प्रज्ञानं ब्रह्म

Manipal

INSPIRED BY LIFE

Annual Quality Assurance Report (AQAR)

2014 -15

Manipal Institute of Technology Manipal

Submitted to

Manipal Academy of Higher Education

Manipal 576104, Karnataka

Vision

Excellence in Technical Education through Innovation and Teamwork

Mission

Educate students professionally to face societal challenges by providing a healthy learning environment grounded well in the principles of engineering, promoting creativity, and nurturing teamwork

Values

- Discipline
- Integrity and Trust
- Holistic Learning
- Ethics and Professionalism
- Concern for Society and Environment

All NAAC accredited institutions will submit an annual self-reviewed progress report to NAAC, through its IQAC. The report is to detail the tangible results achieved in key areas, specifically identified by the institutional IQAC at the beginning of the academic year. The AQAR will detail the results of the perspective plan worked out by the IQAC. *(Note: The AQAR period would be the Academic Year. For example, July 1, 2012 to June 30, 2013)*

Part – A

AQAR for the year *(for example 2013-14)*

2014-15

1. Details of the Institution

1.1 Name of the Institution	MANIPAL INSTITUTE OF TECHNOLOGY
1.2 Address Line 1	MADHAVA NAGAR
City/Town:	MANIPAL, UDUPI
State:	KARNATAKA
Pin Code:	576 104
Institution e-mail address:	office.mit@manipal.edu
Contact Nos.	0820-2925522
Name of the Head of the Institution:	DR. G. K. PRABHU
Tel. No. with STD Code:	0820-2924030
Mobile:	NA
Name of the IQAC Co-ordinator:	Prof. Rajesh Gopakumar
Mobile:	+91 9482520247
IQAC e-mail address:	qmr.isomit@manipal.edu
1.5 Website address:	www.manipal.edu/mit
Web-link of the AQAR:	http://manipal.edu/mit/about/AQAR-MIT.html

For ex. http://www.ladykeanecollege.edu.in/AQAR2012-13.doc

1.6 Accreditation Details

Sl. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1st Cycle	B+		2002	5 yrs

1.7 Date of Establishment of IQAC : DD/MM/YYYY	30.12.2013

1.8 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC (*(for example AQAR 2010-11submitted to NAAC on 12-10-2011)*

   i.   AQAR 2013-14 submitted to University on 01/05/2016   (DD/MM/YYYY)
   ii. AQAR 2014-15 submitted to University on 01/05/2016   (DD/MM/YYYY)

1.9 Institutional Status

University   State ☐   Central ☐   Deemed ☑   Private ☐

Affiliated College   Yes ☑   No ☐

Constituent College   Yes ☑   No ☐

Autonomous college of UGC   Yes ☐   No ☑

Regulatory Agency approved Institution
(eg. **AICTE**, BCI, MCI, PCI, NCI)   Yes ☑   No ☐

Type of Institution   Co-education ☑   Men ☐   Women ☐

                             Urban ☐   Rural ☑   Tribal ☐

Financial Status   Grant-in-aid ☐   UGC 2(f) ☐   UGC 12B ☐

          Grant-in-aid + Self Financing ☐   Total self-financing ☑

1.10 Type of Faculty/Programme

Arts		Science		Commerce		Law		PEI (Phys. Edu)	

TEI (Edu)		Engineering	√	Health Science		Management	

Others (Specity)	NA

1.11 Name of the Affiliating University *(for the Colleges)* | MANIPAL UNIVERSITY, MANIPAL |

1.12 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc.

Autonomy by State/Central Govt. / University			
University with Potential for Excellence		UGC-CPE	
DST Star Scheme		UGC-CE	
UGC-Special Assistance Programme		DST-FIST	
UGC-Innovative PG programmes		Any other (*Specify*)	
UGC-COP Programmes			

2. IQAC Composition and Activities

2.1 No. of Teachers | 18

2.2 No. of Administrative/Technical staff | 15

2.3 No. of students | 3

2.4 No. of Management representatives | 1

2.5 No. of Alumni | 2

2.6 No. of any other stakeholder and community representatives | 1

2.7 No. of Employers/ Industrialists | 2

2.8 No. of other External Experts | 1

2.9 Total No. of members | 43

2.10 No. of IQAC meetings held | 2

2.11 No. of meetings with various stakeholders: No. | 2   Faculty | 2

Non-Teaching Staff Students: | 2   Alumni | 1   Others | 1

2.12 Has IQAC received any funding from UGC during the year?   yes [ ]   No | √

If yes, mention the amount | NA

2.13 Seminars and Conferences (only quality related)

(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total No.s | 0   International | 0   National | 0   State | 0   Institution Level | 0

(ii) Themes | NA

2.14 Significant Activities and contributions made by IQAC

✓ The academic performance of all departments reviewed and suggested steps to improve overall teaching learning process.

✓ Monitors the activities throughout the year, makes suggestions and incorporates the remedial measures

✓ Interaction with Heads and faculties of each and every department for maintaining and sustaining quality teaching learning process.

✓ Framing of quality objectives for institution and departments (programme outcomes). Action plan, monitoring and assessment of quality objectives.

2.15 Plan of Action by IQAC/Outcome

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year *

	Plan of action		2014-2015	Achievement status
1	Enhance Student Progression Percentage of eligible students progressing to higher levels	Improve compared to previous benchmark	85.58 %	Achieved
2	Number of students involved in social responsibility projects and extension activities	Improve on previous benchmark	500	Achieved
3	Graduation rate	% of students completing the programme on time, target can be 1% better than average of previous three batches	89.57%	Achieved
4	Student feedback of faculty	Minimum of 3 on a scale of 5	3.87	Achieved
5	Student feedback on infrastructure	Minimum of 3 on a scale of 5	--	--

6	Student feedback on academic program	Minimum of 3 on a scale of 5	3.65	Achieved
7	Faculty student ratio as per statutory and regulatory requirements	--	1:15	--
8	Student attrition rate	Reduce as compared to previous benchmark	1.57%	Achieved

*** Attach the Academic Calendar of the year as Annexure.**

2.15 Whether the AQAR was placed in statutory body   Yes | √ | No | |

Management | √ | Syndicate | | Any other body | |

Provide the details of the action taken

| --- |

Part – B

Criterion – I

1. Curricular Aspects

1.1 Details about Academic Programmes

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	27		27	-
PG	25	-	25	-
UG	16	-	16	-
PG Diploma	-	-	-	-
Advanced Diploma	-	-	-	-
Diploma	-	-	-	-
Certificate	-	-	-	-
Others	-	-	-	-
Total	68	-	68	

Interdisciplinary				
Innovative				

1.2 (i) Flexibility of the Curriculum: CBCS/Core/Elective option / Open options

(ii) Pattern of programmes:

Pattern	Number of programmes
Semester	44
Trimester	NA
Annual	NA

1.3 Feedback from stakeholders*
(On all aspects)   Alumni [√]   Parents [√]   Employers [√]   Students [√]

Mode of feedback :   Online [√]   Manual [ ]   Co-operating schools (for PEI) [ ]

*Please provide an analysis of the feedback in the Annexure

1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

No

1.5 Any new Department/Centre introduced during the year. If yes, give details.

No

Criterion – II

2. Teaching, Learning and Evaluation

2.1 Total No. of permanent faculty

Total	Asst. Professors	Associate Professors	Professors	Others
626	441	97	88	0

2.2 No. of permanent faculty with Ph.D.

201

2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year

Asst. Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V
65	30	4	6	1	3	0	0	70	39

2.4 No. of Guest and Visiting faculty and Temporary faculty

2		16		0

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended Seminars/ Workshops	306	527	14
Presented papers	612	151	0
Resource Persons	18	17	11

2.6 Innovative processes adopted by the institution in Teaching and Learning:

- Remedial classes for academically poor students.
- Guest Lectures
- Program electives/ open electives
- AMS-Interactive tool for student performance and attendance analysis
- Slot-wise timetable
- Organizing Guest Lecture from Industry experts and site visits, Power point Presentation facility in each class, Continuous Evaluation with 5 assignments as self-learning exercise, QEEE program for students and faculty members
- More courses added as Open Electives for IV & V semester students.
- Industry initiated electives.
- Black board teaching for subjects involving intensive mathematical analysis.
- Power Point Presentations for subjects involving complex diagrams.

- Assignments – All subjects of all semesters involves five assignments which will be evaluated at regular intervals to monitor students' performance.

- Mini-projects and demonstrations – In subjects and labs, students have to work on a mini project and demonstrate its working.

- Industry visits – Industrial visits are carried out by the department for both UG and PG students to near-by Industries for better understanding of theoretical knowledge gained by students. Also, IE student chapter organises Industrial visit. Some of the industries are Canara Lighting Mangalore, GE Bangalore, Infosys Bangalore, Wipro Bangalore, Shamili Hydel Power Plant ltd. Sangur Plant, Siddapur, Udupi and other power plants near-by, etc.

- Black board teaching for subjects involving intensive mathematical analysis.

- Power Point Presentations for subjects involving complex diagrams. Also for some subjects such as Basic Electronics involving large number of sections, to ensure uniformity in content delivery, a common set of PPT slides are used.

- Case studies – Used in teaching design based and management subjects.

- Assignments – All subjects of all semesters: involves five assignments at regular intervals.

- Mini-projects and demonstrations – In subjects such as Embedded Systems, VLSI design, Electronic Circuit design, Digital design, students have to work on a mini project and demonstrate its working. In subjects such as Circuit design using P-Spice, DSP using MATLAB, teachers demonstrate the concepts through examples.

- Industry visits – Faculty guided visits to nearby industries such as AIR Mangalore, BSNL, KarMic Manipal, MCF Hassan etc

- Conducted workshop on latest technologies; Conducted Placement classes

- Concept of academic counseling of under achievers was introduced where students with low attendance and marks are counseled and given assistance with improvement of performance

- Industry visit

- Demonstration of Videos related to the subject

- Modern amenities like LCD projection including animations, showing models

- Innovative pedagogy like active involvement, role plays and audio visual equipment.

2.7 Total No. of actual teaching days during this academic year | 176 |

2.8 Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions)
- Periodic assignments were given to the students where it is required to be submitted by the students with in the stipulated time, subsequently corrections were carried out and evaluated

assignments were given back to the students

- Internal assessment test (sessional) were conducted as per institution timetable twice a semester.
- Final exam (end sem.) conducted as per centralized timetable from institution.
  - Assignment evaluation: out of 10 marks
  - Sessional Test: 20 + 20= 40 marks
  - Final exam: out of 50 marks
- Through continuous evaluation of students through in-semester tests(two sessional tests , quizzes, assignments and end semester examination
- Continuous evaluations of students will be done through assignments, tests and end semester examination.
- Students are evaluated relatively on a grade scale of 10. Every theory subject will have 50% of in-semester marks (continuous evaluation) and 50% of end semester marks. A minimum of 18 marks out of 50 is necessary in the end semester exam to obtain the credit for the course.
- The student performance in each theory course is evaluated out of 100 marks, of which 50 marks are for in semester assessments and 50 marks are for end semester assessments. In semester assessment in theory courses is based on periodic tests, assignments, quizzes, case presentations, seminars etc, which shall be defined by the course instructor.
- The student performance in the laboratory courses is also evaluated out of 100 marks and is based on in semester assessment out of 60 marks and end semester examination for 40 marks.
- The performance of the student in a course is reflected in the Letter Grade awarded
- Introduction of Two compulsory sessional test
- Assessment techniques comprise of tests, assignments, quizzes and exams. Semester exam questions are set to target different course objectives. Student performance is then mapped to different course outcomes and an analysis of the same reveals the extent to which course outcomes are met. Necessary changes are then implemented accordingly.
- Tests are the preparations for the end semester examination and are conducted in the same manner, except for the duration, which is one hour against that of three hours for the examinations. Two tests will be conducted in each semester and the contents will be announced in the beginning of the semester while course plan is distributed to the students.
- Continuous Evaluation, inclusion of MCQ in the Sessional Question paper.

2.9 No. of faculty members involved in curriculum restructuring/ revision/ syllabus development as member of Board of Study/Faculty/Curriculum Development workshop

| 23 | | |

2.10 Average percentage of attendance of students

| 84 |

2.11 Course/Programme wise distribution of pass percentage:

Undergraduate

Title of the Programme	Total no. of students appeared	Division				
		Distinction %	I %	II %	III %	Pass %
Bio-Medical Engineering	24	37.50%	25.00%	33.33%	0	95.83%
Chemical Engineering	59	40.68%	35.59%	13.56%	0	89.83%
Civil Engineering	225	34.22%	38.22%	17.78%	0	90.22%
Computer Science and Engineering	239	43.93%	29.29%	17.15%	1	90.79%
Electrical and Electronics Engineering	220	30.00%	35.45%	20.45%	0	85.91%
Electronics and Communication Engineering	242	41.32%	30.17%	16.94%	0	88.43%
Industrial and Production Engineering	67	29.85%	44.78%	20.90%	0	95.52%
Mechanical Engineering	257	45.14%	28.40%	15.18%	2	89.49%
Printing Technology	23	39.13%	26.09%	4.35%	0	69.57%
Information Technology	135	25.93%	34.07%	24.44%	0	84.44%
Instrumentation and Control Engineering	81	27.16%	30.86%	29.63%	0	87.65%
Biotechnology	23	39.13%	43.48%	17.39%	0	100.00%
Mechatronics	79	30.38%	31.65%	21.52%	1	84.81%
Aeronautical Engineering	58	32.76%	24.14%	20.69%	0	77.59%
Automobile Engineering	72	34.72%	40.28%	13.89%	0	88.89%

Postgraduate

Title of the Programme	Total no. of students appeared	Division				
		Distinction %	I %	II %	III %	Pass %
Bio-Medical Engineering	24	75.00	20.83	0.00	0.00	95.83
Computer Science and Engineering	25	88.00	12.00	0.00	0.00	100.00
Construction Engg. and Management	18	66.67	22.22	0.00	0.00	88.89
Digital Electronics and Advanced Communication	25	80.00	12.00	0.00	0.00	92.00
Energy Management, Auditing and Lighting	18	83.33	16.67	0.00	0.00	100.00

Engineering Management	18	72.22	22.22	0.00	0.00	94.44
Structural Engineering	25	72.00	16.00	4.00	0.00	92.00
Computer Aided Mechanical Design and Analysis	18	66.67	27.78	0.00	0.00	94.44
Control Systems	18	83.33	16.67	0.00	0.00	100.00
Manufacturing Engineering and Technology	18	72.22	27.78	0.00	0.00	100.00
Network Engineering	18	72.22	16.67	0.00	0.00	88.89
Software Engineering	18	55.56	38.89	0.00	0.00	94.44
Nuclear Engineering	-	-	-	-	-	-
Printing and Media Technology	3	100.00	0.00	0.00	0.00	100.00
Microelectronics	17	76.47	17.65	5.88	0.00	100.00
Power Electronic Systems and Control	17	94.12	0.00	5.88	0.00	100.00
Astronomy and Space Engineering	18	50.00	44.44	5.56	0.00	100.00
Printing and Media Technology (Dual Degree)	4	25.00	0.00	0.00	0.00	25.00
Industrial Bio -Technology	17	70.59	23.53	5.88	0.00	100.00
Computer Science and Information Security	17	70.59	29.41	0.00	0.00	100.00
Chemical Engineering	14	71.43	28.57	0.00	0.00	100.00
Environmental Engineering	18	38.89	38.89	16.67	0.00	94.44
Biochemical Engineering	1	100.00	0.00	0.00	0.00	100.00
Industrial Pollution Control	4	50.00	50.00	0.00	0.00	100.00
Advanced Thermal Power and Energy System	19	63.16	31.58	0.00	0.00	94.74

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

1. All the faculty members are asked to enter the day to day activities in the "Academic Management System-AMS" and the same is monitored.

2. Course coverage is monitored.

3. Audits are done to see all the activities are done on time.

4. Feedbacks are studied and improvements are suggested.

2.13 Initiatives undertaken towards faculty development

Faculty / Staff Development Programmes	Number of faculty benefitted
Refresher courses	62
UGC – Faculty Improvement Programme	01
HRD programmes	06
Orientation programmes	40
Faculty exchange programme	01
Staff training conducted by the university	10
Staff training conducted by other institutions	08
Summer / Winter schools, Workshops, etc.	161
Others	NIL

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	210	10	6	0
Technical Staff	172	8	8	0

Criterion – III

3. Research, Consultancy and Extension

3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

➢ Research incentive policy - Faculty members are allotted with incentive points for publication in indexed journals which they can either encash or utilize for attending conferences in India/abroad with the financial support from the institute.

➢ Conference Scheme- Faculty members are provided with financial support to attend the conferences in India and abroad (in addition to research incentive) every year.

➢ Career advancement scheme (promotion) is linked to acquiring Doctoral degree and publications in Journals.

3.2 Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number	3	20	4	7
Outlay in Rs. Lakhs	20.730	178.130	175.000	219.310

3.3 Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	1	3	4	5
Outlay in Rs. Lakhs	5.500	7.5700	16.970	17.2

3.4 Details on research publications

	International	National	Others
Peer Review Journals	252	21	NIL
Non-Peer Review Journals	05	06	NIL
e-Journals	14	NIL	NIL
Conference proceedings	195	39	NIL

3.5 Details on Impact factor of publications: Range | 0.5-5.6 | Average | 1.38 | h-index | 0.5-10 | Nos. in SCOPUS | 112

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant sanctioned	Received
Major projects	2-6	VGST, DeitY, DST, DAE-BRNS Govt of India, SERB-DST,	341.352	125.5260
Minor Projects	1-3	VGST, DST, ICSSR	15.49	1.2000
Interdisciplinary Projects	-	-	-	-
Industry sponsored	1	TITAN	1.485840	67.417
Projects sponsored by the University/ College	3	Manipal University	17.32	7.3200
Students research projects *(other than compulsory by the University)*	4	Manipal University	4.09	4.0900
Any other(Specify)	9	Committee on Space research, France	66.1769	66.1769
Total	1-9	VGST, DeitY, DST, DAE-BRNS Govt of India, SERB-DST, ICSSR, Manipal University, Committee on Space research, France	**445.91474**	**271.7299**

3.7 No. of books published   i) With ISBN No. | 8 | Chapters in Edited Books | 4 |

ii) Without ISBN No. | 1 |

3.8 No. of University Departments receiving funds from

UGC-SAP | NIL | CAS | NIL | DST-FIST | 1 |

DPE | NIL | DST | 1 | DBT Scheme/ funds | 1 |

3.9 For colleges   Autonomy | NIL | CPE | NIL | DBT Star Scheme | NIL |

INSPIRE | NIL | CE | NIL | Any other (specify) | NIL |

3.10 Revenue generated through consultancy | **19.0785** |

3.11 No. of conferences organized by the Institution

Level	International	National	State	University	College
Number	2	5	NIL	NIL	NIL
Sponsoring agencies	IEEE, MU – MIT, IEEE Power & Energy Society, Schneider Electric DST, CSIR, TI university program, CoreEL Technologies CRANES, Blue Dart Express Ltd	DRDO, CSIR-DRDO, BRNS, DAE, Govt. of India, Manipal University			

3.12 No. of faculty served as experts, chairpersons or resource persons   56

3.13 No. of collaborations   International   **03**   National   **06**   Any other   **04**

3.14 No. of linkages created during this year   **10**

3.15 Total budget for research for current year in lakhs:

From Funding agency   **78.13**   From Management of University/College   117.7

Total   **195.83**

3.16 No. of patents received this year

Type of Patent		Number
National	Applied	5
	Granted	0
International	Applied	0
	Granted	0
Commercialised	Applied	0
	Granted	0

3.17 No. of research awards/ recognitions received by faculty and research fellows of the institute in the year

Total	International	National	State	University	Dist	College
17	7	4	1	3	0	2

3.18 No. of faculty from the Institution who are Ph. D. Guides   24   and students registered under them   24

3.19 No. of Ph.D. awarded by faculty from the Institution   10

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF   3   SRF   4   Project Fellow   0   Any other   0

3.21 No. of students Participated in NSS events:

University level	NIL	State Level	NIL
National level	NIL	International level	NIL

3.22 No. of students participated in NCC events:

University level	NIL	State Level	NIL
National level	09	International level	NIL

3.23 No. of Awards won in NSS:

University level	NIL	State Level	NIL
National level	NIL	International level	NIL

3.24 No. of Awards won in NCC:

University level	02	State Level	NIL
National level	NIL	International level	NIL

3.25 No. of Extension activities organized

University level forum   NIL   College forum   NIL   NIL

NCC   02   NSS   NIL   Any other   NIL

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

➢ Development of advanced composites Laboratory in collaboration with NAL Bangalore.

➢ IGSTC and Manipal University sponsored workshop.

➢ The department of Biomedical Engineering organized a two day workshop on Soft Computing in Healthcare Applications (SOFT-COMP2014).

➢ A National level symposium organized on safety in process industries and chemical laboratories

➢ 2014 International Conference on Advances in Energy Conversion Technologies in association with IEEE (PES, Bangalore), Schneider Electric, TI India University programme, Cranes Software & Corel Technologies, DST & CSIR.

➢ Texas Instruments Innovation Challenge – India Analog Design Contest , 2014 was conducted as a part of TI University Program

➢ Collaborative non funded projects such as Bio-signal Processing on clinical and nonclinical data, Radiation study on animals at School of Life Sciences; Gait analysis, Scoliosis study, 3D reconstruction using 2D data, Diabetic retinopathy, Design of compact Electro larynx in association with Kasturba Medical College, Manipal; Electronic interface for dental implants in association with College of Dental Sciences, Manipal. These are a few collaborative inter-institutional projects undertaken by the department.

IEEE student chapter	Technical workshops, seminars, guest lectures.
IE (E & C) student chapter	Technical workshops, seminars, guest lectures.
ISTE student chapter	Technical workshops, seminars, guest lectures.
IAESTE , AIESEC	Student exchange programmes
Major interdisciplinary student Projects such as; Parikshit, Formula Manipal, Solar Mobile, Robo Manipal, Manipal Racing.	Opportunity for the students to work in a large group, execute tasks with tight deadlines, develop leadership qualities and team spirit.
FDP, Guest talks, conferences and Workshops organized within and outside.	Faculty and students are encouraged to participate
"Tech Tatva" and "REVELS"	Technical paper presentations, competitions and cultural events.
Department of Sports for students	Sports and games
Faculty club	Sports, games and cultural events

➢ Annual conference of the department Control Instrumentation Systems Conference (CISCON)

➢ Workshop and Faculty development programme

➢ Two week course on Control Systems conducted from MHRD-ISTE through edu-sat.

➢ Workshop on 3D printing

➢ The Meraki Waltz" -Charity event organised by Rotaract Club of manipal

➢ Blood Donation Camp by lions Club of Manipal

➢ Donation of cloths by REDX

Criterion – IV

4. Infrastructure and Learning Resources

4.1 Details of increase in infrastructure facilities:

Facilities	Existing	Newly created	Source of Fund	Total
Campus area	162 Acres (Land)	-	Manipal University	162 Acres (Land)
Class rooms	141	-	Manipal University	-
Laboratories	82	7	Manipal University	77
Seminar Halls	23	-	Manipal University	23
No. of important equipment's purchased (≥ 1-0 lakh) during the current year.	113	116	SERB-DST & Manipal University	232
Value of the equipment purchased during the year (Rs. in Lakhs)	529.69903	349.10814	SERB-DST & Manipal University	828.80717
Others	24.708	1.0501	Manipal University	25.758

4.2 Computerization of administration and library

➢ Library is computerized using EASYLIB software and all documents are barcoded

➢ E-prints software is used for digital library

4.3 Library services:

	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	90939	3,85,20,441.06	2182	23,70,327.90	93121	4,08,90,768.96
Reference Books	12318	24,86,909.95	37	1,08,959.47	12355	25,95,869.42
e-Books	478	2,41,128.00	27795	39,80,892.00	28273	42,22,020.00
Journals		36,831,229.00	302	45,86,020.00	302	4,14,17,249.00
e-Journals		4,13,33,109.00	1137	1,05,09,915.00	1137	5,18,43,024.00
Digital Database	2	4,88,000.00	3	17,78,841.00	5	22,66,841.00
CD & Video	CD 5050 Video 764	3,12,591.00	CD 450	NIL	CD-5500 Video-764	3,12,591.00
Others (specify)		1,50,000.00	-	-	-	150000.00

4.4 Technology up gradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Departments	Others
Existing	4649 including 2235 desktops and 2414 Laptops	Departments have computer labs, internet facility, Wi-Fi connectivity. All offices also have access to internet facilities. Laptop is provided to each student and faculty.						
Added	Every year there will be a replacement for a set of old lab computers with latest technology upgradation.							

4.5 Computer, Internet access, training to teachers and students and any other programme for technology up-gradation (Networking, e-Governance etc.)

- All students and faculty are provided laptop for their teaching, learning and research requirements.

- Academic Management System-AMS is used for Teaching Learning monitoring process.

4.6 Amount spent on maintenance in lakhs:

i) ICT

547.45

ii) Campus Infrastructure and facilities

1606.16

iii) Equipment's

346.68

iv) Others (Academic Expenses, Staff Compensation, Office & General)

8697

         Total

11,197.29

Criterion – V

5. Student Support and Progression

5.1 Contribution of IQAC in enhancing awareness about Student Support Services

1. The institution publishes its updated academic handbook and academic calendar every year. The book includes information about the institute, list of teaching and non-teaching staff, details about undergraduate and post graduate programmes, rules and regulation of the college and its library, internal assessment and the pattern of evaluation, the tutorial system, hostel facility etc.

2. The institution facilitates students to avail scholarship & other financial assistance from state government, central government and other authorities.

3. Enrichment of library by adding new books and journals.

4. Builds a culture of social responsibility through extension activities by students.

5. Grievance Redressal Cell is working for student support

6. Provides latest information and communication tools like Wi-Fi Campus, Internet Facility e

7. Keeps updating the information on the website on regular basis.

5.2 Efforts made by the institution for tracking the progression

1. Through AMS-Academic Management System by checking attendance and student performance in Internal and External assessments.

2. Through continual assessment of curriculum delivery throughout the semester vide assignments, internal class tests, in semester examinations etc.

3. Interim reviews for Projects and Seminars.

5.3 (a) Total Number of students

UG	PG	Ph. D.	Others
7346	979	23	-

(b) No. of students outside the state   UG | 6172 | PG | 420 |

(c) No. of international students   UG | 185 | PG | 03 |

Undergraduate	Men	No.	%		Women	No.	%
		5873	80			1473	20

		No.	%			No.	%
Postgraduate	Men	709	72	Women		270	28

Undergraduate

	Last Year							This Year						
General	NRI	SC	ST	OBC	Physically Challenged		Total	General	NRI	SC	ST	OBC	Physically Challenged	Total
913	46	-	-	-			959	924	55	-	-	-	-	979

Demand ratio 21.23   Dropout % ---

Postgraduate

	Last Year							This Year					
General	NRI	ST	OBC	Physically Challenged		Total	General	NRI	ST	OBC	Physically Challenged	Total

Demand ratio ---   Dropout % ---

5.4 Details of student support mechanism for coaching for competitive examinations (If any)

- Done at the institution level, with the support of Education Technology cell and placement cell
  - ❖ **Education Technology cell:**
    - o organizes special classes in personality development skills
    - o organizes various foreign language classes, and lectures in softskills.
    - o arranges training on facing the interviews and group discussions.
  - ❖ **Placement cell:** to carry out the placement
    - o Arranges collaboration between industry and academic and thereby promotes industry institute partnerships.
    - o Consistently high quality of placements have been achieved through the cell.
    - o Established a long lasting and fruitful relationship with industries
    - o Arranges workshops on how to face the interviews and choice of campus
- Wide publicity is given for the competitive exams and skill development is provided through the Guest lecturers in core and allied chemical engineering subjects by academic and industrial experts
- Conducted Placement Training Class for UG and PG students in the department
- Aptitude (Logical Reasoning) and soft skills

No. of students beneficiaries   **93**

5.5 No. of students qualified in these examinations

NET   NIL   SET/SLET   NIL   GATE   37   CAT   37

IAS/IPS etc   NIL   State PSC   03   UPSC   04   Others   91

5.6 Details of student counselling and career guidance

Professional counsellors are available on a daily basis for student counselling. The departments take care about any career guidance, on a case to case basis.

No. of students beneficiaries   200

5.7 Details of campus placement

On campus			Off Campus
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
128	**1204**	**1080**	**60**

5.8 Details of gender sensitization programmes

Gender sensitization programme was conducted in the institute for All Teaching and Non-Teaching staff members in batches.

MANIPAL INSTITUTE FO TECHNOLOGY, MANIPAL
GENDER SENSITIZATION PROGRAMME DETAILS

Sl.No	Date	Time	Venue	Nos. attended
1	6th April 2015	10:00 am to 12:30 pm	NLH 403, AB 3, MIT	70
2	6th April 2015	2:30 pm to 4:30 pm	NLH 403, AB 3, MIT	64
3	7th April 2015	10:00 am to 12:00 noon	NLH 403, AB 3, MIT	92
4	7th April 2015	2:30 pm to 4:30 pm	NLH 403, AB 3, MIT	84
5	8th April 2015	10:00 am to 12:00 noon	NLH 403, AB 3, MIT	82
6	8th April 2015	2:30 pm to 4:30 pm	NLH 403, AB 3, MIT	75
7	9th April 2015	10:00 am to 12:00 noon	NLH 403, AB 3, MIT	45
8	9th July 2016	9:00 am to 11:00 am	NLH 403, AB 3, MIT	93
9	9th July 2016	11:15 am to 1:15 pm	NLH 403, AB 3, MIT	90
10	9th July 2016	2:30 pm to 4:30 pm	NLH 403, AB 3, MIT	98
11	10th July 2015	9:00 am to 11:00 am	NLH 403, AB 3, MIT	80
12	10th July 2015	11:15 am to 1:15 pm	NLH 403, AB 3, MIT	82
13	10th July 2015	2:30 pm to 4:30 pm	NLH 403, AB 3, MIT	95
14	31st August 2015	2:00 pm to 4:00 pm	Lecture Hall No. 11, AB 5, MIT	41
15	15th October 2015	10:00 am to 12:00 noon	AC Seminar Hall, MIT	19
16	15th October 2015	2:00 pm to 4:00 pm	AC Seminar Hall, MIT	9
17	16th October 2015	2:00 pm to 4:00 pm	AC Seminar Hall, MIT	12
		Total		1131

5.9 Students Activities

5.9.1   No. of students participated in Sports, Games and other events

State/ University level | 50 | National level | 205 | International level | NIL |

No. of students participated in cultural events

State/ University level | 503 | National level | 200 | International level | NIL |

5.9.2   No. of medals /awards won by students in Sports, Games and other events

Sports: State/ University level | NIL | National level | NIL | International level | NIL |

Cultural: State/ University level | NIL | National level | NIL | International level | NIL |

5.10 Scholarships and Financial Support

	Number of students	Amount
Financial support from institution	1000	11,51,77,318.93
Financial support from government	390	6,30,38,200.00
Financial support from other sources	NIL	NIL
Number of students who received International/ National recognitions	2	1,50,000.00

5.11   Student organised / initiatives

Fairs: State/ University level | NIL | National level | NIL | International level | NIL |

Exhibition: State/ University level | 01 | National level | NIL | International level | NIL |

5.12   No. of social initiatives undertaken by the students | 10 |

5.13   Major grievances of students (if any) redressed: | 9 |

Criterion – VI

6. Governance, Leadership and Management

6.1 State the Vision and Mission of the institution

Vision:

Excellence in technical education through innovation and team work

Mission:

Educate students professionally to face societal challenges by providing a healthy learning environment grounded well in the principles of engineering, promoting creativity, and nurturing teamwork.

6.2 Does the Institution has a management Information System

There are various software systems for different areas as follows

1. SIS- a Student Information System for managing the student profiles.

2. AMS- Academic Management System for monitoring the teaching and learning process.

3. PMS- Performance Analysis System for the faculty performance evaluation.

4. RMS- Research Management System to manage the research processes.

PeopleSoft- Human Resource Management System

6.3 Quality improvement strategies adopted by the institution for each of the following:

6.3.1 Curriculum Development

➢ Maintained course plan / lecture plan and respective faculty will follow the same lecture in the class.

➢ Started conducting class committee meetings to know about the problems from the students in the respective subject in the presence of faculty and solution will be recommended by the department committee headed by the HOD and other members and the corrective measures will be communicated to the students.

➢ Each member of the faculty entitles for updation of the curriculum as and when required and report it to the course coordinator

➢ It is further recommended to Department Curriculum Committee (DCC) and forwarded to the Board of Studies (BOS), for suggestions/revisions and later approved by BOS/Academic Senate.

Class Committee:

➢ Separate class committees are constituted by the Head of the department for III to VIII semester of B.Tech programme and for every semester of M.Tech programme. Members: A

---

senior faculty of the department as Chairman, Course Coordinators/Course Instructors of all courses and student representatives.

➢ Functions of the Class Committee: The class committee will meet thrice in a semester. The first meeting will be held within two weeks from the commencement of the semester in which the course plan, evaluation plan etc. are discussed. The second meeting will be held two weeks after the first test to collect feedback and improve the effectiveness of the teaching learning process. Performance of the students in the tests may also be analyzed. The chairman of the class committee should send the minutes of the class committee meeting to the Associate Director (Academic) through the Head of the Department after each class committee meeting.

➢ The third meeting is to be held to analyze the performance of the students in all courses of study and grade finalization. The Head of the department will declare the result of III to VIII semester B.Tech programme and I to III semester M.Tech programme.

Department Curriculum Committee (DCC)

➢ DCC consists of Program Coordinator Course Coordinator and faculty representatives.

➢ Chaired by Program Coordinator, the committee monitors the attainment of program objectives.

➢ Evaluates program effectiveness and proposes necessary changes.

➢ Prepares periodic reports, records on program activities, progress, status   or other special reports for management key stake holders.

➢ Motivates the faculty and students towards attending workshops, developing projects, working models, paper publications and research.

➢ Interact with students, faculty, Program Coordinators, Module Coordinator and outside/community agencies (through their representation) in facilitating program educational objectives.

➢ DCC meets at least once in a Semester to review the program and submits report to BOS at the Institute level.

➢ Feed-back collected from experts from industry, R & D, alumni and students

➢ Through industry initiated electives

➢ Department Curriculum Committee looks after the curriculum and takes inputs from the faculty members and if any minor change in the curriculum is required, the same will be put forth in the DCC meetings and if approved will be put forth in the BOS meeting for approval

- The department, being a part of MIT, which is a constituent Institute of Manipal University, enjoys academic freedom. There are regular minor and major course revisions to the programmes. Minor revisions are being carried out at every semester and major revision is carried out once in four years. All faculty members are involved in the curriculum revision at the entry level. The syllabus and the revision will be framed by the senior faculty and discussed at the department meeting attended by all the faculty members. Department Curriculum Committee (DCC) at the entry level should approve the programme revision. The DCC constitutes of department experts, student representatives as-well-as representatives from industries and academic institutions of repute.
- The curriculum approved by the DCC at the Institute level passes through the BOS, which also consists of student representatives as-well-as experts from industries and academic institutions of repute. Final approval is given by the Academic Senate.
- The last major revision of syllabus was implemented from the academic year 2014-2015.
- Semester scheme with 10-point Credit System.
- To appreciate the importance of knowledge existing in other domains, there is a provision of open electives wherein students can opt a set of subjects offered by different
- Departments / Institutions under MU. Some such courses offered by our department are:
  - ❖ Consumer Electronics
  - ❖ MEMs Technology
  - ❖ Neural Networks and Fuzzy Logic etc.

- Consulted the students, industry personnel and member from academia during the framing of syllabus
- Proposed Curriculum revision, Reduction of credit, and introduction of Minor specialization for 2014 syllabus onwards
- BTech curriculum revised
- Constant Revision of the Curriculum every few years with due inputs from industry experts and academicians (DCC Meetings, BOS meetings)
- Industry experts have been included
- Academicians from other Institute and Departments have been included
- Industry experts have been included
- Academicians from other Institute and Departments have been included
- Syllabus has been revised
- The academic committee is in contact with the alumni and employers consistently and takes feedback during curriculum development. The feedback is incorporated in offering of newer

open electives and programme electives during the curriculum revision, introduction of courses, or invited lectures on multi-disciplinary areas.

➢ Keeping in mind the Graduate attributes: Engineering knowledge, Problem Analysis, Conducting investigations of complex problems

➢ Regular syllabus/curriculum review by DCC

6.3.2 Teaching and Learning

➢ Mentor is appointed by the department and by Identifying weaker students and counselling them to improve their academics in the successive class.

➢ Learning is never ending process and faculty have been encouraged to attend faculty development programs, attending conferences, presenting papers, carry out research in their interested engineering field

➢ Regular black-board teaching supported by power-point presentations, assignments, quizzes, Peer-learning (through Tutors), and Tutorial Sessions. Setting appropriate question papers is also a part of the teaching-learning process

❖ Tutorial based learning

❖ Remedial classes conducted for identified week students

❖ Mentoring system:

    o Faculty advisor to help at individual level at the department

    o Faculty advisor for professional activities (BMESI)

    o Subject coordinators

    o Placement coordinator for career guidance

❖ Class committee meetings to address student issues pertaining to academics and others

❖ Provision for psychiatric counseling for students if necessary by experts from KMC

➢ Induction programme will be conducted for newly joined faculty through Technology & Development cell in the Institute.

➢ A senior faculty will be a mentor the newly joined faculty in the department.

➢ Class Committees are formed for each semester comprising faculty members as well as student representatives, which meet to discuss the teaching-learning process and also the result analysis of the sessional and the end semester examinations. Based on the inputs given by the faculty members the counselling of weaker students is taken up.

➢ We have faculty advisor scheme (for higher semester students), where each faculty member monitors a set of students. The students can approach the faculty advisor regarding their academic problems. Faculty advisor forms an interface between his /her students and the faculty members/administrators concerned in solving students' problems.

➢ We have class committees represented by both teachers and students. The committee meets twice /thrice a semester to discuss and solve academic problems and other issues. There are section coordinators and lab- in- charges to try and resolve issues related to students in classes and laboratories. We have a process to address/counsel academically weak students. As per

the process, an academically weak student needs to be identified and effort is made to see that they are going to be one in the mainstream.

- Inputs from the above are utilized for counselling teachers as-well-as students by the HOD / senior faculty. With the support of teaching assistants and faculty, additional classes are conducted for academically poor students.

- At the end of the course work, feedback on teaching- learning is collected from the students for further improvement of academic process.

- The newly inducted faculty members are trained on teaching skills. Learning is achieved on attending various workshops within and outside the university.

- Surprise test, Open elective from other institutes, Remedial classes, Introduction of mini project along with Lab.

- Concept of continuous evaluation is adopted where evaluation of student performance takes place throughout the semester in for of assignments, sessionals, and end semester examinations. Class committee meetings take place at regular intervals every semester where students and faculty members discuss learning objectives and their compliance, matters related to academics. Counseling of under achievers is done.

- Maintaining Course plan

- Conducting Tutorials, assignment and sessionals

- Counselling of weak students

- Academic committee has been constituted in the department to discuss matters pertaining to curriculum development and teaching - learning process.

- Illustrative teaching (simulations & animations where ever possible), power point presentations, problem based learning, quizzes, seminars, projects and tutorials

- Focus on slow learners through additional classes, use of innovative methods like GD, active learning and soft skill development.

- **6.3.3 Examination and Evaluation**
- Periodic assignments were given to the students where it is required to be submitted by the students with in the stipulated time, subsequently corrections were carried out and evaluated assignments were given back to the students
- Internal assessment test (sessional) were conducted as per institution timetable twice a semester.
- Final exam (end semester) conducted as per centralized timetable from institution.
  - ❖ Assignment evaluation: out of 10 marks
  - ❖ Sessional Test: 20 + 20= 40 marks
  - ❖ Final exam: out of 50 marks
- Through continuous evaluation of students through in-semester tests(two sessional tests, quizzes, assignments and end semester examination
- Periodic class committee meetings are also conducted to get feedback/suggestions from faculty members as well as students. Feedback from alumni is also taken.
- Result-analysis after examinations
- Counselling of poor-performers after each examination.
- Continuous evaluations of students will be done through assignments, tests and end semester examination.
- Students are evaluated relatively on a grade scale of 10. Every theory subject will have 50% of in-semester marks (continuous evaluation) and 50% of end semester marks. A minimum of 18 marks out of 50 is necessary in the end semester exam to obtain the credit for the course.
- Students have the provision to see their answer script and apply for re-evaluation as per university norms.
- The academic performance of a student is assessed by the course instructor /s concerned.
- The student performance in each theory course is evaluated out of 100 marks, of which 50 marks are for in semester assessments and 50 marks are for end semester assessments. In semester assessment in theory courses is based on periodic tests, assignments, quizzes, case presentations, seminars etc, which shall be defined by the course instructor.
- The student performance in the laboratory courses is also evaluated out of 100 marks and is based on in semester assessment out of 60 marks and end semester examination for 40 marks.
- Course instructors are to give the complete course plan approved by the HOD, at the beginning of the semester. Course plan included lesson plan and evaluation plan of the course offered.
- The performance of the student in a course is reflected in the Letter Grade awarded

Continuous evaluation adopted reducing the strain on the students. Questions are framed so that the range of result forms a Gaussian curve

➢ Assignment weightage increased from 10 to 20, increase in credit of Lab. All question made compulsory for end semester exams.

➢ Assessment techniques comprise of tests, assignments, quizzes and exams. Semester exam questions are set to target different course objectives. Student performance is then mapped to different course outcomes and an analysis of the same reveals the extent to which course outcomes are met. Necessary changes are then implemented accordingly.

➢ Scrutiny of Tutorial, Sessional and Semester Question paper

➢ Maintaining the schemes of Tutorial, Sessional and Semester Question paper

➢ Evaluating and processing the results as per Institute norms

➢ Tests are the preparations for the end semester examination and are conducted in the same manner, except for the duration, which is one hour against that of three hours for the examinations. Two tests will be conducted in each semester and the contents will be announced in the beginning of the semester while course plan is distributed to the students.

➢ Periodic Assignments and sessional examinations.

➢ Continuous Evaluation, inclusion of MCQ in the Sessional Question paper.

➢ **6.3.4 Research and Development**

  ➢ Full time research scholars are screened and selected by the panel of experts after interviewing them.

  ➢ Review of research progress by doctoral advisory committee comprising of subject experts specific to research topic once in every six months.

  ➢ Every research scholar has to publish two papers in journals in the field of research indexed by Scopus or web of science along with other requirements to become eligible for submission of synopsis/ thesis.

  ➢ Thesis of research of each scholar is reviewed by two external examiners in the field of research and thesis defence by the scholar is facilitated only after receiving the satisfactory report received from the examiners.

6.3.5 Library, ICT and physical infrastructure / instrumentation

  ➢ User feedback (online) mechanism is introduced

  ➢ Ezproxy technology is used for remote access of e-resources of the library

  ➢ Staff members are deputed for training programs

6.3.6 Human Resource Management

• PeopleSoft, a human resource management system is used for leave management

• Reduction of time in processing the requests related to conferences, and similar events

6.3.7 Faculty and Staff recruitment

Faculty Recruitment filling positions on ad hoc basis, pending interviews and regularization to augment the situation.

6.3.8 Industry Interaction / Collaboration

• Continuous Increase in internship and placement for UG and PG programmes.

• Continuous Improvement in quality of companies visiting for internship and placement.

6.3.9 Admission of Students

• Admission to UG programs and PG programs (majority) done through all India based

> online entrance exam.
>
> • Students from all over the country and foreign participate in the admission process for UG and PG programs

6.4 Welfare schemes for

Teaching	• EPF • Medicare facility to meet medical needs • Leave Travel concession (LTC) • Reimbursement of children school fee • Residential Housing facility • Group insurance policy • Interest subsidy scheme for home and utility loans • Sodexo meal pass scheme • MARENA- university central sports facility • Incentive schemes for research publications • Seed money for research work • Support for subscription to professional societies • Laptop facility • Employee training and development schemes
Non-teaching	• EPF • Medicare facility to meet medical needs • Reimbursement of children school fee • Group insurance policy • MARENA- university central sports facility • Employee training and development schemes
Students	• Medicare facility to meet medical needs • Residential Hostel facility • MARENA- university central sports facility • Incentive schemes for research publications • Seed money for research work • Laptop facility • Student training and development schemes • Student counselling facility • Teacher guardian scheme for mentoring students

6.5 Total corpus fund generated | -- |

6.6 Whether annual financial audit has been done   Yes | √ | No | |

6.7 Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic				
Administrative	√	TUV Rein land Inc.	√	Internal ISO Auditors

6.8 Does the University/ Autonomous College declares results within 30 days?

For UG Programmes   Yes | √ | No | |

For PG Programmes   Yes | √ | No | |

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

Academic Independence was granted to the institute to conduct and evaluate and publish results.

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

Complete Academic Autonomy was granted to Institute by the University for Design, periodic revision and implementation of curriculum, also to conduct, evaluate and publish results.

6.11 Activities and support from the Alumni Association

The institute is well supported by its alumni contributing as resource persons for technical talks, guest lectures, monetary assistance in building facilities etc.

6.12 Activities and support from the Parent – Teacher Association

NA

6.13 Development programmes for support staff

• Various Training and development programs for support staff

6.14 Initiatives taken by the institution to make the campus eco-friendly

Manipal University is a green campus with certification under ISO 14001: 2004 by TUV Rheinland. Continuous efforts are being put into monitoring and constant up gradation to meet the rapidly expanding infrastructure. Best practices and various initiatives have helped the University to develop an unparalleled ambience for students and residents from various countries.

Few areas where the University applies eco-friendly practices are

Waste Water Management: In order to treat waste water generated in the campus state of the art sewage treatment plants are installed with a capacity of 55 lakh liters per day. In addition, the distribution system for treated water has also been enhanced to ensure efficient reuse. Treated water is used for gardening and arboriculture reducing the burden on fresh water sources. Additionally grey water treatment plant treats feeds the flush system. Using recycled water lowers groundwater extraction costs and conserves on freshwater which can be used for domestic purposes. Sludge generated is dried and used as manure as soil remediation in the University gardens. Rain water harvesting is a continuous activity being carried out every monsoon. Due to these initiatives MU has been able to plant and develop green cover in the entire campus.

Raw Water Management: Keeping in mind the growing urbanization within the campus and increasing demand for water, two approaches have been adapted: Firstly, harvesting rain water from roof tops of buildings and using the same for domestic purposes. RWH units are affixed to down take pipes of roof drains which are in turn connected to underground sumps. Secondly, diverting storm water drains and from roof tops to bore wells. In the case of the first, rainwater is collected from roof tops from existing down takes, connected to a common header and led to a trickling sand filter having individual filtering capacity of 10000 liters /hour. The filtered water is then channeled to a nearby sump and used for domestic purposes. More recently the new version of rainy filters are used.

Solid Waste Management: which consists of domestic waste, a part of which is composted using earth worms and rest are recycled, food wastes are sent to piggeries. Biomedical Waste, hazardous waste and e- wastes are segregated and disposed in a scientific manner to minimize impact on the environment.

Lung spaces: are constantly created across the campus by planting trees wherever possible. 8000 trees were planted in the last three years on campus. World environment day is celebrated on June 5th every year. All the members of the management, students and faculty engaged in a march past with placards carrying messages on environmental conservation. This culminates in a tree planting.

Air Quality: In order to minimize the air emissions with in the campus, restricted entry of vehicles is in place. Emission testing center has been set up for staff and public which delivers services at subsidized rates. Ambient air quality is monitored in the campus, stack emission tests are also conducted in house to keep track of emission from all sources.

Energy Management: Various initiatives in the areas of power efficient air conditioning systems are constantly being undertaken for all new projects in the campus. As per MU guidelines hot water requirement in all hostels is met with solar energy. Presently the installed capacity is 3.9 lakh liters per day. Replacement with energy efficient light fixtures, pumps, equipment's and appliances is a continuous process.

Criterion – VII

7. <u>Innovations and Best Practices</u>

7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

- Slotted time table

- Open electives

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

Sl. No	Objective	Description
1	Enhance Student Progression Percentage of eligible students progressing to higher levels	Improve compared to previous benchmark
2	Number of students involved in social responsibility projects and extension activities	Improve on previous benchmark
3	Graduation rate	% of students completing the programme on time, target can be 1% better than average of previous three batches
4	Student feedback of faculty	Minimum of 3 on a scale of 5
5	Student feedback on infrastructure	Minimum of 3 on a scale of 5
6	Student feedback on academic program	Minimum of 3 on a scale of 5
7	Faculty student ratio as per statutory and regulatory requirements	--
8	Student attrition rate	Reduce as compared to previous benchmark (< 5%)

7.3 Give two Best Practices of the institution *(please see the format in the NAAC Self-study Manuals)*
Provide the details in annexure (annexure need to be numbered as i, ii, iii)

1. Practice School programme – The UG students will do their final project work in an industry under the guidance of an external and internal guide for 4 to 6 months as part of the B.Tech. degree programme curriculum.

2. Open Elective courses- Elective courses are offered by various departments exclusively for other branch students.

7.4 Contribution to environmental awareness / protection

Awareness is given to staff and students on the need for conservation and measures undertaken. During World environment day students from nearby schools carry out the green march along with placards depicting current issues like global warming, Ozone depletion etc. The heads of Institutions along with the top management and students engage in a tree planting session. This culminates in a formal address by the Universities top management and Institutional Heads.

Trainings are given to all staff members on key aspects like Hazardous / Biomedical / other waste management, University objectives of reduction in paper, water and power consumption etc.

7.5 Whether environmental audit was conducted?   Yes │ √ │   No │ │

7.6 Any other relevant information the institution wishes to add. (for example SWOT Analysis)

Strength

- Rated among the

    - Top 30 leading technical institutions in India

    - Top 5 leading private technical institutions

- 59 years of experience in professional education

- Motivated and committed faculty & staff

- Interdisciplinary & Multidisciplinary research potential

- Proactive governance/leadership

- Residential campus with cultural diversity

- State of the art infrastructure

- Brand image and visibility

- Well placed alumni

Weakness

- Far from industrial hub

- Lacks research culture

- Weak postgraduate programs

- Sub optimal utilization of Human resource and facilities

- Inadequate Sponsored projects & Research funds

- Shortage of quality faculty

- Inadequacy of hostel accommodation/ on- campus recreational facilities

Opportunities

- Foster Interdisciplinary and Multidisciplinary research

- Achieve excellence in research and consultancy

- Become a centre for ideation, innovation and incubation

- Tap resources and networking through alumni

- Become recognized hub for entrepreneurship

Challenges

- Quality of intake (more number of IITs and NITs)

- Attracting and retaining the best human resource

- Industry involvement / interaction

- Collaboration with the foreign universities

    – Faculty exchange

    – Collaborative Research

8. **Plans of institution for next year**

- Successful Implementation of Academic processes

- Improving student Placements

- Supporting Students in career services in your department: this includes both student development and higher education assistance to students.

- Value added courses in every Dept. and every term.

- Conducting and Participating in National / International reputed Technical events

- Organizing STTP/Workshops/FDP/ Seminars/ for faculties and Student

- Development programs.

- Publishing research papers in reputed national/international journals.

- Submitting research proposal to various funding agencies

- New MIT 'B' Staff residence – 64 flats

Name: Prof. Rajesh Gopakumar

Name: Prof. (Dr.) G. K. Prabhu

_____
Signature of the Coordinator, IQAC

Prof. Rajesh Gopakumar
QMR & Nodal Officer
Coordinator IQAC
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_____
Signature of the Chairperson, IQAC

DIRECTOR
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MANIPAL - 576 104

———— *** ————

Abbreviations:

CAS	-	Career Advanced Scheme
CAT	-	Common Admission Test
CBCS	-	Choice Based Credit System
CE	-	Centre for Excellence
COP	-	Career Oriented Programme
CPE	-	College with Potential for Excellence
DPE	-	Department with Potential for Excellence
GATE	-	Graduate Aptitude Test
NET	-	National Eligibility Test
PEI	-	Physical Education Institution
SAP	-	Special Assistance Programme
SF	-	Self Financing
SLET	-	State Level Eligibility Test
TEI	-	Teacher Education Institution
UPE	-	University with Potential Excellence
UPSC	-	Union Public Service Commission

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MRM meeting in progress

MIT Ranking - 2015

Survey by	Rank	Description
THE WEEK		
- Hansa Research Survey	**22**	**Multi-disciplinary University - All India**
	10	**Multi-disciplinary University - South Zone**
	4	**Top 13 Private Engineering Colleges**
	36	**Top 100 Engineering Colleges**
	8	**Top 99 Private Engineering Colleges**
	4	**Top 72 Private Engineering Colleges - South Zone**
INDIA TODAY		
- Nielsen Survey	**16**	**Top 70 Engineering Colleges**
OUTLOOK	**21**	**Top 100 Engineering Colleges**