1
5	Instrumentation	5	9	2	1	1
6	Information Technology	5	10	2	1	1

Fig. 4.3: Typical classrooms in RAIT.

All efforts are being made to create an excellent physical ambience for the faculty in terms of adequate research, computing facilities and allied services required for meaningful teaching-learning environment. All the laboratories of the constituent units are fully equipped with sophisticated laboratory instruments and with the state of art facilities. All the classrooms are provided with LCD projectors and laptops with audio facility. Auditoriums and seminar halls are also equipped with audio/video equipment.

There are 3 seminar halls (Fig. 4.4), 3 conference halls (Fig. 4.5) within the RAIT campus and a separate auditorium of capacity 750 (Fig. 4.6) for the purpose of guest lectures for students, faculties as well as parents. Each department has 2 tutorial rooms for tutorial sessions (Fig. 4.7).

Fig. 4.4: Seminar hall.

Fig. 4.5: Conference hall.

Fig. 4.6: Auditorium.

Fig. 4.7: Tutorial room.

Each department in RAIT has well equipped laboratories. The department wise details are given in Table 4.3. The laboratory space and equipment are adequate for the students to have active participation to learn firsthand.

Table 4.3: Details of laboratories.

Sr. No.	Department	Laboratory Number	Laboratory Name	Area (sq.m)
1	Computer Engineering	501 A	PG Lab 1	33
2		513 A	Project Lab	66
3		513 B	Intelligent System Lab	66
4		516 A	Network and Security Lab	66
5		516 B	Microprocessor Lab	66
6		517	Computer Graphics Lab	66
7		518	Software & Design Lab	66
8		519	Database & Data mining Lab	66
9		520	Programming Lab	66
10		521	Server room	33
11		522	PG Lab 2	33
12		012 B	E-yantra Lab	66
13	Electronics	411 A	Digital Electronics Lab	66
14		411 B	Analog Electronics Lab	66
15		408 A	Control Lab	66
16		408 B	Power Electronics Lab	66
17		413 A	Basic Communication Lab	66
18		413 B	Advance Communication lab	66
19		205	VLSI Lab	66
20		118	Project Lab	66
21		211 A	Basic Electronics Lab	66
22		211 B	Integrated Circuit Lab	66
23		008 A	Basic Electrical & Electronics Engg Lab.	66
24		008 B	Machines Lab	66
25		012 A	E-yantra Lab	66
26		204	Signal Processing Lab	66
27		401 A	PG Lab	66
28	Engineering Sciences	113 A,B	Physics Lab	132
29		002 A,B	Chemistry Lab	132
30		013 A, B	Engineering Mechanics Lab	132
31		212 A	AutoCAD Lab	68
32		212 B	Language Lab	68
33		201 A	Microprocessor Lab	66
34		201 B	Microcontroller Lab	66

35	Electronics and Telecommunication	202 A	Signal Processing Lab	66
36		202 B	Image Processing Lab	66
37		208 A	Analog Electronics Lab	66
38		208 B	Digital Electronics Lab	66
39		308 A	Basic Communication Lab	66
40		308 B	Advanced Communication Lab	66
41		311 A	Antenna and Radar Lab	66
42		311 B	TV, Video Lab	66
43		117 B	PG Lab	66
44	Instrumentation	111 A	Transducer Lab	66
45		111 B	Basic Electronics & Integrated Circuit Lab	66
46		112 A	Analytical and Biomedical Lab	66
47		112 B	Project Lab	66
48		112 C	Computation Lab	66
49		108 A	Control System Lab	66
50		108 B	Automation Lab	66
51		011 A	Process Control Lab	66
52		011 B	Process Instrumentation Lab	66
53		012 C	PG Lab	66
54	Information Technology	601 A	PG Lab	66
55		613 A	Project Lab	66
56		613 B	Computer Simulation Lab	66
57		616 A	Database Lab	66
58		616 B	Data Mining Lab	66
59		601 B	Research Lab	66
60		601 B	Programming Lab	66
61		618	Software Testing Lab	66
62		619	Cloud Computing Lab	66
63		620	Computer Graphics Lab	66
64		621	Server Room/Research Lab	30

Fig. 4.8 shows typical layout usage pattern of laboratory within RAIT.

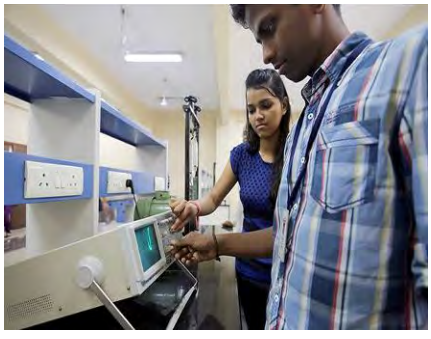



Fig. 4.8: Typical RAIT laboratory.

RAIT is blessed by a large botanical garden within its campus. An herbal garden of area 1250 sq. m with many rare species of plants forms the center of attraction and has more than 50 varieties of plants reared in it under controlled environment. Fig. 4.9 gives a glimpse of the garden.

Fig. 4.9: Botanical gardens.

The facility such as webinar based learning classroom is made available to the students and faculty. 24x7 uninterrupted power supply, broadband connectivity, and above all 24x7 security to the campus is also provided. Online library, adequate laptops are made available to enhance teaching, learning as well as research in the institute. ICT smart boards help to make lectures available online if a student misses any lecture.

Digital board is a technique deployed since 2012 at RAIT (Fig. 4.10). Faculty member can save and reuse the lectures and students can download the running notes prepared

through digital ICT smart boards as and when required. Classrooms with virtual connectivity are made available to provide world class teaching learning (Fig. 4.11).

Fig. 4.10: Use of digital board. **Fig. 4.11: Virtual classroom.**

For the co-curricular activities (Fig. 4.12) the students (assisted by faculty representatives) are given a free hand in planning and execution of these activities, some of which are listed in Table 4.4:

Table 4.4: Details of co-curricular activities.

Sr. No.	Organization	Activity
1	RAIT sports	Stamina, EPL, CPL, Olympia
2	RAIT-Kalaraag	Kalamahotsav
3	IEEE – RAIT	Whizion, Inventia
4	IETE – RAIT	HERTZ, Technova, Ignite
5	ITSA – RAIT	Techware, Aspire
6	ISA – RAIT	Genesis, Niyantran
7	CSI – RAIT	Techknow, Techmate
8	ISTE – RAIT	Innovision, Technozion
9	SUC	Horizon, Shiv Jayanti, Ganesh Mahotsav, Teachers' Day, Tie Day, Saree Day
10	Motif	Entrepreneurship
11	Wall	Institute Magazine
12	Social Wing RAIT	Awareness drives, Environmental activities

D. Y. Patil Sports Academy (DYPSA) encourages the students to utilize all the resources available in the campus. RAIT organizes **Stamina** which is a 3-day Intra RAIT sports tournament that sees good participation from the students. The **SUC (Student Union Council)** committee is the bridge between the institute authorities and the student community. Students look forward to all the events organized by SUC like Teachers' Day, Tie Day, Traditional Day, Rose Day etc. Festivals like Ganesh Chaturthi and Gokulashtami are celebrated with gusto. They also organize **Horizon** which is a top cultural festival in the city. **Kalaraag** has consistently proved its mettle in performing art by winning accolades in folk dances, skits, theatre and other forms

of art organized by UoM and other state level events. So professionally it has presented itself that, it has links in the Marathi theatre and cinema world.

Motif (The Entrepreneurship Development Cell) aims to provide a conduit by which students can access relevant entrepreneurial resources, network with prominent entrepreneurs, share ideas and nurture them. The **Wall** is the annual magazine of RAIT and has completed 11 years of existence. It is a mouth piece of RAIT'ians and a platform for budding writers, poets and thinkers. **Social Wing** undertakes activities like – teaching underprivileged children, awareness drives and various environmental activities.

IEEE-RAIT is the student chapter of IEEE. During an academic calendar they organize the tech fests named Whizion, 360 Degrees and three annual publications named Brackets.

Computer Society of India (CSI)-RAIT is the student chapter of CSI. During an academic calendar they organize tech fests named Techmate, Techknow and three annual publications named Cozine, Technophilia, Decrypt.

ITSA - RAIT is the student chapter of Department of Information Technology. During an academic calendar they organize Aspire/Techware events. ITSA publishes news letter as a title 'Kyros'.

ISA-RAIT is the student chapter of Department of Instrumentation engineering. During an academic calendar they organize tech fests named Genesis, Niyantran and three annual publications named ISAAC magazine, Automatrix and Insight newsletters.

Fig. 4.12: Co-curricular activities.

b) Extra–curricular activities – sports, outdoor and indoor games, gymnasium, auditorium, NSS, NCC, cultural activities, Public speaking, communication skills development, yoga, health and hygiene etc.

The institute has a separate sports complex which includes second largest cricket stadium in the country, international standard swimming pool (Fig. 4.13), gymnasium (Fig. 4.14), 4 badminton courts and 6 tennis courts (Fig. 4.15).

Fig. 4.13: Swimming pool.

Fig. 4.14: Gymnasium.

Fig. 4.15: Badminton and squash court.

Cultural Activities: Cultural department is established with a designated coordinator to facilitate all the cultural/extra-curricular activities of the institute. Seminar halls and auditorium are made available for performing art events (Fig. 4.16). Horizon is the cultural event organized by RAIT every year in the even semester attracting not only RAIT student participants, but also a huge crowd from other institutes in Mumbai.

Fig. 4.16: Cultural activities.

Social wing RAIT: Social Wing was formed in September, 2013 and has undertaken activities (Fig. 4.17) like – teaching underprivileged children, awareness drives (through seminar/street plays), various environmental activities (clean up drives, promoting renewable energy resources etc). The social wing at RAIT is open for everyone who wants to volunteer for many such activities. The fortunate ones can remove the barrier between the privileged and the underprivileged, and get to be a part of spreading happiness.

Fig. 4.17: Social wings activities.

BioVision: BioVision is an alternate energy resource project at RAIT with Bio CNG Car (as can be seen from Fig. 4.18) and data logging experimentation facility. The project involves modifying the petrol vehicle to run on Bio CNG, produced in-house by using kitchen waste by hostels and other organic waste, thereby show casing the need and efficiency in using the alternate abundantly available resource. This idea goes well with Indian rural setting.

Fig. 4.18: BioVision product.

For communication skill development, institute runs courses conducted by various prestigious training institutes. Technical festivals (TechFests) organized by different departments invite skilled persons from 'TIME' and other industries to give talks for improving interview skills, presentation skills and group discussion techniques. Students can judge themselves and hence improve their public speaking skills through competitions and feedback system. Training and Placement Office (TPO) conducts a workshop for the final year students to gear them up for their campus placements including aptitude tests, group discussions, and mock interviews. In addition to this, institute has language laboratory which helps students to develop their communication skills.

Institute strongly believes that yoga offers the immense benefits in uniting the body, mind and breath. RAIT has conducted several wellness and stress removal programs, yoga workshops for benefit of students from the reputed social groups such as Vivekananda Society, Brahmakumari's organization, etc. (Fig. 4.19).

Fig. 4.19: Enhancement workshop conducted in collaboration with Brahmakumaris.

4.1.3 How does the institution plan and ensure that the available infrastructure is in line with its academic growth and is optimally utilized? Give specific examples of the facilities developed/augmented and the amount spent during the last four years (Enclose the Master Plan of the Institution/campus and indicate the existing physical infrastructure and the future planned expansions if any).

- Common facilities like central library, first year laboratories and departmental library, seminar halls, auditorium are utilized by all the departments.
- Library is working for 10 hours a day with internet facility. During the examination season, the working hours are extended from 8 am to 8 pm.
- Corridors and open spaces are utilized during technical festivals for setting up different hubs.
- Tents are set up outside the building area for project competitions.
- All classrooms are digitally equipped so that teaching-learning process becomes interactive and effective. Each classroom has LCD projector, digital board, Wi-Fi and audio facility. Some classrooms are designed like Amphitheatre for better visibility.
- Master plan of the institute and floor-wise structure details are included in Appendix A (Fig. A.1-A.7 at the end of Criterion 4). Future plan is to convert the museum space marked in the master plan into library for better utilization.

Table 4.5 enlists ME and PhD programs, second shift of BE programs started in last 4 years and throws light on how infrastructure has been developed to accommodate increased number of students and new programs.

Table 4.5: Details of new programs started in last 4 years.

Sr. No.	Program	Department	Year of beginning	Infrastructure (Classrooms, Laboratories)	Budget (In Lakhs)
1	Second shift for BE program	Computer Engineering	2013-14	Existing infrastructure	As per the departmental budget
		Electronics	2014-15		
		Electronics & Telecommunication	2012-13		
2	ME program	Electronics & Telecommunication	2011-12	PG Classroom 119 A PG Lab 119 B	25
		Instrumentation	2012-13	PG classroom 112 D Computational Lab 112 C	20
		Information Technology	2012-13	PG Classroom 617 C PG Lab 601 A	20
3	PhD program	Computer Engineering	2012-13	E-yantra R & D Lab 012 B	9
		Electronics	2012-13	E-yantra R & D Lab 012 A	15.5
		Instrumentation	Applied	E-yantra R & D Lab 012 C	–

The amount spent for last 4 academic years on academics, administration and R & D activities is listed in the Table 4.6. The creation of additional space and up-gradation of laboratory space, etc. are shown as a part of administration expenses.

Table 4.6: Total budget (in Cr.).

	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Academics	3.5	3.3	2.95	3.52	4.64	5.1
Administration	13.6	14.37	16.38	19.98	27.83	29.0
R & D	0.48	0.89	0.96	1.07	1.33	1.75
Total	17.61	18.54	20.29	24.57	33.80	35.85

Fig. 4.20 indicates the growth in academics, Administration, and R&D from year 2010 to 2015.

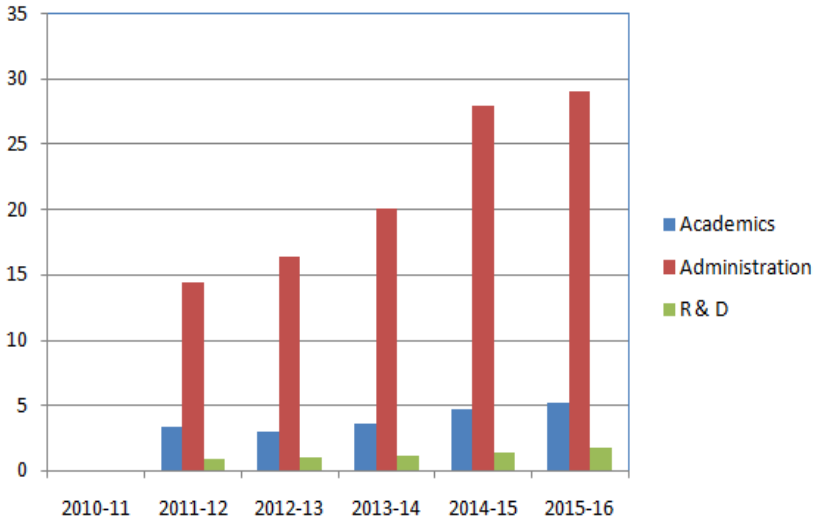


Fig. 4.20: Total budget.

4.1.4 How does the institution ensure that the infrastructure facilities meet the requirements of students with physical disabilities?

Institute has provided barrier free environment to the differently-abled students and staff. The infrastructure facilities meet the requirements of students/staff with disabilities with provision of ramps & lifts in the campus building. Two active lifts with lift-safety guards (Fig. 4.21) are available for students coming with wheelchairs to easily access their classrooms and labs. Wheelchairs are made available to them so that they can attend all the lectures and laboratories on all the floors with ease and comfort. In case of emergencies, stretcher facility aids to get early access to medical facilities (Fig. 4.22).

Fig. 4.21: Two active lifts in RAIT with safety guards.

Fig. 4.22: Ramp, wheel chair and stretcher facility.

Around 50,000 e-books are available in central and departmental libraries to the students and staff so that physically challenged students can easily access those resources. ICT boards are now made available so that lectures can be easily saved and then made available any time later to students especially those with physical disabilities.

4.1.5 Give details on the residential facility and various provisions available within them:

- Hostel Facility–Accommodation available NA
- Recreational facilities, gymnasium, yoga center etc. NA
- Computer facility including access to internet in hostel NA
- Facilities for medical emergencies NA
- Library facility in the hostels NA
- Internet and Wi-Fi facility NA
- Recreational facility-common room with audio-visual equipments N A
- Available residential facility for the staff and occupancy NA
- Constant supply of safe drinking water NA
- Security NA

4.1.6 What are the provisions made available to students and staff in terms of health care on the campus and off the campus?

The institute has a first-aid room for medical inspection purpose. Under the D. Y. Patil group of institutes, medical institute & hospitals are available in the premises to cope with the health related support services (Fig. 4.23). 15% concession is offered to RAIT staff for medical facilities. Also a dental hospital is available in the campus to enhance medical services.

National Insurance Company Ltd. provides Group Insurance (YuvaRaksha) for students of RAIT. YuvaRaksha policy has provided the following facilities:

- Sum insured of Rs. 2,00,000/- per student with annual premium of Rs. 47/- per student.
- Reimbursement of 100% medical expenses on hospitalization due to accidents.

Fig. 4.23: Medical facilities.

4.1.7 Give details of the Common Facilities available on the campus–spaces for special units like IQAC, Grievance Redressal unit, Women's Cell, Counselling and Career Guidance, Placement Unit, Health Centre, Canteen, recreational spaces for staff and students, safe drinking water facility, auditorium etc.

A separate space is provided for IQAC (QMS-RAIT) (Fig. 4.24), First-aid cell (Fig. 4.25), Seminar Halls (Fig. 4.26), Women's cell, Counseling and Career Guidance, Grievance Redressal unit (Fig. 4.27), Training and Placement Unit (4.28). Filters and coolers are installed on all floors for safe drinking water (Fig. 4.29). The maintenance of filters and coolers is carried out periodically. D. Y. Patil auditorium with capacity of 750 is available in campus. In addition to this, institute has seminar halls with hi-tech audio video systems. RAIT has a spacious canteen with a variety of food facility and peaceful and clean ambiance (Fig. 4.30).

Fig. 4.24: QMS-RAIT.

Fig. 4.25: First aid cell.


Fig. 4.26: Seminar halls.


Fig. 4.27: Grievance redressal unit. Fig. 4.28: Training & Placement cell


Fig. 4.29: Drinking water facility. **Fig. 4.30: Canteen.**

4.2 Library as a Learning Resource

4.2.1 Does the library have an Advisory Committee? Specify the composition of such a committee. What significant initiatives have been implemented by the committee to render the library, student/user friendly?

RAIT Library (Fig. 4.31) has an Advisory Committee since 2005. Current composition consists of Professor as the chairman, Librarian as convener and two faculty members from the advisory committee of each department, to look after library developmental activities.
List of Advisory Committee members for the year 2015-16 is shown in Table 4.7 below.

Table 4.7: Library Advisory Committee members (2015-16).

Sr. No.	Name	Membership
1	Dr. Vishwesh Vyawahare	Chairman
2	Dr. Siuli Das	Deputy Chairman
3	Mr. Satyawan Sawant	Convenor
4	Mrs. Vijaylakshmi Bittal	Member
5	Mrs. Nikita Kulkarni	Member
6	Mrs. Rajashree Shedge	Member
7	Mrs. Trupti Patil	Member
8	Mr. Sachin Umbarkar	Member
9	Mrs. Sushma Kodagali	Member
10	Mrs. Rajashri Patil	Member
11	Mr. Chandrakant Gayakwad	Member
12	Mrs. Poonam Waje	Member
13	Mr. Mahesh Parihar	Member
14	Mr. S. D. Talokar	Member
15	Mr. Vijay Patil	Member

Based on curriculum and inputs received from students, faculty members intimate all the requirements related to library to HODs who then forward it to library committee. The decision is taken and implemented by the library committee.
Following are the recommendations of the library committee for the year 2015-16:

- To use a professional software for issue access and return.
- To update digital library computers with latest 10 Lenovo type higher range systems.
- To enhance volumes to 1 L in two years.
- To update departmental library to contain books for GATE and other competitive examinations.
- To have general and motivational books in the library.
- To enhance library working hours to suit Saturdays and examination days.
- To convert museum into world class library for RAIT.
- To start efforts for the creation of SciTech exhibition medium to inculcate scientific thinking amongst students.

Librarian procures the books as per the recommendations of the committee from time to time. The significant initiatives implemented by the committee to render the library user friendly as listed below:

- Users are updated with information regarding check in, check out, renewal, overdue reminders.
- Users can view their account through WEB OPAC of **SLIM 21** Library Management System.
- Students who require books on a relatively permanent period for the entire semester are provided the facility of loaning 2 books per semester through the RAIT Book Bank Scheme subject to availability.
- Library working timings are extended to 8 pm during the examinations.
- Any suggestions/grievances dropped in suggestion box at library are analyzed and action is taken towards them.
- Students can also access publications and past question papers.
- Digital Library has been set up with high-end systems connected with high speed network connectivity to access all e-resources and video streaming e-learning program.
- Students and researchers can access large number of e-books and NPTEL resources through library network system.

Fig. 4.31: Central library, departmental library, digital library and journals, magazines.

4.2.2 Provide details of the following:

- Total area of the library (in sq. m.) : 450
- Total seating capacity : 250
- Working hours (on working days, on holidays, before examination days, during examination days, during vacation)

- On working days : 8.30 am to 6.30 pm
- Examination Preparation (30 days) : 8.30 am to 8.30 pm (Open on Saturdays & Sundays)
- During examination days : 8.00 am to 8.00 pm
- During vacation : 8.30 am to 6.30 pm

- Layout of the library (individual reading cartels, lounge area for browsing and relaxed reading, IT zone for accessing e-resources)
  - Individual reading cartels : Yes
  - Lounge area for browsing and relaxed reading : Yes
  - IT zone for accessing e-resources : Yes

4.2.3 How does the library ensure purchase and use of current titles, print and e-journals and other reading materials? Specify the amount spent on procuring new books, journals and e-resources during the last four years.

- Based on the inputs from students and their requirements and based on the curriculum, teaching faculty decides and intimates requirements to HODs. HODs then consolidate these requirements and intimate to the library committee.
- Dean (R & D) consolidates requirements of researcher community and informs library committee regarding e-journals and printed journals.
- AICTE and UoM provide list of textbooks, references and digital library subscriptions.

Table 4.8 shows the details of purchase of reference books, journals and other reading materials.

Table 4.8: Library holdings.

Library holdings	2011-12		2012-13		2013-14		2014-15	
	No.	Total Cost	No.	Total Cost	No.	Total Cost	No.	Total Cost
Textbooks	2720	8,06,462	1536	4,86,156	2118	8,73,776	3539	13,83,181
Reference Books	140	83,860	85	50,915	122	7,378	190	1,13,810
Journals	62	62,580	62	71,150	63	96,970	61	1,77,280
e-resources	5	9,26,612	4	10,87,442	3	12,85,649	3	13,58,368
Any other (specify)	5 News papers, 2 magazines	5,475	6 news papers, 4 Magazines	12,850	6 news papers, 4 Magazines	12,850	6 news papers, 6 Magazines	15,000

Fig. 4.32 shows the flow of purchase of textbooks, reference books, journals and other reading materials in the central library.

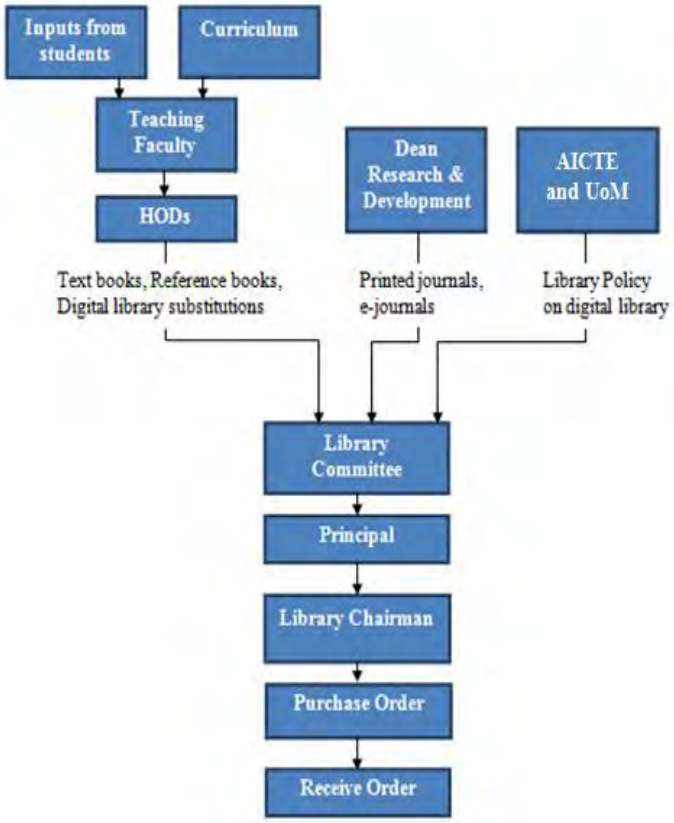


Fig. 4.32: Flow of purchase procedure in central library.

4.2.4 Provide details on the ICT and other tools deployed to provide maximum access to the library collection?

OPAC (Online Public Access Catalogues):	End users can access information through web OPAC (of **SLIM 21)**. The library has prepared database of books in English Language. As soon as new books are purchased and processed, their bibliographic description is added in the OPAC. One terminal is dedicated for the readers to use OPAC for their search of books. It can be accessed through Internet/Intranet, to check library Database (Collection).
E-journals can be accessed through the Library:	• Science Direct (Elsevier) – available online. • IEEE – available online. • Springer – available • NPTEL Lecture Videos – 3,331 Videos are available on sever.
Featured searching tools to search articles in multiple databases:	No
Library Software:	Yes, It is available. Students and faculties can scan available books, issue and return is done through software.

In-house/remote access to e-publications:	In-house access to e-publication is available through IP authentication and Password.
Library automation:	Library is automated with **SLIM 21** software for issue, return and accounting.
Total number of computers for public access:	12
Total number of printers for public access:	02
Internet bandwidth/speed:	135 MBPS
Institutional Repository:	IR using (D-space) Digital Library Software 2938 titles have been uploaded to server.
Content management system for e-learning:	NPTEL Video streaming of total 3,331 courses has been uploaded to server. Forty classrooms have video projector facility to get expose of video conference facility.
Participation in Resource sharing networks/consortia (like Inflibnet):	No

4.2.5 Provide details on the following items:

Average number of walk-ins:	300 per day
Average number of books issued/returned:	200 per day
Ratio of library books to students enrolled:	1:10
Average number of books added during last three years:	1000 per year
Average number of login to OPAC:	100 per day
Average number of login to e-resources:	100 per day
Average number of e-resources downloaded/printed:	300 per day
Number of information literacy trainings organized:	2
Details of "weeding out" of books and other materials:	0.1 % avg/year

4.2.6 Give details of the specialized services provided by the library

- **Journals:** RAIT has journal subscription given in Table 4.9.

Table 4.9: Journal subscription details.

Year	Journal Name
2012-13	IEEE, Springer, Science Direct, McGraw Hill, ASTM
2013-14	IEEE, Springer, Science Direct, McGraw Hill, ASTM, Elsevier
2014-15	IEEE, Springer, Science Direct
2015-16	IEEE, Springer, Science Direct

- **Reference:** RAIT has leading printed/online reference collection; Resources include special collection of subject references, competitive exam books, CDs/DVDs.
- **Reprography:** Yes
- **ILL (Inter Library Loan Service):** Yes
- **Information deployment and notification (Information Deployment and Notification):** Alerts for users regarding all transactions and new arrivals is provided through notice board and email.
- **Download:** Providing downloads of e-resources and institutional repositories.
- **Printing:** Available on request.
- **Reading list /Bibliography compilation:** Displayed shelf list with classification numbers.
- **In-house/remote access to e-resources:** Yes.
- **User orientation and awareness:** Student orientation is conducted at the beginning of the academic year.
- **Assistance in searching Databases:** Library staff assists the users in searching and downloading of library resources as per the requirements.
- **INFLIBNET/IUC facilities:** No.

4.2.7 Enumerate on the support provided by the Library staff to the students and teachers of the college.

- Support to students:
  - Inform students about new arrivals of textbooks, reference books and other study materials through library notice boards and email.
  - Display the new catalogues/pamphlets of publishers on the referral counters.
  - Help students in searching, issuing and returning of books, enrolling in the wait list, getting the books from other libraries, etc.
  - Provide reprography facilities to students in preparation of study materials.
  - Assist the students in searching, login, download and print of the online subscribed journal material.
  - Download running notes prepared through digital ICT boards.
- Support to faculty members:
  - Consolidate and categorize the textbooks, reference books, university question papers, etc.
  - Display new catalogues/pamphlets of publishers on the referral counters.
  - Coordinate with library committee and HODs in procurement of books, periodicals and journals.

- Support to researchers:
  - Download research papers as per requirements.
  - Provide research paper companion.

4.2.8 What are the special facilities offered by the library to the visually/physically challenged persons? Give details.

- Staff at the library is trained to handle special requirements of handicapped personnel and the lifts and wheel chairs are provided.
- Separate lady attendant is provided to assist handicapped girl students.
- The classmates/guardian of physically handicapped students can get the books issued on his/her behalf.
- The e-resources facility is available to get e-books/e-manuscript subscriptions directly to student e-device.
- The institute has protected Wi-Fi facility to get the access of e-resources. Also NPTEL video lectures are managed by the library database. Around 3,331 NPTEL video lectures are available on server to get the exposure of knowledge to the physically challenged students through audio and video channels.
- Books are issued for entire semester for handicapped students.
- Irrespective of category, the needy handicapped students are provided Book Bank facility.

4.2.9 Does the library get the feedback from its users? If yes, how is it analyzed and used for improving the library services. (What strategies are deployed by the Library to collect feedback from users? How is the feedback analyzed and used for further improvement of the library services?)

- Library gets its feedback from three different stakeholders viz students, researchers, and faculty.
- Feedback boxes are provided at each floor and at library. Students provide feedback through class counsellors and through feedback register kept at library.
- Faculty members provide feedback through HODs and also through Dean (R & D).
- The Chairman, Library Committee takes into account the feedback received once in a semester and the librarian consolidates the list for procurement or for augmenting the facilities.
- The Library committee analyses such suggestions/complaints and corrective plans are suggested for Principal's approval.

4.3 IT Infrastructure

4.3.1. Give details on the computing facility available (hardware and software) at the institution.

- **State of the art computing facilities are available (INTEL Pentium Quad Core, 2GHZ,** 732 Desktops + 64 Laptops. (Institute is on the way of procuring more for research purpose)

500GB HDD, 4GB RAM) Number of systems:	
• **Computer-student ratio:**	1:4
• **Standalone facility:**	Yes
• **LAN facility:**	Yes
• **WiFi facility:**	Yes 135 MBPS Internet Wi-Fi facility
• **Licensed software:**	Yes- MATLAB, LabVIEW, Qualnet, Xilinx, EM^3 Proteus, Windows, Adobe, Rational Rose, Microsoft office, Microsoft Campus License agreement, Adobe Reader license agreement.
• **Number of nodes /computers with Internet facility**	: 780 + 80 Laptops.
• **Any other:**	Special Meeting rooms like Counselors' rooms have large size desktops. Digital Library has large and touch screen display computer systems. For high-end applications and research work i5/i7 work stations (2 Nos) are available.

4.3.2 Detail on the computer and internet facility made available to the faculty and students on the campus and off-campus?

RAIT has more than 830 PCs and laptops. These are distributed among various departments and are integrated through campus wide intranet with access to internet.

- There is a central air-conditioned computer facility of around 150 machines.
- There is a specialized language laboratory and a CAD laboratory for first year and second year students.
- Each department is equipped with own specialized laboratories with adequate computing facilities. These laboratories are also utilized for conducting hands-on training sessions and workshops for students.
- The institute has provided laptops to all the senior teachers and researchers and internet facility at their workplace.
- Laptops with wireless internet connectivity are provided to each department for use by faculty for handling class work.
- Advanced standalone computer systems in the library help students and researchers in accessing Open Education Resource and have helped the faculty members with effective teaching and also to improve quality of research.
- Administration office is equipped with adequate computers for providing efficient and timely services to students and staff.
- Campus-wide internet is available to students for academic and extracurricular activities.

- Kiosks at RAIT provide online services to students in regards to issue of various certificates, railway concessions, TC & Migration, and online payments.

The department-wise deployment of computer systems and internet facility provided are highlighted in the Table 4.10.

Table 4.10: Details of computer and internet facility.

Sr. No.	Department	Desktops	Laptops		Internet Facility
			Research	Teaching & Learning	
1	Computer Engineering	276	10	10	135 Mbps high speed wifi available in the whole campus
2	Electronics	81	5	4	
3	Engineering Science	75	3	3	
4	Electronics and Telecommunication	70	6	5	
5	Instrumentation	45	5	4	
6	Information Technology	200	2	7	

4.3.3 What are the institutional plans and strategies for deploying and upgrading the IT infrastructure and associated facilities?

RAIT has strategized deployment of IT infrastructure by planning to

- Increase the bandwidth of internet facility to 100 Mbps and 100% Wi-Fi campus with more than adequate and satisfactory internet facility to all stake holders.
- Replace old and aged computers and software on a regular basis with upgraded software and hardware.
- Deploy e-governance throughout the institution through expansion of Information Management System and to create paperless office, using cloud computing technology.
- Develop e-learning facilities, digitization of resources of the faculty.
- Develop multimedia based animations/PPT based educational modules for the various courses for better understanding of concepts and fundamentals.

- Provide video conferencing within the campus which is already available through skype/hangouts.
- Make use of studio facility available with RAIT in producing value addition video lectures by faculty and make them available to students for use on internet.
- Increase the number of smart boards for all class rooms so that digitized running notes are made available to students for revision.
- Replace all notice boards with digital notice boards.

- Increase the number of kiosks progressively for enhancing service to students.
- Increase the number of learning videos made by RAIT through webinars.

4.3.4 Provide details on the provision made in the annual budget for procurement, upgradation, deployment and maintenance of the computers and their accessories in the institution (Year wise for last four years).

Table 4.11 enlists the year wise budget regarding procurement and maintenance of computers and accessories.

Table 4.11: Budget for computers.

Sr. No.	Year	Budget (in Lakhs)
1	2011-12	61.41
2	2012-13	34.95
3	2013-14	62.39
4	2014-15	49.78
5	2015-16	65.00

4.3.5 How does the institution facilitate extensive use of ICT resources including development and use of computer-aided teaching/learning materials by its staff and students?

- The individual department develops their course materials through power point presentation & animated videos for use during their lectures.
- All class rooms are smart class rooms, thus facilitating delivery of digital content and also usage of internet and other net based resources.
- Audio-visual learning approach helps students to visualize the concepts.
- Softcopy of many learning resources, lecture materials, e-books are provided to students.
- Online feedback from users of ICT resources for improving teaching-learning process is in operation at RAIT, thus paving the way for improvements.
- Students give seminars on few topics like application areas related to their courses through presentations and videos.
- Smart digital boards help students in obtaining running class notes.
- Campus-wide internet assists students in usage of internet for curricular and extracurricular activities.

4.3.6 Elaborate giving suitable examples on how the learning activities and technologies deployed (access to on-line teaching-learning resources, independent learning, ICT enabled classrooms/learning spaces etc.) by the institution place the student at the centre of teaching-learning process and render the role of a facilitator for the teacher.

- The institution has a large and constantly growing collection of online resources (Fig. 4.33) such as NPTEL, e-journals, e-books, and so on. These e-resources are easily accessible anywhere within the campus at any time. This

enables students to clear out with the basics and also to bridge the gap between textbooks and recent technologies.

Fig. 4.33: Students accessing digital library.

- The institute understands that the teachers are to be reoriented from time to time and encouraged to understand their role as facilitator in activities in addition to teaching. Accordingly webinars are organized regularly by senior faculty using internet and webinar technology (Fig. 4.34).

Fig. 4.34: Webinar facility in RAIT.

- Teachers motivate students to take up challenging problems as projects and help them to turn an idea into a working product by emphasizing on independent learning. Fig. 4.35 shows challenging projects developed successfully by RAIT students.

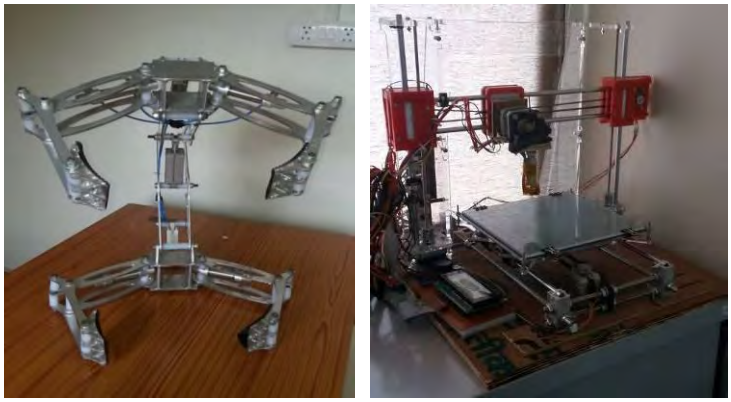


Fig. 4.35 (a): Tree climbing robot. Fig. 4.35 (b): 3-D printer.

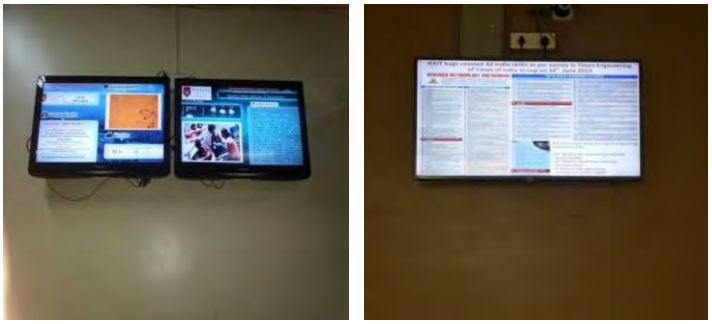


Fig. 4.35 (c): Digital notice board.

- Smart board is a technique deployed in RAIT (Fig. 4.36). The smart arts, charts, figures, shapes can be easily incorporated in teaching-learning process, also the lectures can be saved for reuse purpose. They can be later downloaded by the students absent for those lectures. Thus it is not only beneficial for students but for faculty members as well.

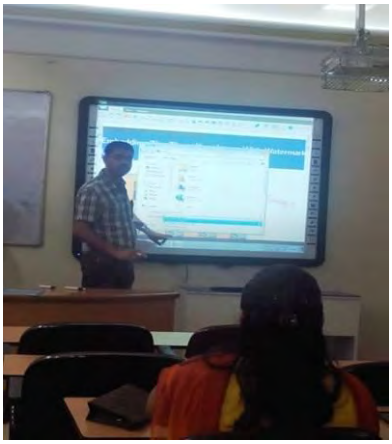


Fig. 4.36: Use of smart board.

4.3.7 Does the Institution avail of the National Knowledge Network connectivity directly or through the affiliating university? If so, what are the services availed of?

RAIT is not connected to the National Knowledge Network directly or through the affiliating UoM. RAIT enjoys high speed broadband internet connectivity, 135 MBPS, for achieving network connectivity for enhanced teaching and learning experience.

4.4 Maintenance of Campus Facilities

4.4.1 How does the institution ensure optimal allocation and utilization of the available financial resources for maintenance and upkeep of the following facilities (substantiate your statements by providing details of budget allocated during last four years)?

The institute always ensures the immediate allocation of financial resources for maintenance and upkeep of major facilities like furniture, equipments, computers, all kinds of teaching aids, etc. It is made sure that the resources are optimally utilized by the respective departments by compulsorily entering into maintenance contracts for all critical equipments.
Maintenance Contracts for

- Maintenance of computer and internet facilities.
- Power supply, lifts, water coolers, ACs, etc.
- Software services.
- Maintaining hygiene and cleanliness in the campus.

Table 4.12 shows budget allocated in last 4 years.

Table 4.12: Budget allocation (in Rs.) for major infrastructure facilities.

Sr. No.	Facilities	2011-12	2012-13	2013-14	2014-15
1	Furniture	8,81,586	76,713	51,18,641	31,64,838
2	Equipment	11,85,140	1,75,803	3,84,001	4,28,155
3	Computers	1,06,09,745	76,713	69,99,343	20,69,606
4	Vehicles	2,01,653	2,56,822	5,66,871	9,55,000
5	Electrical fittings	8,51,519	11,78,186	17,47,653	1,28,75,848
6	Books and teaching aids	8,90,320	6,15,401	9,79,661	15,10,894

4.4.2 What are the institutional mechanisms for maintenance and upkeep of the infrastructure, facilities and equipment of the college?

- Separate departments constantly work for maintaining and repairing electrical lines, equipments, buildings, civil works, transport and computing services.
- Lab equipments are serviced by the concerned manufacturers and service personnel/lab technicians of departments.
- Wherever necessary, Annual Maintenance Contract (AMC) is also in practice.
- Lastly, there is a dedicated team of personnel of all kind of maintenance staff on the payroll of the institute, duly supervised and guided by Administrative Officer (AO)/Assistant to AO (AAO) of the institute.

4.4.3 How and with what frequency does the institute take up calibration and other precision measures for the equipment/ instruments?

- Electronic, Electrical and Mechanical equipments are taken up for calibration and precision measurement regularly or as and when required.
- The diagnostic equipments are calibrated regularly for precise measurement.
- Detected calibration faults are attended immediately through repair by the concerned vendor.

4.4.4 What are the major steps taken for location, upkeep and maintenance of sensitive equipment (voltage fluctuations, constant supply of water etc.)?

- Generators, power supply units (Fig. 4.37) and power backups (UPS) are kept in an isolated area to prevent any damages due to unintended interference.
- Safety precautions are listed for each machine and other equipments in the laboratories for the sake of safety operation.
- During the power cuts, electrical supply is ensured in the campus by the operations of generators with restoration time of 3 minutes. Also voltage stabilizers are provided to majority of electrical equipments to stabilize the voltage fluctuations.
- In-house ground water supply treated by RO plant is kept in the institute to provide portable constant drinking water supply to students and faculty members**.**

Fig. 4.37: Generator, power supply unit.

Appendix - A

Floor wise master plan of campus is given in Fig. 1.

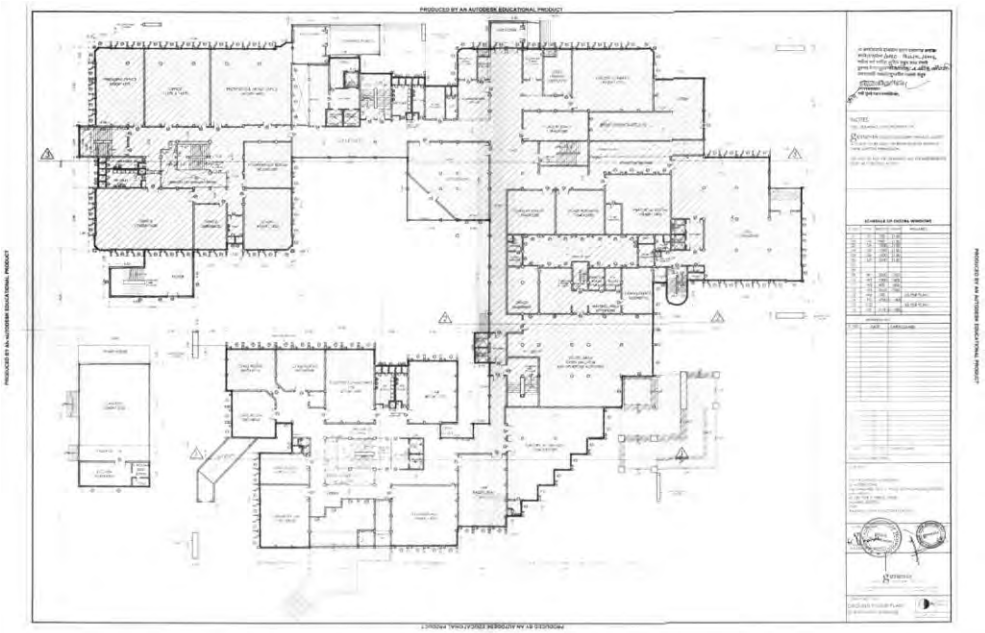


Fig. A.1: Ground floor plan.

Fig. A.2: First floor plan.

Fig. A.3: Second floor plan.

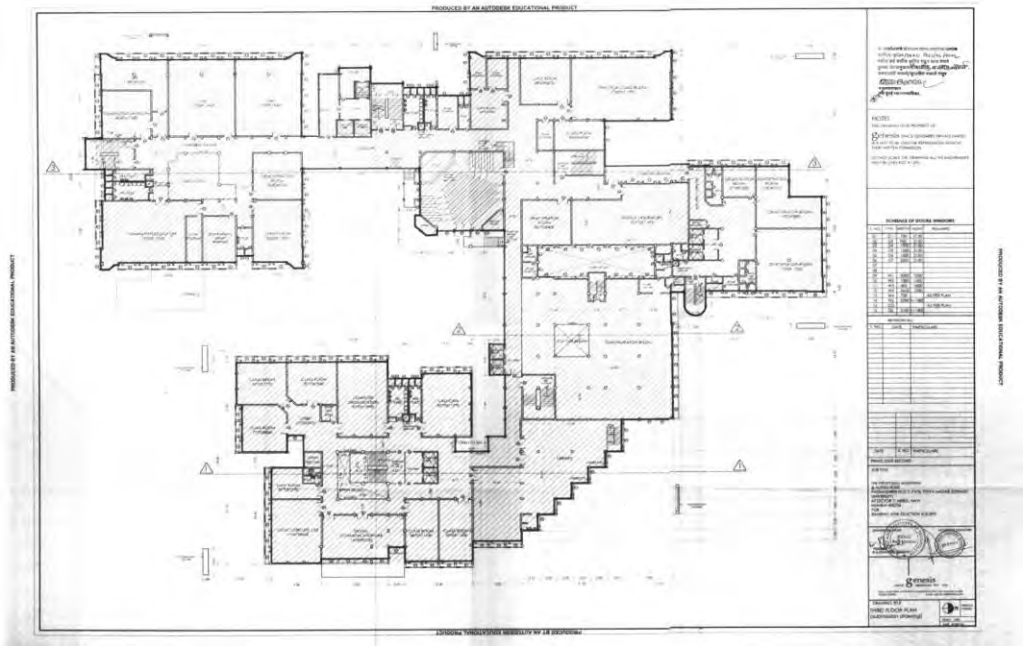


Fig. A.4: Third floor plan.

Fig. A.5: Fourth floor plan.

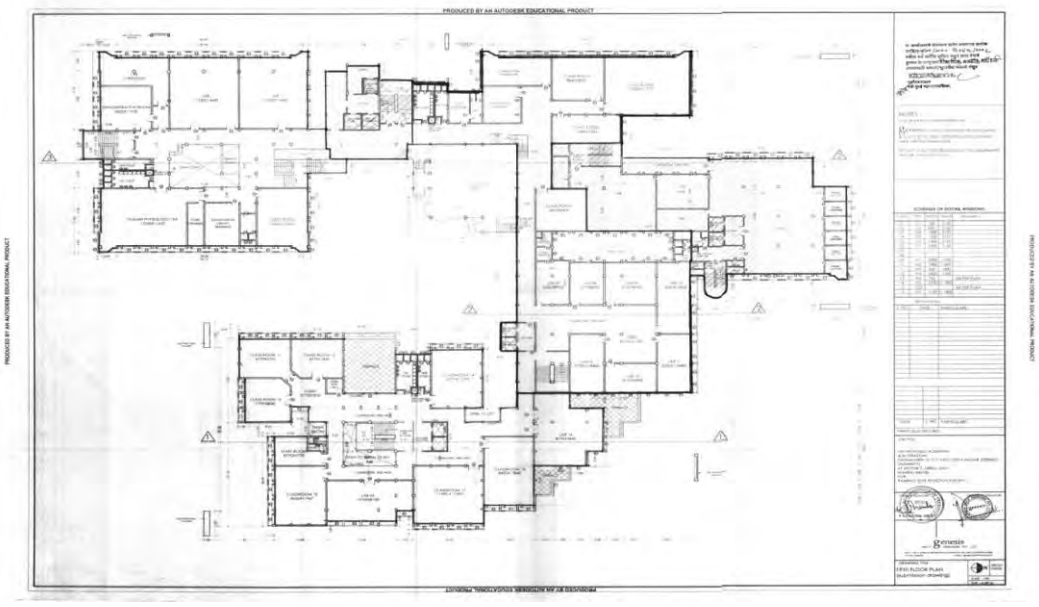


Fig. A.6: Fifth floor plan.

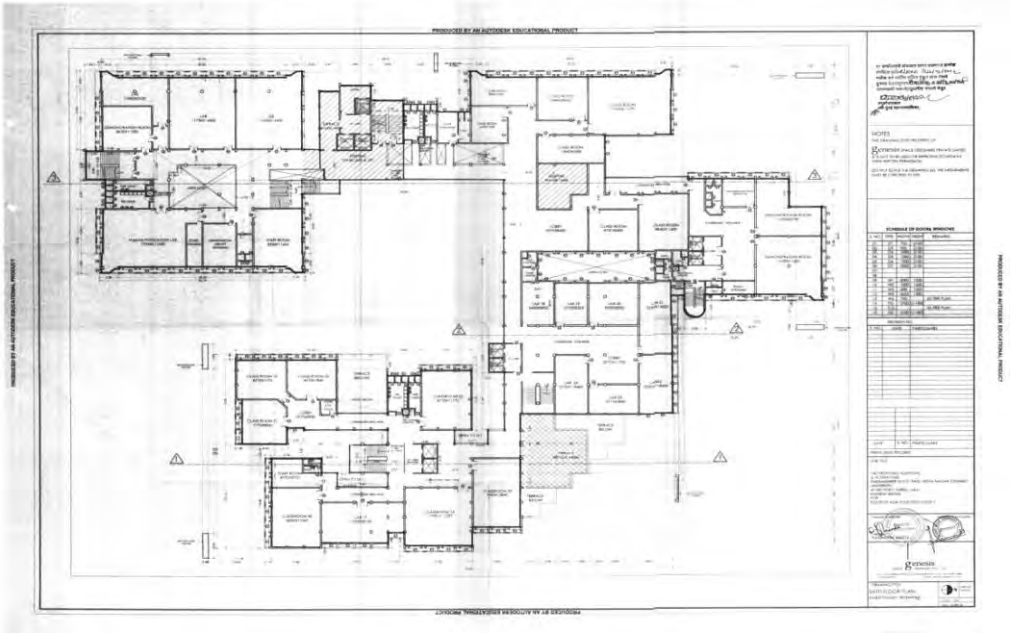


Fig. A.7: Sixth floor plan.

Criterion V

Student Mentoring and Support

D Y PATIL
RAMRAO ADIK INSTITUTE OF TECHNOLOGY
NAVI MUMBAI

Criterion V: Student Monitoring and Support

5.1 Student Mentoring and Support

5.1.1 Does the institution publish its updated prospectus/handbook annually? If 'yes', what is the information provided to students through these documents and how does the institution ensure its commitment and accountability?

The Institute publishes the updated prospectus every year. It includes all the necessary information for the students seeking admission into the Institute.
The Prospectus contains information about:

- The profile of the D Y Patil group.
- Message from President Ramrao Adik Educational Society.
- Message from Principal.
- Vision and Mission statements of the Institution.
- Programmes offered.
- Admission Process.
- Rules and regulations.
- Scheme of examination.
- Details of infrastructure.
- Student activities.
- Placement records.
- Department Details.
- Details of Anti Ragging, Discipline and woman"s grievance redressal committee.
- Projects and initiatives.
- List of faculty members.
- List of various academic and administrative section with contact persons.

The fresh batches of students are provided with prospectus. The other source of information is available on our Institute website: **www.rait.ac.in** where the necessary information is available for all the stake holders.Training and Placement cell publishes brochure for companies which gives glimpse of student profile and previous year placement record for benefits of companies willing to recruit students from our institute.
RAIT has several student bodies which publish their brochures and newsletters to put forth their ideas and policies concerning their area of operation. The publications brought out by student bodies are given in Table 5.48
RAIT has **digital notice boards** for every floor on which every subject teacher publishes course objectives and scheme of evaluation for individual subjects. Subject teachers also publish Digital Course File **(DCF)** which ensures uniform term work, calculation and internal assessment of students.
To ensure its commitment and accountability, Management and Principal hold regular meetings with faculty to communicate vision & mission and related policies and accelerate development in the institute. There is **Quality Assurance** of all programmes conducted by RAIT. To ensure high quality teaching learning RAIT follows details as laid out in the **Quality Assurances and Management System (QMS)** document which specifies RAIT"s quality policy, Institutional mechanism for

internal quality checks, work flow, Deployment mechanism for Quality assurance and Academic audit procedures followed by the Institute.
All academic records are digitally maintained, every course has separate **DCF** which have details about course coverage, **Program Outcomes (PO) and Course Outcomes (CO),** Students records like attendance, test marks, Assignment marks. It also gives mapping of students‟ performance with COs and POs. **CO-PO Achievement** is calculated based on student assessment.
The institution not only makes commitments on paper, it has created **anti-ragging committee** and anti-ragging squad to make this campus ragging free. **Women grievance redressal cell** is created specially to address special issues pertaining to women employees and students, sexual harassment and gender discrimination.
Mentorship is the specialty of this institution. For each batch the institute designates a teacher, called **counsellor**, to take care of problems relating to academics and otherwise at an individual level. Hence there is a cordial relationship among teachers and students in our institution. This ensures entire organization works in synchronization to meet its commitment.
Apart from academic commitment institute is also committed towards **career of students** and **employment even in the most stringent condition**. Our training and placement cell works around the year for generating more employment opportunities and also encouraging and guiding students for **higher studies**. A few of the training courses conducted by the training and development cell of RAIT is shown in Table 5.7 and Table 5.8.
Institute is also committed towards society. Our social wing conducts various events besides **Swatch Bharat** cleanliness drive. We regularly do green audits and make sure our carbon footprint is minimum. List of activities carried out by social wing RAIT is given in Table 5.13

5.1.2 Specify the type, number and amount of institutional scholarships / free ships given to the students during the last four years and whether the financial aid was available and disbursed on time?

Institute ensures the financial assistance to the meritorious students in the form of Scholarships and other concessions. The Institute educational fund is used exclusively for supporting the students. Ramrao Adik Institute of Technology has given exemptions in tuition fee, and Scholarship for merit students as follows:

a. **This Scholarship is given to merit Students from individual branch for all years**

Table 5.1: Reward for students achievements in Institute.

Sr.No.	Achievement	Reward
1	First position in Institute	Rs. 50,000/-
2	Second position in Institute	Rs. 25,000/-
3	Third position in Institute	Rs. 10,000/-

b. **Apart from scholarship in criteria (a), for the final year students, additional scholarship is offered as follows:**

Table 5.2: Reward for students achievements in university.

Sr.No	Achievement	Reward
1	University Rank 1	Fee Exemption of 2nd year + scholarship as per criteria (a).
2	University Rank 2 to 5	Fee exemption of 1st year + scholarship as per

		criteria (a).
3	University Rank 6 to 10	Rs. 25,000/- plus scholarship eligible as in criteria (a).
4	University Rank 11 to 15	Rs. 10,000/- plus scholarship eligible as in criteria (a).

Table 5.3(a): List of students awarded Scholarship for the academic year 2012-13.

Sr. No.	Name of the student	Branch	Class	% Percentage	Institute Rank	University Rank	Total Prize
1.	Saini Ajitkaur	CE	B.E.	80.33	1st	4th	50000 + 1 yr fee
2.	Sawant Swati		B.E.	75.8	2nd		25000
3.	Shirode Richa		B.E.	75	3rd		10000
4.	Khaire Nilam		T.E.	82	1st		50000
5.	Bassan Jasprit		T.E.	79.36	2nd		25000
6.	Warke Chetan		T.E.	78.94	3rd		10000
7.	Usatkar Pradnya		S.E.	81	1st		50000
8.	Newalekar Priyal		S.E.	77.7	2nd		25000
9.	Singh Anjali		S.E.	76.88	3rd		10000
10.	Shetty Ashsish J.		F.E.	82.2	1st		50000
11.	Bag Shreetoma		F.E.	81.93	2nd		25000
12.	Aundhakar Renuka J.		F.E.	81.73	3rd		10000
13.	Jain Shivi		M.E.	76.5	1st		25000
14.	Bandopadhyay Ayantika	EL	B.E.	79.54	1st	4th	50000 + 1 yr fee
15.	Parkar Saif		B.E.	76.45	2nd		25000
16.	Pandhare Rahul		B.E.	75.41	3rd		10000
17.	Parekh Mansi		T.E.	83.17	1st		50000 + 1 yr fee
18.	Mudrale Rasika		T.E.	82.53	2nd		25000
19.	Dukare Darshana		T.E.	80.35	3rd		10000
20.	Goyal Shashwat		S.E.	83.17	1st		50000 + 1 yr fee
21.	Shirvaramkrishnan S.		S.E.	81.82	2nd		25000
22.	Mane Vijayalakshmi		S.E.	79.11	3rd		10000
23.	Sonawane Pushpanjali		M.E.	80.6	1st		25000

24.	Jain Aditya		F.E.	84.06	1st		50000 + 1 yr fee
25.	Rathod Meghanath		F.E.	81.03	2nd		25000
26.	Gupta Ruchita		F.E.	80.93	3rd		10000
27.	Agarwal Natasha	ET	B.E.	84.26	1st	3rd	50000 + 1 yr fee
28.	Kanak Mahesh		B.E.	82.32	2nd	7th	50000
29.	Gangadhare Ankita		B.E.	79.48	3rd		10000
30.	Katkar Gayatri		T.E.	82.88	1st		50000
31.	Chitte Divya		T.E.	82.18	2nd		25000
32.	Saste Nilesh A.		S.E.	81.58	3rd		10000
33.	Khedawala Zahabiya		S.E.	79.64	1st		50000
34.	Puranik Sushrut		S.E.	78.82	2nd		25000
35.	PawarAniket		S.E.	77.47	3rd		10000
36.	Virdi Amandeep Kaur		F.E.	89.96	1st		50000
37.	Shukla Anubhav K.		F.E.	87.66	2nd		25000
38.	Sonar Vaibhav G.		F.E.	86.55	3rd		10000
39.	Lingayet Deepak		M.E.	70.25	1st		25000
40.	Neha Singh	IN	B.E.	80.8	1st	3rd	50000 + 1 yr fee
41.	Arunita Mukhopadyay		B.E.	80.4	2nd	5th	25000
42.	Arti Dhawale		B.E.	79.26	3rd	7th	10000
43.	Belapurkar Rohit		T.E.	80.29	1st		50000 + 1 yr fee
44.	Dutta Rupam		T.E.	79.41	2nd		25000
45.	Jayraj Aditya		T.E.	72.41	3rd		10000
46.	Gupte Shamika		S.E.	76.41	1st		50000 + 1 yr fee
47.	Amber Deepa		S.E.	69.82	2nd		25000
48.	Satoshe Angha		S.E.	69.17	3rd		10000
49.	Pawar Abhijit B.		F.E.	79.37	1st		50000
50.	Sutar Nishant A.		F.E.	78.40	2nd		25000
51.	Islam Danyal B.		F.E.	76.33	3rd		10000
52.	Komal Lawand		M.E.	80.10	1st		25000
53.	Ms.Pawar Netra	IT	B.E.	80.93	1st	3rd	50000+ 1yr fee
54.	Ms.Sisodia Gaurav		B.E.	77.93	2nd		25000
55.	Ms. Patil Anagha		B.E.	76.6	3rd		10000
56.	Ms.Kulkarni Manasi		T.E.	79.11	1st		50000
57.	Ms.ChittethRissy		T.E.	79.11	2nd		25000
58.	Mr.Edrisi Mohammad		T.E.	77.72	3rd		10000

59.	Ms.LokhandwalaArwa		S.E.	80.94	1st		50000
60.	Mr.Dossani Arbaaz		S.E.	80.82	2nd		25000
61.	Ms.RahatalPradyna		S.E.	76.11	3rd		10000
62.	Parashar Pratik G.		F.E.	86.34	1st		50000
63.	Randhawa Harpreet		F.E.	85.7	2nd		25000
64.	Bhandari Akshay		F.E.	84.68	3rd		10000
65.	Ms.PoonamJadhav		M.E.	71.00	1st		25000

Table 5.3(b): List of students awarded Scholarship for the academic year 2013-14.

Sr. No.	Name of the student	Branch	Class	% Percentage	Institute Rank	Uni. Rank	Total Prize
1.	Kadam Seema P.	CE	B.E.	77.65	1st		50000
2.	Wavhal Prasad Tushar		B.E.	77.06	2nd		25000
3.	Warke Chetan Gopal		B.E.	76.6	3rd		10000
4.	Newalkar Priyal Prafull		T.E.	84.05	1st		50000
5.	Usatkar Pradnya B.		T.E.	83.23	2nd		25000
6.	Tiwari Anjali Brahm		T.E.	81.05	3rd		10000
7.	Mulla Fatima Hanif		S.E.	85.78	1st		50000
8.	Nair Savitha S.		S.E.	85.04	2nd		25000
9.	Bag Shreetoma Subrato		S.E.	84.3	3rd		10000
10.	Jadhav Mayuri Manoj		F.E.	85	1st		50000
11.	Chikhalekar Sneha J.		F.E.	83.33	2nd		25000
12.	Nakhawa Tanvi J.		F.E.	82.53	3rd		10000
13.	Oak Sujata Atul		M.E.	81.00	1st		25000
14.	Parekh Mansi Ajay	EL	B.E.	79.806	2nd		50000
15.	Mudrale Rasika R.		B.E.	79.096	3rd		25000
16.	Bawne Rutuja N.		B.E.	75.419355	3rd		10000
17.	Sweta Shivaramakrishnan		T.E.	86.17	1st		50000
18.	Shashwat Goyal		T.E.	80.88	2nd		25000
19.	Pooja Ravindra Patil		T.E.	80.52	3rd		10000
20.	Rathod Meghnath M.		S.E.	83.07	1st		50000
21.	Gupta Ruchita Rupak		S.E.	82.83	2nd		25000
22.	Bebal Shagufta Abdul		S.E.	81.66	3rd		10000
23.	Shingne Rohan Anil		M.E.	69.916667	1st		25000
24.	Patil Ashwini Tukaram		F.E.	81.67	1st		50000

25.	Bhattacharya A. D.		F.E.	81.2	2nd		25000
26.	Konde Aditya Krishna		F.E.	80.87	3rd		10000
27.	Katkar Gayatri G.	ET	B.E.	80.25	1st	2nd	114680
28.	Yeole Sheetal Narayan		B.E.	77.67	2nd		25000
29.	Gupta Ritu Ashokkumar		B.E.	77.03	3rd		10000
30.	Khedawala Z. U.		T.E.	81.18	1st		50000
31.	Singh Chandan B.		T.E.	78.88	2nd		25000
32.	Dabade Madhuri Laxman		T.E.	76.70	3rd		10000
33.	Dixit Aditya Ramesh		S.E.	88.98	1st		50000
34.	Singh Shivam Santosh		S.E.	87.48	2nd		25000
35.	Virdi Amandeep Kaur		S.E.	86.62	3rd		10000
36.	Mehboob Raza Haider		M.E.	76	1st		25000
37.	Shaikh Gulam Ambia		F.E.	84	1st		50000
38.	Sonawane Bhairav P.		F.E.	82.33	2nd		25000
39.	Choudhary Dinesh R.		F.E.	82.07	3rd		10000
40.	Belapurkar Rohit V.	IN	B.E.	80.07	1st	1st	179360
41.	Dutta Rupam R.		B.E.	77.87	2nd	2nd	89680
42.	Gokhale Adwait S.		B.E.	76.6	3rd	5th	74680
43.	Gupte Shamika Sanjiv		T.E.	78.82	1st		50000
44.	Kumar Akash J.		T.E.	75.18	2nd		25000
45.	Patil Vrushali Vijay		T.E.	73.76	3rd		10000
46.	Sutar Nishant Avinash		S.E.	80.73	1st		50000
47.	Kamdar Juhi Girish		S.E.	80.33	2nd		25000
48.	Dalvi Purva Vinod		S.E.	79.13	3rd		10000
49.	Naik Nikita		M.E.	72.8	1st		25000
50.	Suryavanshi Nilesh S.		F.E.	76.33	1st		50000
51.	Patil Srishti Sunil		F.E.	75.06	2nd		25000
52.	Dhawan Manali Govind		F.E.	74.67	3rd		10000
53.	Oswal Nikhil Rajendra		B.E.	77.93	1st		50000
54.	More Vishal Vidyadhar		B.E.	75.93	2nd		25000
55.	Kulkarni Manasi Sanjay		B.E.	75.06	3rd		10000
56.	Dossani Arbaaz Anwar		T.E.	83. 5	1st		50000
57.	Lokhandwala Arwa		T.E.	80.94	2nd		25000

	J.	IT					
58.	Rahatal Pradnya Prakash		T.E.	80.88	3rd		10000
59.	Randhawa Harpreet Kaur		S.E.	87.17	1st		50000
60.	Sahu Aarti Harikrishna		S.E.	83.05	2nd		25000
61.	Parashar Pratik Gajanan		S.E.	82.94	3rd		10000
62.	Ochani Arti Ram		M. E.	72.00	1st		25000
63.	Patel Sushma Devi B.		F.E.	77.4	1st		50000
64.	Deria Tanuj Swapan		F.E.	75.27	2nd		25000
65.	Mishra Himani Rajendra		F.E.	75.06	3rd		10000

Table 5.4: List of students awarded Scholarship for the academic year 2014-15.

Sr. No.	Name of the student	Branch	Class	Percentage	Institute Rank	Uni. Rank	Prize Money
1.	Varkha Gupta	CE	B.E.	80.20	1st		50000
2.	Priyal Nebalkar		B.E.	79.33	2nd		25000
3.	Shraddha Sharma		B.E.	77.33	3rd	-	10000
4.	Dashore Anisha S.		T.E.	74.23	1st		50000
5.	Pawar Priyanka V.		T.E.	72.58	2nd		25000
6.	Bag Shreetoma S.		T.E	72.57	3rd		10000
7.	Inje Sameer S.		S.E.	67.52	1st		50000
8.	Chandwadkar S. C.		S.E.	64.58	2nd		25000
9.	Verma Yogita O.		S.E.	64.35	3rd		10000
10.	Pranali Yadav		M.E	82.16	1st		25000
11.	Lokapur Pawan G.		F.E.	85.67	1st		50000
12.	Londhe Aakanksha		F.E.	84.2	2nd		25000
13.	Deoghare Akshay		F.E.	83.8	3rd		10000
14.	Sweta Shivaramakrishnan	EL	B.E.	81.87	1st	1th	50000 + 2nd yr fees
15.	Shashwat Goyal		B.E.	78.51	2nd	11th	35000
16.	Pooja S Patil		B.E.	78.25	3rd		10000
17.	Rathod Megnath M		T.E.	85.66	1st		50000
18.	Kene Tushar N.		T.E.	85.60	2nd		25000
19.	Bebal Shagufta A.		T.E.	85.46	3rd		10000
20.	Abhishek D. N.		S.E.	89.54	1st		50000
21.	Bhattacharya A.		S.E.	89.35	2nd		25000
22.	Patil Ashwini T.		S.E.	89.29	3rd		10000
23.	Deepali Ausekar		M.E	7.75	1st		50000
24.	Chanodiya Mitesh		F.E.	81.6	1st		50000
25.	Prajapati Surendra		F.E.	79.47	2nd		25000

26.	Jathar Sayali		F.E.	77.93	3rd		10000
27.	Khedawala Z. U.	ET	B.E.	79.55	1st	8th	75000
28.	Puranik Sushrut S.		B.E.	78.58	2nd		25000
29.	Gottipati M. P.		B.E.	77.48	3rd		10000
30.	Singh Shivam		T.E.	89.68	1st		50000
31.	Dixit Aditya R.		T.E.	89.41	2nd		25000
32.	Virdi Amandeep K.		T.E.	87.35	3rd		10000
33.	Chaudhary D. R.		S.E.	83.41	1st		50000
34.	Bhagat Swarali S.		S.E.	80.71	2nd		25000
35.	Anuse Shama G.		S.E.	78.90	3rd		10000
36.	Karne Ganesh D.		M.E	77.83	1st		25000
37.	Yadav Roshany		F.E.	84.33	1st		50000
38.	Phadtare Priya		F.E.	83.47	2nd		25000
39.	Bhadrashette Vaibhavi		F.E.	83.27	3rd		10000
40.	Gupte Shamika	IN	B.E.	77.66	1st	3rd	50000 + 1 yr fee
41.	Akash Kumar		B.E.	74.4	2nd		25000
42.	Bhatia Amrit		B.E.	72.73	3rd		10000
43.	Islam Danyal		T.E.	83.63	1st		50000
44.	Sutar Nishant		T.E.	83.38	2nd		25000
45.	Kamdar Juhi		T.E.	80.86	3rd		10000
46.	Mohite Siddhesh		S.E.	83.73	1st		50000
47.	Palande Hrishikesh		S.E.	80.60	2nd		25000
48.	Suryawanshi Nilesh		S.E.	78.86	3rd		10000
49.	Patel Divyaben		M.E	75.25	1st		25000
50.	Deshmukh Pooja		F.E.	75.67	1st		50000
51.	Prajapati Anjali		F.E.	74.8	2nd		25000
52.	Bandodkar Pooja		F.E.	74.53	3rd		10000
53.	Dossani Arbaaz A.	IT	B.E.	81.13	1st	2nd	50000 +1 yr fee
54.	Rahatal Pradnya P.		B.E.	81.06	2nd	3rd	25000 +1 yr fee
55.	Lokhadwala A. Z.		B.E.	80.26	3rd	6th	35000
56.	Sahu Aarti H.		T.E.	89.48	1st		50000
57.	Randhawa Harpreet		T.E.	87.1	2nd		25000
58.	Parashar Pratik G.		T.E.	86.9	3rd		10000
59.	Mishra Ikshita Jas.		S.E.	80.53	1st		50000
60.	Mishra Himani R.		S.E.	79.53	2nd		25000
61.	Deria Tanuj Swapan		S.E.	77.94	3rd		10000
62.	Thakker Zeal M.		S.E.	77.94	3rd		10000
63.	Prachi Nitnaware		M.E	72.56	1st		25000
64.	Gaikar Aslesha		F.E.	86.8	1st		50000

65.	Pilane Chirag		F.E.	80	2nd		25000
66.	Sonawane Mayur		F.E.	78	3rd		10000

Shiksha Sahakar Scheme:
Economical weaker students are provided concession in academic fees under this scheme. For deserving students who cannot afford fees or daily livelihood because of pecuniary condition prevailing in their family, RAIT encourages students to take up token work in the premises after academic hours in places like department library, computer centre and pay up to Rs. 5000/- as Sahakar Allowance.

Table 5.5: Following students are covered under this scheme for the year 2014-15.

Sr No.	Name of Student	Roll No	Remark
1.	Gaikwad Harshal Sunil	14ET1102	100% Fees Concession
2.	Chormare Ajinkya Vijay	13EE2014	100% Fees concession
3.	Sawant Prajakta Pramod	14IT5001	25% Fees concession for all years(FE to BE)
4.	Nalawade Rupesh Anil	12ET1102	25% Fees concession
5.	Jadhav Yogesh Balasaheb	12CE1064	50% Fees concession
6.	Suryanwanshi Shubham Lotanrao	11CE1030	Fees concession of Rs 44105/-
7.	Gamare Pranjal Prashant	14CE8008	50% Fees concession
8.	Jadhav Rohit Jotiram	14ET5003	25% Fees concession
9.	Patil Vidhula Sunil	13ET7050	25% Fees concession for all four years(FE to BE)

5.1.3 What percentage of students receives financial assistance from state government, central government and other national agencies?

Around 50% of the students are receiving financial assistance from the state Govt., in the form of fee reimbursement. Apart from state many other Scholarships are also available for students from foundations like Tata youth foundation, Railways, BSNL, Armed forces etc. They are available to deserving open category students and mentioned as OTHER scholarships in last section of table.

Table 5.6: Statement of Financial Assistance.

Type	Branch	2011-12		2012-13		2013-14		2014-15	
		No of students	Amount in Lacs.	No of students	Amount in Lacs	No of students	Amount in Rs.	No of students	Amount in Rs.
SC,ST, VJ, NT DT, SBC , OBC	CE	154	66.53	176	89.76	225	130.5	218	162.08
	EL	155	66.96	174	88.74	236	136.9	229	170.26
	ET	133	57.46	180	91.8	252	146.16	277	205.95
	IN	85	36.72	121	61.71	187	108.5	203	150.9
	IT	81	35.00	118	60.18	179	103.82	172	127.9
TOTAL		**608**	**262.66**	**769**	**392.19**	**1079**	**495.32**	**1099**	**817.11**

Minority	CE	4	0.1	5	1.25	6	1.5	5	1.25
	EL	3	0.75	4	0.1	5	1.25	4	0.1
	ET	4	0.1	3	0.75	6	1.5	6	1.5
	IN	2	0.5	3	0.75	2	0.5	2	0.5
	IT	2	0.5	2	0.5	2	0.5	2	0.5
TOTAL		**15**	**1.95**	**17**	**3.35**	**21**	**5.25**	**19**	**3.85**
E B C	CE	22	7.21	24	82.26	23	8.89	26	11.28
	EL	20	6.55	22	7.54	20	7.73	30	13.02
	ET	14	4.58	28	9.59	48	18.56	32	13.89
	IN	15	4.91	9	3.08	16	6.18	38	16.50
	IT	10	3.27	19	6.51	9	3.48	25	10.85
TOTAL		**81**	**26.53**	**102**	**34.96**	**116**	**44.86**	**151**	**65.57**
Other scholarships	Comp	7	1.75	8	2.0	22	7.70	23	6.44
	EL	5	1.25	7	1.75	22	7.70	21	5.88
	ET	6	1.5	7	1.75	24	8.40	24	6.72
	IN	6	1.5	7	1.75	20	7.00	20	5.60
	IT	6	1.5	5	1.75	21	7.35	19	5.32
TOTAL		**30**	**7.5**	**34**	**9.00**	**109**	**38.15**	**126**	**29.96**

5.1.4 What are the specific support services/facilities available forStudents from SC/ST, OBC and economically weaker sections?

- The students who belong to SC/ST, VJ/NT, OBC and the economic weaker sections are identified during the process of admission. These students are provided every possible help to enable them to get Government scholarships.
- Reservation is given to this class of students in Admission process as per government norms.
- Faculty members are encouraged to put more efforts and take extra classes to make them capable to compete with other students. Remedial classes are held by teachers for subject related weakness removal.
- These students also get government grant for purchasing books under BOOK BANK. Institute provides books to this class of students from the government grant.
- For deserving cases waiver of fee payable by him is carried out depending on economic condition prevailing in family.
- For students of these groups from local vernacular background, special classes are conducted in spoken and written communications.
- **Students with physical disabilities**

  - Necessary facilities are available in the Institute like ramps, wheel chair and Lifts.

- Examinees with physical disabilities are given special attention regarding the sitting arrangements and blind as well as incapacitated persons are allowed for writers and extra time as per norm given in Mumbai university circular no. Exam/COE/benefit/102 of 2012.
- Applicants with physical disability are also given 3% horizontal reservation in the admission in various courses as per government policy.

- **Overseas students :** NA
- **Students to participate in various competitions/National and International**

  - Students are encouraged to participate in extra-curricular and co-curricular activities such as technical fests, cultural events, and sports events etc. which are organized by reputed institutions such as IIT,,s, NIT,,s, Universities and Government Institutes.

  - All necessary support and services are provided by the Institute like financial assistance, Wi-Fi facility and library facility. Faculty members are deputed to assist and guide the students.
  - The students from this institution have participated in various international, national and state level competitions and have been proved as valuable contributors in the field of education and research.
  - To enhance the urge for research of the students, the institution has its own Research and development cell called Dr. A. P. J. Abdul Kalam Centre of Advanced Research, where the students along with some faculty members carry out research on their area of interest.
  - The institute bears complete travel, boarding and other incidental expenses for all students representing institute for technical seminar, conferences, project competition etc.

- **Medical assistance to students: health centre, health insurance etc.**

  - The institute has a medical room wherein one has easy access to first aid if required.
  - First Aid box is present in the every department of Institute.
  - Multispecialty Dr. D. Y. Patil Hospital & Research Centre is located within the campus where emergency medical help is arranged.
  - The medical service available to students includes nursing, treatments and counseling.
  - All the students of RAIT is covered under insurance cover of Rs 2,00,000/- under insurance scheme provided by Nation Insurance Company Ltd whose annual premium is paid by Institute.

- **Organizing coaching classes for competitive exams**
  - The institution is supporting the students beyond the syllabus by arranging special training programs, soft skill training programs for students on a regular basis, by the internal and external experts.
  - We invite representatives of organizations and bodies which does professional counseling and conduct coaching for such competitive exams like GATE, UPSC, IES etc.
  - Various books required to prepare for competitive exams are made available to students from institute library and department libraries. Books for preparing IAS, UPSC, IPS, IES are available catering to need of competitive exams.
  - Institute has number of faculties who have done their post-graduation from institutes like IIT"s and NIT"s. These faculty members regularly guide and assist students preparing for GATE and other competitive exams.
- **Skill development (spoken English, computer literacy, etc.,)**
  - Soft skill development classes are regularly arranged for the students to enhance their communication skills, logical, numerical ability and problem solving skills. The details are shown below in table 5.8:

Table 5.7: Soft skills development programmes.

Sr. No	Program	Target Group	Duration	Purpose
1.	INFOSYS Campus Connect Foundation Program	Third Year Students	2 months	Soft skill Development
2.	INFOSYS Campus Connect Softskills Program	Final Year Students	2 months	Soft skill Improvement
3.	INFOSYS Campus Connect Aspirations 20:20	Final Year Students	10 days	Personality Development
4.	Roy E. Charles and Associates Softskills Training	Final Year Students	2 Months	Soft Skills Development
5.	Roy E. Charles and Associates Group Discussion Program	Final Year Students	2 Months	Group Discussions
6.	Roy E. Charles and Associates Personal Interview series	Final Year Students	2 Months	Interview
7.	T.I.M.E. Aptitude training series	Final Year Students	1 Month	Aptitude Training
8.	Persistent Systems Projects	Final Year Students	1 Month	Project Training

- Technical Skills Development classes are regularly arranged. In addition a numbers of professional workshops are arranged for all branches. Industry specific and skills development courses are conducted by Industry such as IBM, Oracle, Siemens, Yokogawa etc for 3rd year and final year students.

Table 5.8: Technical skill development programmes.

Sr. No	Program	Target Group	Duration	Year
1.	NS2 and its Application	CE Students	2 Days	2010
2.	Android Workshop in collaboration With "mosterindia.com"	CE Students	1Day	2011
3.	Workshop on Ethical hacking	CE Students	1 Day	2011
4.	Web Development	CE Students	2 Days	2011
5.	Cloud Computing and Grid Computing	CE Students	2 Days	2012
6.	Basics of Linux	CE Students	2 Days	2012
7.	Workshop on LATEX	CE Students	1 Day	2012
8.	Web Designing and Development	CE Students	2 Days	2012
9.	Institute Level Project Competition	CE Students	1 Day	2012
10.	Linux Enterprise Technologies and Server Application	CE Students	1 Day	2013
11.	NS2 workshop	CE Students	2 Days	2013
12.	Institute Level Project Competition	CE Students	1 Day	2013
13.	Workshop on LATEX	CE Students	1 Day	2014
14.	Advanced Web Technology	CE Students	1 Day	2014
15.	NS2 and its Applications	CE Students	2 Days	2014
16.	Matlab for Pattern Recoginition	CE Students	1 Day	2014
17.	IBM SEED Program for Business Intelligence Using IBM Cognos BI	CE/IT Students	3 Days	2014
18.	IBM SEED Rational Suite Enterprise(RSA)	CE/IT Students	3 Days	2014
19.	IBM SEED Program for Enterprise Application Development & Deployment for Cloud Environment	CE/IT Students	4 Days	2014
20.	Linux Server Installation	CE Students	1 Day	2014
21.	GUI using JAVA	CE Students	1 Day	2014
22.	Institute Level Project Competition	CE Students	1 Day	2014
23.	Advances in networking and mobile computing	IT students	2 Days	2010
24.	NS2	IT students	1 Day	2011

25.	Information Security Trends in Todays world	IT students	1 Day	2012
26.	Software Reliability	IT students	1 Day	2013
27.	Cloud Computing	IT students	1 Day	2013
28.	Dive in Technology	IT students	1 Day	2012
29.	Implementation of Cloud Computing	IT students	2 Days	2013
30.	Network Security and CISCO router configuration	CE/IT students	2 Days	2014
31.	Linux Configuration	IT students	2 Days	2014
32.	Network Security and Digital Forensics	IT students	5 Days	2015
33.	India"s Nuclear power program	IN students	1 Day	2015
34.	Research Trends in Aeronautics Engineering	IN students	1 Day	2014
35.	Process Automation	IN students	1 Day	2013
36.	INO: India based Neutrino Observatory	IN/EL students	1 Day	2015
37.	Concepts in I&C Engineering Design	IN students	1 Day	2015
38.	Hardware of Labview My RIO	IN students	1 Day	2015
39.	Scope of Instrumentation	IN students	1 Day	2014
40.	Trends in Industrial Data Communication	IN students	1 Day	2014
41.	Visual TCAD Software Demo	EL students	1 Day	2015
42.	INO: India based Neutrino Observatory	EL students	1 Day	2015
43.	India"s Nuclear power program	EL students	1 Day	2015
44.	Embedded GPU System	EL students	1 Day	2015
45.	Internet on Things	EL students	1 Day	2015
46.	COMSOL Multyphysics	EL students	1 Day	2015
47.	Embedded Systems Fundamentals	EL students	1 Day	2015
48.	Scientific Report Writing using Latex for ME-Students	EL students	1 Day	2015
49.	Scientific Report Writing using Latex for EXTC	EL students	1 Day	2015
50.	Research Trends in Aeronautics Engineering	EL students	1 Day	2014

51.	Scientific Report Writing using Latex for BE students	EL students	1 Day	2014
52.	Scientific Report Writing using Latex for ME students	EL students	1 Day	2014
53.	Scientific Report Writing using Latex for students	EL students	1 Day	2013
54.	Scientific Report Writing using Latex for students	EL students	1 Day	2012
55.	Scientific Report Writing using Latex for students	EL students	1 Day	2011
56.	QualNet	ET students	1 Day	2012
57.	Simulation and control of Magnetic Levitation system	ET students	1 Day	2013
58.	Robotics Workshop	ET students	1 Day	2014
59.	Global Overview of Deve. in Microwave & mm Wave Communication as on today	ET students	1 Day	2015

- Various workshops for embedded system hardware, software like Qualnet, NS2, Lab view, Matlab, and various programming languages are arranged.
- Special training programs for enhancing employability are conducted by training and placement cell from reputed companies like TIME, TCS , Persistent Systems, Infosys, Siemens, Texas instrument etc.

- **Support for "slow learners"**
  - The institution believes that slow learners can go steadily. So, personal care is taken by individual faculty members for these students.
  - The department appoints class counselor for every batch who identifies the weak students.
  - Remedial classes, extra-hour classes, frequent tests are arranged on a regular basis.
  - Additional assignments and tutorials are organized for slow learners. In addition question banks are prepared for benefit of slow learners.
  - Additional practical sessions are conducted for these students.

- **Exposures of students to other institution of higher learning/ corporate/business house etc.**

  - Industrial visits, participation in seminars/ workshops/ conferences/ Project Competitions organized in other institutes or by various departments and technical committees so that students could well aware of the outside world.
  - Various workshops, seminars and guest lectures are arranged by the Institute to guide the students for their career, to motivate them for higher education, getting placement in reputed companies and knowledge of current scenarios in industry.
  - Famous personalities and industrialists are invited regularly for guest lectures. Our students get the benefit from their invaluable expertise. The

institute also arranges industrial visits to leading corporate houses for practical exposure.

Table 5.9: Talks delivered by famous personalities and industrialists.

Sr. No	Speaker	Topic	Target Group	Duration	Year
1	Mr. Satyajit Ashtekar	ERP Design and Technology	CE Students	1 Day	2010
2	C.A.Murthy	Pattern Recognition	CE Students	1 Day	2010
3	Dr.Pushpak Bhattacharya	Natural Language Processing	CE Students	1 Day	2010
4	Dr.Rajat Kumar De	Bioinformatics	CE Students	1 Day	2010
5	Dr.Sumantra Dutta Roy	Motion Segmentation and Tracking, Gesture Analysis	CE Students	1 Day	2010
6	Mr.S.K.Bose	Image Mosaicing	CE Students	1 Day	2010
7	Dr.Sharat Chandran	GPU	CE Students	1 Day	2010
8	Dr.B.Krisna Mohan	Neural Networks & SVM	CE Students	1 Day	2010
9	Dr. M Sasikumar	Handwritten Character Recognition	CE Students	1 Day	2010
10	Dr.A.G.Ramkrishnana	Document Analysis & Recognition	CE Students	1 Day	2010
11	Dr. Leena Ragha	Machine Learning	CE Students	1 Day	2010
12	Dr. Satish Devane	Mobile Networks	CE Students	1 Day	2011
13	Dr. Nupur Giri	Mobile Computing	CE Students	1 Day	2012
14	Mrs. V. Shanti	Cloud vs Grid Computing	CE Students	1 Day	2013
15	Mr. Sayyad Munir	Research Areas of MANET	CE Students	1 Day	2013
16	Dr. Ramesh Vasappanavara	Advanced Algorithms	CE Students	1 Day	2013
17	Mr. Gautam V	Data Structure- Graphs and Trees	CE Students	1 Day	2013
18	Mr. Kiran Sawant	Ontology and its application	CE Students	1 Day	2014
19	Dr. Ramesh Vasappanavara	Advanced Algorithms	CE Students	1 Day	2014
20	Mr. Anand V	Data Structure and its applications	CE Students	1 Day	2014
21	Dr. Vishwesh	Algebraic Structures	CE	1 Day	2014

	Vyawahare		Students		
22	Dr. Prachi Gharpure	E-Learning Technology	CE Students	1 Day	2014
23	Dr. Ramamurthy	Cognitive Wireless Sensor Network, Security and other related issues	CE Students	1 Day	2014
24	Dr. Kalyan Chakrawarthy	Wireless Networks	CE Students	1 Day	2014
25	Dr. Y. S. Rao	Realtime Simulations and Hardware in the loop	CE Students	1 Day	2014
26	Mr.Gautam V	Structured Programming Approach	CE Students	1 Day	2015
27	Dr. Sanjeev Tambe	Applications of Computational Intelligenceformodeling and optimizationof chemical processes	CE Students	1 Day	2015
28	Dr. M. Sasikumar	Computational Intelligence	CE Students	1 Day	2015
29	Dr. P. Krishna Subba Rao	Soft Computing Techniques in TYPE II diabetes using Gene Expression Profile Data	CE Students	1 Day	2015
30	Dr. Siby Abraham	Application of Soft Computing in Bioinformatics	CE Students	1 Day	2015
31	Dr.Chelpa Lingam	Emotional Intelligence	CE Students	1 Day	2015
32	Dr. Surya Durbha	Domain Adaptation Approaches for Rapid Disaster Assessment using Remote Sensing Data	CE Students	1 Day	2015
33	Dr. Saketha Nath	Class Ratio Estimation using MMD	CE Students	1 Day	2015
34	Dr. Pushpak Bhattacharyya	Sentiment Analysis on Social Media	CE Students	1 Day	2015
35	Dr. B. Krishna Mohan	Computational Intelligence	CE Students	1 Day	2015
36	Dr. G Shivkumar, Dr. Abhay Karindikar	Advances networking and mobile computing	IT students	2 Days	2010
37	Mr.Gordan Gonsalves	Information Security Trends in Today‟s world	IT students	1 Day	2012
38	Dr. Gopika Vinod	Software Reliability	IT students	1 Day	2013
39	Mr. Bhushan Jadhav	Cloud Computing	IT students	1 Day	2013

41	Mr. Pritpal Singh	Dive in Technology	IT students	1 Day	2012
42	Nayjot Singh	Implementation of Cloud Computing	IT students	1 Day	2013
43	Mr. Vipin Kumar	Network Security and CISCO router configuration	CE/IT students	2 Days	2014
44	Prof. D. Ambawade	Linux	IT students	2 Days	2014
45	Dr. Gigi Jospeh, Dr. R K Shyamsundar, Mr , Amol Mhatre, Mr Sachin Dedhia	Network Security and Digital Forensics	IT students	5 Days	2015
46	Mr Sekhar Basu	India"s Nuclear power program	IN students	1 Day	2015
47	Dr Zakir Taquvi	Research Trends in Aeronautics Engineering	IN students	1 Day	2014
48	Mr.A.B. Agnihotri	Process Automation	IN students	1 Day	2013
49	Mr Nabha Mondal	INO: India based Neutrino Observatory	IN/EE students	1 Day	2015
50	Mr .Vivek Koshti	Concepts in I&C Engineering Design	IN students	1 Day	2015
51	Mr S. Agrawal	Hardware of Labview My RIO	IN students	1 Day	2015
52	Mr Rajesh Shah	Scope of Instrumentation	IN students	1 Day	2014
53	Mr Udayan Mankar	Trends in Industrial Data Communication	IN students	1 Day	2014
54	Mr. Jagdish Bisawa	Embedded Systems	EL students	1 Day	2015
55	Mr. Viraj Padte	Embedded GPU System	EL/IN students	1 Day	2015
56	Mr. Ajay S. S.	COMSOL Multyphysics	EL students	1 Day	2014
57	Mr. Rakesh	Visula TCAD Soft. Demo	EL Students	1 Day	2014
58	Mr. Ankur S.	Internet on Things	EL Students	1 Day	2014
59	Experts from Qualnet Software provider	QualNet	ET/EL students	1 Day	2012
60	Dr P. S. V. Natraj	Simulation and control of Magnetic Levitation Sysytem	ET/EL students	1 Day	2013
61	ARK Technosolutions	Robotics Workshop	ET/EL students	1 Day	2014
62	Dr. Girish Kumar Dr. Sanjeev Gupta Dr. Archana Sharma	Global Overview of Developments in Microwave & Milimeter	ET students	1 Day	2015

	Dr. Manmohan Singh Bhatia	Wave Communication as on today			

- The students are motivated to participate and present research papers in various National and international seminars, conferences and workshops. Financial assistance for traveling and conference fee is provided by institute for deserving cases.

Table 5.10: Participation of students in research activities.

Sr. No	Student Group	Topic	Venue
1.	Arbaaz Dosani, Pradnya Dossani	Video Object Tracking	RAIT Project Competition
2.	Ms. Harpreet Kaur Ms. Akanshya Purohit	E- Bonafide Certificate	RAIT Project Competition
3.	Mr. Ankit Singh Ms. Manali Kiledar Mr. Akash Rai	Railway Concession	RAIT Project Competition
4.	Mr. Mahesh Pawar	Biogas Car	RAIT Project Competition
5.	Mr. Avinash Adsul	Real time interactive distance learning System	RAIT Project Competition
6.	Amrit Kaur Bhatia & Avishkar Misal	National level IEEE project competition	Vartak College of Engineering Vasai& RAIT
7.	Suraj Sharma and Pranjli Chaudhary	Appreciation prize for project by Srijan a state level project competition	Nashik
8.	Suraj Sharma and Pranjli Chaudhary,	Texas Instruments University Program for Projects	Mumbai
9.	Suraj Sharma, Sujay Mondal	Best Technical Paper on Emerging Technologies in safety & security by ISA Exbuzz Fire & Service Ltd.	Mumbai
10.	Adiya Patki & Omkar Malawade	Technical Quiz Competition	BVCOE, Navi Mumbai
11.	Sanketkumar Biswas Maulin Thanawal Mornu Gangkak	Online Aptitute Examination	Mumbai
12.	Sreejith Menon Akash Malbari Manish Gajare	Java Remote Administration for Laboratory Monitoring	Mumbai

13.	Karmarkar Surjeet Jadhav Umesh Maity Shubhdip	Camera Mouse	Mumbai
14.	Siddharth	3D password	Mumbai
15.	Reshma Jadhav	Fast and accurate Thematic object Detection	International Conference on Cloud Computing and Computer Science, 2014
16.	Manisha Bhagat	Lip-Reading Based on Combined Views Generated From Frontal and Profile View	International Conference on Cloud Computing and Computer Science, 2014
17.	Swapnil Shinde, Shrikant Sanas, Sudeep Thepade	Handwritten Barakhadi Recognition Using KEVR Algorithm with various Gradient Masks	I2CT
18.	Akshata Doiphode	Segmentation of handwritten touching characters based on joint points detection from devanagari word	International conference and workshop on emerging trends in technology
19.	Madhura Phadke	Facial expression recognition using principle component based gabor features	International conference and workshop on emerging trends in technology
20.	Shreya Patankar	Histogram feature analysis and Zonal moments based handwritten marathi barakhadi recognition	International conference and workshop on emerging trends in technology
21.	Devdip Sen Shashwat Goyal	Car Parking System using Krypton	IIT, Bombay
22.	Devdip Sen Shashwat Goyal Pooja Patil	Virtual Lab Implementation Using LabView	Project Competition in RAIT
23.	Sagar Chande	Microcontroller Based PCB Milling Machine	Project Competition RAIT,Nerul
24.	Ankita Gangadhare Rohel Dawoodani Avdhoot Gaikwad	Voice guiding system for disabled persons using ultrasonic sensors & GPS	Mumbai
25.	Yogesh Pawar Sushrut Puranik Devarshi Rane Nikhil Bagade	3 D Printer	Mumbai
26.	Yojana Kore	Use of Recursive equations in Gabor Filter for Online Signature Verification	3rd International Conference on Computer Modeling and Simulation

27.	Varsha Hole	A Survey of Handwritten Document Pre-processing techniques and customizing for Indian languages	International conference and workshop on emerging trends in technology
28.	Shalaka Deore	Moment Based Online and Offline Handwritten Character Recognition	CiiT International Journal of Biometrics and Bioinformatics
29.	Rajashri Kamble	" Novel approach for segmentation of handwritten touching characters from Devanagari words	International conference on computational intelligence and information technology
30.	Sagar Thakare	High Performance Intrusion Detection using K-means Clustering and Grid Base labeling	ICWET2012
31.	Ravindra R.Agrawal	Optimized Heterogeneous Wireless Network with Scoring Methods	International Journal of Computer Applications
32.	Akshata Doiphode	Segmentation of handwritten touching characters based on joint points detection from devanagari word	International conference and workshop on emerging trends in technology
33.	Madhura Phadke	Facial expression recognition using principle component based gabor features	international conference and workshop on emerging trends in technology
34.	Shreya Patankar	Histogram feature analysis and Zonal moments based handwritten marathi barakhadi recognition	international conference and workshop on emerging trends in technology
35.	Smita Bansod	Staganography with high capacity data embedding using modified BPCS	international conference and workshop on emerging trends in technology
36.	Asmita deshmukh	An effective CBIR using texture	IJCA proceedings on international conference and workshop on emerging trends in technology
37.	Sonal Balpande	Hybrid Reactive Database Intrusion Detection system	International Conference & Workshop on Emerging Trends in Technology 2012 (ICWET-2012)
38.	Vijaya Waghmare	Genetic algorithm as a recognizer for handwritten character recognition	International conference on computer science and engineering
39.	Seema Desai	GCARM: A Combined approach to Datamining	Asian Journal of Computer Science & Technology
40.	Sumedha Bhagwat	Devanagari character recognition using radon transform and principal	International conference on computer science and information technology

		component analysis and linear discriminant analysis	
41.	Shreya Patankar	Zonal moments based Handwritten Marathi Barakhadi Recognition	International Journal of Engineering Research and Technology
42.	Seema Desai	Association Rule Mining using Graph and Clustering Technique	CICN2012, IEEE Explore
43.	Archana Arudkar	RBAC+: Protecting Web Databases with access control Mechanisms	International Journal of Management and Information Technology
44.	Monali Mavani	MapReduce Frame Work: Investigating Suitability for Faster data Analytics	International Conference on Advances in Computing, Communication and Control
45.	Krupi Patel	Survey and Analysis on Migration of Legacy System to Service Oriented Architecture	IOSR Journal of Computer Engineering
46.	Snehal Kulkarni	" Neuro Fuzzy Approach for predicting sales performance of Movies considering sentiments in online reviews"	IFIP-ACEEE First International Conference on Recent Trends in Communication and Computer Networks :ComNet 2013
47.	Ashraf, K.N.	" Survey and analysis of mobility management protocols for handover in wireless network"	IEEE 3rd International Advance Computing Conference (IACC), 2013
48.	Nilesh Yadav	An Improved FP Tree Based Association Rule Mining Technique using Genetic Algorithm	International Conference on Computer Science and Information Technology
49.	Jayashree Jha	Intrusion Detection System using Support Vector Machine	International Conference and Workshop on Advanced Computing
50.	Vijaya Waghmare	Application of Genetic Algorithm for Handwritten Kannada Characters	IEEE International Advance Computing Conference
51.	Ujjawal Rawale	" Survey on Identity Management in Cloud Computing"	International Conference and Workshop on Advanced Computing (ICWAC-2013)
52.	Archana Chougle	" Mobile Cloud Computing: challenges and solutions"	International Conference and Workshop on Advanced Computing (ICWAC-2013)
53.	Priyanka Bagul	3-Level Privacy Preservation Technique in data mining	International conference on Emerging trends and technology and itâ€™s applications
54.	Umesh Patil	Behaviour Based Malware	International conference on

		Detection based on N-grams analysis	Emerging trends and technology and itï¿½s
55.	Jayashri Jha	Intrusion Detection System using Support Vector Machine	International Journal of Applied Information Systems (IJAIS)
56.	Urjashree Patil	Improved Hybrid Dynamic Load Balancing Algorithm for Distributed Environment	International Journal of Scientific and Research Publications (IJSRP)
57.	Datta Deshmukh	Cloud Computing for Agent based Traffic Management System using Soft Computing Approaches	International Conference on Emerging Trends in Technology and its Application (ICETTA-2013)
58.	Himani Deshpande	SQL Injection: A threat to Web Applications	International Journal of Computer Science and Applications
59.	Premlata Sonvane	Quantum Cryptography with Key distribution in wireless Network	International Conference on Advances in Electrical, Electronics, Mechanical and Computer Science
60.	Urmila Shinde	Comparative Analysis of Collaborative Filtering Techniques	IOSR journal of Computer Engineering (IOSR-JCE)
61.	Rachana Gajre	Optimized bully election method for selection coordinator process and recovery	International Journal of Scientific and research publication
62.	Mrudula Varade	Distributed Metadata Management Scheme in HDFS	International Journal of Scientific and Research Publications
63.	Reshma Jadhav	An Introduction to augmented reality with mobile system	International Conference of electronic and computer engineering
64.	Dhanshri Patil	Energy & Delay Aware Geographic Routing Protocol for MANET	ICACACT2013
65.	Archana Arudkar	Sender Authentication with Transmission Power Adjustment Method using RSSI in WSN	International Journal of Modern Engineering Research
66.	Premalata S	Quantom Cryptogarphy with key distribution in WN	International Conference on Advances in Electrical, Electronics, mechanical and CS
67.	Sonali Chavan	4G Wireless Networks Challenges and Benefits	International Journal of Emerging Technology and Advanced Engineering,
68.	Swati Pandit	Survey of Real Time Scheduling Algorithms	IOSR journal of Computer Engineering (IOSR-JCE)
69.	Achal	Review of Handwritten	International Conference on

	Bharambhe	Devnagiri Character using Wavelet Transform and MLP Neural Network	Advances in Communication and Computing Technologies
70.	Anagha Raich	Location Aware Modified AODV to Select Best Path	International Journal of Research In Advanced Technology (IJRAT)
71.	Suchita Jogi	Survey and Analysis of Medium Access Control Protocols for Wireless Sensor Network	IOSR Journal of COmputer Engineering (IOSR - JCE)
72.	Deepali Maste	Intelligent Dynamic Time Quantom Allocation in MLFQ Scheduling	International Conference on Advancements in Computing Sciences, Information Techniques and Emerging E-Learning Technologies
73.	Noaman Ashraf Khatib	Improved EAP-SIM based authentication protocol with pre-authorization for FMIPv6 handover	3rd international conference on computational intelligence and Information CIIT 2013 IEEE Track
74.	Rachana Gajre	Comparison Image Registration Methods for satellite images	IJSRP
75.	Ms.Bhakti Deokar	Review: Study of Vulnerability Lifecycle & Its Impact On Software Security Systems	Industrial Applications of Signal Processing ICIASP
76.	Ms. Monali Mavani	Security Implication and Detection of Threats due to manipulatingIPv6 Extension Headers	INDICON 2013
77.	Sanobar Khan	Handwritten Arbic Word Recognition using Zernike Moments and DCT Features	I2CT
78.	Yogesh Khairnar	Analisys of Clustered based DoS Attack Detection in WSN	Knowledge Collaboration in Engineering (KCE2014)
79.	Neelam Panse	Scheduling Approaches in Cloud Environment for Data intensive with Security Constraints	International Conference on Convergence of Technology
80.	Rahul Talreja	" Comparative Analysis of Methods to Detect Misbehaving Nodes in MANET"	MulticonW 2014
81.	Kavita Gite	A Review of Mining Algorithm to get frequent item sets over data stream	International Conference on “Emerging Trends in Technology and It‟s Applications” - ICETTA-2014
82.	Uttara Patil	An Analysis on Real Time Control, Monitoring and	RACEM 2014

		Alerts for Surveillance System	
83.	Amruta Kalyankar	Taxonomy of Congestion Control Protocols in Wireless Sensor Networks	International Journal of Advanced Research in Computer Science & SOftware Engineering
84.	Monali Mavani	" Covert channel in IPv6 Destination option Extension Header	International Conference on Circuits, Systems, Communication and Information Technology Applications (CSCITA)
85.	Malavade Vinayak	Packet Loss in Handover for Host Based Mobility Management Protocols	Fourth International Conference on Communication Systems and Network Technologies,IEEE
86.	Anand Mhatre	Comparative Study of Concurrency Control Techniques in Distributed Databases	Fourth International Conference on Communication Systems and Network Technologies,IEEE
87.	Jyoti Deone	Frequent patterns for mining association rule in improved apriori algorithm	IJARCT
88.	Vandana Nisargandh	An Enhanced Secure Routing Algorithm against Sinkhole Attack in Wireless Sensor Networks	ICSTACE, Springer
89.	Khatib Noaman	Analysis of Improved EAP-SIM based Authnetication Protocol	ACEEE
90.	Manisha Bhagat	Lip-Reading Based on Combined Views Generated From Frontal and Profile View	International Conference on Cloud Computing and Computer Science
91.	Reshma Jadhav	Fast and accurate Thematic object Detection	International Conference on Cloud Computing and Computer Science
92.	Manisha Bhole	A new and simple metdod to construct Root locus of general fractional order system	ISA Transaction
93.	Raja Meena	Comparison of Flat Routing Protocols of Wireless Sensor Network	ICEECE-Chennai
94.	Manisha Bhole	Time and frequency domain analysis of linear fractional order system	IJACSA
95.	Deepti Patil	Design of fractional order system using Bode‟s ideal loop transfer function method	ICIC, Pune

96.	Bhavik D Kothari JatinKumar B Patel Bhavynak S Shah	Analysis of initial and final conditions arising due to switching operation in electrical networks with fractional order capacitor	IFAC, China
97.	Manisha Bhole	Stability analysis of fractional order system	ICWET, Mumbai
98.	S M Bopalkar	Body Parts Detection in Gesture Recognition Using Color Information	ICWET-New York
99.	Kalpana Sanjay Phate	Energy Conservation in Data Intensive Wireless Sensor Networks Using Mobile Relay Configuration	Mumbai
100.	Nilam Patil	FPFA Implementation of Adaptive Noise Cancellation Using NLMS Algorithm	Mumbai
101.	Pravin D. Pawar	Reutilization of Electrical Power for Continuous and Controlled Generation of Electricity	Mumbai
102.	Krutika Ingale	Data Flow in USB-i2c Interface Bridge	Mumbai
103.	Nitin P. Jain Preeti N. Jain	An Embedded, GSM based, Multiparameter, Realtime Patient Monitoring System & Control an implementation of ICU patients	IEEE
104.	Sonali V Tarlekar	Design and Implementation of Embedded web server	Mumbai
105.	Priya C Mule	Detection technique of DNA and biological object using Si Chip	Mumbai
106.	Preeti Jain	Embedded Linux system	Mumbai
107.	Sayli Suryarao Dilip Yadav Kunal Lakhani	Air traffic control using Zigbee	Mumbai
108.	Manoj Wajekar Aniket Tilgule Kiran Shinde	Smart car parking management system	Mumbai
109.	Rashmi Saratkar	Centre symmetric LBP-an effective texture spectrum descriptor	Mumbai
110.	Shubhangi Ghate	An algorithm of total variation fot image inpainting	Mumbai

111.	Shubhangi Ghate	AVS-Embedded ulti format video decoder	IJCER
112.	Myuresh Kene Shireen Meher Aniket Marathe	Sign language recognition system	Mumbai
113.	Ekta Patil	Android Privacy	Mumbai
114.	Laxman Sonnur	Automatics dual axis low cost solar tracking system using microcontroller	Mumbai
115.	Aniket Udare Swapnil Deore Akash Singh	Gender detection using face detection	Mumbai
116.	Rishikesh Yadav	Fusion of PET and CT Images using Wavelet Transform	Mumbai

Institute motivates students to do internship in reputed R&D institutes like BARC, IIT and leading corporate organizations.

Table 5.11: List of Internships by students.

Sr. No	Student Name	Name of institution/company	Year
1.	Malvade Omkar, Mihir Pingale, Navyashri Emani	Reliance Petrochemical, Nagothne, Raigad	2015
2.	Rutuja Shete, Aarti Shitole, Vishakha Vhavhal,Ashish Murlidharan, Ashutosh Bhalerao, Salvi Siddhi, Faizan Khan, Yadnya Asodekar,Aditya Rangrajan, Abhishek Bhovad, Uttamkumar Shinde, Rajdeep Suryawanshi, Shrikant Sahu, Aditya Katarvavare, Vaibhav Deshmukh, Rutuja Shete, Arti Shitole Vishal Wahval	RCF, Mahul Village, Chembur	2015
3.	Sneha Dhole, Swati Dongare	HPCL, Mahul Village, Chembur	2015
4.	Hrishiraj Parwadi	ONGC,Panvel	2015
5.	Harsha Pawar	BPCL, Mahul Village, Chembur	2015
6.	Anupama Galgali, Abhilash Ganeshkar, Aditya Patki, Sayali Pangare	Reliance Industries, Patalganga, Raigad	2015
7.	Reyashree Mallick, Aishwarya Palav	BARC, Anushaktinagar, Chembur	2015
8.	Safaya Kashyap, Gupta Richa	NPCIL, Anushaktinagar, Chembur	2015
9.	Kajal Varade, Divesh Koli Sonam Thali	ONGC, Uran, Panvel	2015
10.	Akshay Chavan	Bharat Electronics, Mumbai	2015
11.	Siddhant Patil	MSEB, Bandra	2015
12.	Rahul Gadare	SIEMENS, Kalwa,	2015

		Thane	
13.	Harshal More	Reliance Petrochemicals, Nagothane, Raigad	2014
14.	Ankit Nadkar, Umesh Kene Pratik Patil, Onkar Pimple	RCF, Mahul Village, Chembur	2014
15.	Pratik Kamble, Kalpita Malvankar, Faraz Thakur Vaibhav Mishra, Gaurav Shetty Mayuresh Shelke, Ajinkya Yalmar, Kalhan Kampasi, Vishal Vavhal,	ONGC, Uran, Panvel	2014
16.	Kunika Kharat	ONGC, Bombay High	2014
17.	Aditya Rangarajan	BARC, Anushaktinagar, Chembur	2014
18.	Ajinkya Yalmar, Gaurav Shetty Mayuresh Shelke	Deepak Fertilizers and Petrochemicals, Rasayani, Raigad	2014
19.	Hiteshbhai Patel	Detection Instruments, Mhape, Mumbai	2015
20.	Roopak Naigaonkar, Rahul Panchal	SI Group, Thane, Belapur Road	2015
21.	Pooja Sharma	BARC, Anushaktinagar, Chembur	2015
22.	Pranav Dherange	Hindalco, Worli, Mumbai	2015
23.	Ajinkya Yalmar	MIDC,Taloja	2014
24.	Shamika Gupte, Deepa Ambar, Anagha Satose, Vrushali Patil	L & T, Andheri, Mumbai	2014
25.	Shrishti Patil	BARC, Anushaktinagar, Chembur	2015
26.	Prathmesh Haldankar, Rithvika Acharya, Sunny Ghawali	BPCL, Mahul Village, Chembur	2015
27.	Shruti Chaurasia	SIEMENS, Thane	2013
28.	Kulthe Aditya	BPCL, Mahul Village, Chembur	2013
29.	Kampasi Kalhan, Vaibhav Mishra	ONGC, Uran, Panvel	2013
30.	Riddhi Vaidya	L & T, ,Andheri, Mumbai	2013
31.	Tejas Sarankar, Aniket Shinde Saikrishna Reddy	Air-India, Mumbai	2013
32.	Shweta Mhatre, Jayesh Naik	RCF, Mahul Village, Chembur	2013
33.	Tushar Shirude, Abhishek Pandey	BARC, Anushaktinagar, Chembur	2013
34.	Kadu Niteesh, Bonawate Abhishek, Patil Deepesh	HPCL, Mahul Village, Chembur	2013
35.	Vishvesh Petkar	Sivananda Electronics	2013
36.	Vaidya Riddhi	SIEMENS	2013
37.	Abhimanyu Dogra	APLAB	2013
38.	Anamane Aditya	Air India	2013

39.	Pratik Kamble, Kapadne Neha	RCF, Mahul Village, Chembur	2013
40.	Abhishek Pande, Bodekar Prakash, Aditya Anamane, Swapnil Joshi	BARC, Anushaktinagar, Chembur	2013
41.	Kunal Phondekar	ONGC, Uran, Panvel	2013
42.	Ajinkya Yalmar, Gaurav Shetty Mayuresh Shelke	MIDC, Taloja, Panvel	2014
43.	More Harshal	Reliance Petrochemicals, Nagonthne, Raigad	2014
44.	Ankit Nadkar, Umesh Kene Pratik Patil, Onkar Pimple Vijesh Vidyanandan, Karan Haksar, Abhijeet Kharade	RCF, Mahul Village, Chembur	2014
45.	Rohan Kamble	Reliance Petrochemicals, Nagonthne, Raigad	2013
46.	Vishvesh Pethkar	Shivanda Electronics, Nashik	2014
47.	Aditya Kulthe	Bharat Petroleum Corporation LTD.	2013
48.	Shraddha Sharma	Hewlett-Packard	2014
49.	Abhishek Rane	London School of Economics	2014
50.	Parisha Gupta, Shishir Ambastha, Rahul Khandalkar	BARC	2014
51.	Sharad Kotha	BSNL	2014
52.	Shweta Chabuskawar	Indian oil Corporation Ltd.,	2014
53.	Siddarth Kumar, Anupama Saha	AVOTUS	2014
54.	Jaspreet Kaur Bassan	Tata thermal power plant.	2014
55.	Wajge Jagruti, Sachin Biradar, Udit Mhatre	Reliance	2014
56.	Perekar Madhuri	RCF	2014
57.	Divya Sharma	Orange Business Services India PVT. LTD.	2014
58.	Shubham Trivedi	Reliance Corporate IT Park Ltd.,	2015
59.	Sushant Alone	Ordanance Factory	2015
60.	Kumar Saurabh	Tech Mahindra	2015
61.	Priyanka Pawar	G.G.M, PMU, ONGC	2015
62.	Sumeet Anil Deshmukh	Persistent System	2013
63.	Harpreet Kaur	Reliance ADA	2014
64.	Ashwini Bangar	L&T Infotech	2014
65.	Nishant Sharma	PDCOR Ltd, Jaipur, Rajasthan	2014
66.	Sneha Sanap	Air India	2014
67.	Yadav Dilip Kumar	Ngenious Solutions, Mumbai	2015

68.	Shreya Bhindade	MAHAGUN Co	2015
69.	Akshay Bhandari, Aniket Giriyalkar, Sahu Swati	BARC	2015
70.	Varun Shanbhag	L&T Infotech	2015
71.	Chitan Bhatt	ONGC, Mumbai	2013
72.	Probhudho Chkraborty	Tarapur Atomic Power station 3&4 , Tarapur	2014
73.	Akansha Purohit	TCS	2015
74.	Rajat Deepak Mathur	BARC	2012
75.	Avinash R Gond, Chinmay S Joshi Aniket V Gharat, Mayur S Bille Ashish A Jadhav, Gursimran Singh	Mazgaon Dock Ltd.	2012
76.	Akash Singh, Pooja Gaikwad Siddhi Waman, Kajal Gaglani Shivangi Guleria	BARC, Mumbai	2013
77.	Apoorva R Gajendragadkar	Tata Power Pvt. Ltd.	2013
78.	Rutuja Bavne	JNPT, Navasheva	2013
79.	Vinay Jaiswar, Sayli D Suryarao Manasi Parekh, Aniruddha Warade	BARC, Mumbai	2013
80.	Shashwat Goyal	NPCIL, Mumbai	2013
81.	Prashant Dalal	Jawaharlal Nehru Port Trust	2013
82.	Devdip Sen, Shreya chakraborty	NPCIL, Mumbai	2013
83.	Shantanu Shubham	NTPC	2013
84.	Satyajeet Nikam	RCF	2013
85.	Apoorva Singh, Aniket Wasulkar Aditya Tumsare, Nitin Verma Prashant Singh, Sainath A Sanap	HRDD, BARC	2013
86.	Nayan Milind Mahajan	Jacob Engg. (India)	2013
87.	Srinath Bhradwaj, Akshay Chirag Dawra	AIMIL	2013
88.	Hemali Mhatre	JNPT	2013
89.	Nikita agarwal	Siemens	2013
90.	Siddarth A Chakrapani	Orange Business Solutions	2013
91.	Aniket Marathe, Mayuresh Keni	Bormonz	2013
92.	Anurag Jain, Kunal K Ghadge	Aplab	2013
93.	Soni Mishra	JSW Steel Ltd.	2013
94.	Chinmay P, Alpana Sharan	Ascent Team	2013
95.	Juhi Korhe, Sanika Lokhande, Vijayalakshmi M Kiran Pale, Sonal Dandekar, Aiman Ansari	G.T.P.S Power station, URAN	2013
96.	Vaidehi Rane	Reliance Industries, Patalganga	2014
97.	Ganesh Haridas, Kunal Ghadge	Vital Electronics, Mahape	2014
98.	Rutuparna Nitave	AIR INDIA	2014
99.	Aditya Himanshu, Arminder Jain Supriya Jantre, Karthik K Subramaniam,	BARC, Mumbai	2014

	Shreya Chakraborty Aditya Mishra, Kevin Alex, Tanmay Kurmi, Ajinkya Mali		
100.	Ruchira Naphade, Kshitij Mishra	Siemens Ltd.	2014
101.	Anup Sawant, Omkar Mokashi, Anirudh Balsubramaniam, Deepan Poddar, Mrinal Mahesh P Rajat Chauhan, Vinay Jaiswar	BARC, Mumbai	2014
102.	Eshan Mozarkar	LSP, Wardha	2014
103.	Kaustubh Dhonde	Reliance	2014
104.	Deepesh Juvekar, Abhijit Patil	Emerson Network Power India	2014
105.	Gaurav Bhokare	A.P.M. Terminds	2014
106.	Purba Roy	BARC, Mumbai	2014
107.	Chinmayee Paunikar, Amrita Pujari	L&T	2014
108.	Rahul S Kolekar	M/S Reliance Infrastructure	2014
109.	Shrijay Dalvi	BSNL	2014
110.	Shamli Soni	ONGC, Elcome Integrated System	2014
111.	Pooja P Patil, Rachna shetty Sujan Reddy, Srushty Nakhwa	ONGC	2014
112.	Aniket Raut	Reliance Industries Ltd.	2014
113.	Hitali Patil	IIG, New Panvel	2014
114.	Ankita Manjarekar, Richa Gupta Gopal Mahajan	COEP College, Pune	2014
115.	Aditya Arora	Shiv Tech. Equipment Ltd.	2014
116.	Priyam Verma	L&T	2014
117.	Ojas Phansekar	Portescap	2014
118.	Siddarth Chakrapani, Pratik Kokate	Reliance Communications	2014
119.	Pragati Shukla	Siemens Ltd.	2014
120.	Ankita Parab, Pooja Patil Shweta Rai	Western Railway Larsen & Toubro	2014
121.	Anurag Jain, Anwesha Bhattacharya	ECIL	2014
122.	Tejshree Tandel	NALCO	2014
123.	Kunal Ghadge	Print Electronics Pvt. Ltd.	2014
124.	Mayur S Shringare	Bharat Bijlee, Airoli	2014
125.	Ankita Raut	Relience Industries Ltd	2014
126.	Arminder Matharu	BARC, Mumbai	2014
127.	Aditi A Dasgupta, Neha Kanyal	L&T Infotech	2015
128.	Alpana Jamadagni, Srishti Kamble	Mazgaon Dock	2015
129.	Shruti Padwal	RCF, Thal	2015
130.	Parag R Patil	L&T Automation	2015
131.	Gaurav Hajare, Ruchita Gupta	Railways	2015
132.	Gaurav Hajare, Mrinal M P	Siemens	2015
133.	Hitali B Patil	Ordinance Factory	2015

		Ambernath	
134.	Chinmay Kargutkar	L&T Business Park	2015
135.	Yugandhara Chandratre, Mannat Dev, Anubhav Pratap Singh, Abhishek Misal, Ajinkya Pisal Purba Roy, Amruta Pujari, Chinmayee Paunikar Sanjay J Pandaith Shriram Ranjan, Yadula Surve	BARC, Mumbai	2015
136.	Onish Chamoli	Godrej	2015
137.	Akrishti Jain	NPCIL	2015
138.	Dia Ghosh	BSNL	2015

- Institute is also actively involved in research activities. Institute has entered into an MOU with Gauranga SoftTech for Joint research and developments at RAIT and GAURANGA including internship to institute students.
- Institute is part of Virtual Laboratory initiative of IIT Bombay.
- RAIT has Developed e-yantra Laboratory jointly with IIT Bombay for advance robotics under e-yantra Lab set-up Initiative (eLSI) Programme.
- eLSI aims to enable Institutes to teach Robotics and Embedded Systems in an effective manner by training teams of 4 teachers from Institute, in the basics of Embedded systems theory and Microcontroller programming through a 2-day workshop.
- Institute has various technical committees which tie up with national and international organization like IEEE, IETE, ISA, CSI, ISTE etc.

Major activities of technical committees are discussed in detail in Criteria 5.3.5.

5.1.5 Describe the efforts made by the institution to facilitate entrepreneurial skills, among the students and the impact of the efforts.

- RAIT has an active Entrepreneurship Development Cell called MOTIF.
- The Entrepreneurship Development Cell aims to provide a conduit by which students can access relevant entrepreneurial resources, network with prominent entrepreneurs, share ideas and nurture them.
- MOTIF aims to create an amicable atmosphere for passionate and enthusiastic people with ideas. It also aims to provide RAITians with a powerful knowledge base through resources, alumni meetings, industrial exposure, seminars and creative workshops which will help them to understand the practical aspects of entrepreneurship and working of successful businesses.
- The MOTIF has organized number of programs, awareness drives in collaboration with NEN, IIT – SINE.
- RAIT has established an incubation center under Motif to encourage actively the budding entrepreneurs.

Some of program organized by MOTIF in year 2014-15:

- **Illuminate Workshops**
  - Concept: *To teach basics of Entrepreneurship with specific focus on drafting a Business Plan*
  - Guests: Mr. Ajeet Khurana, CEO, SINE (Society for Innovation and Entrepreneurship) Initiative.,IITB
  - Goals: The goals of the workshop are to provide the budding entrepreneurs with relevant knowledge regarding Entrepreneurship, current Entrepreneurial environment in India as well as an expert opinion on the ideas put forth by them.

- **Relevance of Networking**

  - Concept: *Workshop on Networking*
  - Guests: Mr. Soumil Khandhadia
  - Goals: The goal of the workshop was to demonstrate the relevance of networking in today"s business environment.

- **The Ultimate Plan**

  - Concept: To organize a business plan competition
  - Guests: Dr. Joseph Roderick, Manasi Jhawela
  - Goals: The goals of the event are to provide the budding entrepreneurs a chance to present their business plan and get feedback on the same.

- **Who wants to be an Entrepreneur?**

  - Concept: To test the basics of Entrepreneurship
  - Guests: Father Joseph Roderick
  - Goals: The goals of the event are to provide the budding entrepreneurs a chance test their knowledge regarding Entrepreneurship.

- **RAIT Incubation Centre (RIC)**

  - RIC is an incubator that provides support for technology based start-up. It is an umbrella for promotion of entrepreneurship at RAIT. Provide an environment to translate knowledge and innovation into creation of successful entrepreneurs.
  - RAIT provides budding entrepreneurs with seed money for procuring inventory for ratification and proving of their prototypes. On success of prototypes RAIT provides all assistance for making the student and product successful.
  - RIC is working towards creating an ecosystem that will foster and support innovation and knowledge based entrepreneurship amongst the RAIT community leading to the creation of wealth and social value through successful ventures.

Following students have been successful in floating new ventures and being run by student entrepreneurs:

Table 5.12: List of student entrepreneurs.

Sr. No.	Student Group	Enterprise	Products/Service
1.	Sanket Kumar Biswas	Software applications	Web Sites & Services
2.	Mahesh Pawar	Software Projects & IOT	ICT for class room

5.1.6 Enumerate the policies and strategies of the institution which promote participation of students in extracurricular and co- curricular activities such as sports, games, Quiz competitions, debate and discussions, cultural activities etc.

- The management is committed to provide best of the facilities in terms of infrastructure and academic fronts. The additional sports facilities of international repute like Dr. D.Y. Patil Sports stadium and swimming pool and other sports facilities aid in all round development of a student. RAIT sponsors and support extensively students an extracurricular activity for their overall development as it is firmly believes that these activities make students better equipped to develop up leadership qualities.
- There are several committees in the Institution to promote and motivate the students to get actively involved in the extracurricular and co-curricular activities, like sports, games, Quiz competitions, debate and discussions, cultural activities etc.
- Different policies and strategies on different extracurricular and co-curricular activities are usually framed by the respective and relevant committee in consultation with the HODs and Head of the Institute.
- Kalaraag is a unique endeavour started by the students to show their talents in fine arts and creative art. It has consistently proved its mettle in performing art by winning accolades in folk dances, skits, theatre and other forms of art. Our students are consistently winning prizes for the last 15 years at the university level. So professionally has it presented itself that it has links in the Marathi theatre.
- Sports Students of RAIT are not only known for their academic performance but are also sports enthusiast they play Cricket, Football, Basket Ball , Table Tennis , Swimming and various other sports. D. Y. Patil Sports Academy encourages the students to utilise all the resources available in the campus. RAIT organises Stamina which is a 3-day Intra RAIT sports tournament that sees top participation for all events.
- Social Wing - It was formed in September, 2013 and has undertaken activities like – teaching underprivileged children, awareness drives (through seminars/street plays), various environmental activities (clean up drives, promoting renewable energy resources, etc). The Social Wing is open for everyone who wants to volunteer for such activities. The fortunate ones can remove the barrier between the privileged and the underprivileged, and get to be a part of spreading happiness.

Table 5.13: List of activities carried out by social wing RAIT.

Sr. No	Program	Duration
1.	Swatch Bharat Cleanliness Drive	3 Days
2.	Visit to Orphanage	2 days
3.	Cloth Collection and Donation Drive	2 Weeks
4.	Donation of Cloth, Books, Toys and Computers to orphanages, electronic equipment to old age homes	1 day
5.	Visit to old age homes	1 Day
6.	Street play to spread social message	5 Days
7.	Teaching to slum children	Regular
8.	Help during disaster in any part of country	Incidental
9.	Traffic management during ganpati festival	1 Day
10.	Science Exhibition and Career Guidance for orphanage children"s	2 days

- Additional academic support, flexibility in examinations
  - All cultural, sports and technical committees and individual students give details of extracurricular activity and participation to class counselor of individual batch.
  - Class counselor arranges extra classes to fulfill the gap because of participation in extracurricular activity.
  - Library is kept open from 8 am in morning to 8.00 pm in evening so that students can study even after Institute hours.
  - University of Mumbai grants additional marks for students taking part in national and international sports and extracurricular aspects.
- Special dietary requirements, sports uniform and materials
  - Sports uniforms and sports materials are provided by the Institute for sports persons.
  - Food packets are arranged by the Institute for extracurricular events.
  - Coaching and other professional support is provided to sports person with the help of D.Y. Patil sports academy (present in campus) and also for cultural activities of kalarag.
- Any other
  - Inter Department cricket tournament (EPL –Engineering premier league) and football league (CPL- Collage premier league) are organized in the Institute every year, where students as well as faculty members and other staff from the Institute participate.
  - Institute takes part in Inter Institute sports tournament Olympia organized by D. Y. Patil Sports academy (DYPSA) and has won many sports trophies.
  - Institute takes pride in providing number of State and national level sports persons given in Table 5.14.

Table 5.14: List of national and International sports achiever.

Sr. No	Name of Player	Sports
1	Mr. Abey Kruvilla	International Cricket Player
2	Mr. Ean Dev	Ranji Player Cricket
3	Mr. Ajinkya Parte	Played for Middlesex County Cricket club, UK

4	Mr Pranav Shetty	International Open Grandmasters Chess tournament
5	Mr Shaaz sayed	National Hockey Player
6	Mr Vishwanath Karindikar	National Football Player
7	Mr Vikrant Shinde	National Judo Player

- Many quiz, debate competitions and coding competitions are organized in the Institute, where the students actively participate.
- RAIT Annual cultural Fest HORIZON is a symbol of glorious culture of this Institute. Many popular celebrity Bands like Jal, Shankar-Ehsaan-Loy (repeatedly), Yana Gupta, Indian Ocean, Pritam with his Metro Band, Fazal Quereshi Gary Lawyer and many more have performed. Also the students from this institution participate in the fest, showing their unique talents in various fields.

5.1.7 Enumerating on the support and guidance provided to the students in preparing for the competitive exams, give details on the number of students appeared and qualified in various competitive exams such as UGC-CSIR-NET, UGCNET, SLET, ATE/CAT/GRE/TOFEL/GMAT/Central/State services, Defence, Civil Services, etc.

- This institution has a key focus in motivating students for higher studies or research career. Placement cell regularly organizes career counselling sessions. Information about career scope in various industries like IT, Embedded, VLSI is given. Students are motivated to take professional courses and competitive exams like GATE, GRE, CAT, TOFEL, IELTS and AMCAT.
- Orientation on various options for higher education and studying abroad is provided. Many students from this institution have gone for higher studies abroad or working as research scientists in premier research institutes like BARC, ISRO etc.
- Various lectures on how to prepare for GATE, GRE, CAT and Aptitude classes are arranged. Mock tests are also arranged with this purpose. This has resulted into many success stories.

- Soft skill development classes are regularly arranged for the students to enhance their communication skill, logical, numerical ability and problem solving skills. Support of Language Lab is taken to improve spoken English skills.

Table 5.15: Electronics Department students qualified in Competitive exams.

Sr No	Academic Year	No students qualified in Competitive Exams				
		GATE	GRE/GMAT	Defense SSB	UPSC/ MPSC	CAT/ CET
1	2011-2012	03	22	00	00	04
2	2012-2013	05	39	00	01	02
3	2013-2014	05	56	01	01	02
4	2014-2015	54	11	00	00	01

Table 5.16: Instrumentation Department students qualified in Competitive Exams.

Sr No	Academic Year	No students qualified in Competitive Exams				
		GATE	GRE/GMAT	Defense SSB	UPSC/ MPSC	CAT/ CET
1	2011-2012	06	03	00	00	04
2	2012-2013	09	08	02	00	07
3	2013-2014	12	42	02	00	10
4	2014-2015	13	10	NA	NA	04

Table 5.17: Computer Department students qualified in Competitive Exams.

Sr No	Academic Year	No students qualified in Competitive Exams				
		GATE	GRE/GMAT	Defense SSB	UPSC/ MPSC	CAT/ CET
1	2011-2012	21	8	0	1	1
2	2012-2013	14	13	1	1	10
3	2013-2014	20	24	2	2	6
4	2014-2015	32	30	1	4	5

Table 5.18: Information Technology Department students qualified in Competitive Exams.

Sr No	Academic Year	No students qualified in Competitive Exams				
		GATE	GRE/GMAT	Defense SSB	UPSC/ MPSC	CAT/ CET
1	2011-2012	01	14	00	00	01
2	2012-2013	00	24	02	00	01
3	2013-2014	02	17	02	00	04
4	2014-2015	03	12	02	00	03

Table 5.19: Electronics and Telecommunication Department students qualified in Competitive Exams.

Sr No	Academic Year	No students qualified in Competitive Exams				
		GATE	GRE/GMAT	Defense SSB	UPSC/ MPSC	CAT/ CET
1	2011-2012	07	24	00	00	00
2	2012-2013	05	26	02	00	02
3	2013-2014	07	30	02	00	00
4	2014-2015	49	40	00	00	00

5.1.8 What type of counselling services are made available to the students (academic, personal, career, psycho-social etc?)

- Academic Counselling:
  - The institute provides regular counselling to the students to address issues relating to their academic shortfall and obstacles. Institute has constituted a dedicated team of Faculty to counsel the students academically. One class counselor is assigned to every class.

- Class counsellor look after their academic requirements, Attendance and makes arrangements for remedial and tutorial classes.
- Class counsellor also arrange regular meeting with students to get various .suggestions from student. Students can freely express their view, Suggest improvement, demand for any additional facility required.
- After discussing with HOD class counsellor try to implement suggestions.
- Parents are provided opportunity to meet the department teachers, HOD, and Principal to ascertain the progress of their wards. They are regularly informed about the progress twice a semester.

- Personal Counselling:
  - Our dedicated team of class counsellors also takes personal care in the case of academically low or irregular students. Interaction with such students is done at one-to-one level. The students are encouraged to share their personal problem and a friendly environment is provided to make them comfortable to share their personal problems. The mentors maintain secrecy of any personal information and take necessary corrective steps in consultation with senior faculty members, and if required, parents are informed.
- Career Counselling:
  - Training and Placement Cell at RAIT is primarily involved in Career Guidance. All the students are provided with intense and multidimensional career guidance throughout the course duration. Online assessment tests are conducted for the students so that they can analyse their strengths and weaknesses.
- The placement cell is involved in:
  - Organizing in-plant training programs for hands-on experience
  - Organizing programs to enhance soft-skills
  - Career counselling for pursuing higher studies in India and abroad
  - Conducting entrepreneurship development programs to motivate aspiring students
- Psycho-social
  - RAIT has understood that students having psychosocial disorders frequently have difficulty in coping up with social situations as this reflects in effective communication with others. The problems relating to social factors affecting student‟s mental health viz. peer pressure, parental support, cultural and religious background, socioeconomic status, and interpersonal relationships are addressed through their mentors. At times the senior faculty members of RAIT also get involved to control problems relating to above factors.
  - Mentors generally identify such cases with help of fellow students and some time they are referred to Psychiatry department.
  - RAIT has conducted several wellness and stress removal programmes for benefit of students from reputed social groups such as Vivekananda Society, Brahmakumari‟s organization etc. The details of courses are shown below:

Table 5.20: Enrichment program for students.

Sr. No	Enrichment Programs	Year
1.	Stress Free Workshop by Brahma Kumari	13-20 August 2013
2.	Technical Talk on Research Trends in Aeronautics Engineering by Ex NASA Dr Zakir Taquvi	2014
3.	Stress Management Workshop by Ramakrishna mission	6- 7th February 2014
4.	Sahaj Yoga Meditation for Students & Faculties	2-5th March 2015
5.	Technical Talk by BARC director Shri. Sekhar Basu (India‟s Nuclear Power Program)	2015
6.	Success Mantra for Life by Mrs Jayanti Chavan	16th September 2015
7.	Effective Public Speaking by Mr. Mihir Mankad	11th August 2015

5.1.8 Does the institution have a structured mechanism for career guidance and placement of its students? If 'yes', detail on the services provided to help students identify job opportunities and prepare themselves for interview and the percentage of students selected during campus interviews by different employers (list the employers and the programmes).

- Yes, The Institute has a dedicated Training and Placement Cell working round the year to provide efficient, effective training and employment opportunities for all students.
- Various training initiatives have been taken up by the Training and Placement Cell to develop the required skills in students so as to get them placed in reputed organizations
- RAIT has an excellent track record in finding placement for all its students. Our passout students can now be found in leading corporate and business houses, with remuneration packages on par with international standards.
- RAIT‟s high standards and close relationship with the industry brings some of the best recruiters to the campus. Organizations that regularly participate in campus recruitment include Infosys, TCS, HCL, Mahindra Satyam, L&T Infotech, Nomura, J. P. Morgan, Morgan Stanley, Nvidia, Microsoft, Oracle and other national and multinational corporations.

Our recruiter:

- **Our Mass Recruiters:**
  - Tata Consultancy Services (TCS) has recruited 200 (year 2015), 164 (year 2014), 148 (year 2013) students in a single day from RAIT.
  - INFOSYS has recruited 202 (year 2012) students in a single day from RAIT

- **Our Dream Recruiters (Top offers)**
  - Morgan Stanley 12.70 Lacs/Annum
  - J.P. Morgan 6.5 Lacs / Annum
  - Nomura 5.5. Lacs/Annum
  - Mahanagar Gas 5.5. Lacs/ Annum

Industry Institute Partnership to promote placements

- **INFOSYS Campus Connect**
  - Foundation Program
  - Softskills Program
  - Aspirations 20:20 Programming Contest
  - Spark : Industrial Visit to INFOSYS

- **ORACLE Workforce Development Program**
  - ORACLE Certified Professional (OCP)
  - ORACLE Certified Administrator (OCA)
- **TCS has signed MoU for**
  - Faculty Development Programs (FDP)
  - Technical Seminar series
  - Best Student Award for Academic Excellence
  - Best Project Award
  - Internship openings
  - Contests like EngiNX and TESTimony
- **Persistent Systems**
  - Mentors allotted for final year projects
- **T.I.M.E.**
  - Aptitude training series for 40 Hrs.
  - 30 Online tests post training
- **Roy E. Charles and Associates**
  - Softskills Training
  - Group Discussions
  - Personal Interview Series
- **Mock Placement drives by various companies and HRs.**

Table 5. 21 : RAIT 2014-15 Placement Records.

Sr. No.	Company Name	CE	EL	ET	IT	IN	Total
1.	SMG Convonix	1	5	3	0	0	9
2.	HCL Technologies	1	1	3	1	0	6
3.	Hexaware	0	1	0	0	0	1
4.	HP	2	0	0	0	0	2
5.	HSBC	11	7	1	2	0	21
6.	I-Gate	6	3	3	3	0	15
7.	J. P. Morgan	1	0	0	1	0	2
8.	L&T Infotech	9	12	17	6	1	45
9.	Mindcraft	2	0	0	2	0	4
10.	Persistent Systems	4	0	0	4	0	8
11.	Protegrity	1	1	0	1	0	3
12.	TCS	55	52	69	14	10	200
13.	Tech Mahindra	5	5	9	14	3	36
14.	Wisdm Labs	1	0	0	0	0	1
15.	Ariston Capital	0	0	0	0	0	0
16.	Yoodle	0	0	0	0	0	0
17.	Quinox	0	0	0	0	0	0
18.	Zarca	2	8	1	0	0	11
19.	Morgan Stanley	0	0	0	0	0	0
20.	Teradata	1	0	0	0	0	1
21.	GEP	02 ME	00	00	00	00	02
22.	Reliance Retail	02	00	00	01	00	03
23.	Reliance Jio-4G	11	00	00	08	00	19
TOTAL		**117**	**95**	**106**	**57**	**14**	**389**

Table 5.22 : RAIT 2013- 14 Placement Records.

Sr. No.	Company name	CE	EL	ET	IT	IN	Total	pay package
1	TCS	43	36	40	22	7	148	3.16 L/A
2	HSBC	2	8	5	4	3	22	3.30 L/A
3	Tech-Mahindra	3	2	6	2	2	15	3.30 L/A
4	JP Morgan	7	0	0	4	0	11	6.5 L/A
5	Morgan Stanley	1	0	0	0	0	1	12.70 L/A
6	Inscripts	2	0	0	1	0	3	2.85 L/A
7	Johnson Controls	0	0	0	0	1	1	3.0 L/A
8	Lnt Infotech	2	1	1	0	0	4	3.0 L/A
9	Mphasis	1	0	0	0	0	1	3.0 L/A
10	NSE-IT	3	1	0	0	0	4	3.75 L/A
11	NTT	0	0	0	1	0	1	6.0 L/A
12	Oracle financials	0	0	0	1	0	1	3.5 L/A
13	Persistent systems	2	0	0	3	0	5	3.30 L/A
14	Quinox	1	0	0	1	0	2	2.85 L/A

15	Technimont	0	0	0	0	1	1	2.80 L/A
16	Technip	0	0	0	0	1	1	2.5 L/A
17	ElectroLab	0	1	0	0	0	1	2.3 L/A
18	yoodle Infotech	0	0	1	0	0	1	3.0 L/A
19	ZTE	0	4	2	0	0	6	3.0 L/A
20	IBM India	1	0	0	0	0	1	3. 0 L/A
21	De-Pronto	1	0	0	0	0	1	2.0 L/A
22	Zycus	0	2	1	0	0	3	3.40 L/A
23	Mahanagar Gas Ltd	0	0	0	0	1	1	5.25 L/A
24	Reliance IT	1	2	2	1	0	6	3.25 L/A
25	Reliance Communications (4G)	1	0	0	0	0	1	3.25 L/A
26	Accelyakale	5	0	0	0	0	5	3.25 L/A
27	AMDOCS	1	0	0	0	0	1	3.50 L/A
28	Ariston Capital	0	1	1	0	0	2	3.5 L/A
29	Bewakoof.com	2	2	0	1	0	5	2.0 L/A
30	VVF	0	0	0	0	1	1	3.0 L/A
31	Computer Sciences Corporation (CSC)	1	1	0	0	0	2	3.5 L/A
32	Convonix	0	2	1	0	0	3	2.85 L/A
33	Direct i	1	1	0	0	0	2	3.5 L/A
34	Hexaware	0	0	0	1	0	1	2.85 L/A
35	Indian Navy	0	2	0	2	3	7	8.65 L/A
36	Wisdmlabs	1	0	0	0	0	1	3.0 L/A
37	Zarca / Mouthshut.com	1	1	1	1	0	4	3.0 L/A
38	Xoriant Technologies Ltd	0	0	0	1	0	1	3.0 L/A
39	NetMagic Solutions	1	0	0	0	0	1	3.0 L/A
40	Syntel India Ltd.	5	6	0	2	0	13	3.0 L/A
TOTAL		91	74	63	48	20	296	

Table 5.23: Placement Records for year 2012-13.

SrNo	Company name	CE	EL	ET	IN	IT	Total	Pay package
1	TCS	46	40	46	11	21	164	3.16 L/A
2	HCL	3	4	3	0	8	18	3.5 L/A

3	HSBC	3	6	0	0	0	9	3.3 L/A
4	AccelyaKale	2	0	0	0	3	5	3.25 L/A
5	Avotus	1	0	0	0	1	2	2.0 L/A
6	MPhasis	0	0	0	0	1	1	3.3 L/A
7	Convonix	1	5	1	0	0	7	3.3 L/A
8	Verchaska	0	0	0	0	0	0	3.3. L/A
9	Reliance IT	0	0	1	0	0	1	3.5 L/A
10	Inscripts	4	0	0	0	0	4	3.25 L/A
11	J. P. Morgan	4	0	0	0	2	6	6.5 L/A
12	Mahanagar Gas	0	0	0	2	0	2	6.5 L/A
13	MT Educare	0	0	2	1	0	3	3.0 L/A
14	Nomura	4	0	1	0	0	5	5.5 L/A
15	NSE IT	2	0	1	0	0	3	3.35 L/A
16	OFSS	2	0	1	0	0	3	3.0 L/A
17	Sikraft	0	0	0	7	0	7	2.5 L/A
18	Indian Navy	1	1	1	0	1	4	8.5 L/A
19	Microsoft	0	0	0	0	0	0	7.56 L/A
20	Godrej Infotech	0	1	0	0	0	1	2.5L/A
21	FSS	1	0	0	0	1	2	2.75L/A
22	Morgan Stanley	0	0	0	0	0	0	11.70 L/A
23	AMDOCS	1	0	0	0	0	1	3.5 L/A
24	Directi	1	0	1	0	0	2	3.0 L /A
25	Tech-Mahindra	5	3	3	2	2	15	3.25L/A
26	Ariston Capital	None						
27	Neeyamo	None						
28	INVENSYS	01						3.25 L/A
29	Total	81	60	61	40	24	266	

Table 5.24: Placement Records for year 2011-12.

Sr no	Company name	CE	EL	ET	IT	IN	Total	Pay Package
1	Inscripts	2	1	2	0	0	5	2.88 L/A
2	HCL Technologies	31	15	12	26	0	84	3.5L/A
3	Convonix	2	0	3	5	2	12	3.25L/A
4	Infosys limited	61	23	40	61	17	202	3.25L/A
5	ATOS Origin	8	4	2	2	3	19	3.4L/A
6	L & T Infotech	1	0	0	0	1	2	2.87L/A
7	IRIS	1	3	1	2	0	7	2.85L/A
8	HSBC	0	2	0	2	0	4	3.1L/A

9	Patni iGate	0	0	0	1	0	1	3L/A
10	Tech Mahindra	0	0	0	1	1	2	3L/A
11	J. P. Morgan	8	7	0	0	0	15	6.5L/A
12	Microsoft	2	0	0	0	0	2	7.68L/A
13	Indus Valley Partners	1	0	0	0	0	1	5.5L/A
14	Nomura	1	1	2	0	0	4	5.5L/A
15	Monsanto Holdings	1	0	0	0	0	1	3L/A
16	Sterling	0	0	1	0	0	1	2.85L/A
17	Mott McDonald	0	0	0	0	1	1	2.5L/A
18	Teradata	9	4	0	0	0	13	2.75L/A
19	AGC Networks	1	0	3	8	0	12	3.5L/A
20	Sikraft	0	0	0	0	6	6	2.85L/A
21	Sharplinegroup	0	0	0	0	3	3	2.5L/A
22	Godrej	0	1	1	1	1	0	2.5 L/A
Total		**129**	**61**	**68**	**109**	**35**	**402**	

Table 5.25: Placement Record for the year 2010-11.

Sr No	Company name	CE	EL	ET	IT	IN	Total	Pay Package
1	Infosys (30/12/10)	47	28	62	25	11	173	3.25L/A
2	Remindo (Flora)*	0	0	3	2	0	5	6.00L/A
3	Convonix : SEO (21/01/11)	6	3	1	2	1	13	3.30L/A
4	Microsoft* (12/01/11)	1	0	0	0	0	1	7.68L/A
5	Tech-Mahindra (05/01/11)	10	10	12	4	0	36	2.90L/A
6	Quinnox(01/02/11)	0	0	1	0	0	1	2.35L/A
7	Hexaware	0	0	1	0	0	1	2.10L/A
8	HSBC (09/01/11)	3	3	8	0	0	14	2.80L/A
9	Patni (07/01/11)	9	3	10	3	4	29	3.00L/A
10	J. P. Morgan* (13/10/10)	0	0	12	4	0	16	6.32L/A
11	Thirdware (25/01/11)	0	0	1	0	0	1	3.00L/A
12	Bayer India Ltd. (17/01/11)	1	1	2	0	0	4	3.42L/A

13	Atos India Ltd. (13/01/11)	4	3	1	1	1	10	3.40L/A
14	Reliance IT (11/01/11)	1	2	2	1	2	8	3.20L/A
15	Morgan Stanley*	0	0	1	0	0	1	10.5L/A
16	Persistent (14/01/11)	0	1	0	0	0	1	3.00L/A
17	Indus Valley Partners	0	0	0	0	0	0	4.25L/A
18	IRIS (29/01/11)	0	0	4	2	0	6	2.75L/A
19	NOMURA* (03/02/11)	1	3	0	0	1	5	6.00
20	Nielsen Bases (10/02/11)	2	1	0	1	0	4	3.00
21	ORACLE (12/02/11)	1	1	4	0	0	6	3.00
22	Syntel India Ltd.	8	6	1	0	0	15	2.80
23	Intravo Technologies (18/01/11)	7	9	0	0	0	16	2.00
24	InScripts (I) Pvt Ltd. (23/01/11)	1	0	2	1	0	4	2.52
25	Tata Elxsi	1	1	0	0	0	2	2.60
26	T.I.M.E.(15/02/11)	0	1	0	0	1	2	2.5
27	AGC networks (An Essar Enterprise)	5	2	1	3	0	11	3.80
28	Vistaar Systems Ltd	0	0	0	0	0	0	3.00
29	Orange Business Solutions	1	0	0	0	0	1	2.5 + variable
30	MAQ Software(20/04/11)	0	0	0	1	0	1	3.90 + variable
31	Videocon DTH (18/05/11)	0	2	0	0	0	2	3.25 L + variable
32	Sikraft	0	0	0	0	5	5	1.8 L + variable
33	Airtel DTH (09/06/11)	0	1	1	0	1	3	2.5 L
34	Mott MacDonold	0	0	0	0	1	1	2.85 L
35	Godrej Infotech	1	0	0	0	0	1	2.8 L
36	Invensys	0	0	0	0	2	2	2.8 L
Total		**108**	**82**	**130**	**50**	**30**	**400**	

5.1.9 Does the institution have a student grievance redressal cell? If yes, list (if any) the grievances reported and redressed during the last four years.

Yes, the Institute has a mechanism for the student grievance redressal issues. Proctor RAIT has been vested with responsibility to oversee the functioning of grievance cell. Salient features of Grievance Redressal Cell are highlighted below:

- A suggestion and complaint box is placed on each floor and in front of library in the institution. This box is opened once every Monday and suggestions/ grievances are discussed in the meeting with HOD and collage management and appropriate action is taken as necessary.
- Class counsellors appointed for every batch also discuss various student issues in monthly meeting with student and resolve it by consulting HODs and Principal.
- Grievance Cell operates both student‟s wing as well as faculty wing. Within these groups there are separate girl student‟s wing and women faculty wing to address the grievances.

In view of adequate care being taken and proactive approach adopted by RAIT, no case has been reported. Infrastructure and facility related suggestions and complaints received are disposed to the satisfaction of students.The organization Chart and roles and responsibilities of members of proctorial team are shown below:

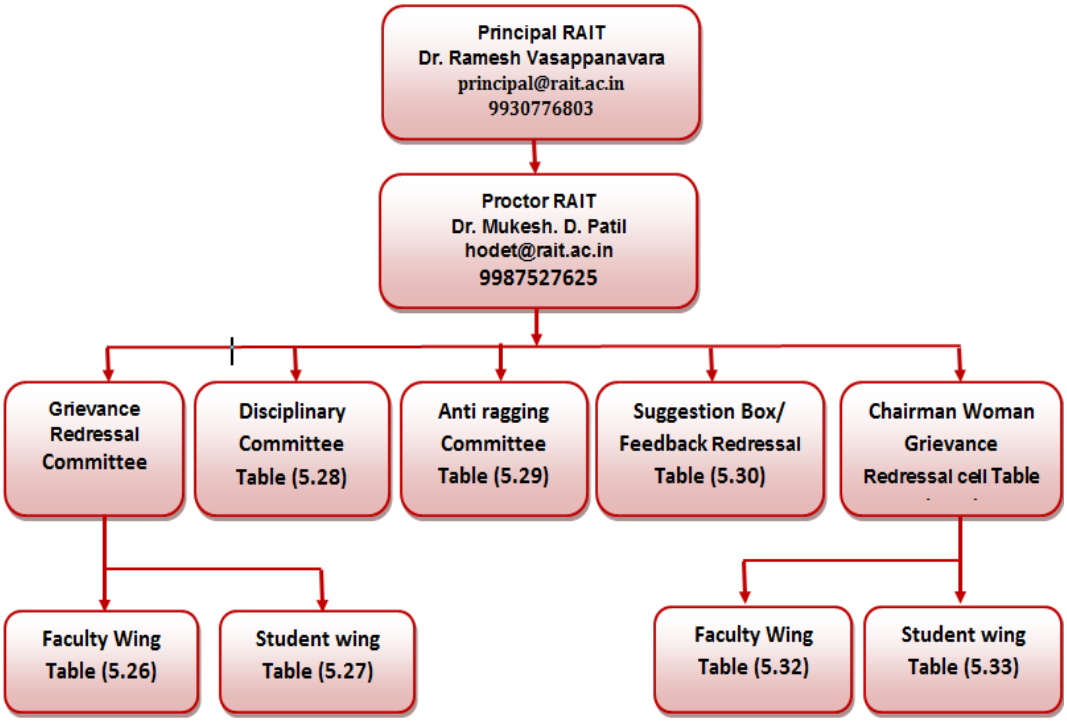


Table 5.26: Grievance Redressal Committee Faculty Wing.

Name	Designation	Mobile No.	Department
Balu Bhusari	Member	9322496851	Electronics
Nilesh Marathe	Member	9819144809	Computer

Table 5.27: Grievance Redressal Committee Student Wing.

Name	Designation	Mobile No.	Department
Suraj Korandla	Member	7738749967	Computer Engg.
Sahil Shinde	Member	9867251767	Electronics & Tel. Engg.
Anubhav Singh	Member	9594114994	Electronics Engg.
Abhirup Bhttacharya	Member	9819760979	Information Technology
Nilesh Abhang	Member	9768242636	Instrumentation Engg.

Table 5.28: Disciplinary Committee.

Name	Designation	Mobile No.	Department
V. Y.Barve	Coordinator	9167587196	Engineering Sciences
Y.K.Nehete	Member	9820893231	Engineering Sciences
R.Balachandran	Member	9869419525	Engineering Sciences
S.D.Talokar	Member	9819256475	Engineering Sciences
Ravindra Gode	Member	9969541285	Engineering Sciences
A.P.Lale	Member	9819675140	Engineering Sciences
Prashant Jadhav	Member	9222102881	Engineering Sciences
Kunal J. Padalkar	Member	9867215741	Engineering Sciences
S. M. Patil	Member	9869370363	Engineering Sciences

Table 5.29: Anti ragging Committee.

Name	Designation	Mobile No.	Email
Dr. Ramesh Vasappanavara	Principal	9930776803	principal@rait.ac.in
Dr. Mukesh D. Patil	Proctor & Faculty Representative	9987527625	hodet@rait.ac.in

Dr. Suhas D. Shete	Faculty Representative	9322787940	hodes@rait.ac.in
Dr. Leena R. Ragha	Faculty Representative	9987297843	hodce@rait.ac.in
Dr. Vishwesh A. Vyawahare	Faculty Representative	9819858418	hodet@rait.ac.in
Sharad P. Jadhav	Faculty Representative	9769441164	hodin@rait.ac.in
Dipti S. Jadhav	Faculty Representative	9819384911	hodit@rait.ac.in
Sunil M. Gaikwad	Non – Teaching Representative	9820301328	registrar@rait.ac.in
D. D. Kolte	Social Administration Representative	9320467945	koltedd@yahoo.in
Manoj Jalanawala	Local Media Representative	9322532507	jalnawalla@gmail.com
Mr. Mumbaikar	Police Representative	9870565655	mumbaikar@rediffmail.com
Ravindra Kadam	Parents Representative	9969984704	paprn@rait.ac.in
Nilay Bahalkar	Senior Student Representative	8080514795	nalay.bahalkar@gmail.com
Niharika Srivastav	Fresher Student Representative	9167200239	niharika.belle@gmail.com

Table 5.30: Suggestion Box/ Feedback Redressal.

Name	Designation	Mobile No.	Department
Dipti S. Jadhav	Chairman	9819384911	Information Technology
Nikhil Khachane	Member	7208050645	Computer Engg.
Tanveer Khau		9619196241	
Inderbir Singh	Member	7738337457	Electronics & Tel. Engg.
Mannat Dev		9969606127	
Ankit Jadhav	Member	8689976775	Electronics Engg.
Aswini Bakde		8898379205	
Sumit Bopche	Member	8806064715	Information Technology
Eashani Deorukhkar		9820892364	
Akash Pawar	Member	7208705588	Instrumentation Engg.
Mayuri Kharat		9167685043	

Table 5.31: Chairman Woman Grievance Redressal cell

Name	Designation	Mobile No.	Department
Dr. Leena Ragha	Chairman	9987297843	Computer Engg.
Geeta Devurkar	Dy. Chairman	9819553231	Electronics & Tel. Engg.
Poorinma Talwai	Member	9820574167	Electronics Engg.
Nilima Dongare	Member	9324981241	Information Technology
Shital Patil	Member	9987268320	Instrumentation Engg.
Dr. S. D. Shete	Member	9322787940	Engineering Sciences
D. D. Kolte	Member	9320467945	NGO, Comred D. K. Kolte Prathishthan

Table 5.32: Woman Grievance Redressal cell Faculty wing.

Name	Designation	Mobile No.	Department
Sujata Kadam	Member	9594028830	Electronics & Tel. Engg
Gargi S. Phadke	Member	9594028830	Instrumentation

Table 5.33: Woman Grievance Redressal Cell Student Wing.

Name	Designation	Mobile No.	Department
Megha Korde	Member	9172237999	Computer Engg.
Madhura Chafle	Member	9769535243	Electronics & Tel. Engg.
Shivani Ranjan	Member	9869313083	Electronics Engg.
Prerna Sharma	Member	7045359722	Information Technology
Sonal Khilari	Member	8655641650	Instrumentation Engg.

5.1.10 What are the institutional provisions for resolving issues pertaining to sexual harassment?

- Women‟s Grievance Redressal Committee comprising of senior faculty members who addresses problems faced by girl students and counsels them in the institution. Objective of cell is to combat violence against women employees and students, Sexual harassment and gender discrimination. Cell takes necessary steps if the incidents pertaining to sexual harassment require the intervention of the law.
- The composition of Woman Grievance Redressal Cell is as follows

Table 5.34: Woman Grievance Redressal Cell.

Name	Designation	Mobile No.	Department
Dr. Leena Ragha	Chairman	9987297843	Computer Engg.
Geeta Devurkar	Dy. Chairman	9819553231	Electronics & Tel. Engg.
Poorinma Talwai	Member	9820574167	Electronics Engg.
Nilima Dongre	Member	9324981241	Information Technology
Shital Patil	Member	9987268320	Instrumentation Engg.
Dr. S. D. Shete	Member	9322787940	Engineering Sciences
D. D. Kolte	Member	9320467945	NGO, Comred D. K. Kolte Prathishthan

5.1.11 Is there an anti-ragging committee? How many instances (if any) have been reported during the last four years and what action has been taken on these?

- As per UGC norms and regulation 2009, the Institute follows a strict anti-ragging policy and has a fully functional committee in place. The committee comprises of the Principal, the Registrar, the various Heads of Departments, the Parents Representative, a Representative from the Police force, a Sr. Student Representative and a Fresher Representative. This committee plays a vigilant and a proactive role to prevent any ragging incident in the

  institution.The details of anti-ragging committee members are presented in above table 5.19.

Anti-ragging poster on collage notice board

5.1.12 Enumerate the welfare schemes made available to students by the institution.

- Economical weaker students are provided concession in academic fees and opportunity to work in campus under Shiksha Sahakar Scheme.
- Institute ensures the financial assistance to the meritorious students in the form of Scholarships and other tuition fees waivers. The Institute educational fund is used exclusively for supporting the students. Ramrao Adik Institute of

Technology has given exemptions in tuition fee, and Scholarship for merit students.

-
- The needy students are provided facility to pay tuition fees in instalments.
- There is provision of free Text Book supply facility offered in the library for SC and ST category students. On need, this facility is extended to students of economically weaker sections too.
- The students are funded for taking part in professional and project work competitions and professional societies.
- Accidental and life cover is provided to all students free of charge by RAIT.
- Various types of Counselling and guidance are provided to students.
- Insurance is provided to every student. For more details refer Criteria 5.1.4
- Various types of Counselling and guidance are provided to students. For more details refer Criteria 5.1.8

5.1.13 Does the institution have a registered Alumni Association? If 'yes', what are its activities and major contributions for institutional, academic and infrastructure development?

- RAA (RAIT Alumni Association) was formed in 2003. It helps the students and the institution to stay connected with the alumni who are spread all around the world.
- RAA has started the RAIT"s Alumni Mentoring Program called RAMP. RAMP helps the students interact with the alumni, who are pursuing successful careers in various fields.
- The RAA organises the reunion event for the alumni, felicitates and honours the previous batches during these functions. It also comes out with an edition of RAIT Alumni Magazine (RAM).
- RAA also has a dedicated web portal and forum http://alumni.rait.ac.in/ where alumni can interact.
- Many of our Alumni are serving institute as faculty, our distinguish alumni Dr. Vijay D. Patil is President of Dr. D. Y. Patil University and involved in providing students with the best in terms of infrastructure, faculty and other inputs that transforms an institute into a temple of learning.
- Some of our distinguished Alumni are as follows:

Table 5.35: Distinguished Alumni of RAIT.

Sr.No	Name	Designation
1.	Dr. Vijay D. Patil	Prochancellor, Dr. D Y Patil University President, Dr. D Y Patil Sport Academy
2.	Mr.Satyajit Ashtekar	Vice President, Reliance IT
3.	Shankar Mahadevan	Popular Pop Singer and Composer Winner of National Award 4 Times
4.	Sudhir Sawant	Director, MindTree Ltd
5.	Sundeep Mehta	Associate Director, Capgemini India Pvt Ltd
6.	Prathamesh Kulkarni	Project Director at Hexaware Technologies
7.	Karthikeyan Lakshminarayanan Iyer	Innovation Consultant and Founder Director, Crafitti Consulting Pvt. Ltd.

8.	Rishikesh Sapre	Co-Founder and Director, Strategic Planning, Brainmatics Solutions
9.	Deepali Padalia	Director - Business Development, HCL Australia
10.	Pradeep Singh	Manager of Software development at Cisco Systems, Inc
11	Mithun Sheshagiri	Self-employed. Art Hose (art-hose.com)
12	Anurag Mendhekar	Founder, Blue Vector Systems
13	Aalok Bhatwal	CEO, Hyper Drive Information Technologies (P) Ltd. Bangalore
14	Manmahesh Kantipudi	CEO, GVK BIO
15	Sridhar Ranganathan	CEO and Founder, Clood On Inc
16	Pritam Pal	Computer CEO (Asia Pacific), SWASH Group of Companies
17	Revanu Navadgi	Vice President, Syntel Ltd.
18	Salim Ali	Vice President, Marketing, SAP
19	Priten	Vice President Business Development- Aditya Birla Minacs
20	Kiran Emani	Managing Director (Seygen Technologies)
21	Mathew Panat	Director (Oracle)
22	Amit Behl	Performer in Arts (TV Actor)
23	Ashish Jadhav	Faculty (Dhirubhai Ambani School of Management & Information Technology)
24	Ms. Kunal Agrawal	Prof. in St. Louis
25	Moinudin K Quereshi	Associate Prof. In Georgia University (10 US Patent)
26	Rajesh Sawant	Chairman (Akademika Group)
27	Chetan Kale	Senior Verification Engineer (Nvidia)
28	Janardhan Iyengar	Associate Prof. (Franklin & Marshall College)
29	Viraj Savant	CEO (Idealake)
30	Parikshit Dar	Co-Founder (BookMyShow)
31	Mukund Biwalkar	Vice President (Allied Digital Services Ltd.)
32	Sadanand Patil	Vice President (Axis Bank)
33	Rahul Girish Shah	Director (Glostar Electricals Pvt. Ltd.)
34	Prithviraj Dutta	Vice President (JP Morgan)
35	Vishal Prakash	Director (Standard Chartered Bank)
36	Tushar Shankar	Associate Vice President ,Business Solutions (Electra Card Services)
37	Shridhar PrabhakarJoshi	VP (Global Product Strategy WMS Gaming)
38	Neeraj Agrawal	Director (Infinite Learning Solutions)
39	Dinesh H Jain	Director (Manchast Electronics, Mumbai)
40	Ajay Sawant	Managing Director (Orient Technologies Pvt. Ltd.)
41	Bala Venkatrao	Director (Cloudera)
42	Mehernosh B. Mistry	Director, IT (People's United Bank, Bridgeport, CT)
43	Santosh Chavan	IT Director (Pfizer Inc)
44	Unmesh Diwakar Raote	Director (Ultramax Infonet Technologies Pvt Ltd.)
45	Satish Bhagwat	Sr. VP (Alcatel Lucent)
46	Krishna Mishra	Ogilvy & Mather




5.2 Student Progression

5.2.1 Providing the percentage of students progressing to higher education or employment (for the last four batches) highlight the trends observed.

Computer Department

Table 5.36: Student progression of Computer Department.

Student progression	Against % enrolled				
UG to PG	10-11	11-12	12-13	13-14	14-15
	18	26	33	45	60
PG to M.Phil.	NA				
PG to Ph.D.	10-11	11-12	12-13	13-14	14-15
	11	6	--	31	17
Ph.D. to Post-Doctoral	NA				
Employed • Campus selection	10-11	11-12	12-13	13-14	14-15
	81	86	83	86	88
• Other than campus recruitment	10-11	11-12	12-13	13-14	14-15
	17	12	14	11	(in Process)
Entrepreneurship/Self-employment	10-11	11-12	12-13	13-14	14-15
	2	2	3	3	(in Process)

Table 5.37: Student progression of Electronics Department.

Student progression	Against % enrolled				
UG to PG	10-11	11-12	12-13	13-14	14-15
	15	24.16	38.33	52.5	55
PG to M.Phil.	NA				
PG to Ph.D.	10-11	11-12	12-13	13-14	14-15
	5.56	00	00	11.12	00
Ph.D. to Post-Doctoral	NA				
Employed • Campus selection	10-11	11-12	12-13	13-14	14-15
	95	87.5	75	88.75	89.52
• Other than campus recruitment	10-11	11-12	12-13	13-14	14-15
	2	5	3	2	3
Entrepreneurship/Self-employment	10-11	11-12	12-13	13-14	14-15
	1.67	2.50	1.67	0.08	00

Table 5.38: Student progression of Electronics and Telecommunication Department.

Student progression	Against % enrolled				
UG to PG	10-11	11-12	12-13	13-14	14-15
	18.33	20	21	29	15
PG to M.Phil.	NA				
PG to Ph.D.	10-11	11-12	12-13	13-14	14-15
	0	0	0	5	0
Ph.D. to Post-Doctoral	NA				
Employed • Campus selection	10-11	11-12	12-13	13-14	14-15
	91.48	86.07	75.64	83.11	96.33
• Other than campus recruitment	10-11	11-12	12-13	13-14	14-15
	5	10.7	22.8	15.6	4.2
Entrepreneurship/Self-employment	10-11	11-12	12-13	13-14	14-15
	0.1	0.5	0.8	0.6	0.3

Table 5.39: Student progression of Instrumentation Department.

Student progression	Against % enrolled				
UG to PG	10-11	11-12	12-13	13-14	14-15
	-	16.67	21.67	26.66	19.5
PG to M.Phil.	NA				
PG to Ph.D.	10-11	11-12	12-13	13-14	14-15
	-	2	-	1	1
Ph.D. to Post-Doctoral	NA				
Employed • Campus selection	10-11	11-12	12-13	13-14	14-15
	-	33.37	20	36.67	41.67
• Other than campus recruitment	10-11	11-12	12-13	13-14	14-15
	-	63.34	76.67	58.38	55.67
Entrepreneurship/Self-employment	10-11	11-12	12-13	13-14	14-15
	-	-	1.67	1.25	1.14

Table 5.40: Student progression of Information Technology Department.

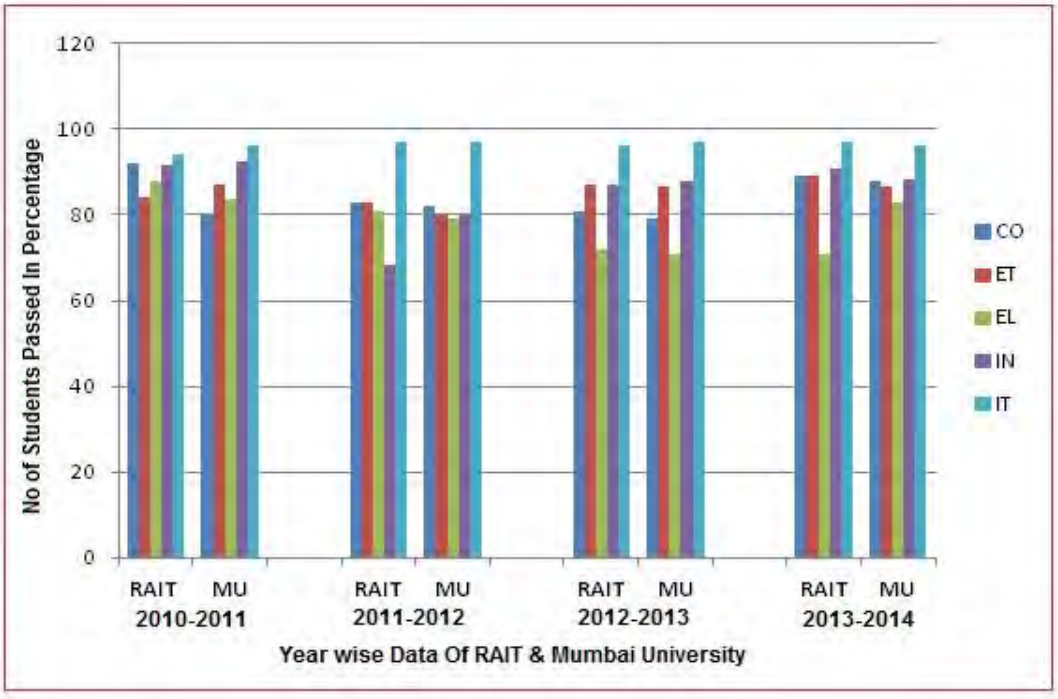
Student progression	Against % enrolled				
UG to PG	10-11	11-12	12-13	13-14	14-15
	26.66	20.83	36.23	20	5.4 (In process)
PG to M.Phil.	NA				
PG to Ph.D.	10-11	11-12	12-13	13-14	14-15
	00	00	00	00	11.11
Ph.D. to Post-Doctoral	NA				
Employed • Campus selection	10-11	11-12	12-13	13-14	14-15
	70.4	88.4	45.88	67.56	77.38
• Other than campus recruitment	10-11	11-12	12-13	13-14	14-15
	14.08	17.39	16.47	20.27	00
Entrepreneurship/Self-employment	10-11	11-12	12-13	13-14	14-15

	12.67	11.59	11.76	18.92	00

5.2.2 Provide details of the programme wise pass percentage and completion rate for the last four years (course wise/batch wise as stipulated by the university)? Furnish programme-wise details in comparison with that of the previous performance of the same institution and that of the Colleges of the affiliating university within the city/district.

Table 5.41: Programme wise pass percentage and completion rate

Dept.	2010-2011		2011-12		2012-13		2013-14		2014-15	
	RAIT	MU	RAIT	MU	RAIT	MU	RAIT	MU	RAIT	MU
CE	89.90	79.50	85.90	87.80	89.30	79.70	90.70	88.90	100.00	79.70
EL	88.00	83.54	83.33	79.15	72.00	70.79	83.00	83.05	79.00	70.79
ET	84.00	87.00	83.00	80.00	87.00	86.5	89.25	86.5	94.30	86.50
IN	91.90	92.32	91.80	79.93	69.31	87.91	87.17	88.46	90.66	87.91
IT	94.36	96.00	97.00	97.00	96.00	97.00	99.00	96.00	96.01	97.00



5.2.3 How does the institution facilitate student progression to higher level of education and/or towards employment?

Shaping of career after graduation is one of the prime goals of any educational institute. RAIT Vision statement clearly specifies this goal to nurture the youth with international competencies and exemplary level of employability. At RAIT we have active Career Counselling and Placement Cell. It organises Placement drives, Lectures on Career opportunities, preparation for GATE, CAT, GRE, etc or for any other competitive examinations. Special aptitude, soft skill and technical skill workshops are arranged. RAIT also organises the lectures of eminent scientists/ personalities/ counsellors on careers after graduation/post-graduation in various fields.

The institute also assists students for their placement. Training and placement cell, organizes many campus interviews for the students and many reputed organizations

like TCS, ITC Infotech, Capgemini, Wipro, IBM have recruited a large number of students from this Institute. A good number of students are working in the government sector also.
Institute also has MOUs with corporates like Gauranga, TCS, Infosys and Oracle, etc., who are in research and product development. It gives opportunity for students to work on research projects, Internship and placement in core companies.

5.2.4 Enumerate the special support provided to students who are at risk of failure and drop out?

- **Mentorship** is the specialty of this institution. For each batch the institute designates a teacher to take care of problems relating to academics and otherwise at a personal level.
- The department appoints **class counselor for every batch** who identifies weak students based on regular test conducted. Wherever necessary, parents are invited to take part in the counseling.
- **Remedial classes**, **extra-hour classes**, **frequent tests** are arranged on regular basis for such week student.

5.3 Student Participation and Activities

5.3.1 List the range of sports, games, cultural and other extracurricular activities available to students. Provide details of participation and program calendar.

Table 5.42: List of students who participated in Olympia 2014.

- **Cricket**

Sr. No.	Name	Roll No.
1	Aonkar Sawant	09CE5029
2	Ajinkya Parte	12ET8009
3	Nikhil Shetty	12IT2005
4	Gaurav Jha	13EE1149
5	Shubham Singh	12CE2021
6	Ganesh Adekar	11CE2005
7	Bhavin Bhoir	10IN1041
8	Hrishikesh Tambe	11IT1039
9	Ankit Ambokar	12ET7006
10	Sohail Budhwani	09EE1009
11	Akash Gaikwad	11CE1076
12	Ashay Madne	13ET1057
13	Gaurav Shetty	11IN1046
14	Onish Chamoli	12EE1080

- **Football**

Sr. No.	Name	Roll No.
1	Rohil Subramanian	10CE1055
2	Neehar Mukne	12CE6351
3	Vaibhav Mishra	11IN1034
4	Sujan Reddy	12EE5036
5	Rameez Wadkar	07ET2016

6	Ashley verghese	12IN1101
7	Mehul Kad	10EE1047
8	Archit Sharma	12EE1069
9	Akhil Panicker	13ET1160
10	Sanket Nagrale	13ET1129
11	Abhinav Dangayach	12IN1096

- **Box Cricket**

Sr. No.	Name	Roll No.
1	Sayli Suryarao	09EE2020
2	Darshana Dukare	11EE5003
3	Shruti Tatkare	11EE5001
4	Nilam Hargude	11EE3022
5	Rissy Chitteth	10IT1022
6	Rupali Joshi	09CE1049
7	Pooja Pingle	10IT1012
8	Snehal Shelar	10EE1025

- **Badminton**

Sr. No.	Name	Roll No.
1	Aakriti Sharma	10IT1036
2	Nirupama Raman	10IT2014
3	Sanchita Bhattacharjee	11CE2014
4	Namrata Pillai	11CE2003
5	Varad Govande	10IN2007
6	Abhishek Rane	10CE1044
7	Devidas Sawaleshwarkar	10IN1039
8	Rohan Kamble	09IN1443

- **Volleyball**

Sr. No.	Name	Roll No.
1	Sagar Davare	11CE5033
2	Darshan Sawant	12CE1094
3	Tushar Sawant	12IN6252
4	Nitin Ghangre	09ET1012
5	Pranay Thakur	12ET8008
6	Suraj Adhikari	12ET7018
7	Rahul Waradkar	12ET8008
8	Pranav Patil	09IT1006
9	Kalpesh Deshmukh	12IN1041
10	Harshal More	12IN5024
11	Vikram Baranwal	12EE5013
12	Siddhesh Takale	09IN2014
13	Sunil Dhonnar	13ET7035

Table 5.43: RAIT football squad list.

- **2012-2013**

Sr. No.	Name	Branch
1.	Gaurav Bodare	Instrumentation

2.	Joel Fernandes	Electronics and Telecommunication
3.	Tejas Shetty	Electronics
4.	Rameez Wadekar	Electronics and Telecommunication
5.	Rohan Warrier	Electronics and Telecommunication
6.	Kuldip Dulay	Electronics
7.	Aniket Kamble	Electronics and Telecommunication
8.	Sourabh Nair	Instrumentation
9.	Neehar Mukne	Computers
10.	Sujan Reddy	Electronics
11.	Vaibhav Mishra	Instrumentation
12.	Rohil Subrmanian	Computers
13.	Abhishek Sakpal	Instrumentation
14.	Ashley Verghese	Instrumentation
15.	Abhishek Yadav	Computers
16.	Prannoy Satpute	Instrumentation
17.	Divakar Iyer	Instrumentation

- **2013-2014**

Sr. No.	Name	Branch
1.	Onish Chamoli	Electronics
2.	Sanket Nagrale	Electronics and Telecommunication
3.	Gaurav Bodare	Instrumentation
4.	Rameez Wadekar	Electronics and Telecommunication
5.	Rohan Warrier	Electronics and Telecommunication
6.	Ashley Verghese	Instrumentation
7.	Akhil Panicker	Electronics and Telecommunication
8.	Rohan Bhirangi	Computers
9.	Neehar Mukne	Computers
10.	Sujan Reddy	Electronics
11.	Vaibhav Mishra	Instrumentation
12.	Rohil Subrmanian	Computers
13.	Abhishek Sakpal	Instrumentation
14.	Archit Sharma	Electronics
15.	Prannoy Satpute	Instrumentation
16.	Divakar Iyer	Instrumentation

- **2014-2015**

Sr. No.	Name	Branch
1.	Onish Chamoli	Electronics
2.	Abhishek Sakpal	Instrumentation
3.	Prannoy Satpute	Instrumentation
4.	Divakar Iyer	Instrumentation
5.	Amey Lad	Computers
6.	Akhil Panicker	Electronics and Telecommunication
6.	Ashley Verghese	Instrumentation
7.	Ankit Patil	Electronics and Telecommunication
8.	Archit Sharma	Electronics
9.	Gaurav Bodare	Instrumentation

10.	Swar Kunwar	Computers
11.	Surya Ganesh	Electronics and Telecommunication
12.	Vaibhav Mishra	Instrumentation
13.	Sujan Reddy	Electronics
14.	Rohan Bhirangi	Computers
15.	Sanju Pandiath	Electronics
16.	Salil Tare	Electronics
17.	Saurabh Vaskar	Info. Tech.
18.	Advait Kale	Electronics and Telecommunication

5.3.2 Furnish the details of major student achievements in co- curricular, extracurricular and cultural activities at different levels: University / State / Zonal / National / International, etc. for the previous four years.

Achievement in cultural activities

Achievements 2012-13

- Mumbai University Youth Fest"12-13
  - Bharud Marathi skit 1st
  - Monoact Hindi 2nd
  - Monoact Hindi consolation
  - Elocution English consolation
  - Western instrumental consolation
- VJTI
  - Bharud 2nd
  - Monoact Hindi 1st
  - Classical instrumental non percussion 1st
  - Marathi One act play consolation
- Bharud 2nd at Airoli State Level Skit Competition

Table 5.44: Participation in Cultural Activities for academic year 2012-13.

Department	Name of the Student	Activity
CE	Ankit Shah	Elocution
	Abhilash Panicker	Instrumental
	Aalok Shewade	Group Dance
	Dhananjay M.	Group Dance
	Aalok Shewade	Group Dance
	Nikita Rana	Elocution
	Nikita Rana	Debate
	Nikita Rana	Debate
EL	Siddhi Waman	(skit)
	Sayli Zurale	skit
	Aniket Kadam	skit
ET	Omkar Sali	one act play
IN	Atul Rokade	(skit)
	Roopak Naigaonkar	(non-percussion)
IT	Satish Gaykar	(skit)

Achievements 2013-14

- Mumbai University Youth Fest"13-14:

- Marathi skit – 3rd prize
- Hindi skit – 1st consolation prize
- Western instrumental – consolation prize

- Debate - Consolation prize
- Quiz - 2nd prize
- Collage - 2nd prize

- Thane Art Festival :
  - Marathi skit – 1st prize
- Pillai"s Inst. Of Information Technology, Panvel
  - Marathi skit - 1st prize
  - Marathi mono-act - 1st prize
- Dr. D. Y. Patil School of Biotech, Belapur(SPECIES)
  - Marathi skit – 1st prize
- Dr. D. Y. Patil School of Law
  - Hindi one act play – 2nd prize

Table 5.45: Participation in Cultural Activities for academic year 2013-14.

Departement	Name of Student	Activity
CE	Eilanit Hillel Gadkar	Dhating Nach
	Eilannit Hillel Gadkar	Group Dance
	Eilannit Hillel Gadkar	Dhanting Nach
	Ankit Shah	debate
	Abhilash Panicker	Instrumental
EL	Prajakta Tambe	skit
	Aniket Kadam	skit
	Nikhil Khade	skit
	Praful Gurav	skit
ET	Aditi Raikar	skit,monoact
	Rahul Kamble	Dance
IN	Devendra Kiroshikar	quiz
	Swanand Karandikar	one act play
IT	Pranav Patil	skit
	Rohan Sawant	quiz
	Hrishikesh Tambe	Skit
	Renuka Singh	quiz

- Achievements 2014-15
- Mumbai University Youth Fest"14-15
  - Hindi one act play: Best actor – Pranil Pillai – consolation prize
  - Best actress – Sameeksha Mahajan – 3rd prize

  - Marathi skit – 3rd prize.
  - Mime – 1st Consolation prize
  - Marathi mono act - Consolation prize
  - Classical instrumental non percussion - Roopak Naigaonkar- 1st prize
- Marathi Skit – 1st prize in the following events of Institutes:
  - Fr. Agnel College, Vashi ICT SNDT

- Vivekanand College, Chembur VJTI
- Dr. D. Y. Patil School of Biotech, Belapur (SPECIES)
- Terna College of Engg, Nerul

- Marathi Skit – 2ndprize:
  - P.I.I.T., Panvel
  - Xaviers Matunga.
- Hindi skit – 1nd prize:
  - Mithibai College
  - SIES, Nerul
- Mono act 2nd prize – V.I.T. College

Table 5.46: Participation in Cultural Activities for academic year 2014-15.

Department	Name Of	Activity
CE	Pranil Pillai	one act play
	Minal Mahindrakar	skit
	Chinmay Deosthali	mime
	Sameeksha Mahajan	one act play
	Devendra Tayade	Elocution
	Sandesh Kolekar	Group dance
	Eilanit Gadkar	Group dance
	Kajal Soni	Painting competition
	Kajal Soni	Spot painting
EL	Prajakt Dongre	Skit
	Sayali Zurale	Hindi skit
	Nikhil Khade	Hindi skit
	Aniket kadam	Hindi skit
	PrajaktaTambe	Hindi skit
	Prajakt Dongre	Hindi skit
	Prafful Gurav	Hindi skit
ET	Chaitanya Mane	mime
	Aniket Kadam	skit & mime
IN	Siddhesh Takale	skit & mime
	Swanand Karandikar	Skit
	Girish Kulkarni	mime
	Roopak Naigaonkar	non percn
IT	Pranav Patil	mime
	Hrishikesh Tambe	Skit
	Rohan Sawant	Skit
	Aishwarya Jadhav	Skit

Table 5.47: Sports achievement.

Sr. No.	Name of the student	Sports activity	Prize won	Year
1.	Shraddha Sharma	Throwball in Stamina 2013 Intra College Sports, RAIT	1st Position	2012-13
2.	Kavita Choudhary	Throwball in Stamina 2013 Intra College Sports, RAIT	1st Position	
3.	Namrata Pillai	Girls Badminton Doubles, OLYMPIA 2013 , Dr. D Y		

		Patil Sports Academy		
4.	Namrata Pillai	Badminton Mixed doubles, OLYMPIA 2013 , 5Dr. D Y Patil Sports Academy	2nd Position	
5.	Saurabh Mishra	Boys TT Doubles, STAMINA 2012 Intra College Sports, RAIT	1st Position	
6.	Narsimha Walekar	Hockey, STAMINA 2013 Intra College Sports, RAIT	2nd Position	
7.	Namrata Pillai	Box Cricket STAMINA 2013 Intra College Sports, RAIT	2nd Position	
8.	DARSHAN SAWANTH	KHO-KHO, OLYMPIA-2013, RAIT	1st Position	2013-14
9.	Gaurav Hamde	Tennis, OLYMPIA -2013, rait	1st Position	
10.	Jatin Sakpal	Tug of war, OLYMPIA-2013, RAIT	1st Position	
11.	Mandeep Vratesh	Throwball in Stamina 2014 Intra College Sports, RAIT	2nd Position	2014-15
12.	Harshit Singh	Volleyball in Olympia2015 IntraCollege Sports, RAIT	2nd Position	
13.	Vamsi Krishnan	Basketball in Stamina 2014 Intra College Sports, RAIT	1st Position	
14.	Vamsi Krishnan	Basketball(Boys) in Olympia 2014 Intra College Sports, RAIT	2nd Position	
15.	Avnish Kadam	Basketball in Stamina 2014 Intra College Sports, RAIT	1st Position	
16.	Avnish Kadam	Basketball(Boys) in Olympia 2014 Intra College Sports, RAIT	2nd Position	
17.	Rutuj Puanik	Chess in Sports Extravaganza 2015	2nd Position	
18.	Devendra Tayade	Table Tennis at BITS Open Sports Meet 2014	Participation	
19.	Pranav Shetty	Chess Tournament at Shri Maheshwaranand Sarswati Memorial All India Open Fide Rating	7th Position	
20.	Pranav Shetty	Chess in 13th Parsvnath Delhi International Open Grandmasters Chess tournament 2015 (Category A)	74th Position	
21.	Pranav Shetty	Chess in Stamina 2014 Intra College Sports, RAIT	1st Position	
22.	Pranav Shetty	Chess in Olympia 2014 Intra College Sports,RAIT	1st Position	
23.	Shivprasad Gond	Kabaddi in Olympia 2015 Intra College Sports,RAIT	2nd Position	

24.	Shubham Singh	Cricket in Olympia 2015 Intra College Sports,RAIT	1st Position	
25.	Shubham Singh	Cricket in Enthusia 2014 National Level Competition	1st Position	
26.	Shubham Singh	Cricket at National Level Inter-Engineering Sports Meet SUMMIT '14	Participation	
27.	Shubham Singh	Cricket event during "EPL 2014"	2nd Position	
28.	Ganesh Adekar	Tug of War event during Stamina 2014 intra college festival	2nd Position	
29.	Ganesh Adekar	Cricket in Natinal Level Inter Engineering Sports Meet SUMMIT'14	Participation	
30.	Ganesh Adekar	Cricket during ENTHUSIA 2014 ,a National Level Competition	Winner	
31.	Ganesh Adekar	Cricket during EPL 2014 intra Institute festival	2nd Position	
32.	Onkar Sawant	Cricket during EPL 2014 intra college festival	2nd Position	
33.	Onkar Sawant	Tug of War event during Stamina 2014 intra college festival	1st Position	
34.	Onkar Sawant	Tug of war(Boys) held in Olympia 2014 intra college festival	1st Position	

5.3.3 How does the college seek and use data and feedback from its graduates and employers, to improve the performance and quality of the institutional provisions?

- Student Feedback: Online Feedback is collected as a regular practice at the end of the Semesters. This is used to analyze the performance of the faculty and corrective measures are taken if required.
- Apart from student feedback various other feedbacks are taken under QMS program such as CO-PO attainment feedback and end of program feedback from graduating students.

Feedback Mechanisms:-

This is the first step towards the correction step in the QA process. Every student who takes a course is expected to fill a digital form. He grades each course taking faculty by giving points on 0-5 scale for the attributes mentioned in the digital feedback form. The student can add more comments if she/he so desires. The feedback forms content is analysed for trends by DQA cells and reported to QMS, RAIT who then suggest appropriate remedial action as deemed fit.

Feedback from students:-

The timing of the feedback process is during running of the semester. The students are encouraged to give this feedback fearlessly without any conditions imposed. This valuable input is collected by the concerned HODs of each Department. It is then

compiled and stored digitally and kept with concerned HODs.This process is also digitised to facilitate quick and easy feedback generation through digital forms.

Feedback to HODs:-
The Heads of all departments of RAIT receive the feedback from students on course content, delivery and effectiveness as detailed above. This feedback is discussed with concerned faculty members and reviewed by the CMQA team of RAIT. The analysis carried out keeps in mind the relevance, consistency and reliability of the remarks received and outlines the recurring points of significance. QMS at RAIT then conveys this corrective action pertaining to each department to the HOD concerned who then calls department level meetings to ensure compliance. The QMS of RAIT are apprised of the corrective steps from time to time via HOD reports.

Consolidated Report by HOD:-
This is a full report prepared department-wise which is submitted to QMS of RAIT for further action. The detailed deliberations ensure point by point coverage of all major and minor points. Issues that can be resolved at the HOD level are done so promptly and mentioned in the report. Those that require further discussions and those

that require infrastructural changes are referred to in the report and passed on to QMS to figure in subsequent higher level committee discussions. The CMQA then holds meetings to take decisions on these points.

Review by QMS:-
The review process is attended by senior professors and HODs of each department. QMS looks for points of omission, points that need elaboration or points that can be avoided to prevent duplication etc in each of the courses. The reliability and consistency of feedback is kept in mind before suggesting corrective or remedial action.

Remedial Measures Suggested by QMS:-
The remedial measures are tuned well so as to be effective. The problem nature, the faculty viewpoint and institute quality standards are all taken into account before the remedial measures are communicated for the purpose of implementation. QMS suggests these measures to HODs who then brief the concerned faculty members and ensure implementation.

Corrective Action:-
The corrective action is crucial final thread in the overall QMS of RAIT. This is implemented via the following steps.

QMS conducts HODs meetings and collects feedback and offers necessary suggestions and takes collective decisions if needed for effective implementation of quality policy and smooth conduct of academics and assurance of good teaching and learning environments.
Additional details of feedback reports and remedial actions are highlighted in QMS-RAIT document placed at Appendix.

5.3.4 How does the college involve and encourage students to publish materials like catalogues, wall magazines, college magazine, and other material? List the publications/ materials brought out by the students during the previous four academic sessions.

- Student community of the Institute publishes annual magazine WALL. The Wall is a mouth piece of RAITians and a platform for budding writers, poets and thinkers. It also chronicles the events and happenings in RAIT giving an insight into the mind of the RAITians to the readers.
- Apart from that institute contain number of technical and non-technical student committee who publishes their yearly newsletter providing information about student events like seminars, Academic Calendar,

  Workshops conducted, Orientation & Awareness Programs, Professional society and Departmental association activities and Achievements and activities of Students and Faculty members.

Table 5.48: Student Magazine.

Sr. No.	Brochure/News letter	By Whom	Periodicity	Specific Issues
1	Wall magazine	Wall Committee	Yearly	Campus Life & Literary Issue
2	ISAAC	ISA-RAIT	Yearly	Technical Magazine
3	Automatrix	ISA-RAIT	Half Yearly	Technical Articles
4	Insight	ISA-RAIT	Half Yearly	Technical Articles
5	Brackets	IEEE-RAIT	Yearly	Technical
6	Vision Infinity	IEEE-RAIT	Yearly	Technical
7	Cozine	CSI RAIT	Yearly	Technical
8	Technophilia	CSI RAIT	Yearly	Technical
9	Decrypt	CSI RAIT	Online	Technical
10	Kyros	ITSA RAIT	Yearly	Technical
11	RAIT Alumni Magazine (RAM)	RAIT Alumni	Yearly	Alumni News
12	e-Page RAIT	ITSA RAIT	Yearly	Institute News

5.3.5 Does the college have a Student Council or any similar body? Give details on its selection, constitution, activities and funding.

RAIT has number of student committees which organizes number of student activities independently under supervision of faculty. The selection process at RAIT follows a unique leadership development model for all its student based associations. The process that will build leaders based on their aptitude, involvement, and activities of the association, and opinion of peer groups and professional and academic

performance, has been put in place. The details and process of selection of office bearers are as follows:

- The students during their entry into college opt for one or more student associations based on their interest and based on orientation provided by various student associations.
- Students need to be member of at least one professional association and can opt for one or more co-curricular associations.
- The leadership positions are at three levels viz
  - Final Year involving top level of leadership roles such as Chairman, Secretary and Jt. Secretary etc.
  - Second layer of leadership positions from 3rd year students
  - Third layer from second year students.
  - Volunteers from first year students.
- At each level peer group selects the student leaders for the positions available at that level of operations. For example Chairman of a society is chosen by peer group of that association at the end of 3rd year prior to commencing final year.

The constitution and activities of SUC and other student associations are shown below:

SUC (Student Union Council)

It is a student representative body comprising of committee headed by the General Secretary (GS). The committee is the bridge between the Institute authorities and the student community. Over the years SUC has created an atmosphere of goodwill and camaraderie in the Institute. Students look forward to all the events organised by the SUC like Teachers Day, Tie Day, Traditional Day, Rose Day etc. Festivals like Ganesh Chaturthi and Gokulashtami are celebrated with gusto. SUC also organises Freshers Day to bring the freshers into the mainstream of RAIT life. SUC also organises HORIZON which is a top cultural festival in the city.

RAIT SPORTS

Students of RAIT are not only known for their academic performance but are also sports enthusiast they play Cricket, Football, Basket Ball, Table Tennis, Swimming and various other sports. D. Y. Patil Sports Academy encourages the students to utilise all the resources available in the campus. RAIT organises Stamina which is a 3-day Intra RAIT sports tournament that sees top participation for all events.

RAA (RAIT Alumni Association)

RAA was formed in 2003. It helps the students and the institution to stay connectedwith the alumni who are spread all around the world. RAA has started the RAIT‟s Alumni Mentoring Program called RAMP. RAMP helps the students interact with the alumni, alumni who are pursuing successful careers in various fields. The

RAA organises the reunion event for the alumni, felicitates and honours the previous batches during these functions. It also comes out with an edition of RAIT Alumni Magazine (RAM).

Social Wing

"Social Wing" was formed in September, 2013 and has undertaken activities like – teaching underprivileged children, awareness drives (through seminar/street plays),

various environmental activities (clean up drives, promoting renewable energy resources, etc). The Social Wing is open for everyone who wants to volunteer for many such activities. The fortunate ones can remove the barrier between the privileged and the underprivileged, and get to be a part of spreading happiness.

The Wall

The Wall is the annual magazine of RAIT and has completed 11 years of existence. It is a mouth piece of RAIT'ians and a platform for budding writers, poets and thinkers. It also chronicles the events and happenings in RAIT giving an insight into the mind of the RAIT'ians to the readers.

Motif

The Entrepreneurship Development Cell aims to provide a conduit by which students can access relevant entrepreneurial resources, network with prominent entrepreneurs, share ideas and nurture them. The Cell aims to create an amicable atmosphere for passionate and enthusiastic people with ideas. It also aims to provide RAIT'ians with a powerful knowledge base through resources, alumni meetings, industrial exposure, seminars and creative workshops which will help them to understand the practical aspects of entrepreneurship and working of successful businesses.

CSI – RAIT

Computer Society of India (CSI) - RAIT is the student chapter of CSI. During an academic calendar they organise Techmate and Techknow - the tech fests and three annual publications - Cozine, Technophilia and Decrypt.

IEEE – RAIT

IEEE - RAIT is the student chapter of IEEE. During an academic calendar they organise Whizion and 360 Degrees - the tech fests and three annual publications – Brackets, Vision infinity and newsletter.

ISA – RAIT

ISA - RAIT is the student chapter of Department of Instrumentation. During an academic calendar they organise Genesis and Niyantran the tech fests and three annual publications - ISAAC magazine; Automatrix & Insight newsletters.

ITSA – RAIT

ITSA - RAIT is the student chapter of Department of Information Technology. During an academic calendar they organize Aspire/Techware events. ITSA publishes news letter as a title „Kyros".

IETE –RAIT

The Institution of Electronics and Telecommunication Engineers (IETE) is India's leading recognised professional society devoted to the advancement of Science and Technology of Electronics, Telecommunication & IT. IETE RAIT organize regular conferences and workshops

Kalaraag:

It is a unique endeavor started by the students to show their talents in fine arts and creative art. It has consistently proved its mettle in performing art by winning accolades in folk dances, skits, theatre and other forms of art. Our students are consistently winning prizes for the last 15 years at the university level. So professionally has it presented itself that it has links in the Marathi theatre and cinema world.

Fund allocated to various committees

To organize various events institute allocate fund to each committee. Apart from allocated fund committee may raise more funds from membership and corporate sponsorship.

Table 5.49: Following table shows fund allocated to each committee in last three years.

Committee Name	2012-13	2013-14	2014-15
RAIT SPORTS	261000	320000	320000
KALARAAG	480000	768950	525000
ISA RAIT	375000	600350	600000
SOCIAL WING	-	100000	250000
IEEE RAIT	550000	6590000	750000
WALL	125000	204000	2,95,000
CSI	400000	501600	550000
ITSA	210000	250000	300000
SUC	501600	501600	1400000
RAA	125000	125000	250000
ISTE	125000	125000	250000
IETE	400000	501600	300000
MOTIF	210000	250000	90000
PHOTO CIRCLE	-	-	45000







5.3.6 Give details of various academic and administrative bodies that have student representatives on them.

List of committees in which student representatives are there is given below. Further details of their activities are already described in previous sections.

- Student Union Council
- Anti-Ragging committee
- Woman grievance cell
- RAIT Alumni Association (RAA)
- Computer Society of India (CSI) – RAIT **(CSI – RAIT)**
- Institute of Electrical and Electronics Engineers **(IEEE – RAIT)**
- The International Society of Automation (**ISA – RAIT)**
- Information Technology Support Associate **(ITSA –RAIT)**
- The Institution of Electronics and Telecommunication Engineers (**IETE – RAIT)**

- MOTIF
- Kalaraag
- RAIT Social Wing
- RAIT Sports

5.3.7 How does the institution network and collaborate with the Alumni and former faculty of the Institution.

The Institute has a registered alumni association which meets once in a year. The association plays vital role in keeping touch with the members and stakeholders through social media and facebook. It invites the retired teachers and staff to the annual meet. The retired faculty members are also invited to the meeting to share their experiences. The alumni get together to provide a platform for interaction with the present students in a cordial atmosphere.RAIT - Association (RAA) regularly organizes Alumni Meet, Seminar/ Conference/ Workshops Annual Get together etc.Interaction with formers faculty member is done through Invitation in seminar and workshop many former faculty are Invited as external examiners.

Table 5.50: Alumni activities in institute.

Year	Alumni Activity	Number of participants
2010-11	Expert Lecture	170
	Annual Reunion held on 26/02/2011	206
2011-12	Expert Lecture	165
	Annual Reunion held on 18/02/2012	158
	Meet on 28/01/2012	184
2012-13	Expert Lecture	145
	Annual Reunion held on 23/02/2013	130
	Meet on 18/02/2013	172
2013-14	Alumni Meet (Panel Discussion)	161
	Panel Discussion on Entrepreneurship vs Jobs organized by RAIT Alumni association on 21/08/2013	250
2014-15	Alumni Meet (Reunion) Alumni Cricket team(TCS)	150
	Annual Reunion held on 28/02/2015	167
	Meet on 28/02/2015	140

Criterion VI

Governance, Leadership and Management

D Y PATIL
RAMRAO ADIK INSTITUTE OF TECHNOLOGY
NAVI MUMBAI

Criterion VI: Governance, Leadership and Management

6.1 Institutional Vision and Leadership

6.1.1 State the vision and mission of the Institution and enumerate on how the mission statement defines the institution's distinctive characteristics in terms of addressing the needs of the society, the students it seeks to serve, institution's traditions and value orientations, vision for the future, etc.?

Vision:

To foster and permeate higher and quality education with value added engineering, technology programs, providing all facilities in terms of technology and platforms for all round development with societal awareness and nurture the youth with international competencies and exemplary level of employability even under highly competitive environment so that they are innovative, adaptable and capable of handling problems faced by our country and world at large.

Mission

The institution is committed to mobilize the resources and equip the institution with men and materials of excellence. To ensure that the institute becomes pivotal centre of service to industry, academia and society, with the latest technology and student forums of technology enhancing technical societies, cultural platforms, sports excellence centres and entrepreneurial development centre. To develop the institute to become an autonomous institution & deemed university at the earliest with facilities for advanced research and development programs on par with international standard. To invite international and reputed national institutions and universities to collaborate with our institute on the issues of common interest of teaching and learning sophistication.

RAIT vision and mission envisage to supply highly motivated and technological well trained graduates to serve the society and solve the problems being faced. In addition, RAIT is been entrusted with task of supplying relevant technology to support societal expectations. The details of goals and objectives that are derived from vision and mission statements are provided at Criterion 1.1.

The institution gives admission to the students from various sectors of the society to reach the un-reached and to give opportunities of enrichment, which makes our graduates efficient and effective. The institute has drawn a clear perspective for future development to maintain competitive edge in quality and system.

The institute provides comprehensive education instilled with scientific zeal, creating a platform for lifelong learning. The institute follows a three-fold system by providing academic, co-curricular and extra-curricular programs. The institute's vital motto is to strengthen the inner potential and emotional quotient of the students.

Maintaining Excellence in Quality Education

- To provide high standard platform to students for learning through latest resources.
- To inherit career linked domain skills for higher studies and employment.
- To strive for continuous improvement.
- To develop good human being for nation building.

The top Management, Principal and faculty take care in implementing this policy for the satisfaction of stakeholders. Excellent infrastructure facilities and healthy teaching and learning environment are provided to the students and faculty.

6.1.2 What is the role of top management, Principal and Faculty in design and implementation of its quality policy and plans?

The top Management and Governing Council (MGC-RAIT) determine the Vision and Mission for the institute which are guiding principles and directive policy.

MGC-RAIT provides resources, such as financial, material and manpower in order to achieve institution's vision as envisaged by founders. It also allocates yearly budgets that encompass all facets of running the establishment such as capital expenditure, administrative, academic, as well as provision for replacement of equipment by providing budget for depreciation.

MGC-RAIT has laid down the quality policy for all the endeavours of RAIT as shown below. This enunciation is the guiding principle which RAIT is adhering in all its actions and activities.

ज्ञानधीनं जगत् सर्वम।

Knowledge is supreme.

Our Quality Policy

It is our earnest endeavour to produce high quality engineering professionals who are innovative and inspiring, thought and action leaders, competent to solve problems faced by society, nation and world at large by striving towards very high standards in learning, teaching and training methodologies.

Our Motto: If it is not of quality, it is NOT RAIT!

Dr. Vijay D. Patil

President, RAES

MGC-RAIT consists of a group of dedicated teachers, members of RAES, who are important office bearers. It decides on long term goals and objectives policies and matters. The organization chart for MGC-RAIT is shown in Enclosure 1. The President RAES is the Chairman of the MGC-RAIT and Principal RAIT is the Member Secretary. The board members meet at least twice a year, to discuss and

decide the developments to be undertaken for RAIT and interact with CAC with regard to the decisions to be taken and obtain view of the academic council.
MGC-RAIT plays a vital role in the design of quality systems for RAIT.

Faculty and Staff

- Policy for recruitment of best talent.
- Policy for retention of talent and prevention of attrition of faculty.
- Policy on motivating faculty by offering incentives for:
  - Higher and continuous learning.
  - Enhancement of skills and knowledge base.
  - Providing incentives for R&D work for all faculty members.
  - Timely and adequate financial incentives, wages and increments.
  - R&D and Project Grants and provision of seed money

Teaching and Learning Process

- Policy on digital RAIT.
- Policy on teaching and learning facilities in class rooms.
- Policy on procurement of latest industry oriented equipments.
- Policy on timely replacement of obsolete equipments.
- Policy on providing campus wide internet of 135 MBPS.
- Policy on involvement in semester-wise academic audits conducted by RAIT.
- Meeting with Member Secretary-cum-Principal twice in a month by Chairman RAES to obtain feedback and also affect midterm course correction if needed.
- Meeting the entire faculty and staff twice in a year by Chairman RAES to highlight Management's perspective, new policy directions, and provide feedback, student progress and development.
- Policy on providing professional societies yearly grants for encouragement to professional, scholastic, cultural, sports activities amongst students.
- Policy on provision of tuition fees waivers and assistance to weaker section students and non-creamy layers students under SSS.
- Policy on provision of scholarships and rewards to meritorious students.

Institutional head (Principal) is the member Secretary and hence he/she is a part of the decision-making process. Thus, the institutional head plays a very significant role in the decision-making. CAC, whose organization chart is placed at Enclosure 2, meets at least twice in a month to decide on important academic and administrative policies. The CAC, in conjunction with CMQA also reviews quality assurance policies once in a semester and issues guidelines for all to follow. The Principal holds meeting with HODs every week. All the decisions and policies to improve academic activities are reviewed and discussed in this meeting before implementation. Thus, the HODs, as the representatives of the faculty, are involved in the institutional decision-making.

Role of Principal in QMS process at RAIT

Principal and CMQA (QMS for short) hold regular meetings with HOD and collect feedback and deliberate on the same. They generate remedial action and the steps for

the same are prepared in the form of instructions to be passed on for implementation in various departments. This often includes budget preparation and/or allocation, purchase and procurement guidelines as well as structural changes or faculty addition in various departments as deemed necessary.

Role of Institute Academic Committee in QMS Process at RAIT

QMS offers necessary suggestions and takes collective decisions if needed for effective implementation of the institute's quality assurance policy to ensure smooth conductance of academics and assurance of good teaching and learning environments.

Role of Chief Mentor in QMS Process at RAIT

The QMS discusses with each teaching faculty about teaching/learning issues from time to time (twice during a semester or more). This is done in a group so that points of common interest that emerge are shared immediately to all the teaching staff.

Role of HODs in QMS Process at RAIT

HODs carry out checks to ascertain whether lesson plans and schedules set are being followed or not. This is a regular process to enable mid-course correction and ensure that the subject matter is covered to a large extent.

Role of Faculty in QMS Process at RAIT

RAIT has also constituted a Local Management Council, RAIT (LMC-RAIT), having representatives from faculty and student associations, which is a statutory body formed as per the provisions of the Maharashtra University Act, 1994. The organization chart is placed at Enclosure 3. LMC-RAIT has been created and functioning to provide working mechanisms for participative management principle.

The hierarchy of Quality Assurance Cell (QAC) ensures the down to up and up to down approach so that the required flexibility in working and this cyclic process is assured to allow each individual element of hierarchy to participate and contribute significantly. This setup is depicted in Fig. 6.1.

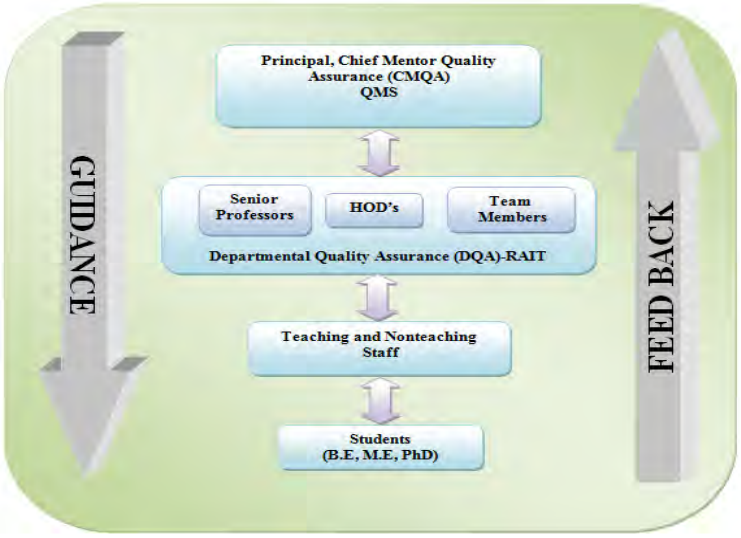


Figure 6.1: Role of QMS in RAIT.

6.1.3 What is the involvement of the leadership in ensuring?

- ***The policy statements and action plans for fulfilment of the stated mission***
- ***Formulation of action plans for all operations andincorporation of the same into the institutional strategic plan***
- ***Interaction with stakeholders***
- ***Proper support for policy and planning through need analysis, research inputs and consultations with the stakeholders***
- ***Reinforcing the culture of excellence***
- ***Champion organizational change***

- **The policy statements and action plans for fulfilment of the stated mission**

The institute is working continuously to achieve the following:

- To ensure all-round development of students by providing various co-curricular, extra-curricular, and entrepreneurship skill development opportunities.
- To enhance research culture amongst the faculty and students, by providing latest, research facilities and industry Institute interaction.
- To inculcate moral integrity in students and make them socially responsible good human beings.
- To develop leadership qualities and an ability to work in a team, by encouraging the students to participate in various activities.
- To set up a research center recognized by the affiliating UoM.
- The Management and the Principal ensure that the institution forges ahead with all the planning to consolidate and become one of the premier institutions**.** The policy statements and action plans are formulated, after careful consideration of all the stakeholders, by the management.

- **Formulation of action plans for all operations and incorporation of the same into the institutional strategic plan**

The action plans for operations are prepared under the supervision and guidance of the Principal and HODs. The institute has a well-planned academic calendar before the start of each semester. This calendar lists down all the curricular, co-curricular and extra-curricular activities and the events to be organized throughout the semester. There are multiple committees that exist within the department, whose responsibility is to plan out developmental activities and ensure their timely execution. As an individual, each staff member prepares a lecture plan and content analysis for the subjects allotted to them much before the start of each semester.

- **Interaction with stakeholders**

The mission statement has been displayed at many places within the campus for wider publicity. The institute academic council and the Principal assisted by HODs prepared and promulgated implementation strategy to convert mission and goals to operational processes and the same has been conveyed to entire faculty and heads of the departments for implementation and practice. New recruits as teaching faculty are given orientation programmes at the beginning of each semester. The HODs and

senior faculty conduct regular meetings with the teaching staff and non-teaching staff and highlight the objectives and goals of the department. Students are also briefed by the Principal, respective HODs and the class counsellors during their monthly meetings. The faculty is expected to maintain the quality as per QMS-RAIT document in principle and practice.

- **Proper support for policy and planning through need analysis, research inputs and consultations with the stakeholders**

The HODs review the departmental progress for continuous improvement in consultation with the Principal. Based on the suggestions given by the stakeholders during interactions, guest lectures under training programmes are arranged for bridging the gap between academics and industry. The institute has signed MoUs with various companies for providing additional technical training to the students.

- **Reinforcing the culture of excellence**

The Institute believes in striving for excellence in all aspects. The students are trained to take initiatives to act on opportunities and take responsibilities. The institute inspires and creates culture of involvement, entrepreneurship and improvement by providing support at all levels.

- **Champion organizational change**

The institute is always open for accepting change in policy for achieving excellence. Taking into consideration the preceding year‘s performance in terms of academic results, placements, research publications in conferences and journals, funded projects, etc., the institute follows a well-structured approach for implementing the required changes to ensure improvement in the performance of the system. Requirements arising, in order to achieve the above goals in the institute, are systematically conveyed with its justifications to the competent authorities.

6.1.4 What are the procedures adopted by the institution to monitor and evaluate policies and plans of the institution for effective implementation and improvement from time to time?

Institute Level

Academic Monitoring Committee

- Members of this committee monitor the instruction delivery on a regular basis so as to record the progress in theory classes and practical sessions.
- Student attendance is monitored and corrective actions are taken if required by informing the parents.
- Feedback is collected from the students regarding conduction of lectures and practical sessions. This feedback is conveyed to the concerned faculty for necessary action to improve the teaching-learning process.
- Students are allowed to organize and participate in seminars, conferences, competitions, technical festivals, science exhibitions and cultural programmes.

Library Committee

The Library Committee is entrusted to oversee growth and maintenance of library so that maximum number of students and faculty can use the facility. In addition, the committee is responsible for procurement of books for central library.

Examination Coordination Committee

- Conduction of tutorials/mid semester tests/mock practical examinations so as to judge the grasping of concepts by students.
- Conduction of end of semester university level examination.

Research and Development Committee

- To monitor the research activities carried out in the institute.
- To ensure that the M.E./Ph.D. students are provided with the necessary facilities and infrastructure required in their research.
- To ensure the smooth conduction of M.E. and Ph.D. seminars with subject expert as external examiners.
- To check that the Journal and Conference/Symposium communications sent by the students and faculty are of good quality and free from any kind of plagiarism.
- To take note of any grievances of the research students and take necessary actions.

Projects-UG and PG Planning and Monitoring Committee

- Encouraging students to participate in project competitions and present papers in national and international conferences.

Grants and Revenue Generation Committee

- To generate revenue from existing infrastructure and research facilities available in the institute.
- To provide expert training programme by internal and external resources for the students of the institute and students from other institutes.

Records Audit and Inspection Committee

To maintain all records and books about teaching and learning process and maintain academic standards of institute in consonance with NBA/NAAC/AICTE/UoM norms.

- To facilitate academic audit twice a year.
- To liaison with CMQA and Principal to analyze feedback from various sources and implement corrective actions.

Training and Placement Committee

- Helping the students to get employment.
- Arranging hands-on training, industrial visits and in-plant training.

- Arranging guest lectures by professionals from industry and academics.
- Guiding students for higher education in the country and in foreign universities.
- Arrange summer internships in association with training and placement.

Alumni Committee

- To maintain alumni database.
- To arrange interaction with achievers from the department for the benefit of students.

Entrepreneurship Skills Development Committee

- To organize entrepreneurial development programmes.
- To arrange interaction with achievers from the institute with alumni for the benefit of students.

Conferences/Publications Committee

- Organization of national level conference by each department.
- Plan for organizing an international/national level student/faculty conference.

Committee for monitoring of Extra-curricular activities

- Celebrating Womens day, Engineers Day, Independence Day, Republic Day, etc.
- Organizing annual social gathering.
- Publication of newsletter every semester by each department.
- Publication of annual institute magazine.
- Organizing events such as blood donation camps and various other activities under the social wing RAIT.

Anti-Ragging Committee

- To depute faculty on anti ragging activities based on plans prepared and carryout regular checks for any ragging activity in their areas.
- Carrying out surprise visits and checks in probable ragging areas on the campus.
- In case of any incidence noticed on the spot, assessment of the incidence be made and necessary action to be taken and inform the control cell immediately.
- Ensure anti-ragging instructions are displayed at prominent places in their areas of control.
- Each squad in-charge makes detailed duty plan in respect of his squad and forward a copy of the same to the control room.
- Every squad in-charge briefs all members of his squad about their duties/action regarding anti-ragging.

Women's Grievance Redressal Cell

- To create awareness in the faculty members and students about the sexual harassment and other related issues.
- To advise complaints of the informal and formal means of resolution as specified by the cell.
- To ensure the fair and timely resolution of harassment complaints.
- To provide information regarding counseling and support services on the campus.
- To ensure that student, faculty and staff are provided with current and comprehensive guiding materials on harassment and assault.

Purchase Committee

- The budget Provision.
- Prioritization of purchase of equipment, machinery, etc., based on the sanctioned annual budget depending on the requirements of the projects.
- Preparation of specification/identification of the exact requirement by the indenting scientist or by purchase committee through pre-indent discussion/presentations or conference (wherever required) in case of costly R&D purchases.
- Consideration of the indents by the respective purchase committee, where required.
- Calling for tender/quotations wherever required and processing of tender papers by the Purchase Department.
- Evaluation of the tenders/quotations by the Purchase Committee and recommendations of the Principal for final decision.
- Submission of the papers to the sanctioning authority for financial sanction.
- Placement of orders/award of contract.
- Arrival of equipment, installation, commissioning and inspection certification by indenter for processing payment.

Departmental Level

Following is the list of committees constructed at the department level for smooth conduction of academics and these are replicating same as that of institute level committee so that mirroring function in the entire institute is followed in order to ensure the fruitful outcome.

- Academic Monitoring Committee
- Library Committee
- Examination Coordination Committee
- Projects-UG and PG Planning and Monitoring Committee
- Grants and Revenue Generation Committee
- Records Audit and Inspection Committee
- Training and Placement/ Committee
- Alumni Committee
- Entrepreneurship skills development Committee

- Conferences/Publications Committee
- Monitoring of Extra-curricular activities
- Anti-Ragging Committee
- Women's Grievance cell
- Purchase Committee

6.1.5 Give details of the academic leadership provided to the faculty by the top management?

Management has given adequate freedom to faculty for strengthening teaching–learning process, academic advancement and nurturing future talent in students. Faculty will be at liberty to formulate plans for supporting poor learners, preparing required learning material, organizing various programmes for curricular and extracurricular abilities, encouraging enthusiastic learners for professional competency, designing new experimental set up in laboratories, taking up in-house R &D projects. The freedom of action will motivate faculty for creative and innovative practices, coordination and team work.

6.1.6 How does the college groom leadership at various levels?

For the effective implementation of the policies and plans, various committees are formed consisting of coordinator and members. These committees are delegated with authority to work in their respective committees and supervision is done by the Principal which involves participative management and improves decision making abilities. The work is done by coordinating with all the departments.

6.1.7 How does the college delegate authority and provide operational autonomy to the departments / units of the institution and work towards decentralized governance system?

- Adequate systematized autonomy to all the departments and sections.
- Class Monitoring Committees and students associations with representatives from meritorious, average, below average levels and female students.
- Organization of several activities by student to enhance the capabilities of students under the advisory ship of faculty member.
- Empowering HOD to distribute work load to faculty, to identify the add-on courses to deliver, to identify the content beyond syllabus and to organize various faculty and student empowerment programmes with the help of members of class monitoring committee, teaching and non-teaching staff of the department.
- Allocation of budget based on the proposals received from the department.
- Involvement of lab technician in making budget proposals.
- Conduction of midterm examinations by departments.
- Decentralized governance system with well-defined interrelationships.
- Empowering the faculty member in-charge of a laboratory to devise and implement the necessary plans for effective conduction of experiments.

6.1.8 Does the college promote a culture of participative management? If 'yes', indicate the levels of participative management.

Yes, the institute believes in a work culture that encourages participative management. Following are its salient features:

- The head of the institute frames policies and plans after collecting opinion and ideas of HODs, faculty members in the staff meeting. Due importance is given for staff to participate in discussions.
- The HOD, in departmental meetings, gives adequate authority and responsibility to staff to discuss about implementation of action plans.
- Students, non-teaching staff are also made as members of various committees which involve participative management.
- Alumni meets, parent meets are conducted to collect feedback about institution which contributes to participative management.

6.2 Strategy Development and Deployment

6.2.1 Does the Institution have a formally stated quality policy? How is it developed, driven, deployed and reviewed?

Yes, RAIT has a formally stated quality policy. It follows the QMS-RAIT which is expected to be derived and aligned with respect to the vision and mission of the institute. Quality policy clearly states the objectives of the institution, its progress towards the achievement of objectives and its contribution to the society. All these strategies are monitored by the QMS-RAIT that meets every couple of months to decide on academic quality control issues.

6.2.2 Does the Institute have a perspective plan for development? If so, give the aspects considered for inclusion in the plan.

Yes, the institute has a perspective plan for development. In accordance to that, it is committed for developing proper infrastructure, budget allocation, enhancement of quality education with e-learning, workshops, seminars, FDP's and conferences complementing the regular classroom teaching. To achieve this, institute specifies the targets to all the concerned departments by providing proper information collected from stakeholders, advisors, etc., who are directly related for imparting institutional excellence.
The institute has well developed perspective plan from year 2012-17, these plans are reviewed once in a year as a part of academic audit for compliance. The detailed plan is placed at Enclosure 5 of QMS-RAIT document available at *www.rait.ac.in*.

6.2.3 Describe the internal organizational structure and decision making processes.

- President, RAES is the functional head of the institute. He mainly looks after academics, development of`` education and also growth of institutions and can cause any action to be initiated which is required in his opinion for the promotion of the above subject to ratification by the governing bodies.

- The President and Principal are the chief executives of the institute. The Principal coordinates between the management, LMC and the other office bearers of the institute.
- The Principal is the chief academic administrator and a bridge between the Management, Staff and Students.
- Registrar is administrative head for administration and non teaching staff of institute.
- The chief responsibility include University and AICTE affiliations, external interface with inspecting agencies and oversee the financial transaction.
- Coordinators of all committees report to their respective HODs which in turn report to the Principal on various matters related to the department/institute.
- Every committee has a coordinator with two or more members. Coordinator will be in charge of the committees and its programs. These committees assist the HODs in the discharge of their duties.
- HOD is responsible for the implementation of the policies laid down by the institute.

HOD prepares budget estimation for the department for its operation, maintenance and development. He/she constitutes aforementioned committees to help in various matters.

6.2.4 Give a broad description of the quality improvement strategies of the institution for each of the following

Teaching & Learning:

The Institute ensures effectiveness of the teaching-learning process by:

- Implementation of outcome based teaching and learning methodology.
- Recruitment of well qualified and experienced staff as per AICTE/UoM norms.
- Course allocation to the faculty much before the commencement of the semester to help them prepare lesson plan and lesson notes.
- Review of the academic results of the previous year.
- Issue of revised syllabi to the faculty members.
- Encourage faculty members to teach beyond the syllabus contents as per the requirements of the current technology trend.
- Continuous assessment of student performance through tests, assignments, seminars and projects.
- Emphasis on imparting skills through laboratory experiments and various skill development programmes.
- Promoting professional development of faculty by providing support
    - To undergo refresher courses.
    - To pursue higher education.
    - To attend and organize national and international seminars/workshops / conferences.

Web-based Learning:

- The institute has central internet facility with 135 Mbps leased lines. There is a centralized computing facility with 150 computers to promote and motivate students for self-learning.

Learning with Multi-media:

- Availability of course material on intra-net.
- Digital library facility.
- Availability of video lectures.
- LCD projectors for presentation.

Research & Development:

Research and Development is an integral part of the activities of institute. The R&D committee facilitates, channelizes, records, and regulates all the academic, sponsored, collaborative research projects and consultancy works in the institute. The institute is closely working with core industries to involve the students and faculty in R&D. The institute strives to provide a conducive atmosphere which encourages higher studies and research amongst the faculty and students. It also promotes and manages institute-industry interaction. The R&D committee is involved in administrating research projects sponsored by various government and non-government funding agencies such as UGC, BARC, AICTE, UoM, DST, etc., and promotion of collaborative research partnerships for undertaking creative and advanced research.

Community Engagement:

Community engagement refers to the process by which organizations and individuals build ongoing, permanent relationships for the purpose of applying a collective vision for the benefit of a community. RAIT has been very active in rendering community services such as organizing blood donation camps, creating awareness on waste management, green awareness, adoption of students which are economically and socially downtrodden, etc.

Human Resource Management:

- Employees are given utmost importance and their needs are well recognized.
- Service rules are transparent and the staff gets benefits such as provident fund, gratuity, etc.
- The faculty members and staff are entitled to other benefits like casual leave, maternity leave, medical leave, earned leave and vacation according to rules laid down in the statutes of UoM.
- The institute frequently arranges training programmes and also deputes the staff to other organizations for attending such programmes for acquiring technical skills, teaching skills, and soft skills.
- The institute has also arranged financial planning lectures for staff, to assist them for effective planning of their finances.
- The institute has a well-defined and effective selection procedure, systematic performance appraisal system and promotion policies.

Industry Interaction:

The institute has an institute-industry interaction. Industrial training for the students as well as faculty is promoted. In every academic year, industrial visits are arranged for faculty and students. Both UG and PG students are motivated to undertake their final year project in the relevant industries of their domain, thus exposing and preparing them to meet the real time requirement of the industry.

6.2.5 How does the Head of the institution ensure that adequate information (from feedback and personal contacts etc.) is available for the top management and the stakeholders, to review the activities of the institution?

Principal as a Head of the institute ensures that adequate information on various activities is obtained through regular staff meetings, meeting with HODs and their coordinators. Also the head of the institution compiles all the feedback obtained from employers, alumni and parents. The feedback obtained from various stakeholders is sent to the MGC-RAIT once in a semester or based on the need immediately, to obtain their views and recommendations on the functioning of the system.

- For flow of information Principal also depends on feedback from students, faculty, HODs and CMQA, which is sent from time to time on diverse matters such as academic performance, efficacy of teaching and learning, sufficiency of infrastructure, etc .
- Further there is a channel available with Principal in that students and faculty submit their feedback through 'Feedback Boxes' provided at each floor. These boxes are opened every Monday and corrective actions are initiated immediately.

- Besides, all the heads of academic and non-academic departments are allowed to report on any issue at any time to the Management/Governing Body through the Principal. Conversely Management/Governing body can also access these issues if they feel necessary.
- Principal obtains feedback during daily interaction with students during contact hours.

6.2.6 How does the management encourage and support involvement of the staff in improving the effectiveness and efficiency of the institutional processes?

The Management of RAIT through apex planning and controlling body MGC-RAIT lays down Vision, Mission and long and short range goals for the institute. In addition the Management has set in the quality policy of RAIT. These aspects are given wide publicity through notice boards, websites, etc., to make faculty and staff aware of thinking of the Management. The CAC has identified the areas of academics, administration, faculty and resources as areas needing constant up gradation and attention for achieving efficiency and effectiveness. The proactive measures initiated by Management of RAIT are as follows:

- Setting up of quality assurance document called QMS-RAIT which defines

each and every aspect of academic planning, delivery, evaluation and feedback mechanism.

- Orientation programmes are conducted every semester and academic year for faculty to highlight the process and induct newly recruited faculty and staff into QMS process.
- There are several committees set up at departmental level and at institute level, wherein the faculty and non-teaching staff can participate in institute building activity.
- Faculty members are encouraged to design and develop systems and software programmes and define organizational procedures to improve efficiency. The improvements suggested by faculty are successfully implemented in following cases:
  - Examination section evaluation and grading process.
  - Coding and decoding of examination answer sheets to maintain secrecy.
  - Examination fees collection system.
  - Admission process.
  - Design of elaborate feedback mechanism.
  - Design of paperless administrative support to students in the form of RAIT kiosks.
  - Resource planning in case of room allocations and seat allocation during examination.
  - Online fees payment systems for students.
  - Digital notice boards with in-house Linux-based software.
  - Android based attendance recording systems.
  - RAIT Circle, as software for student faculty interaction.
- Rewarding the staff members, both faculty and non-teaching staff, with financial and non-financial incentives for their outstanding performance.
- Providing all types of support systems (human, financial and ICT) to every committee for the effective functioning.
- Participating in the meetings of various committees to support the institutional process.
- Encouraging the staff to strengthen the teaching capacities by motivating them to undertake research, consultancy and paper publications as well as to participate in the seminars and workshops.
- Encouraging incentives for research and development activities of faculty.

6.2.7 Enumerate the resolutions made by the Management Council in the last year and the status of implementation of such resolutions.

MGC-RAIT has made following important resolutions to be implemented during October 2014 and February 2015. The status is indicated below:

- To start PhD programme in the Department of Instrumentation Engineering: RAIT has approached MoU for approval during October 2014. Accordingly a Local Inspection Committee (LIC) constituted by MoU visited the institute and submitted its recommendation for starting PhD programme. The faculty and professor has been identified and in place.

- To convert all 40 class rooms into ICT smart class rooms by providing Laptops, LCD Projectors and audio-visual presentation hardware and software.
  Project completed on April 30, 2015.
- To provide digital notice boards with in-house display software on all floors.
  Project is in process. Ground and first floor notice boards have been installed and software tested. The other floor work is in progress.
- To create RAIT KIOSKS that will provide online paper less transaction to students:
  Project to provide services such as railway concession, issue of certificates and online transaction have been completed. Further processes are underway to expand the services offered.

Fig. 6.2: e-Kiosks and digital notice boards

- To expand R&D activity at the institute with leading institutes and reputed industries.

- RAIT has entered in to R&D collaborations with Indian Institute of Technology Mumbai, BARC Mumbai, and leading research based industry called Gauranga SoftTech, Navi Mumbai for mutually beneficial research and development efforts. MOUs have been entered with Gauranga SoftTech, TCS, Infosys, etc for research cooperation.
- To expand faculty with PhD qualifications in all branches to augment quality manpower and to boost research efforts of RAIT.
- RAIT has conducted and selected qualified faculty with PhD qualifications in the department of Electronics and Telecommunication and Electronics Engineering. In addition RAIT has sponsored and deputed several faculty members to PhD programmes in VJTI, IIT Mumbai and other reputed institutions. The details are as follows:

Table No. 6.1: Faculty sponsored/deputed for various programs.

Number of faculty recruited with PhD	16
Number of faculty with Mphil	06
Number of faculty undergoing PhD	19
Number of faculty admitted at RAIT PhD	16

- To fill vacancies of RAIT as per NBA/NAAC/AICTE standards. To approach UoM for conducting interviews and ratify ad-hoc faculty already recruited.

Interviews have been completed and qualified staff has been selected. RAIT has the required number of faculty as specified by AICTE and enjoys student to faculty ratio of 15:1. The institute has also approached UoM to conduct interviews for UGC ratification of posts so that cadre ratios can also be maintained.

6.2.8 Does the affiliating university make a provision for according the status of autonomy to an affiliated institution? If 'yes', what are the efforts made by the institution in obtaining autonomy?

Yes, there is a provision by the affiliating university to grant the autonomy according to the status of the institution. RAIT is planning to apply for the autonomy status as per clause 12(b) of the UGC Act (3).

6.2.9 How does the Institution ensure that grievances / complaints are promptly attended to and resolved effectively? Is there a mechanism to analyze the nature of grievances for promoting better stakeholder relationship?

The institute has following committees for addressing the grievances/complaints from students, teaching and non-teaching staff.

- **Local Managing Committee**

Local Managing Committee of RAIT has been created and functioning to provide working mechanisms for participative management principle.

- **Anti-ragging Committee**

In case of any incidence noticed on the spot, assessment of the incidence be made and necessary action to be taken and inform the control cell immediately in given Performa. Ensure anti ragging instructions are displayed at prominent places in their areas of control.

- **Anti-Ragging Squad**

Each squad in-charge makes detailed duty plan in respect of his squad and forward a list copy of the same to the control room. Every squad in-charge briefs all members of his squad about their duties/action regarding anti ragging.

- **Women's Grievance Redressal Cell**

To ensure the fair and timely resolution of harassment complaints. To ensure that student, faculty and staff are provided with current and comprehensive materials on harassment and assault.

- **Student Council**

To promote the interests of students among the institute administration, staff and parents. To inform students about any subject that concerns them. To consult students on any issue of importance.

- **Student Grievance Redressal Cell**

The function of the cell is to look into the complaints lodged by any student, and judge its merit. The grievance cell is also empowered to look into matters of harassment. Anyone with a genuine grievance may approach the department members in person, or in consultation with the officer in-charge Student Grievance Redressal Cell.

- **Complaint Box Redressal**

In case the person is unwilling to appear in self, grievances may be dropped in writing at the letterbox/ suggestion box of the Grievance Cell at administrative block.

- **Clean and Green complaints Redressal Committee**

Institute conducts the regular check for the cleanliness and green environment. If there are any complains registered with the Councillor then that will be forwarded to concerned authority and it is rectified and record of which is maintained with Administrative Officer and staff.

Everybody in the institution is made aware of the existence of these committees. As and when the committee receives a complaint, they meet immediately, review and resolve the problems. They also ensure that necessary actions are taken. The complaint details are filed separately and kept confidential.

6.2.10 During the last four years, had there been any instances of court cases filed by and against the institute? Provide details on the issues and decisions of the courts on these?

NIL. No court cases have been filed against RAIT during last four years.

6.2.11 Does the Institution have a mechanism for analyzing student feedback on institutional performance? If 'yes', what was the outcome and response of the institution to such an effort?

Yes, the institution collects online feedback every semester, from students, on institutional performance for the improvement and development of academic standard as well as various types of facilities. Students provide their feedback on the working of the administrative office, facilities provided by the department, facilities provided by the institute and the working of the training and placement cell as well. In addition to this, students evaluate their subject teachers using the specified questionnaire. This is an online process and is conducted at the department level. A faculty and one supporting staff of the department is assigned this activity and the HODs monitor the process.

HODs go through the departmental feedback and convey it to staff members. After discussion, decisions are taken for the improvement of individual performance.

6.3 Faculty Empowerment Strategies

6.3.1 What are the efforts made by the institution to enhance the professional development of its teaching and non-teaching staff?

Our institution believes that the commitment and dedication for developing high performance work systems can only be achieved if faculty members are willing to give their best. Here learning is viewed as a lifelong process, so teachers are encouraged to have the best possible skills which can bring improvements in student learning. Our institute provides choice and differentiated learning opportunities for educators. Faculty members are encouraged to attend seminars, workshops, orientation courses and refresher courses to update their knowledge. Funds are clearly allocated for the following professional activities:

- Adequate R&D budget to be able to spend on research and development activities have been earmarked by RAIT. For the current year an amount of 3 Cr has been budgeted.
- Workshops, conferences at the national or international level are conducted each year within the institute and faculty is deputed to these knowledge enhancement programmes.
- Adequate time is clearly allocated for professional development work for faculty which means that the staff is on duty leave when he/she proceeds for orientation or refresher course or attending any seminars and workshops.
- Policies and procedures support professional development efforts and the implementation of professional development goals, with some teachers being

  the members of various Professional Associations and Bodies.
- Evaluation processes is so designed so as to respect learning and growth of faculty.
- Art of living and motivational lectures addressing team play and distressing techniques are regularly conducted for teaching and non-teaching staff.
- The budget for library and digital library and memberships in professional societies are made attractive to make learning and teaching as easily attainable task for faculty.
- Faculty are deputed to qualification improvement programmes such as ME/MPhil/PhD by providing adequate time to undertake course work and research work.

6.3.2 What are the strategies adopted by the institution for faculty empowerment through training, retraining and motivating the employees for the roles and responsibility they perform?

- **Training**

The staff members are motivated to attend seminars, conferences, exchanging the research activities, orientation courses, and other training programs. The HODs

motivate their staff to improve their educational qualification such as ME/MPhil/Ph.D. Creating a good environment enables staff to make the best use of their capabilities and to realize their potential to the benefit of both the organization and themselves.

- **Retraining**

Whenever there is a revision in syllabus or curriculum, or change in the faculty handling a subject, orientation and refresher courses are conducted by HODs in conjunction with UoM or faculty is deputed to attend these orientation/refresher courses.

- **Motivation**

RAIT believes knowledge of task in hand and subject is the greatest motivator. Accordingly, RAIT spends considerable amount of resources in conducting and organizing technical seminars, workshops, skill and knowledge enhancement courses which are dedicated to pedagogy and subject content. The institute establishes an environment in which the talents, creativity and energies of employees are unleashed. Efforts are made to create conditions in which innovation, team work and total quality can flourish and encourage willingness to operate flexibly in the interest of the adaptive organization and the pursuit of excellence. Timely recognition and providing incentives for innovative and quality teaching and research work are hallmark of RAIT.

- **Performance Appraisal and Reward System**

Recognition and appreciation of a job well-done gingers the individual's self-image and self-recognition to optimum heights. It is a regular feature of the institute to acknowledge the hard work of the teaching and non-teaching staff members by giving them the cash prizes during the Annual Prize Distribution each year. The Management ensures that the right people are available at the right place and right time, and have the capability and competence to work effectively and efficiently so as to achieve the objectives set by the organization. There is an elaborate appraisal system at place which gives weightages to academics, research, student and peer feedback and contribution to institute and department. Based on these criteria, appraisal is carried out and rewards are given to teaching and non-teaching staff.

- **Participative Management**

Our institute encourages participative management. The decision making in the institute takes place at three levels. At highest level it is by Senior Management through apex decision making body called MGC-RAIT, which is involved in planning, goal setting and strategic reviews for the organization. MGC-RAIT is in touch with institute level decision making body called CAC, in which Principal, HODs, and CMQA and other senior professors are members, which will execute policies set up by MGC-RAIT. It will also ensure the designing and implementation procedures for functioning and controlling the administrative and academic activities of the institute. HODs in turn have the departmental committees that will involve

faculty members and collectively decide on academics, administration and addressing students concerns. In addition there are several student associations wherein students assisted by faculty in-charge are involved.

6.3.3 Provide details on the performance appraisal system of the staff to evaluate and ensure that information on multiple activities is appropriately captured and considered for better appraisal.

Self-appraisal: This is filled by each staff member every year appraising the Principal and the Management about the activities they have been doing throughout the year and academic results of their students. As a result each member of the staff has the opportunity to convey what they have done and what they intend to do in the coming session. The faculty will also highlight the goals set by their superiors (HOD/Principal) and also goals set by themselves so that they get an opportunity to bring out what was expected and what has been achieved.

Evaluating Performance Index (EPI): Each faculty at the end of semester calculates performance index called EPI, which will convey parameters like average performance of class, pass percentage, and number of students above class average. The faculty compiles EPIs for all the subjects he/she has handled in an academic year. Based on these EPI, Academic Performance Index (API) of the faculty is computed, which is a barometer of academic performance.

Student appraisal of faculty: The feedback received from the students helps in making a comprehensive appraisal of the faculty members. The EPIs computed by faculty is adjusted based on the faculty feedback provided by students.

Contributions towards Research and Development: Appraisal also takes into account the achievement of faculty towards research and development works,

conferences and seminars attended/conducted, and publication in national and international journals and conference proceedings.

Feedback from HOD/Principal: The appraisal by faculty includes feedback from HODs and Principal for contributions made by the faculty in departmental work and institute level work.

Details of performance appraisal system are placed at QMS-RAIT document.

6.3.4 What is the outcome of the review of the performance appraisal reports by the management and the major decisions taken? How are they communicated to the appropriate stakeholders?

Performance appraisal of a faculty member is based on following factors:

- Self-appraisal is carried out by faculty in the beginning of academic year and semester. In this faculty concerned projects his/her contributions, objectives, and resources required and additional training programmes required. In addition, the faculty also projects the objectives set by himself or herself.
- Evaluators Performance Index.

- Students Feedback.
- Feedback by HOD/Principal.
- Annual Performance Index.

The MGC-RAIT reviews the performance reports put up by Principal for arriving at conclusion regarding overall performance of the faculty. The decision taken by Management on appraisal and feedback are conveyed by Principal, HODs and CMQA to individual faculty. Feedback is shared with an advisory on the scope of improvement and areas needing attention.

Following decisions are taken based on performance of faculty:

- Skills & technology skills enhancement programmes for faculty.
- Appointment of faculty from premier and reputed institutions.
- Meeting of faculty/cadre requirements of institution.
- Rewards to performing faculty through incentives and recognitions.
- Promotions and selections to higher positions depending on suitability and performance and not merely on seniority.
- Performance based rewarding system for innovation
- Project and research project funding for good performers amongst faculty

Annual reports of the institute are read out at the Annual Prize Distribution Function and Convocation to appraise the stakeholders about the major research work and other contributions by the staff members.

6.3.5 What are the welfare schemes available for teaching and non-teaching staff? What percentage of staff have availed the benefit of such schemes in the last four years?

Some of the welfare schemes available for teaching and non-teaching staff are listed below:

- Healthcare facility for teaching and non-teaching staff at concessional rates at DY Patil Hospital, Nerul:
  All the faculty and non-teaching staff are entitled to use medical facility at the concessional rates; the concession of 15% is given to all employee of RAIT. In addition, depending on complexity of case and repayment capacity of staff member, additional concessions are provided by the hospital management. Percentage of faculty utilizing this is 100%.
- Maternity Leave:
  The institute has a liberal leave policy for post maternal leave. Maternity leave is granted to all women faculty which can be up to maximum of three months. All eligible faculty members have been granted these privileges, incidentally 3% of Women faculty have availed this facility for last 4 years, post maternity leave depending on the need and emergency additional leave also granted to women faculty; nearly 2% of faculty has availed this facility.
- Medical Leave/Casual Leave/Compensatory-Off facility:
  100% of faculty avails this facility.

- Yearly 70 days vacation for teaching staff and 30 days of EL for non-vacation staff:
  100% of faculty avails above facility.
- On-duty leave facility whenever faculty and staff travel on duty:
  Nearly 80% of faculty enjoys on-duty leave facility.
- Provident Fund as per rules: Available for all faculty.
- Gratuity on attainment of superannuation for teaching and non-teaching staff is available for all eligible staff.
- Incentives for publishing in high grade journals and books:
  On an average 5% of the faculty receives grants, incentives under this scheme.
- Travelling allowance and registration charges for attending conferences:
  Around 90% of faculty avails this facility each year.
- Additional increments/allowances after obtaining higher qualifications such as ME/MTech/MPhil/PhD: On obtaining ME/MTech/MPhil qualifications, faculty is promoted as Assistant Professor in Sixth Pay. Under this scheme 75% of faculty has been given Sixth Pay scale. For faculty obtaining PhD, additional increments/promotion to next grade are awarded. Under this scheme 5% of the faculty has benefitted by this facility.
- Cooperative Society Membership for faculty and staff.

6.3.6 What are the measures taken by the Institution for attracting and retaining eminent faculty?

Good academic and research atmosphere supposed to be the key to attract and retain eminent faculty. The institute has been trying its level best to maintain and develop its academic and research ambience. There are a number of factors for which the institute is attracted the eminent faculties:

- Better quality students that are admitted to RAIT and nurture them to higher qualities of professional life, which acts as a chief motivator to the faculty.
- Academic independence accorded to the teaching faculty.
- Freedom to choose resources to carry out research and other academic work in the department.
- Participative management, with opportunities to take part in decision making and shaping the future of RAIT.
- RAIT gives departmental autonomy in functioning. This includes resolving issues arising because of subject matter differences amongst the faculty.
- To a large extend RAIT encourages and provides the means for technology aided teaching /learning activities. Faculty has been provided with laptops to prepare and execute their lecture in a digital format. The faculty also maintains DCF which makes their life easy and gives them more time to devote to teaching learning and research.
- Both teaching and non-teaching staff work cohesively and in unison to attain academic supremacy.

6.4 Financial Management and Resource Mobilization

6.4.1 What is the institutional mechanism to monitor effective and efficient use of available financial resources?

The finances of the institution are judiciously allocated and effectively utilized by proper budgeting system. The institution is effective in resource mobilization and planning development strategies. Financial committees in the institute comprise of both teaching and non-teaching staff. The Principal and the Management allocate funds according to the demand of a particular department or for the physical infrastructure of the institute. Quotations are invited from different vendors/suppliers and the ones providing the best quality and best price are selected for procurement. The automation of account at the level of institute management helps the Management for monitoring the financial resources. A flow-chart of this process is shown in Fig. 6.3.

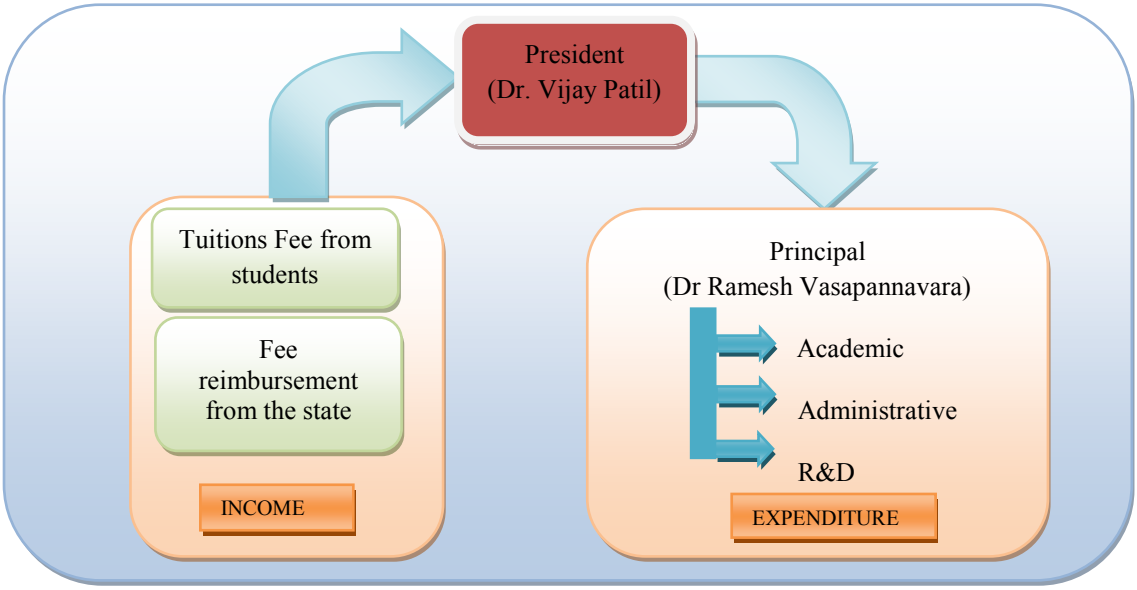


Figure 6.3: Institutional mechanism to monitor available financial resources.

6.4.2 What are the institutional mechanisms for internal and external audit? When was the last audit done and what are the major audit objections? Provide the details on compliance.

The institute accounts are regularly audited by external competent authorities. For internal audit, a team comprising of accountant, member of finance committee and Principal evaluate the preparation of accounts. This system of maintaining finances paves the way for error-free accounts and it becomes easier for the external auditor to conduct institute audit smoothly. As the audit work is done periodically and by various authorities timely, there are usually no major audit objections.

6.4.3 What are the major sources of institutional receipts/funding and how is the deficit managed? Provide audited income and expenditure statement of academic and administrative activities of the previous four years and the reserve fund/corpus available with Institutions, if any.

The major sources of institutional receipts are:

- Tuitions Fees from the students.
- Fee reimbursement from the state government.

Table No. 6.2: Expenditure statement of academic and administrative activities.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Budget (Cr)	12.93	15.17	21.32	28.45	34.41	In Process

RAIT has allocated a budget of 35.85 Cr for 2015-16. The institute has sanctioned a budget of Rs 1.75 Cr towards R&D for all departments for the academic year 2015-16. In turn each department has been provided with a research and development budget of Rs. 35 to 48 Lakhs to carry out research activities and purchase of specialised hardware and software.

Table No. 6.3: Total Budget.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Budget (Cr)	17.61	18.54	20.29	24.57	33.80	35.85

Total budget provided by the Management is intelligently divided in three parts by Principal, QMS-RAIT and higher authority members as administrative expenditure, academic expenditure and R&D activity.

RAIT budget for **Administrative expenditure** such as salary & honorarium, advertisement expenses, commission & charges, building maintenance expenses, electricity charges, eelectrical maintenance expenses, generator expenses, water charges, employers contributions to PF, office & miscellaneous expenses, postage, telephone & internet expenses, repairs & maintenance, ssecurity service charges and staff welfare expenses, etc.

Welfare, guarding charges, rent rates & taxes paid, fees concession to students, gratuity payment, lift maintenance, painting expense, plumbing material charges, supervision charges, sweeping & cleaning, PF administrative charges, etc., are shown below:

Table No. 6.4: Administrative expenditure.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Budget (Cr)	13.6	14.37	16.38	19.98	27.83	29.00

RAIT budget towards **Academic activities** such as Affiliation/Application & registration charges, inspection fees, computer maintenance expenses, examination expenses, examination remuneration, laboratory & office renovation expenses, lab recurring expenses, printing & stationary, equipment maintenance, electronic lab recurring expenses etc. are shown below:

Table No. 6.5: Academic activities.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Budget (Cr)	3.54	3.28	2.94	3.52	4.64	5.1

The budget details for **R&D activities** such as newspaper & periodicals / magazines-journals & subscription, seminar & conferences expenses, newspaper & periodicals, travelling & conveyance expenses, transport are given below:

Table No. 6.6: R&D activities.

Year	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Budget (Cr)	0.48	0.89	0.96	1.07	1.33	1.75

The deficit is managed with the help of society funding when and where necessary.

6.4.4 Give details on the efforts made by the institution in securing additional funding and the utilization of the same (if any).

The institute made efforts to get AICTE funds. Funds sanctioned are utilized as per the rules and regulations.

Table No. 6.7: Additional Funding and the Utilization.

Sr.No.	Faculty Name	Project Name	Funding Agencies	Cost (Lakhs)
1.	Dr. Ramesh Vasapannavara	Advance computer Research areas	AICTE	1.50

2.	Dr. Satish Devane	Development and Modernization of Network Laboratory	AICTE	18.50
3.	Dr. Satish Devane	Agent based reconfigurable routing for MPLS Network	AICTE	8.24
4.	Dr. M. D. Patil	Design and deployment of model predictive controller for single loop process setup	University of Mumbai	0.35
5	Dr.Vishwesh A.Vyawahare & Dr.M.D.Patil	Power Electronics control for railway locomotive	Department of Indian Railways through Gauranga Tech	0.10

6.5 Internal Quality Assurance System (IQAS)

6.5.1 Internal Quality Assurance Cell (IQAC)

a. Has the institution established an Internal Quality Assurance Cell (IQAC)? If 'yes', what is the institutional policy with regard to quality assurance and how has it contributed in institutionalizing the quality assurance processes?

IQAC in RAIT is named as QMS-RAIT and both pseudo names have been used interchangeably in the document. The institution has established an Internal Quality Assurance Cell (IQAC) for the academic excellence. This cell is structured (refer figure in QMS-RAIT) and has a well-defined role for all the participants. This activity starts with the students, who are the purpose of our existence, with their feedback travelling all the way upwards to the Principal along with comments of HODs and CMQA. With their experience in teaching/learning, the seniors offer solutions that are translated into implementation steps that travel back to the students. This cyclic activity engaged for quality upkeeps the smooth running of academic atmosphere including suggestion for infrastructural improvement, resource mobilization, giving emphasis on quality rather than quantity.

QMS-RAIT monitors the overall performances and also reviews the entire scenario of the institution. With QMS-RAIT in place, all the teaching and non-teaching staff of the institute show signs of being cautious and conscious. With purpose and need of quality ingrained in their thoughts, the staff is motivated to exercise self-control to bring about this desirable change. Each staff member is provided with a copy of QMS-RAIT document, which contains the Quality Policy statement of RAIT and makes them aware of his or her responsibility towards quality upholding and work accordingly.

Students and alumni play an important role by providing the valuable feedback. This is the starting point in the effective functioning of the IQAC. The feedback on

teachers and curriculum by the students has helped the institute to improve the teaching methodology and introduction of new courses year after year. Not only curriculum activities but co-curricular activities, cultural programs, seminars, conferences also stand to gain from the students and alumni support. Academic and administrative planning in the institute moves hand in hand. Steering committees comprising of staff members of various departments are made for cultural, academic and sports activities to be held throughout the academic session.
More details and functioning nuances for quality assurance can be found in QMS-RAIT document attached with this Self-Study Report.

b. How many decisions of the IQAC have been approved by the management authorities for implementation and how many of them were actually implemented?

Some of the decisions of the IQAC (QMS-RAIT) that have been approved and implemented by the management/authorities are as under:

- Formation of QMS Cell with a CMQA who reports all matters pertaining to quality assurance to the Principal.
- Formation of QA cell in every department with HOD as head for smooth implementation of quality policy and activities.
- Both internal and external staff development program and promoting pursuit of higher qualification through degrees and training programs.
- Additional funds for conducting workshops, seminars and value added courses for students.
- Institutional tie-ups through MoUs, joint research projects, etc.
- Encouragement towards consultancy, technology incubation and patent filing activities.

c. Does the IQAC have external members on its committee? If so, mention any significant contribution made by them.

The QMS-RAIT committees encourage participation of external members to have a balanced view of their standing national scenario. The co-opted external members actively participate, evaluate and advise RAIT regarding the efficacy of measures taken for ensuring quality technical education as and when required. This is done directly via their induction into committees or indirectly through their inspirational and motivational lectures arranged from time to time as mentioned in this report.

d. How do students and alumni contribute to the effective functioning of the IQAC?

The institute has a registered RAA intended to strengthen the stakeholder relationship, participate in decision making process and to foster the institute level developmental activities. RAA also assists in placement activities as well as quality improvement of both the students and the faculty members by concreting the industry-academia partnership.

Alumni communication tracking records reside with the Principal wherein they record their views and suggestions in regard to institute functioning. This has served as a source of impartial and mature feedback which would not have been possible to get otherwise.

e. How does the IQAC communicate and engage staff from different constituents of the institution?

All the HODs are members of QMS-RAIT. In each department, DQAC with at least one senior faculty member from other department ensures uniformity across all the departments. As stated earlier, all students and faculty members of the institute are involved directly/indirectly in effective functioning of QMS-RAIT.

6.5.2 Does the institution have an integrated framework for Quality assurance of the academic and administrative activities? If 'yes', give details on its operationalisation.

With the formation of QMS-RAIT cell in this institute, the entire academic, administrative and non-academic activity has come under quality assurance ambit. The academic functions and related administrative matters have been vastly streamlined ever since the functional committees are formed. The Registrar, Professor-in-charge (Examinations) and all HODs look after speedy and more efficient transactions of matters related to teaching/learning, payment of fees, conduct of examinations, issuing of Transfer Certificate (TC), Leaving Certificate (LC), Transcript Certificate, redressal of valuation grievances, etc. The feedback on teachers obtained from students has helped in analysing and evaluating their performance. This evaluation has led to taking up remedial measures to improve the performance of teachers and to encourage them who have been efficient and full of initiatives.

More details on methodology followed are mentioned in the QMS-RAIT document.

6.5.3 Does the institution provide training to its staff for effective implementation of the Quality assurance procedures? If 'yes', give details enumerating its impact.

It has become a practice at RAIT, to hand over to each faculty and other staff a copy of QMS-RAIT document that makes him/her fully aware of quality policy at RAIT and updates him/her on the methods followed to achieve the goals of high quality. They are encouraged to ask seniors and get clarifications to any doubts that may arise. With their participation over a period of time, they can also suggest improvements through changes that they feel will make the situation better. We stress that the functions of the institute and its academic and administrative units are governed by the principles of participation and transparency. The institute makes it a point that all the staff members are acquainted with the latest techniques for the quality assurance.

Non-teaching staff members are oriented from time to time for effective time-management, courtesy, behavioural and psychosocial counselling for developing commitment and dedication towards the institute. Every year many of the staff

members attend the orientation and refresher courses. They are also motivated to attend various workshops and seminar for upgrading their teaching skills. As a result, staff members have developed effective leadership qualities and recognized their inner potential and qualities.

6.5.4 Does the institution undertake Academic Audit or other external review of the academic provisions? If 'yes', how are the outcomes used to improve the institutional activities?

Yes. The present practice of quality assurance has contributed to plan and execute the policies uniformly throughout the institute. QMS-RAIT plans and schedules both internal and external academic audits. It also keeps track of accreditation status of various programmes and makes arrangement for application to accreditation agencies.

The Principal communicates in this regards during the regular meetings. The HODs also review the various academic activities during the weekly departmental meetings and guide the staff members accordingly. Submission of self-appraisal reports and annual activity reports regularly is mandatory for each and every staff member of the Institute.

Table No. 6.8: Auditing/Inspecting Agency

Sr. No.	Date	Auditing/Inspecting Agency	Remarks
1.	15/06/2015	Local Inquiry Committee (LIC) (Letter No.: Th/ICD/2015-16/1855)	PhD (Continuation)
2.	04/06/2015	DTE Committee	Inspection for UG, PG, PhD
3.	05/05/2015	Local Inquiry Committee (LIC) (Letter No.: PG/2/ICD/2014-15/107)	ME (CO,EL,ET,IT,IN)
4.	30/04/2015	Local Inquiry Committee (LIC) (Letter No.: Th/ICD/2014-15/468)	PhD (EL,CO)
5.	23/04/2015	Local Inquiry Committee (LIC) (Letter No.: Th/ICD/2015-16/277)	PhD(IN) 2015-16
6.	31/03/2015	Academic Audit	Internal audit
7.	27/01/2015	Local Inquiry Committee (LIC) (Letter No.: Aff/ICD/2014-15/3747)	Continuation and extension of affiliation BE-2013-14 to 2014-15
8.	27/10/2014	Academic Audit	Internal audit
9.	18/10/2014	Local Inquiry Committee (LIC) (Letter No.: PG/2/ICD/2014-15/1289)	Continuation and extension of affiliation ME(All)
10.	15/05/2014	Local Inquiry Committee (LIC) (Letter No.: PG/2/ICD/2014-15/190)	ME(EL)
11.	12/05/2014	Local Inquiry Committee (LIC) (Letter No.: Aff/ICD/14-15/960)	Continuation and extension of

			affiliation
12.	29/03/2013	Academic Audit	Internal audit
13.	03/11/2012	Local Inquiry Committee (LIC) (Letter No.: Th. 11447/2010)	Enrol for PhD (Electronics)
14.	02/12/2011 - 04/12/2011	NBA Accreditation (Letter No:28-142/2010-NBA)	Accreditation
15.	25/01/2011	Local Inquiry Committee (LIC) (Letter No.: Affiliation Section No. 1/1035/2011)	New branches and Increase in intake
16.	06/11/2010	Local Inquiry Committee (LIC) (Letter No.: 11509/2010)	Enrolment for PhD Computer Engineering

6.5.5 How are the internal quality assurance mechanisms aligned with the requirements of the relevant external quality assurance agencies/regulatory authorities?

QMS-RAIT committee has ensured that internal quality policies will not conflict with external quality assurance agency policies. A database on the latest notifications made by relevant guiding and regulatory authorities are kept in the QMS-RAIT cell. These changes are brought into practice through the QMS activities which are rendered flexible and adaptive through its structured and participative approach which delinks analysis with implementation.

The institute is affiliated to the UoM, and approved by the AICTE, New Delhi. All compliances are made as per the requirements of these two bodies from time to time. The best practices of the institution are:

- Conducting national level symposia.
- Continuous interaction with the university, leading to the incorporation of the suggestions of the university bodies.
- Implementation of periodic recommendations of the local inspection committees of UoM.
- Transparent recruiting process that ensures appointment of highly competent faculty.
- Formation of committees involving teaching staff, administrative staff and students for efficient functioning of all aspects of institute administration.
- Departmental associations that strengthen curricular and co-curricular dimensions of the specialized disciplines.
- Involving both teachers and students in activities that sensitize them to social and environmental issues.
- Well-equipped laboratories, library, auditorium and basic amenities.

6.5.6 What institutional mechanisms are in place to continuously review the teaching learning process? Give details of its structure, methodologies of operations and outcome?

The educational process is geared to create a society based on human values. For that, the outcome-based approach is followed rigorously. Besides academic excellence, emphasis is given to moulding and forming students who are sensitive to their surroundings and are socially responsible. Though the curriculum is designed by the

UoM, the goals and objectives of the institute are transmitted to the students through the efforts of the faculty by teaching beyond classroom and the curriculum.

The calendar of activities for the upcoming session is discussed before the year begins in a general staff meeting. Dates for important events, celebration of festivals, inter institute youth festival, departmental activities, seminars, workshops, etc., are tentatively decided. Regular staff meetings are held throughout the year during which important decisions are made. The teaching staff has an organized unitized schedule to complete the syllabi. Teaching plans including time schedules are prepared by each department before the beginning of each session. These are regularly reviewed and restructured. Principal meets HODs to ensure that syllabi are adequately covered. The institute conducts assessment of the students at regular intervals, through class tests, seminars and assignments. Details of the evaluation methods and schedules are communicated to the students through prospectus and notices.

In addition, the teachers adopt innovative methods of assessment like book review, open book tests, question banks, assignments, etc. The lecture methods of teaching are supplemented by the use of audio visual aids, projects, seminars, field trips and other practical supplementary aids. Extracurricular activities are held to develop aesthetic potential and team spirit.

6.5.7 How does the institution communicate its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders? Any other relevant information regarding Governance Leadership and Management which the college would like to include.

Apart from the institute website, it communicates the quality assurance policy mechanism outcomes through institute prospectus, annual reports, and parent-teacher meetings. Additionally, the Principal also presents the annual report in prize distribution and convocation functions. Also, these activities are highlighted and given publicity in news releases.

Criterion VII

Innovations and Best Practices

E-Attendance

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Criterion VII: Innovations and Best Practices

7.1 Environment Consciousness

At RAIT, we are constantly innovating and have time and again shown eagerness to introduce best practices that positively impact teaching, learning, administration as well as environmental and societal concerns.

Keeping in step with the heightened global concerns on environmental impact of any organization, RAIT has introduced various green campus initiatives. In this broad and important area, introduction of the „Digital Initiative Program at RAIT" or DIP-RAIT has reduced the use of paperwork considerably and this initiative thus saves the green cover by way of conservation of trees. It has also led to a decongested working area, free from massive paper records, which pose a danger owing to its burnable nature. It has also provided a platform for effective management at all levels owing to its unique features. DIP-RAIT has also had a positive impact on the students and faculty alike and both communities are now finding more time to focus on the primary function of teaching and learning. In the last two to three years, this important activity has taken roots and is now growing and flowering with fruits that all can enjoy. The top management has expressed happiness over this and has actively supported this program.

RAIT has introduced QMS-RAIT to have audit, analysis and subsequent corrective measures to constantly enhance quality and upgrade the activities that impact teaching/learning, administration, societal outreach, ethical conduct and general overall development of students. This activity is also encouraged and supported by top management of RAIT.

The details of these initiatives and their impact on the functioning of the organization are given below in the subsequent paragraphs.

7.1.1 Does the Institute conduct a Green Audit of its campus and facilities?

RAIT displays sensitivity to issues like climate change and other environmental issues. It has in the past, and continues to adopt, environment friendly practices and takes necessary actions such as: energy conservation, rain water harvesting, waste recycling, carbon neutrality, tree plantation, hazardous waste management, etc.

The institute takes environmental issues seriously and educates its inmates to develop a habit of environmental sensitivity.

Green Audit of its campus and facilities:

At RAIT, we are following the guidelines of International Labour Organization or ILO, Geneva, @ 2011 definition made available through an article by Robert Coyle accessible in open literature which mentions the definition adopted by International Chambers of Commerce or ICC in its publication "Environmental Auditing" given below:

A management tool comprises of a systematic documental, periodic and objective evaluation of how well environmental organization, management and equipment are performing, with the aim of helping the environment by:

- Facilitating management control of environmental practices
- Assessing compliance with company policies which would include regulatory requirements.

RAIT has constituted an internal committee for carrying out the green audit through its QMS-RAIT team, the details of which are shown in Fig. 7.1. After years of efforts, we are now at the doorstep to external audits and ready to call external expert audits by national and international environmental audit teams to comply with the standards laid down for this activity by local and national regulatory bodies. Initiatives taken for green campus in the academic year 2014-15 includes water harvesting, fire fighting system and establishment of social wing (through tree plantation activities).

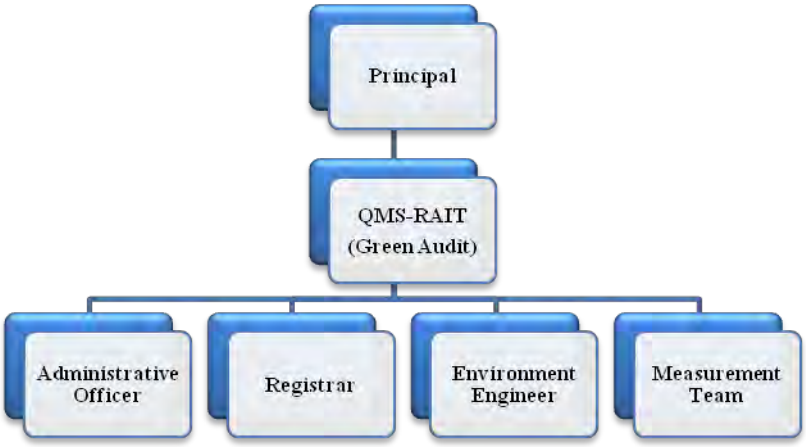

Fig. 7.1: Green audit committee.

7.1.2 What are the initiatives taken by the college to make the campus eco-friendly?

Energy conservation: At RAIT we have adopted the following measures:

- Heat reflecting exterior design to institute building thereby cutting on cooling requirements. We also save on recurring expense on painting costs which in Mumbai weather undergoes degradation at a relatively faster rate.
- Adequate window area of classrooms to avoid the use of lighting in day time.
- Dedicated staff for manual checks to switch off ACs, lights, fans and equipments when not in use.
- Automatic sensors at selected places for switching off lights, fans when not in use.

Use of renewable Energy: Following measures have been adopted:

- An in-house 500 kg/day, 60 kg/15KW capacity bio-gas plant for use in the areas electricity generation, conversion to Bio CNG and experiments and research work in the areas of inexpensive methods to improve purity of methane content in bio gas.

Water Harvesting: At RAIT we have adopted the following measures:

- The institute is surrounded by gardens that need adequate water nourishment. The drain from the roof tops also finds a way to green areas and this reduces the watering requirements of gardens and tree areas.
- We have two bore-wells which are used for watering the gardens.
- As a part of water conservation practice, RAIT has constructed two major pits for merging rain water into ground water table after suitable filtering.

Efforts for carbon neutrality: Our efforts towards carbon neutrality are listed below:

- Over the years, consumption of electricity has reduced considerably on account of air conditioning, cooling and lighting. As mentioned before we have used a heat resistance exterior design for RAIT building. The lower floors are ceramic tiled up to third floor and higher floors contain heat resistant glass covers. The average temperature difference between outside and inside during peak summer is about 5 degree celcius. This results in considerable saving on air conditioning and cooling budget.
- Adequate sunlight influx during daytime from wide area windows on all sides of the building and the central glass dome roof top ensure minimal lighting requirements during daytime. We have phased out the use of incandescent lamps and switched to fluorescent lamps. Seminar halls are lighted with LED lights for power saving (Fig. 7.2).

Fig. 7.2: Usage of LED lights.

- D.Y. Patil Vidyanagar campus is situated in the area of 68 acres with more than 65% open area (Fig. 7.3), which is grass and tree laden; we are actually comfortable with carbon neutrality issue.

Fig. 7.3: Google earth image of D Y Patil, Nerul campus.

- We have set up a bio-gas plant (Fig. 7.4) within campus where the organic waste from within the campus has the potential of generating 15 Kilo Watts of electric power.

Fig. 7.4: Biogas plant.

- RAIT has taken up the tree plantation and green patch creation in the area between RAIT boundary wall and Mumbai–Pune highway (Fig. 7.5). With a tree laden campus that boasts of more than 800 trees we are very comfortable in regard to fresh air. A mature leafy tree produces as much oxygen in a season as 10 people inhale in a year.

Fig. 7.5: Tree plantation.

Plantation: We are tree conscious and have taken every step to ensure a green campus. In a campus of 68 acres, we have a tree count of about 800 trees and this number is likely to go up with tree plantation initiatives now extended to neighbouring corridors.

Hazardous waste management: At RAIT, hazardous waste primarily consists of chemicals and burnable material within the building. The chemical laboratory is well equipped to manage the waste and has well approved procedures for chemical storage and disposal.

With DIP, the bulky paper records are now replaced by digital storage. The institute library is also digital to the extent possible.

E-waste management: At RAIT we are using LCD based monitors (Fig. 7.6) to reduce the effect of e-waste. The old equipment has been phased out long back. We donate old working products to schools and non-working e-waste to reputed disposal vendors.

Fig. 7.6: LCD based monitors.

7.2 Innovations

RAIT is geared to promote an ambience of creativity innovation and improving quality. It has constituted a body QMS-RAIT under the leadership of CMQA and many institutional level committees to steer this work.

7.2.1 Give details of innovations introduced during the last four years which have created a positive impact on the functioning of the college.

Our continuous efforts for quality enhancement at RAIT, have led us to innovate and implement newer practices and also monitor the effects of these desired changes on the overall performance of the institution, especially in the last three years. The innovations not only span the full spectrum of teaching and learning both from the perspective of students and teachers, but also, administration and management. Some of the salient innovations in recent times are:

- Introduction of DCFs in place of manual records which each of the faculty fills up to keep all digitized records of teaching/learning activity conducted by them.
- Introduction of on-line student and staff attendance system.
- Introduction of RAIT kiosks to ease and accelerate the student–administration interface.
- Stepping up the student/parent interaction for counseling and keeping records for the same.
- Encouraging higher learning for both students (extra and expert lectures) and teaching staff (sponsorship to conferences, workshops and skill and qualification enhancement programs).
- Use of high technology aids in teaching (ICT enabled classrooms, web-based seminars, NPTEL courses, etc.)
- To consolidate all the points made above, from 2012 onwards, RAIT has stepped up its quality enhancement drive at all levels of functioning, through QMS-RAIT. It has constituted a high level structured team with a CMQA to carry out this task as brought out by RAIT-QMS document.
- RAIT has in the recent past, put in place, many department level societies which carry out important tasks of publishing newsletters and popular level booklets on issues and experiences of relevance to the concerned department. These societies help in development of imagination, writing and oratory skills. The details of the societies are provided in Criterion 5.1.4.

Innovations introduced to create a positive impact on the functioning of the institute are summarized in Fig. 7.7.

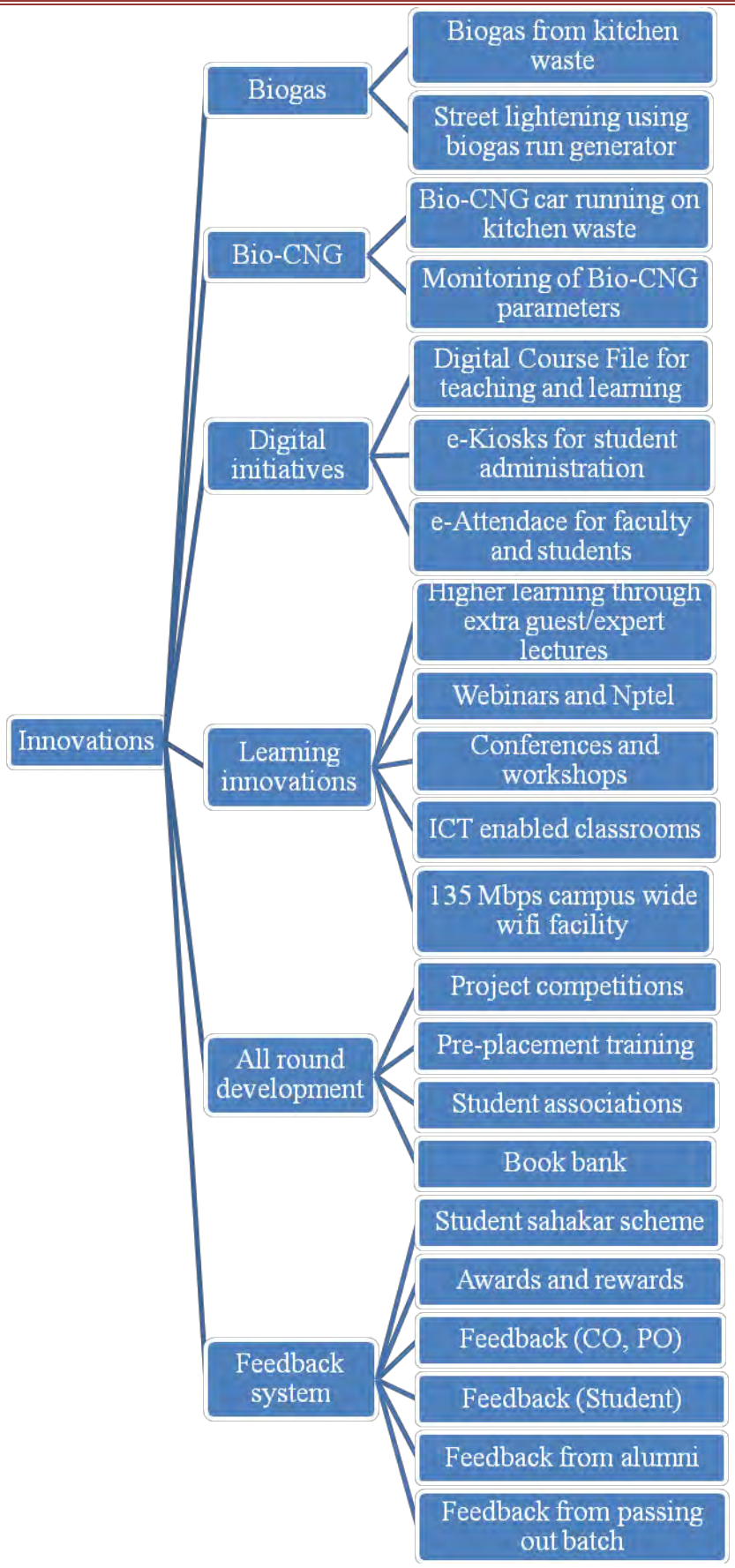

Fig. 7.7: Innovations summary.

7.3 Best Practices

7.3.1 Elaborate on any two best practices in the given format at page no. 98, which have contributed to the achievement of the Institutional Objectives and/or contributed to the Quality improvement of the core activities of the college.

Digital Initiative Program or DIP-RAIT and Quality Management Services or QMS-RAIT, are the two initiatives that RAIT has adopted in the recent past to improve its functioning at all levels in a participative, inclusive and verifiable manner.

The details of these practices, their implementation and impact on the institute functioning are given in the next section.

BEST PRACTICE A:

1. Title of the Practice

Digital Initiative Program at RAIT (DIP-RAIT)

2. Goal

The goal of DIP-RAIT is many fold. At the simplest, it is a drive towards paperless records of the teaching/learning activity at RAIT at least of records older than three years. This is a green initiative to reduce usage of papers. It helps in decongestion of working area and reduction of burnable material within institute premises and adds to safety and cleanliness.

With the in-house basic software developed for this (DCF, digital boards, student feedback forms, digital notice boards, e-kiosks for students to get certificates, digital academic calendars, e-attendance, etc.) both faculty and students are expected to save time in matters of routine. With all details of the teaching/learning activity in one place, without trouble of repeated searches through thick files to answer queries raised by auditors and management to ascertain the quality of their work, the digitization drive is the answer to find many quality related issues. The DCFs have seeds of finding patterns of significance that quality assurance work requires.

3. The Context

At RAIT, since the last few years, we have strived to bring in outcome based education (OBE) which is proposed and stressed by organizations like ABET, NBA and the like. The steps taken by RAIT keep this in the mind while introducing changes to enhance quality.

Keeping records of courses taught is not new and examining these for assessing quality of teaching through these files is also not new (perhaps decades old). So what was the need for digitization? The answer is simple, though very challenging. Take a teaching staff of say 200 with number of courses per semester in all branches at 60 (typical of RAIT). With each course file running into about 100 pages, this runs into 12,000 pages. This is beyond the capacity of any one person who is to look for meaningful answers to queries that have a bearing on quality. Giving this job to one

person (for uniformity), either it will be restricted to a simple routine checking of entries or taxing that person beyond his limit. If this task is given to a team, we run the risk of non-uniformity and differences which may be unacceptable. RAITs answer to this problem was DCFs designed so as to make them more than just data entry sheets and this is the challenge that we at RAIT have accepted. Since DCFs are designed in-house, we can from time to time tailor them to provide information on patterns we seek which are important to teaching/learning. Say we seek answers to the following questions,

- Which course has poor response from students and needs a redesign in course plan?
- Which elective course has good response from students?
- What remedial action was taken for weak students in a given course?
- What is the COs & POs attainment of a given course?
- What is the EPI after each term test?
- Which course needs change in lesson plan owing to non-adequate syllabus coverage in prerequisites?

The DCFs are being configured to provide answers in an automated fashion. This activity will become more efficient and inclusive as time proceeds.

The benefits of digitization have reached administration as well. Through student projects, certificates needed by students from time to time and also fee payments, communication of test results etc. is now made available through e-kiosks (Fig. 7.8) which have considerably cut down the time spent by any student on this tedious task to less than one-fifth of pre kiosk days. The time saved by them can be utilized for studies.

Fig. 7.8: e-Kiosk machines used by students and faculty members.

RAIT has come up with digital notice boards to make students familiar with mission and vision of the departments and the institute. These boards are set up on all the floors. All the notices and rules which are expected to be read by are put up on these notice boards. This kind of digitization skips the usage and maintenance of paper notices. Another achievement of DIP-RAIT is digital academic calendar. RAIT

publishes digital academic calendar in the beginning of every semester wherein all the major events such as commencement and conduction of examinations, technical events, guest lectures, conferences, seminars are scheduled and displayed on all available digital media such as digital notice boards, RAIT website, etc. The digital calendar software facilitates all the stakeholders to obtain:

- Events for current day, next day, current week, month and semester.
- Allocation of resources like seminar rooms, auditorium, etc.
- List of holidays and the days on which imp activities are scheduled.

RAIT has deployed e-attendance facility for maintaining attendance of students of every lecture and smart tabs are provided for the same. Digital boards set up in all the departments help to save running notes of individual lecture, which are accessible in successive lectures. These digital facilities are shown in Fig. 7.9.

Incorporation of digital door locks in the institute is in the process. Efficiency and security of workplace will increase with its usage. This time based system helps to get information about opening and closing of the door.

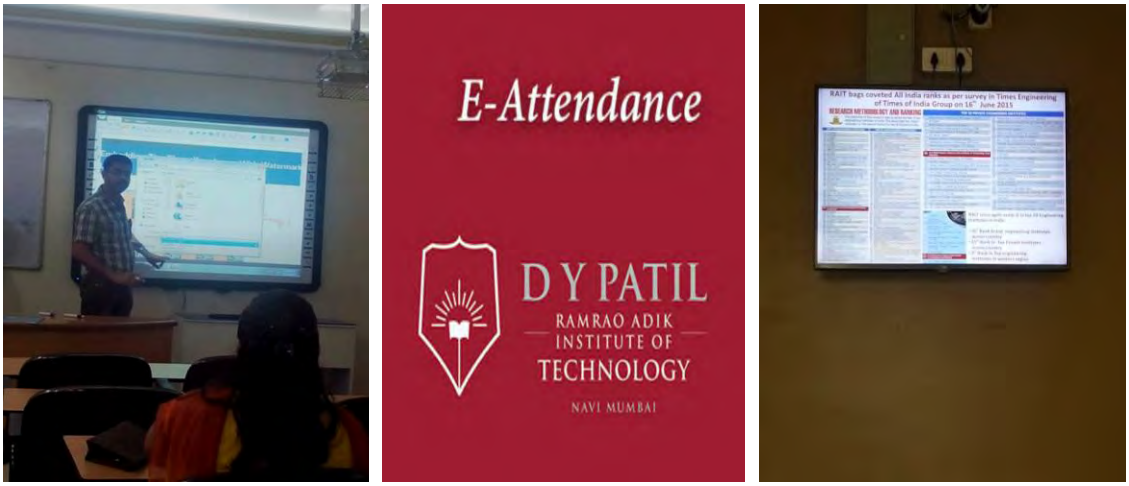

Fig. 7.9: Digital facilities in RAIT.

4. The Practice

Practicing DCF is becoming a way of life at RAIT. Every faculty is apprised of her/his obligations to fill DCF with relevant details while also maintaining proper paper records. An updated set of instructions to fill DCFs is handed to all teaching staff and the latest sample is given below for reference.

User Manual for DCF

1. Collect the syllabus for the desired subject from UoM website http://www.mu.ac.in.

2. After studying the syllabus, prepare Course Handout for that subject. Faculty has to prepare Course objectives (COs):

- COs are specified by UoM for CBGS pattern. Faculty can also specify his/her CO for CBGS pattern.
- For old syllabus no COs were specified by UoM, so faculty has to prepare COs for such subjects.

3. Program Outcomes (PO) are decided by the Department based on Bloomers taxonomy as recommended by NBA and ABET authorities.

4. Faculty has to map the CO's of that subject with POs.

5. Faculty has to prepare Chapter Plan as per distribution of the CO weightage.

6. Faculty has to prepare per lecture Lesson Plan.

7. Faculty has to prepare the List of Experiments to be performed by the students.

8. Faculty has to prepare Assignment Assessment schema covering all COs as per the weightage.

9. Faculty has to prepare Term Test Assessment schema covering all COs as per the weightage.

10. Faculty can now start filling DCF:

- Faculty has to fill the basic subject and faculty details.
- Faculty has to put the student details. (Student details are with the Time-Table Committee of the Department)
- Faculty has to put the CO & PO details respectively.
- Faculty has to put the CO-PO mapping details.
- Faculty has to put the Term Test assessment details.
- Faculty has to put the Lab details along with the count of total no. of experiments conducted.
- Faculty has to put the Assignment assessment details.
- Faculty has to put the total no. of lectures conducted along with the Term Work (TW) details (faculty can get the TW from Exam Section).

More details are provided in the QMS-RAIT document.

The administrative staff prepares the excel sheets for discipline wise and batch wise student enrolment lists and the same are handed out to faculty by HODs for further action. Hence, the digital initiative starts at administrative level itself.

5. Evidence of Success

The adoption of DIP-RAIT has brought forth the following:

- It has provided an interactive way to improve the performance.
- The system provided a means for continuous evaluation of performance.
- It has provided a means for the students to calculate his/her performance metrics and try to improve.
- It has provided automation whereby time is saved in managing routine necessary tasks allowing more time for primary function of teaching/learning.
- It has done away the need for storing massive paper records.
- With this initiative, it can be easily checked whether all COs and POs are attained as per the requirement.
- Digital feedback system has improved the evaluation process of individual course and teacher.

6. Problems Encountered and Resources Required

- To make use of DIP-RAIT large number of digital resources were required such as desktop PCs, laptops, tabs, etc. This problem has been overcome in course of time and by convincing management to provide funds for the same.
- Various versions of DCFs are required to design, as there are variations in different course plans laid out by the university.
- In the basic developed system we try to add more advanced automation like term work generation, COs and POs attainment, attendance calculation, etc.
- The main challenge was to guide the faculty about how to use the system and this took considerable time.
- We need to design large number of questions satisfying all COs of all courses. This required many discussions of HODs with relevant faculty members.
- Networking of systems with server was required for student feedback forms. This also needed resources which came by through management.

BEST PRACTICE B:

1. Title of the Practice

Quality Management Services at RAIT (QMS-RAIT)

2. Goal

Left to itself, equipment and practices both undergo a downfall in quality. Hence the need to monitor everything periodically and also take steps to innovate to continuously improve the quality of equipment, staff and the services rendered by them. The goal of QMS-RAIT is precisely this: to maintain and enhance quality at RAIT.

3. The Context

As stressed above, quality checks by experienced staff, who have risen above the ripples created by locality, year to year variations, course content relevance, etc., is the best course of assuring that teaching/learning activity does not become mechanical – devoid of any spark and full of life that enthuses young student minds to follow through. It was with such considerations that RAIT embarked on setting up a structure within the institute to do quality assurance work. Our philosophy is that students who are the purpose of our existence professionally are also a good mirror for judging the quality of teaching/learning practices followed by us. Hence, valuable feedback given by students is taken seriously and analyzed and discussed at the highest academic level and corrective steps worked out and conveyed downwards to teaching faculty who then make necessary changes. The „from the students" and „back to students" cycle- that runs year after year results in continuous improvement of quality. The details of the structure created within RAIT and the functioning are given in the QMS-RAIT document.

4. The Practice

This is adequately discussed in the QMS-RAIT document and thus need not be repeated here. All we say here is that this activity is participatory and has well defined activities at all levels across the institution.

It covers teaching/learning as well as academic administration and also green initiatives and societal obligations and last but not the least safety and health care of all inmates at RAIT.

5. Evidence of success:

The benefits from QMS-RAIT are felt through the following:

- Better student feedbacks.
- Better satisfaction level amongst staff.
- More teaching staff registering for skill enhancement activities and doctorate registrations.
- Quicker and smoother adjustments to changes in syllabi and course contents.
- Better responses from recruiting agencies on student industrial readiness.
- Better suitability of staff to take up research in their areas of specialization. This area is now growing at a rapid pace.

6. Problems Encountered and Resources Required

Fortunately, problems encountered were no more than reluctance to adapt to a new practice. Once it was understood that this activity will eventually bring quality enhancement, the inhibitions to adopt this dropped soon.

The management was and always is eager to enhance quality and they readily provided all the resources like extra space and money to carry out changes necessary to implement QMS-RAIT. They have expressed happiness over this activity which

has led to better rankings received by the institute by independent agencies.

7. Safety Management

Safety of people and equipment has been top priority at RAIT. Safety briefing is imparted to all at RAIT. RAIT provides insurance to all students covering accident from National Insurance Corporation at no extra cost to students.

Fire Safety Equipment is installed in each floor and kept ready for use in case of emergency. Fire and Safety Officer has been employed by the institute, who conducts regular training programmes and dummy fire exercises. Emergency evacuation plans in case of fire or otherwise are displayed prominently at site. Chemical storage and use is through time tested established procedures. Data safety is also ensured via power backups. All these efforts have resulted in a clean, no fatal or serious accident-record inside the campus till date. Some salient safety features are:

- In case of fire, around 1000 people can be vacated from all the floors in 5-6 minutes.
- More than 100 KVA power backup is available to secure the useful computing/server facility such as
  - Server – 10KVA.
  - Computer Lab – 40 KVA.
  - IT Lab – 40 KVA.
  - Exam Section – 10 KVA.
  - Individual
    Principal – 1 (500 VA).
    Account – 4 (500 VA).
    Office – 6 (500 VA).

8. Contact Details

Name of the Principal:	Dr. Ramesh Vasappanavara		
Name of the Institution:	Ramrao Adik Institute of Technology, Navi-Mumbai, Pin Code: 400706.		
Accredited Status:	First Cycle		
Accredited by NBA:	1	Electronics:	2005 to 2008 & 2012 to 2015
	2	Electronics and Telecommunication:	2012 to 2015
	3	Computer:	2005 to 2008 Reaccreditation process will be initiated shortly.
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