

# INSTITUTIONAL ACCREDITATION SELF STUDY REPORT

Submitted to



**NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL (NAAC)**  
An Autonomous Institution of the University Grants Commission

By



**MADHAV INSTITUTE OF TECHNOLOGY AND SCIENCE, GWALIOR**  
An Autonomous Institute Affiliated to Rajiv Gandhi Proudhayugiki Vishwavidyalaya  
Race Course Road, Gola Ka Mandir  
Gwalior (M.P.) -474005  
[www.mitsgwalior.in](http://www.mitsgwalior.in)

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## EXECUTIVE SUMMARY

- Madhav Institute of Technology and Science then known as **Madhav Engineering College** was established in 1957 by His Highness **Late Sir Jiwaji Rao Scindia**, Maharaja, Erstwhile state of Gwalior with the prime objective of providing Technical Education at undergraduate and post graduate levels along with conducting research activities. The foundation stone of the Institute was laid by **Late Dr. Rajendra Prasad**, the then President of India on 20th October, 1956 and the building was inaugurated on 11th December, 1964 by **Late Dr. S. Radhakrishnan**, the then President of India.
- Later, on 30<sup>th</sup> June 2008, **Smt Pratibha Devisingh Patil**, the then President of India, presided over the **Golden Jubilee Celebrations** of the institute.
- The Institute started initially with B.E. Courses in Civil, Mechanical and Electrical Engineering. Later on Post Graduate and Ph.D. Course in applied Sciences were introduced 1967. The B.E. in discipline Electronics Engineering was started in 1981. Undergraduate course in Architecture was introduced in 1984. The Institute took the lead in the region to start of Post Graduate course in Computer application (M.C.A.) in 1986.
- The Institute offered the Post graduate Course in Civil Engineering with specialization in Construction Technology and Management in 1987, which was perhaps first in India. Post Graduation in Electronics and Electrical Engineering was started in 1995. The B.E. in Computer Science and Engineering & Chemical Engineering were offered first in 1994 and 1995 respectively and the discipline of Information Technology was started in 2000.
- Post graduate course in Environment Engineering, Geo Informatics, Chemical Engineering, Cyber Security, Information Technology and BE in Electronics and Telecommunication Engineering and BE in Automobile Engineering are the latest additions. The Institute also offers Ph.D. programmes in various disciplines of Engineering, Technology and Science.
- During this 59 year long phenomenal journey, MITS has never looked back and has constantly strived to achieve new heights. With the encouragement and support from our management, the institute has emerged as a leading technical institution of the region. The MITS family has persistently tried to maintain very high academic standards, superior placements, strict discipline and an excellent work culture.

- The institute is proud to be one among the 189 institutions of 22 states and union territories of the nation which are selected by the MHRD under TEQIP-II. Only five institutes of Madhya Pradesh have this privilege. The funding received under this scheme has strengthened the academic fabric of the institute, through short-term training programs, expert lectures, conferences/seminars and addition of latest equipment and software to the various laboratories.
- The institute has a sprawling campus spread in 45 acres on Race Course Road, Gwalior. The inside of the campus resembles a well planned city with gardens, lawns and clean wide roads. The campus has its own water supply and backup electricity supply. The total built up area is around 35000 sq. meter with 26 lecture halls and tutorial rooms, conference hall, drawing halls, central computer center, training and placement cell, workshop, boys and girls hostels, guest house, medical dispensary, staff quarters, sports complex and Entrepreneurship and Development Cell.
- The overall MITS campus is divided into two main zones: Student & Faculty Residential Zone. The student residential zone is divided into two main sectors -- one for men's hostels and another for women's hostel. There are, in all, 5 hostels (3 for men and 2 for women). Each hostel has a capacity of around 112 students though some hostels can house 200 students. New hostel buildings with latest facilities are under construction to accommodate more students. Each hostel has its own mess, a table tennis room, a common room where residents can watch television and read magazine and newspapers and a visiting room where residents can receive their guests.
- A sense of social responsibility is being inculcated in our students through various activities of the National Service Scheme (NSS). Students are encouraged to teach and help the under privileged children from nearby areas. To increase awareness on health issues free or subsidized medical camps, blood donation camps etc are routinely organized.
- The Institute has advanced infrastructure for teaching learning process. The students are groomed and trained to face the world outside the campus through various student chapters, personality development courses, student activities and numerous technical competitions.

# THE EXISTING INFRASTRUCTURE OF MITS CAMPUS

**AREA STATEMENT MITS CAMPUS**

TOTAL AREA =90,000 SQ M

EXISTING GROUND COVERAGE

APPROX. 14%=26600 sqm



## 1. Profile of the Affiliated/ Constituent College

1. Name and Address of the College:

Name :	<input checked="" type="checkbox"/>		Madhav Institute of Technology and Science, Gwalior (M.P.)
Address :	P.O. Residency , Race Course Road, Gola Ka Mandir, Gwalior		
City :	Pin : 474005	State : Madhya Pradesh	
Website :	www.mitsgwalior.in		

2. For Communication:

Designation	Name	Telephone with STD code	Mobile	Fax	Email
Principal	Dr. Sanjeev Jain	O: 0751-2409300 R: 0751-2409301	9425149630	0751-2664684	dr.sanjeevjain@yahoo.co
Vice Principal	NA	O: R:			
Steering Committee Co-ordinator	NA	O: R:			

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: 01 July 1957  
b. University to which the college is affiliated /or which governs the college (If it is a constituent college)

Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal (M.P.)

c. Details of UGC recognition:

Under Section	Date, Month & Year (dd-mm-yyyy) *(Please See Annexure-I)	Remarks If any)
i. 2 (f)	Since beginning	
ii. 12 (B)	Since beginning	

(Enclose the Certificate of recognition u/s 2 (f) and 12 (B) of the UGC Act)

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 Programmeme *(Please See Annexure-II)	Day, Month and Year (dd-mm-yyyy)	Validity	Remarks
AICTE-Chapter 2	Engineering & Technology	EOA 07/04/2015	One year	
AICTE-Chapter 2/ Council of Architecture	Architecture & Town Planning	EOA 07/04/2015	One year	
AICTE-Chapter 2	MCA	EOA 07/04/2015	One year	

(Enclose the recognition/approval letter)

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: .....NA..... (dd/mm/yyyy)

b. for its performance by any other governmental agency?

Yes  No

If yes, Name of the agency .....NA..... and

Date of recognition: .....NA..... (dd/mm/yyyy)

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

Location *	Urban
Campus area in sq. mts.	180813 sq. mts. (44.68 Acre)
Built up area in sq. mts.	34814 sq. mts.

(\* Urban, Semi-urban, Rural, Tribal, Hilly Area, Any others specify)

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.

The facilities listed below are available in the campus. These facilities are of institute property solely.

- Auditorium/seminar complex with infrastructural facilities: Yes

The Institute has two seminar halls with seating capacity of 300 each. Each hall is equipped with e-station facility.

- Sports facilities

- \* play ground :Yes

- \* swimming pool :No

- \* gymnasium :Yes

- Hostel

- \* Boys' hostel

- i. Number of hostels 02

- ii. Number of inmates 200

- iii. Facilities (mention available facilities)

Bed, Table, Chair, Fan, Recreation hall with T.V. , Newspaper, playground, in-house laundry service, wifi connection, sanitary

staff , hot water facilities and water purifiers

\* Girls' hostel

- i. Number of hostels 03
- ii. Number of inmates 365
- iii. Facilities (mention available facilities)  
Bed, Table, Chair, Fan, Recreation hall with T.V. , Newspaper, playground, in-house laundry service, wifi connection, hot water facilities and water purifiers, security guard, sanitary staff

\* Working women's hostel No

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

• Residential facilities for teaching and non-teaching staff (give numbers available – cadre wise)

For Teaching staff : 08  
For Non- teaching : 06

- Cafeteria : Yes
- Health centre : Yes

First aid, Inpatient, Outpatient, Emergency care facility Ambulance

Health centre staff -

Qualified doctor	Full time	<input checked="" type="checkbox"/>	Part-time	<input type="checkbox"/>
Qualified Nurse	Full time	<input checked="" type="checkbox"/>	Part-time	<input type="checkbox"/>

• Facilities like banking, post office, book shops:

- Union Bank of India, Branch MITS
- ATM counter Union Bank of India
- ATM counter IDBI
- Books & stationery shop
- Courier Office

• Transport facilities to cater to the needs of students and staff: **Yes**

• Animal house : **No (Not Applicable)**

• Biological waste disposal : **Yes.**

The biological waste material after sterilization is disposed of in pit. Also the Institute has full time sanitary inspector and sanitation staff.

• Generator or other facility for management/regulation of electricity and voltage

The institute has following facilities for management/regulation of electricity and voltage:

- 33 kV substation
- Generator: 02 Nos., 125 kVA and 200kVA
- Inverters & UPS
- Solid waste management facility : **Yes.**

Dumping & removal is as per norms of Nagar Nigam Gwalior.

- Waste water management : **Yes, through municipal drainage system**
- Water harvesting : **Yes**

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

Sl. No.	Programme Level	Name of the Programme/ Course	Duration	Entry Qualification	Medium of instruction	Sanctioned/approved Student strength	No. of students admitted
1	Under-Graduate	BE	4 Years	10+2	English	870	*908
		B Arch	5 Years	10+2	English	40	*41
2	Post-Graduate	ME/MTech	2 Years	BE/ B. Tech.	English	294	206
		M. Arch		B. Arch.	English	18	-
		MCA	3Years	B. Sc. / B Tech. (IT,CSE)	English	60	43
3	Ph.D.	Ph.D.	-	ME/MTech	English	-	04

\* Including GOI seats

13. Does the college offer self-financed Programmes?

Yes  No

If yes, how many?

Presently, the Institute is offering following self financed courses:

- BE in Information Technology
- BE in Chemical Engineering
- BE in Biotechnology
- BE in Electronics and Telecommunication Engineering
- BE in Automobile Engineering
- ME in Environment Engineering
- ME in Geo Informatics
- MTech in Chemical Engineering
- MTech in Biotechnology
- MTech in Cyber Security
- MTech Information Technology

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

Yes	√	No		Number	11
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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 Programmemes. Similarly, do not list the departments offering common compulsory subjects for all the Programmemes like English, regional languages etc.)

Faculty	Departments (eg. Physics, Botany, History etc.)	UG	PG	Research
Science	Applied Science Department	√		
Arts	-	-	-	-
Commerce	-	-	-	-
Any Other (Specify)	Engineering	√	√	√
	Architecture	√	√	√
	Computer Applications	-	√	√

16. Number of Programmemes offered under (Programmeme means a degree course like BA, BSc, MA, M.Com...)

a. annual system	
b. semester system	32
c. trimester system	

17. Number of Programmemes with

a. Choice Based Credit System	32
b. Inter/Multidisciplinary Approach	
c. Any other (specify and provide details)	

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

Yes  No

If yes,

a. Year of Introduction of the Programmeme(s).....NA... (dd/mm/yyyy)

and number of batches that completed the Programmeme

b. NCTE recognition details (if applicable)

Notification No.: ..... NA ..... Date: NA .....

Validity:..... NA .....

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

Yes  No

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

Yes  No

If yes,

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

b. NCTE recognition details (if applicable)

Notification No.: ..... NA ..... Date: ..... NA .....  
..... (dd/mm/yyyy) Validity:..... NA .....

c. Is the institution opting for assessment and accreditation of Physical Education Programmeme 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	*M	*F	*M	*F
Sanctioned by the UGC / University / State Government <i>Recruited</i>	11	4	13	4	44	12	64	16	64	8
<i>Yet to recruit</i>	Nil		16		14		38		40	
Sanctioned by the Management/ society or other authorized bodies <i>Recruited</i>			1	-	9	6	8	1	2	-
<i>Yet to recruit</i>	3		8		3		Nil		Nil	

\*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.	10	03	08	04	10	05	40

M.Phil.	-	-	-	-	-	-	-
PG	01	01	05	-	34	07	48
Temporary teachers							
Ph.D.	-	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	15	07	22
Part-time teachers							
Ph.D.	-	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-

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

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

Categories	Year 1(2015)		Year 2 (2014)		Year 3(2013)		Year 4(2012)	
	Male	Female	Male	Female	Male	Female	Male	Female
SC	176	49	115	70	119	65	72	40
ST	58	12	75	35	68	30	73	25
OBC	184	59	187	40	144	50	101	40
General	424	238	305	211	246	195	225	125
Others	-	-	-	-	-	-	-	-

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	962	206	-	04	1172
Students from other states of India	03(J&K) 30 (All India)	-	-	-	33
NRI students	-	-	-	-	-
Foreign students	-	-	-	-	-
Total	995	206	-	04	1205

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

UG 2%

PG 11%

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. 59950/-

(b) excluding the salary component

Rs. 7629/-

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

Yes  No

If yes,

a) is it a registered centre for offering distance education Programmemes of another

University

Yes  No

b) Name of the University which has granted such registration.

Indira Gandhi National Open University (IGNOU)

c) Number of Programmemes offered

- MCA- 3 Years Programmeme
- BCA- 3 Years Programmeme
- CIT- Certificate Programmeme in Information Technology

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

Yes  No

28. Provide Teacher-student ratio for each of the Programmeme/course offered 1:15

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) - NA

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.

320 days

32. Number of teaching days during the last academic year

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

200 days

33. Date of establishment of Internal Quality Assurance Cell (IQAC) IQAC  
..... (dd/mm/yyyy)

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

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

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

Nil.

## 2. Criteria - wise Inputs

### 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 of the Institute**

To create world class quality Engineers and Technocrats capable of providing leadership in all spheres of life and society

#### **Mission of the Institute**

- To provide quality education in technical and allied disciplines.
- To organize and arrange innovative courses in Engineering and Technology.
- To arrange vocational courses in the upcoming fields and innovative subjects to meet global advancement.
- To promote research in the fields of Technology and Science.

#### **Objectives**

- To provide the best possible education facilities for students and training for building their bright careers in Engineering and Technology.
- To ensure technological up-gradation of students to meet the need of industry by organizing seminars, expert lectures, workshops etc.
- To encourage faculty for undertaking research and also present/ publish research papers in national/international seminars, conferences and journals.
- To generate new knowledge by engaging in cutting- edge research for overall development of students & society.
- To inculcate understanding of professional and ethical responsibilities.
- To organize quality improvement Programmemes for faculty members from reputed national or international engineering colleges and industries.
- To emphasize on value based education through multi-grade modern teaching methodologies and techniques.

- To invite leading industries or companies for campus placement.

The vision, mission and objectives of the Institution, are communicated to the students, teachers, staff and other stakeholders in following manner.

- By displaying the Vision, Mission and Objectives of Institution in the prospectus, Newsletter, on the institute website etc.
- By verbal communication in teacher- parent meeting.
- By displaying at department office/library, HoD Office and Training and Placement Office

**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).**

Institution develops and deploys action plans for effective implementation in following manner-

- Academic calendar includes all the Academic, Curricular, Co-curricular and extension activities.
- Each Programme of the department is elaborated in terms of Programme Outcomes which are aligned with graduate attributes. Furthermore, Course Outcomes (CO'S) for every subject taught are formed by individual faculty members.
- Every faculty member prepares a teaching plan, showing month-wise topics to be taught. These plans depend upon the syllabus prescribed by the college and the number of lectures allotted. The topics to be covered, the time required, the content that would be covered over a period of one week, in a month, and in a semester is properly described in the teaching plan.
- Programme Education Objectives (PEO's) are formed in consultation with stakeholders : faculty members, alumni, parents, employers etc.
- Devising a mechanism to monitor teaching and other related activities from time to time.
- Performance of students in practical subjects is assessed by conducting quiz and viva voice.
- Seminar and vocational training are conducted for students.



**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?**

- Teachers are encouraged to attend and participate in various faculty development Programmemes, seminars, conferences and workshops in India and abroad to update their knowledge.
- The faculty members are encouraged to enhance their qualifications by providing study leave, deputing under the Quality Improvement Programmeme of Ministry of Human Resource and Development (MHRD), no fee for in-house Ph.D. Programmeme
- High-speed Internet facility is available in library to access e-Journals.
- All the faculty members are given computer facilities alongwith internet and telephone connection in their chambers.
- Faculty members are provided stationery, books as per their requirements.

**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.**

- Laptops and Tablets are provided to the faculty members for classroom teaching.
- All the classrooms are equipped with LCD projectors and other modern teaching aids.
- The course syllabus is reviewed and updated from time to time by taking inputs from alumni through informal discussions, suggestions from academic experts and industry.
- The drafts are taken up for discussions at the Board of Studies meetings before the approval in the academic council.
- Finally, a comprehensive document stating the framework of the curriculum is released and implemented.
- All the laboratories are equipped with state-of-art equipments/ software as per the need of curriculum and for research work.

**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?**

Affiliating university has given academic autonomy to the institute to frame its

own course curriculum as per the ordinance of the university. To frame the syllabus, the institute adopts the following approaches:

- Department conducts workshops to modify the course curriculum.
- Each department is having a Board of Studies, comprising of Head of the Department, two senior faculty members (by rotation for two years), and eminent professors from institute of national importance, alumni, industry personnel and University nominee. The meeting of Board of Studies is conducted every year to recommend the course curriculum for the next academic year.
- The recommendations of Board of Studies are further discussed in academic council and the curriculum is implemented after the approval of the academic council.

**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.**

- Curriculum is design by members of board of studies of institution.
- Industry persons, subject expert, senior faculty members and HOD are members of BOS and collect student feedback, teacher feedback and stakeholder feedback for development of the curriculum.
- The syllabus undergoes modification from time to time in line with technological advancements. This upgradation is conducted in consultation with the members of the BOS, which comprises of experts from education and industry offering their expert opinion in this direction.
- Numbers of faculty members are chairmen/members of Board of Studies and academic council and thus supporting the University in framing the course curriculum.

**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.

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

By taking feedback from stakeholders: students, alumni, parents and employers.

## Academic Flexibility

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

#### Goals and Objectives

- To provide the best possible education facilities for students and training for making their bright careers in Engineering and Technology.
- To ensure technological up-gradation of students to meet the need of industry by organizing seminars, expert lectures, workshops.
- To encourage faculty for undertaking research and also present/ publish research papers in national/international seminars, conferences and journals.
- To generate new knowledge by engaging in cutting- edge research for overall development of students & society.
- To inculcate understanding of professional and ethical responsibilities.
- To organize quality improvement Programmemes for faculty members from reputed national or international engineering colleges and industries.
- To emphasize on value based education through multi-grade modern teaching methodologies and techniques.
- To invite leading industries or companies for the campus placement.

The institute offers the following undergraduate and postgraduate Programmes:

S.No	Programme Name	Course Name	Intake Capacity Allotted To Admission (As Per Aicte)
1.	B.E	Biotechnology	30
2.	B.E	Civil Engineering	120
3.	B.E	Chemical Engineering	60
4.	B.E	Computer Science & Engineering	120
5.	B.E	Electronics Engineering	120
6.	B.E	Electrical Engineering	120
7.	B.E	Information Technology	60
8.	B.E	Mechanical Engineering	120

9.	B.E	Automobile Engineering	60
10.	B.E	Electronics & Telecommunication Engineering	60
11.	B. Arch	Architecture	40
12.	M.E	Construction Technology & Management	25
13.	M.E	Construction Technology & Management-PT	5
14.	M.E	Structural Engineering	7
15.	M.E	Electrical Engineering-Measurement & Control	12
16.	M.E	Electronics Communication Control & Networking	25
17.	M.Tech	Information Technology	18
18.	M.Tech	Computer Science & Technology	18
19.	M.E	Electrical Engineering-Industrial Systems Drives	25
20.	M.E	Mechanical Engineering-Material Handling	21
21.	M.E.	Public Health Engineering	12
22.	M.Tech	Production Engineering	18
23.	M.Tech	Biotechnology	18
24.	M.Tech	Microwave Engineering	18
25.	M.Tech	Cyber Technology	18
26.	M.Tech	Chemical Engineering	18
27.	M.E	Environmental Engineering	18
28.	M.E.	Geo Informatics	18
29.	MCA	Computer Science & Engineering	60
30.	M. Arch	Urban Management	18

Certificate/ diploma/ skill development courses offered by the institute:

- IBM Certification
- Infosys Certification campus connect Programme
- IIT Massive open online courses (Moocs)
- Career Launcher Communication skill training
- ISTE Chapter skill development Programme
- ACM Chapter skill development Programme
- Entrepreneurship Development Cell (EDC) organizes various certificate Programmes for self employment.

**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:**

**Range of Core / Elective options offered by the University (RGPV, Bhopal) and those opted by the college**

S.No	Program me Name	Course Name	Intake Capacity Alotted To Admission (As Per Aicte)	Total Students	Elective Subjects
1.	B.E	Biotechnology	30	30	2
2.	B.E	Civil Engineering	120	120	2
3.	B.E	Chemical Engineering	60	60	2
4.	B.E	Computer Science & Engineering	120	120	2
5.	B.E	Electronics Engineering	120	120	2
6.	B.E	Electrical Engineering	120	120	4
7.	B.E	Information Technology	60	60	2
8.	B.E	Mechanical Engineering	120	120	1
9.	B.E	Automobile Engineering	60	60	-
10.	B.E	Electronics & Telecommunication Engineering	60	60	-
11.	M.E	Construction Technology & Management	25	25	-
12.	M.E	Construction Technology & Management-PT	5	5	-
13.	M.E	Structural Engineering	7	7	-

14.	M.E	Electrical Engineering-Measurement & Control	12	10	-
15.	M.E	Electronics Communication Control & Networking	25	25	
16.	M.Tech	Information Technology	18	18	2
17.	M.Tech	Computer Science & Technology	18	18	2
18.	M.E	Electrical Engineering-Industrial System Drives	25	14	-
19.	M.E	Mechanical Engineering-Material Handling	21	5	-
20.	M.Tech	Production Engineering	18	20	-
21.	M.Tech	Biotechnology	18	6	-
22.	M.Tech	Microwave Engineering	18	18	-
23.	M.Tech	Cyber Technology	18	18	2
24.	M.Tech	Chemical Engineering	18	6	-
25.	M.E	Environmental Engineering	18	17	-
26.	MCA	Master in Computer Application	60	43	2

**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.**

Yes, the institution offers the following self-financed Programmes:

- B.E. Information Technology
- B.E. Biotechnology
- B. E. Chemical Engineering
- B.E. Automobile Engineering
- B.E. Electronics & Telecommunication Engineering
- M.Tech. Microwave Engineering
- M.Tech. Computer Science and Engineering
- M.Tech. Information Technology
- M.Tech. Biotechnology
- M.Tech. Chemical Engineering
- M.Tech. Cyber Security
- M.Tech. Production Engineering
- M.E. Measurement and Control
- M.E. Structural Engineering
- M.E. Material Handling
- M.E. Public Health Engineering
- M.Tech. Geo-Informatics
- M.E. Environment Engineering

All the above Programmes are at par with the other Programmes offered by the institute, only they differ in fee structure as per the M.P. Government norms.

Salary and qualifications of all the faculty members are as per the state government/AICTE norms.

**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.**

Yes, Institute organizes skills development Programmes such as training for campus preparation, organized training Programme for acquiring IBM certification and organizes various Entrepreneurship Programmes for students and faculty members.

**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 institute supplements the University's curriculum by conducting:

- Industrial visits are arranged for the students to integrate the theory and the actual practices in the Industries.
- Eminent persons from industries and reputed Institutions are invited for updating the current happenings to the students.
- The students are encouraged to attend vocational training.
- Covering topics beyond syllabus.
- Conducting training Programmes in logical and analytical skills
- Remedial classes for academically weaker students.

**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?**

Experienced faculty members provide a very thorough presentation of the subjects which makes the theoretical foundation of the students. The regular discussion on the question pattern of different competitive examinations, results in successful qualification of students.

During seminars and workshops suggestions from expert and industry people are sought for understanding the scenario of the job market. Additional classes for improved soft skills and personality development Programmes are arranged.

Campus placements for students are arranged in the college by renowned companies like TCS, Accenture, Wipro, Infosys etc. During these Placement Programmes a feedback is taken from the companies regarding how one should get equipped for getting jobs.

### **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?**

<b>Initiatives by the Institution towards</b>	<b>Activities</b>
Gender	<ul style="list-style-type: none"> <li>• No discrimination among students in the class rooms and labs.</li> <li>• The Institute regularly organizes expert lecture on issues like women empowerment.</li> </ul>
Environmental Education	<ul style="list-style-type: none"> <li>• The subject “Environmental Science” is included as part of the curriculum (EEES). It is compulsory for all the students, irrespective of the stream.</li> </ul>
Human Rights	<ul style="list-style-type: none"> <li>• Anti-ragging awareness Programme</li> <li>• Election duty</li> <li>• Community Service</li> <li>• Discipline committee monitors any indiscipline issues relating to ragging</li> </ul>
ICT	<ul style="list-style-type: none"> <li>• IIT Bombay Remote Center has been established</li> <li>• LCD equipped classrooms, Computer lab, and library.</li> </ul>

### **1.3.4 What are the various value-added courses / enrichment Programmes offered**

**to ensure holistic development of students?**

- **moral and ethical values**
- **employable and life skills**
- **better career options**
- **community orientation**

The N.C.C. and N.S.S. wings of the College help the students in community orientation, personality development and acquiring life skills. Better career options are taken care of by the Training and placement cell of the college. Following activities are organized under association with MITS & NSS:

- Medical Camp (Cardio Camp )
- Medical Camp cum Seminar on Eye
- Dental Camp cum Seminar on “Tobacco”
  - Dress Distribution - occasion of birthday of late H. H. Shrimant Madhav Rao Scindia.
  - Traffic Awareness Programmeme
  - Seven Days Special Residential Camp (Rural)
  - Stationery distribution
  - Blood Donation Camp
  - Youth Awareness Programmeme, etc.

NSS Unit, MITS was formed in academic year 2011-12 with following objectives:

- To enable the students to understand the community in which they work
- To develop social sense and civic responsibility
- To apply education- find practical solution to individual & community problems
- To develop competence required for group living and sharing responsibilities
- To acquire leadership qualities and democratic attitude
- To develop capability to meet emergencies and national disasters
- To practice national integration

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

The institution collects feedback from the stakeholders in enriching the curriculum in the following manner:

- In every semester feedback is collected from students. The students express their opinion on curriculum through response sheets.

- Alumni and parents to register their views during interface meetings.
- From recruiters, informal feedback is collected during campus recruitments
- The departmental committee analyses the feedback and prepares response chart for enriching the curriculum.
- The teachers collect the final year students feedback regarding learning processes at the end of academic session every year
- The suggestions are obtained from the stake holders time to time and further used to manage the overall proficiency of the students for employability.

### **1.3.6 How does the institution monitor and evaluate the quality of its enrichment Programmemes?**

Coordinator of the Programme monitor and evaluate the efficiency and the success of these enrichment Programmes. The feedback for enrichment Programmemes is taken on the basis of objectives, content of the Programme, resource persons and the method of delivery. The Institute ensures that the curriculum bears a thrust on these core values including the focus on contribution to society and development of nation. The enrichment Programmes conducted by the institution are evaluated on the basis of:

- Student achievements.
- Campus Placements.
- Attitude and personality of students.
- Feedback from the stakeholders.
- Feedback from industry persons
- Faculty contribution and achievements
- Contribution to society

## **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?**

Numbers of faculty members are chairman/members of Board of Studies and academic council and they are supporting the University in framing the course curriculum.

### **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 Programmemes?**

Yes, a mechanism is adopted for obtaining feedback from the students and the stakeholders on the curriculum. The feedback is collected and communicated to the University during periodic meetings. The senior faculties who are members in the various boards of studies/syllabus committees collect suggestions from students and other faculty members and update syllabus accordingly. The alumni also give constructive suggestions on helping the students to concentrate with greater focus and improving themselves.

**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?)**

The institution during the last four years in PG has introduced the following Programmes and UG are:

S.No	UG/ PG	Branch	Duration
1	UG	B.E.(Automobile Engineering)	4 Years
2	UG	B.E.( Electronics & Telecommunication Engineering)	4 Years
3	PG	M.Tech. Geo Informatics	2 Years
4	PG	M.Tech. Environment Engineering	2 Years
5	PG	M.Tech. Computer Science & Engineering	2 Years
6	PG	M.Tech. Information Technology	2 Years
7	PG	M.Tech. Cyber Security	2 Years
8	PG	M.Tech. Chemical Engineering	2 Years

The above Programmes were introduced on the basis of demand by the employers.

## **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?**

Admissions for Undergraduate and MCA Programme is done by state government. For postgraduate Programmes admission, advertisement is given in leading newspapers at the national level.

#### **2.1.2 Explain in detail the criteria 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.**

Admission to B.E. courses is done through counseling by Directorate of Technical Education (DTE), M.P. Government Bhopal, on the basis of JEE mains. The admission to B.Arch. course is done through state level counseling on the basis of National Aptitude Test in Architecture (NATA), an online test conducted by the Council of Architecture, New Delhi and marks obtained in 10+2.

Admissions in M.C.A. is done through Pre MCA test conducted by Govt. of M.P. Admission in Post graduate Programme is offered on the basis of GATE score/BE percentage. The admission process is done at institute level. Ph.D. Admission Process: On the basis of interview conducted at the institute as per QIP, AICTE guidelines.

#### **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.**

The following Table shows the programme-wise entry-level rank for admission for the year 2015.

S.No	Course	Highest Rank	Lowest Rank
1	BE (Civil Engineering)	46772	1061937

2	BE (Automobile Engineering)	75308	1090861
3	B.Arch.	1	347
4	BE (Biotechnology)	529	1108248
5	BE (Computer Science & Engineering)	27260	1169043
6	BE (Electrical Engineering)	46047	1180781
7	BE (Chemical Engineering)	74374	1031712
8	BE (Electronics Engineering)	46917	972850
9	BE (Electronics & telecomm.)	63267	1067544
10	BE (Mechanical Engineering )	33526	834871
11	BE (Information Technology)	46563	896304

The comparison with other colleges of the affiliating university within the city/district is given as follows.

Name of Institution	Year	Highest Rank	Lowest Rank
Institute of Technology and Management, Gwalior	2015	46567	1230781
Madhav Institute of Technology and Science (MITS), Gwalior	2015	529	1108248
Rustamji Institute of Technology, Gwalior	2015	27260	1459043
Shri Ram College of Engineering and Management - Gwalior	2015	77564	1678342
Bhartiya Vidya Mandir College of Technology and Management	2015	99575	2399712
NRI Institute of Technology and Management	2015	79894	1937812
Maharana Pratap College of Technology	2015	67867	1639348
Gwalior Engineering College (GEC)	2015	93745	2171712
Vikrant Institute of Technology and Management, Gwalior	2015	87521	2090369

**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?**

No, from the year 2013, the State Government of Madhya Pradesh has decided to admit students to Engineering Colleges of Madhya Pradesh through Joint Entrance Exam (JEE Mains) conducted at All India level by CBSE. The all India ranking is obtained from the 60% score of JEE Mains and 40% score of qualifying examination Board.

**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**

Rules and regulations of M.P. government are followed for admissions in all the Programmes. The category wise admission policy is as per the following table:

S.No.	Categories of Students	Admission Policy of The Institution
1	SC/ST	16% and 20% of total seats reserved for SC and ST Candidate respectively
2	OBC	14% of total seats reserved for OBC Candidate respectively.
3	Women	30% compartmentalized in each category and caste
4	Differently abled	3% reservation in each category
5	Economically weaker sections	5% extra seats provided under Tuition Fee Waiver Scheme (TFW)

**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.**

**Student Admission data-2015**

Program me Name	Branch	Number of applications received	No of students admitted	Demand Ratio
B.E	Biotechnology		30	Data not

B.E	Civil Engineering	*Data not available	120	available
B.E	Chemical Engineering		60	
B.E	Computer Science & Engineering		120	
B.E	Electronics Engineering		120	
B.E	Electrical Engineering		120	
B.E	Information Technology		60	
B.E	Mechanical Engineering		120	
B.E	Automobile Engineering		60	
B.E	Electronics & Telecommunication Engineering		60	
M.E	Construction Technology & Management	70	25	2.8:1
M.E	Construction Technology & Management-PT	5	5	1:1
M.E	Structural Engineering	12	7	1.7:1
M.E	Electrical Engineering-Measurement & Control	73	10	7.3:1
M.E	Electronics Communication Control & Networking	111	25	4:1.
M.Tech	Information Technology	200	18	11.1:1
M.Tech	Computer Science & Technology	205	18	18.2:1
M.E	Electrical Engineering-Industrial System Drives	14	14	1:1
M.Tech	Production Engineering	40	18	2:1
M.Tech	Biotechnology	6	6	1:1
M.Tech	Microwave Engineering	110	18	6:1
M.Tech	Cyber Technology	91	18	5:1
M.Tech	Chemical Engineering	6	6	1:1
M.E	Environmental Engineering	17	17	1:1
MCA	Computer Science & Engineering	*Data not available	60	Data not available

\*As the admissions done by the State Government

## 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 institution is fully adhering to governmental policies regarding the needs

of differently-abled students. Seats are reserved at the time of admission in various Programmes. The college makes sure that the classes of such students are held at ground floor to the possible extent. Ramps and separate sanitary facilities are being provided.

**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.**

The minimum qualification for B.E. is intermediate (10+2) or equivalent with physics, Chemistry and Mathematics. The minimum qualification for B.E. II year (Lateral Entry) is three-year engineering diploma in any branch of engineering (except Architecture) with minimum 60% marks. Students enter engineering colleges from different State board (Hindi, English medium, CBSE or MP Board). Their level of knowledge in key subjects and their assessment in school also varies widely. So the gaps in the entry level due to the above are bridged before the commencement of the first year classes by conducting an orientation Programme in the key subjects.

**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?**

- Remedial classes are conducted by faculty for weak students.
- Personality development Programme: T&P cell organizes personality development classes for the overall development of the students.
- All Departments of the institution conduct expert talks by the experts from various industries, research organizations and academics.
- Extra classes are conducted for Programming languages.

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

Institute takes care of all the necessary requirements of females in the campus. A Grievance Cell is in place to address gender discrimination issues. Students and staff are active members of the NSS, NCC etc and take part in many voluntary activities, both in the college campus and in nearby villages, to encourage the protection of environment, emphasize sustainable development, propagate use of alternate source of energy (solar/wind energy), etc.

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

The institution identifies the advance learners on the basis of their passing grade, classroom performance and regularity in submission of assignment, promptness and personal interactions. The college pays following attention to advanced learners:

- Facilitated with state of the art facilities in terms of well equipped library provided with latest edition of books, e-Books, online journals, CD ROMs and modern labs and other amenities.
- Meritorious students are rewarded with certificate and prize money
- They are sponsored to participate in the national/international conferences and technical symposia.
- Guest lecturers are invited from prestigious institutions and industries.
- Admittance to Centres of Excellence and enrolment in training Programmes.

**2.2.6 How does the institute collect, analyze and use the data and information on the academic performance (through the Programmeme 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)?**

There has been very less number of dropouts in UG and in PG course. The slow learners and students from disadvantaged communities are given extra classes/ training after the normal working hours of the college and arrange special classes, remedial classes and tests for the needy students. Further, verbal and motivational lecture or counseling is done for weak students by mentor/senior faculty members regularly.

### **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.)**

Academic calendar is prepared by Dean Academic after discussion with the Director and Head of departments. The schedule is presented in the academic calendar displayed at notice board, course manual and college website prior to the commencement of the classes for the new academic session.

Preparation of the comprehensive lesson plan for the semester by individual teacher is mandatory. The college has started online attendance where a provision has been made to show the course contents covered during a lecture by the faculty. At the end of each semester, students are assessed internally on the basis of attendance, assignments, quiz, presentation, mid semester

examinations and end semester examination.

### **2.3.2 How does IQAC contribute to improve the teaching-learning process?**

IQAC conducts the meetings of the members of the committee for the improvement in teaching - learning process. Following are the contributions of IQAC in improving teaching -learning process:

- Organized seminar, cooperate with academicians and people from industry to acquire information on the scientific development and demand of market to enhance the teaching quality.
- The IQAC recommend to the department the various approaches for syllabus coverage, improvement of pass percentage, assessment of learning outcomes.
- A feedback form to be filled by students so that the teaching quality of the teacher can be evaluated.
- Head of Department conduct periodic assessment of faculty members in terms of lecture deliveries with respect to predefined lecture-wise schedule is approved.

### **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?**

The institute provides support to the teacher for creating the learning student centric in following ways:

- Provide encouragement to the students to use internet and computers to keep updated with respect to latest technology and innovations.
- Motivate the students for participation in technical Programmes.
- Visits are arranged to industries, institution of higher education and research, and national laboratories for practical knowledge.
- MoUs are signed with various industries for providing training and employment.
- Regular guest lectures by eminent experts from industry and academia are organized to address novel areas.
- Encourage faculty members to develop new experiments beyond syllabus.
- Central computing, LAN facilities, e-Library facilities help teachers and students in teaching learning process.
- A library with latest books and journals helps to provide latest and comprehensive information to the students

- The teachers frequently give illustrations and discuss the technical aspects in order to acquaint the students with the practical insight of the subject.

#### **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?**

The institute motivates the students to participate in National and International seminars and present their research papers. Emphasis is given on increasing the employability of the students and putting them at ease with the employer's expectations by developing the essential skills.

A collaborative environment is established between industry and academia by virtue of joint projects and consulting assignments. Undergraduate and post graduate students are groomed in such a manner that projects undertaken by them are so chosen that they can be extended towards research work at a later stage. All the departments have professional society associations under which several Programmes are conducted to nurture creativity and scientific temper among the students.

Following facilities/infrastructure are available to the students for continuous learning:

- Teachers use smart classrooms with e-station for effective knowledge sharing.
- In addition to standard text books, the teachers also refer to following latest technologies:
  - Video lectures
  - Internet based information
  - Digital library facility and proceedings of IEEE, ASME, ASCE etc.
  - e-journals and e text books
  - NPTEL videos
- Teachers concentrate on core technologies as per syllabus, which the students are intended to learn.
- 24 hours internet and library facility.
- Every department has a seminar hall with LCD projector.
- Every staff room has computer with internet facility.
- There are 35 staff members working for higher education and are active with all these sources of information.

**2.3.5 What are the technologies and facilities available and used by the faculty for effective teaching? e.g: 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**

The following technologies are used by the faculty of the institute to achieve effectiveness in teaching:

- Faculty members use e-learning resources from National Programme on Technology Enhanced Learning (NPTEL) to deliver lectures.
- Faculty participated in NMEICT Programme organized by IIT Bombay and IIT Kharagpur under the Faculty development Programme, enhancing their knowledge.
- Virtual Lab is an initiative of Human Resource Development (MHRD) under the National mission on education through Information and Communication Technology (ICT).
- To understand working models, free open courseware from national reputed institute like NITs, IIT, etc is accessed for effective teaching.
- Institute uses tools such as SMART board with data storage facility, multimedia projectors, OHP etc.
- Institute has signed MoU with IIT Bombay for IIT Bombay Blended MOOC and currently running two courses: Computer Programming and Thermodynamics.
- Institute is also a remote center of IIT Bombay and IIT Kharagpur for the conduction of workshops and other academic activities under MHRDs National Mission on Education through ICT. Faculty members are regularly attending the workshops which are being conducted by IIT Bombay and IIT Kharagpur and thus enhancing their knowledge for achieving effectiveness in teaching.

**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 Institute sponsors and organizes FDPs/ workshops for faculty members. Expert lectures by eminent people from industries/other academic institutions are arranged from time to time. The Institute encourages the students and the faculty to present the papers in national and international seminars/workshops

and attend faculty development Programme at institutions of national repute. The Institute and faculty adopt various strategies for the effective teaching, which are as follows:

- The teaching aids like slides, comparative charts, photographs, pictorial materials, and information and communication tools, Practical Training Booklets etc. are used as per requirement to make the teaching and learning experience more effective and interesting.
- The students are encouraged to participate in various technical seminars and workshops conducted by other institutions, universities in and outside the state.

**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?**

Faculty members have taken various initiatives in addressing the academic, psycho-social & personal needs of the students. The faculty identifies the students who need counseling. The students are free to discuss their problems and weaknesses, whether personal or educational. Beside this, all students are counseled by Director, HoDs and faculty members in general from time to time during regular academic interactions. The additional academic, personal and psycho-social support and guidance services offered by the Institute are:

- Guest lectures by eminent people from industries/other academic institutions are arranged at regular intervals.
- The Institute sponsors and encourages the students and the faculty to present the papers in national and international seminars/workshops.
- The Institute organizes seminars and workshops by inviting eminent professionals having expertise in their respective areas. The student and faculty community actively participate to reap benefits out of them.
- Motivational lectures and meditation classes are conducted free of cost for stress management.

**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 faculty to adopt new and innovative approaches and the impact of such innovative practices on student learning?**

Institute encourages the faculty to utilize library resources and e-resources to update learning and use other technological aids which help in enhancement

of knowledge and skills. Following innovative teaching approaches/methods are adopted by the faculty during the last four years:

- Teaching through smart class software & e-class room.
- Teaching through Power-point presentations
- NPTEL resources
- Providing access to online journals throughout the campus.
- Use of language lab for enhancing language skills.
- Organizing inter college and intra college technical contests
- Expert Lecture Series
- A-View resource centre for the conduction of various workshops under MHRDs National Mission on Education through ICT.
- Institute has availed IEEE and Science direct subscriptions and faculty & students are encouraged to utilize these resources to update their knowledge base.

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

Library resources are augmented to enhance teaching-learning process through:

- Every year books, magazines, journals are added as per the need of staff and students.
- E- Journals facility
- NPTEL link is available in the library
- Wi-Fi enabled campus
- Students make use of library after teaching hours.
- Teachers also use various CDs, open source materials, hard copy and e-journals to improve their knowledge skills.

### **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.**

No

### **2.3.11 How does the institute monitor and evaluate the quality of teaching**

## learning?

Evaluation of teacher's performance is done every semester. The institution has a feedback system to evaluate the teachers by students. At the end of each semester, the feedback from students is obtained by issuing printed questionnaires relating to all subjects. In this feedback, questions regarding performance of the teachers are sought. Their feedback is analyzed by the concerned HOD. Based on assessment of performance, HOD gives necessary directions for the improvement in the teaching methods. The Director also monitors the feedback system and takes appropriate corrective measures. The Institute monitors and evaluates the quality of teaching by following methods:

- Feedback for faculty is collected twice in a semester
- Feedbacks are analyzed by the class coordinator
- Director and HODs initiate remedial measures
- Counseling of staff for better performance
- Course files prepared by faculty.
- Analysis of student performance in mid-term and end term examinations
- Quality final year project
- Attendance of Students
- Feedback from the alumni

### Student Feed Back Form

**Note:-** 1. Student should not write his name nor put his signature in this form  
2. He / She should be fair in evaluating. 3. Please tick in blocks

Name of Faculty.....Subject Taught.....

Semester.....your attendance in class.....% (Approximate)

Your Rank in class : Top 10% .....

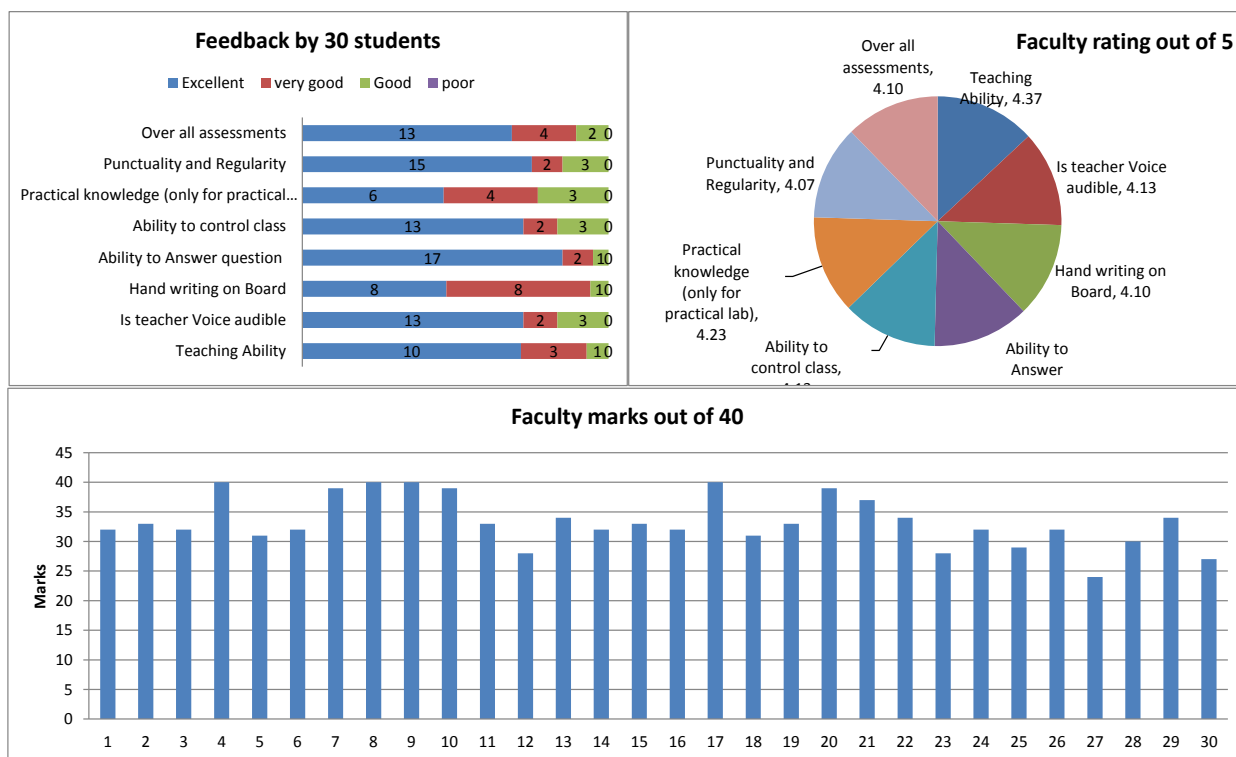
(Please tick) Top 11-40% .....

Top 41-74% .....

S.No.	Particulars	Excellent	Very Good	Good	Average	Poor
01	Teaching Ability					
02	Is Teacher voice Audible					
03	Hand writing on board					
04	Ability to Answer questions					
05	Ability to control class					
06	Practical knowledge(only for practical labs)					

07	Punctuality and regularity				
08	Overall assessment				
09	Do you want to study another subject in a next semester from this faculty	Yes	No		
10 (a)	Provide Suggestion for improvement in the subjects related to course contents				
10(b)	Whether course contents are sufficient or do you suggest any modification in syllabus?	Yes	No		

### Analysis system of feedback form



## 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**

Highest Qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							

D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	12	3	6	5	8	5	49
PG	1	1	6	0	37	8	53
B.E.	-	-	-	-	1	1	2
Total	13	4	12	5	45	14	94

The Institute has a different recruitment policy for regular teaching/ non-teaching staff and temporary teaching/ non-teaching staff.

Recruitment policies for regular teaching/ non-teaching staff:

- After approval from the Board of Governors (BOG), an open advertisement is published for positions in at least two leading newspapers and on the institute website.
- The selection committee comprises of member of BOG, Director, HOD of concerned Programme and experts from the concerned field.
- The process of selection:
  - Except for the professor and associate professor posts, written test is conducted for short listing.
  - Presentation is given by the applicant which is followed by a technical interview.
  - Eligibility as per the AICTE/Affiliating university norms is strictly followed.

Recruitment policies for temporary teaching/ non-teaching staff:

- Each department sends the requirement of teaching/ non-teaching staff to the Director at the commencement of semester.
- Open advertisement is published for positions in at least two national and local newspapers and also uploaded on institute web site.
- The selection committee comprises of Director, HOD and subject experts.
- The process of selection -
  - Eligibility as per AICTE norms.
  - Written test for short listing.
  - Presentation by the applicant followed by a technical interview.

Retention policies:

- A healthy working environment conducive for self growth is offered

through well defined transparent and uniform policies. Remunerations and salary as per state govt. pay scale to the faculty members are also ensured by the institute.

- Faculty members are sponsored to attend quality improvement Programmes, seminars, conferences, workshops etc.
- Faculty members are encouraged to organize quality improvement Programmes, seminars, conferences, workshops. All expenses to conduct the above Programmes are borne by the institution.
- Timely increment and other allowances are given as per state government pay scale to the faculty members.
- The faculty members who are pursuing Ph.D. are being exempted from the tuition fee.

**2.4.2 How does the institution cope with the growing demand/ scarcity of qualified senior faculty to teach new Programmemes/ 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.**

- Faculty members are promoted to update themselves by attending FDPs/Seminars/Conferences in emerging areas.
- Faculty is sponsored for qualification enhancement with pay under Q.I.P. at national level institutes like IITs.
- Expert lectures are frequently organized by the departments in thrust areas.
- NPTEL lectures and other e-resources are made available to the faculty of such departments to cope up with the scarcity of qualified senior faculty.
- Demonstration through virtual labs.

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

**a) Nomination to staff development Programmemes**

As per the Training Need Analysis (TNA), faculty members are permitted to attend at least two Faculty Development Programmemes/STTPs per year.

Academic Staff Development Programme/ Faculty Development Programmemes	Number of faculty
Refresher courses	32

HRD Programmemes	23
Orientation Programmemes	10
Staff training conducted by the College	35
Staff training conducted by University/other Colleges	25
Summer / winter schools, workshops etc.	28
Any other (Seminars, conferences etc.)	79

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

- **Teaching learning methods/approaches**
- **Handling new curriculum**
- **Content/knowledge management**
- **Selection, development and use of enrichment materials**
- **Assessment**
- **Cross cutting issues**
- **Audio Visual Aids/multimedia**
- **OER's**
- **Teaching learning material development, selection and use**

Large number of faculty developments Programmemes have been organized by the different departments of the Institute, like:

- Workshop on MATLAB Applications
- Faculty development Programmeme on Optimization Techniques for Engineering Applications
- Faculty development Programmeme on Pedagogy
- Faculty development Programmeme on Research Methodology
- Faculty development Programmeme on Recent Advances in Microwave Engineering (three times)
- Workshop on Renewable Energy Sources
- Faculty development Programmeme on Green House
- Workshop on Computer Aided Drug Design
- Faculty development Programmeme on Computational Fluid Dynamics
- Workshop on Recent Trends in Solar Energy

- Faculty development Programmeme on Nature Inspired Optimization Techniques  
Alongwith the above number of conferences/seminars are organized in the Institute every year.

**c) Percentage of faculty**

- **invited as resource persons in Workshops / Seminars / Conferences organized by external professional agencies**  
Approximately 40% faculty members have been invited as resource persons in Workshops / Seminars / Conferences organized by external professional agencies
- **participated in external Workshops / Seminars / Conferences recognized by national/ international professional bodies**  
All the faculty members have participated in various external Workshops / Seminars / Conferences recognized by national/ international professional bodies
- **presented papers in Workshops / Seminars / Conferences conducted or recognized by professional agencies**  
Approximately 70% of the faculty members have presented papers in Workshops / Seminars / Conferences conducted or recognized by professional agencies

**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.)**

Following policies are in place to recharge the faculty members:

- Facilitation to pursue research work by procuring necessary equipments, software etc.
- Faculty members are sponsored to attend FDPs/Short term training Programmemes/Seminars/Workshops etc.
- Sponsorship to publish papers in National/International Journals and conference proceedings.
- The institution provides duty leave to faculty for participating and presenting papers at National and International seminars/workshops/conferences.
- Faculty members are encouraged to pursue higher education for

upgrading their qualifications. The Institute provides study leave for pursuing M.Tech or Ph.D.

**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.**

- Dr. S.K. Jain received Japanese Government Scholarship for Post Doctoral Research.
- Dr. S.K. Jain Biography included in Marquis Who's Who in the world.
- Dr. S.K. Jain received Maharashtra State National Award for outstanding research work in engineering and Technology awarded by ISTE, New Delhi.
- Dr. S.K. Jain received Dr. Jai Krishna Medal by Institution of Engineers (India) for published research paper in the area of Earthquake engineering.
- Dr. S.K. Jain received Khosla Commendation certificate of I.I.T. Roorkee for published research paper in the field of Earthquake Engineering.
- Dr. S.K. Jain received Khosla Second Prize of U.O.R., Roorkee for published research paper.
- Dr. Manjaree Pandit received UGC post doctoral research award for 2 years (salary for 2 years and contingency of Rs. 3.0 lacs)
- Dr. Laxmi Srivastava rewarded for review work, provided free membership (MIEE) by Institution of Electrical Engineers (UK) for one year.
- Dr. Manjaree Pandit received ISTE-Raja Rambapu Patil National Award for promising Engineering teacher.
- Dr. Manjaree Pandit and Dr. Laxmi Srivastava received certificate of merit from Institution of Engineers, for their joint paper.
- Dr. Manjaree Pandit received ISTE-Maharashtra Government National Research Award for work done by teachers of Engineering colleges
- Dr. Laxmi Srivastava received Khosla Research Gold Medal and cash award for Best Research Paper, from I.I.T., Roorkee.
- Dr. Sulochana Wadhwani, Dr. S.P. Gupta and Dr. Vinod Kumar received certificate of merit from Institution of Engineers, for their joint paper .
- Dr. Laxmi Srivastava, received Best paper award on Energy and Power

Engineering (ICEPE2011) held at VITS, Mumbai.

- Dr. P.K. Singhal, Department of Electronics received AICTE Career award.
- Dr. Sarvesh Jain, Dept. of Civil Engineering received AICTE Career award.
- Prof. Anil Kumar Saxena received award from AICTE for Best Technical Book in Hindi, "Lok Swasth Yantriki" (in Hindi).
- Dr. C. S. Malvi received the Madhya Pradesh Young Scientist award.
- Dr. Anshu Chaturvedi received the Madhya Pradesh Young Scientist award.
- Prof. Vedansh Chaturvedi received the Madhya Pradesh Young Scientist award.

**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?**

Yes, the evaluation of teachers' performance by the students is done every semester. At the end of each semester, the feedback from students is obtained by issuing printed questionnaires relating to all subjects. The feedback mainly focus on teaching skills of the faculty, presentation, communication, knowledge and content covered. Their feedback is analyzed and necessary directions for the improvement in the teaching methods are given to the faculty members. Also, lecture classes are monitored by the senior faculty members. They give constructive comments to improve the quality of teaching and the teaching-learning process.

**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 institute makes the stakeholders aware of the evaluation process in the following ways:

- Notice board and Academic Calendar.
- Uploading the scheme and syllabus on institute website.
- Student Manual
- The faculty members are informed about the evaluation process by the Head of the Department.

- Evaluation process is discussed by the faculty members/mentors/class coordinators in the classrooms and the required changes are brought in and informed to the students.

**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 institute on its own?**

Our institute has academic autonomy. All major evaluation reforms of the university adopted in following manner:

- Enrollment numbers of students is allotted as per the code and criteria of the affiliating university.
- All internal and external exams are evaluated as per the common scheme provided by the affiliating university. The distribution of weightage /marks for each component is decided by the respective Board of Studies and approved by the Academic Council.
- Answer books evaluation of end semester exams is permitted for those faculty members who have completed two years of teaching.
- Introduction of OMR sheets in examination.
- Two mid semester examinations are conducted in each semester and best of two marks is considered.

**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?**

A meeting of all HODs, Dean (Academic), Controller of Exam and Examination Superintendent with the Director before end semester examination is conducted regarding the smooth conduct/implementation of examination rules. Then the recommendations are implemented for the subsequent examinations and evaluations in conjunction with university norms. The results are analyzed and reviewed by the Examination Cell so as to plan and execute corrective actions, if any.

**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 Assessment of the students is assessed on the following parameters:

- Class interactions
- Group discussions/Viva-voce
- Presentations
- Assignments/Quiz

- Mid - Semester Tests
- Workshops/Seminars
- Vocational Training

Institute conducts a summative evaluation (End semester examination) at the end of each semester through the following:

- Theory and practical exams
- Major/Minor Project work

Increasing transition ratio of students is observed by adopting this approach.

**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.**

All the students are familiar about the transparency in internal assessment.

- Two mid semester examinations are conducted in each semester and best of two marks is considered.
- Academic performance is monitored by observing the students performance in the classrooms through class-tests, interactions, sessional tests and assignments.
- The Institute has set up an academic monitoring procedure in each department in consultation with the Director
- The regularity of the students is monitored by recording presence /absence in every class through the ERP system.
- The students and parents are communicated about the progress through mail, letter and in parent teacher meet.
- Parents and local guardians are invited to the college for the discussion of the necessary action to be implemented for the progress of the student.
- Communication skills are tested through report writings, presentations and group discussions.

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

Following graduate attributes are specified by the college/affiliating university:

- Application of knowledge of mathematics, science, and engineering.

- Ability to design and conduct experiments, as well as to analyze and interpret data.
- Ability to design a system software, hardware component, or process to meet desired needs within realistic constraints such as economic, environmental, social, ethical, manufacturability and sustainability.
- To function in multidisciplinary teams.
- To identify, formulates, and solves engineering problems,
- To understand professional and ethical responsibility.
- To communicate effectively.
- Understanding the impact of engineering solutions in a global, economic, environmental, and social context.
- Recognizing the need for and an ability to engage in life-long learning.
- To gain Programmeming knowledge and analytical thinking to encourage realistic approach.
- Developing adaptability for changing industrial, environment in terms of fast changing and latest emerging technologies.
- To demonstrate the ability to perform or work on engineering, technological and scientific projects.
- To participate and succeed in competitive examinations.

The college ensures the attainment of these by the students in following manner:

- Written tests, sessional test, attendance, presentations, industrial visits, assignments, independent learning and behavioral aspects.
- After evaluation of the assignments/tests/projects/ etc. the outcome results are discussed in the class, results are put on the notice board, students are individually counseled, feedback is taken from the students for better assessment, as well as improving the existing standards of assessment.
- There has been betterment in the quality of question papers and solutions devised for these papers.
- While evaluating students for internal assessment, transparency is maintained and due weightage is given for their behavioral attributes, independent learning and communication skills.

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

The subject teacher shows the evaluated copies of mid – semester examinations to the students in the class. Student can ask the teacher if he/she has any doubt in evaluation. The teacher clarifies doubts regarding evaluation. Internal marks are displayed on the notice board to enable discussion with the subject teacher/ Faculty Advisor and the HOD in the case of any disagreement.

Within stipulated days of the announcement of the end semester examination results, students can apply for revaluation/rechecking by filling a form through the registrar of the college. If student is not satisfied with revaluation result, there is provision of spot valuation after forwarding application from college director for speedy redressal of grievances.

**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?**

Yes, the college has clearly stated learning outcomes mentioned in its Vision and Mission. These are made aware to students and staff as given below:

- Every department has well defined Programme Education Objectives (PEO). Further, they have clearly defined Programme outcomes (PO) and course outcomes (CO) and cross mapping has been done in between PEO, PO and CO. Moreover, evaluation of each PO and CO is done to check whether students have achieved them, and then use the results to make courses better.
- The faculty is made aware of the learning outcomes for each course which is clearly indicated in the curriculum provided to the students. If it is not indicated in the curriculum, faculty themselves will define learning outcomes.

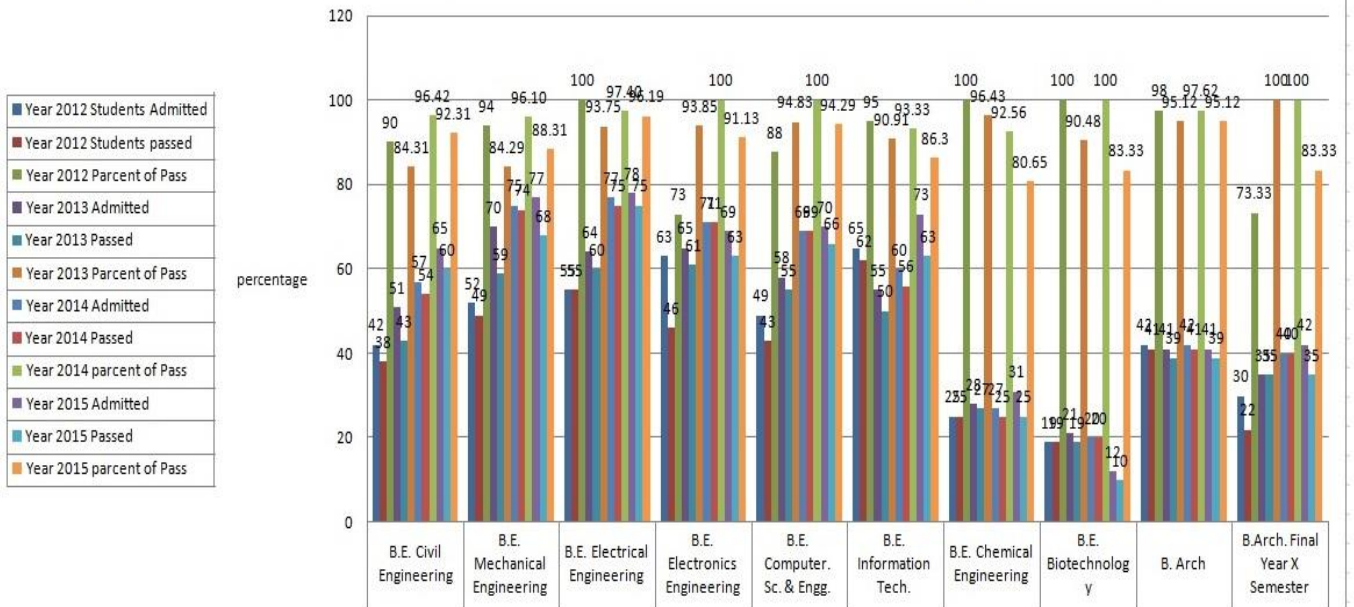
**2.6.2 Enumerate on how the institution monitors and communicates the progress and performance of students through the duration of the course/Programme? Provide an analysis of the students' results/achievements (Programme/course wise for last four years) and explain the differences if any and patterns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

The institution monitors and communicates the progress and performance of students through the duration of course/ Programme by following manners:

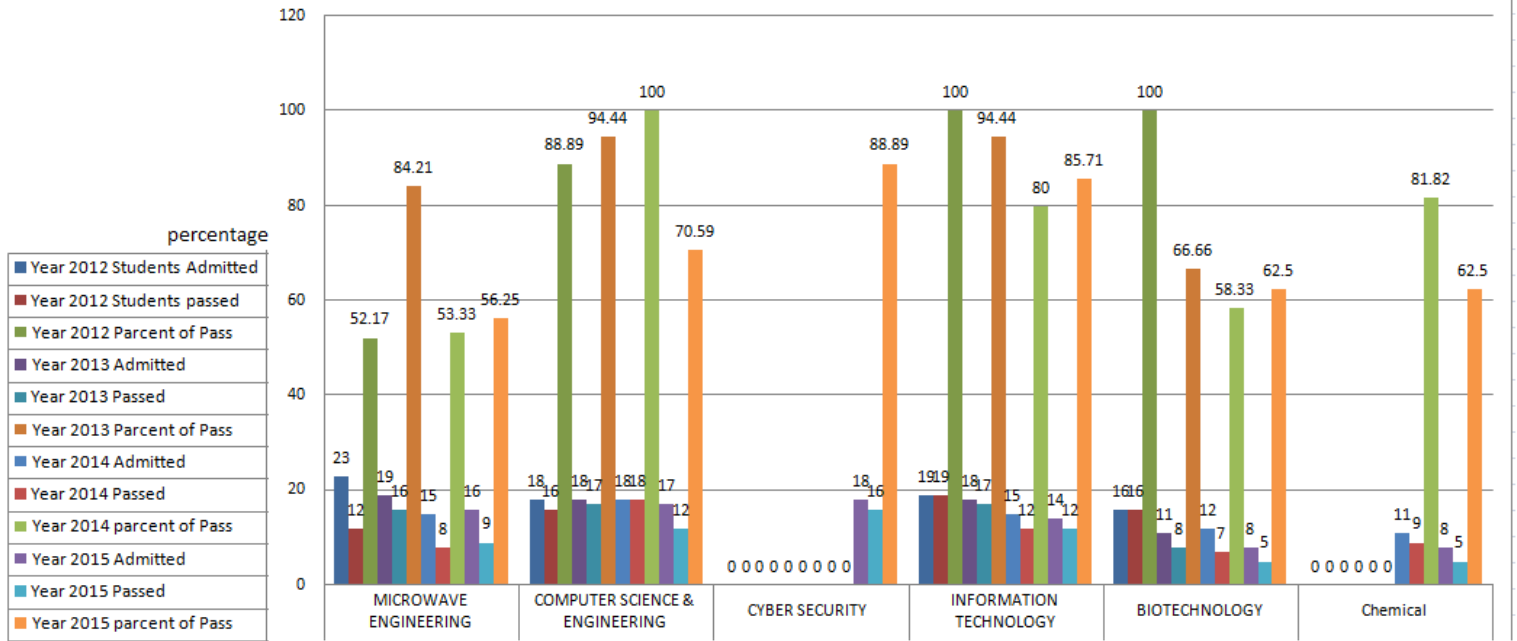
- The parents are informed regarding attendance shortage through SMS and letters.
- The students' performance is monitored by their respective class coordinator or faculty member.
- The answer books are shown to the students.
- The institution evaluates the students' performance through two mid semester tests of both objective and subjective type and assignments during the semester.

**Analysis Student result (Last four Year)(%)**

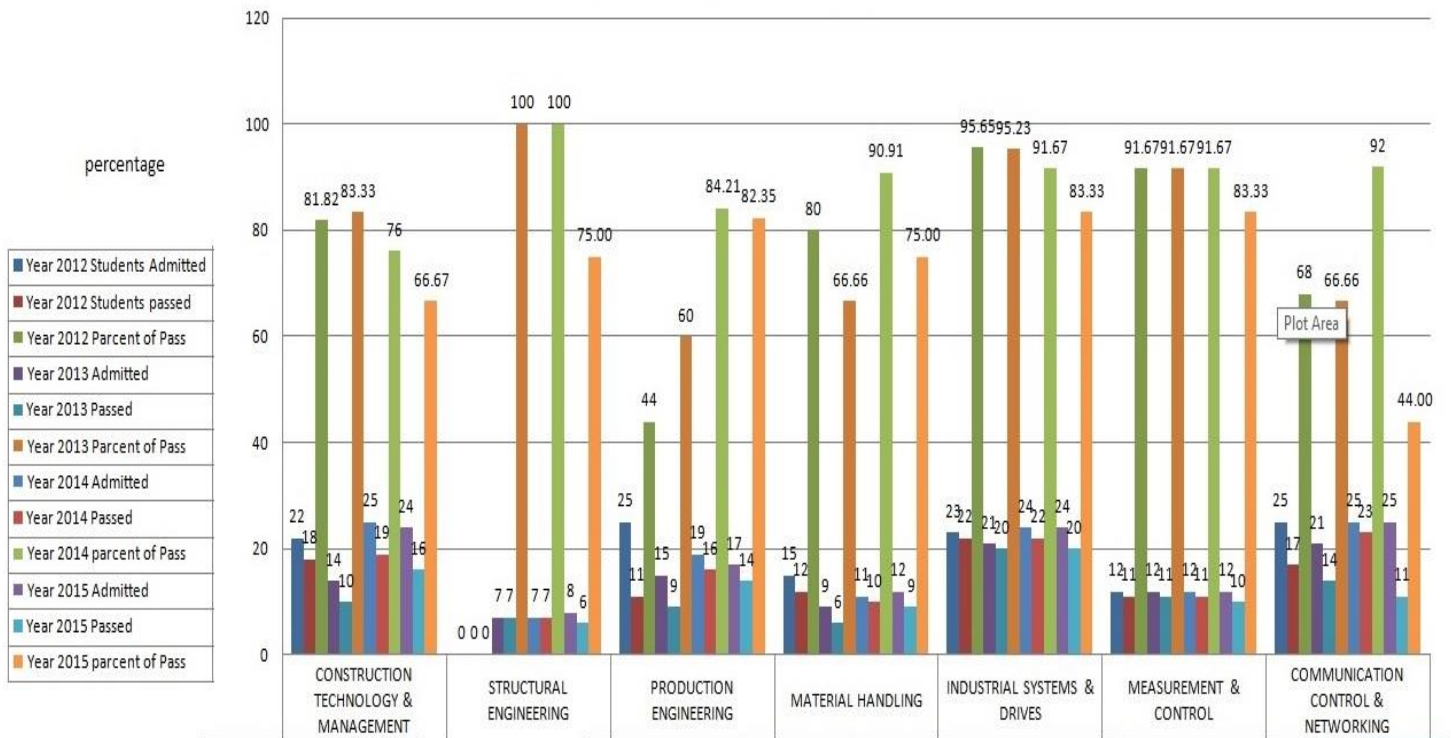
**Result Analysis of B.E. Fourth & B.Arch Fourth, Fifth Year (Last Four Years)**

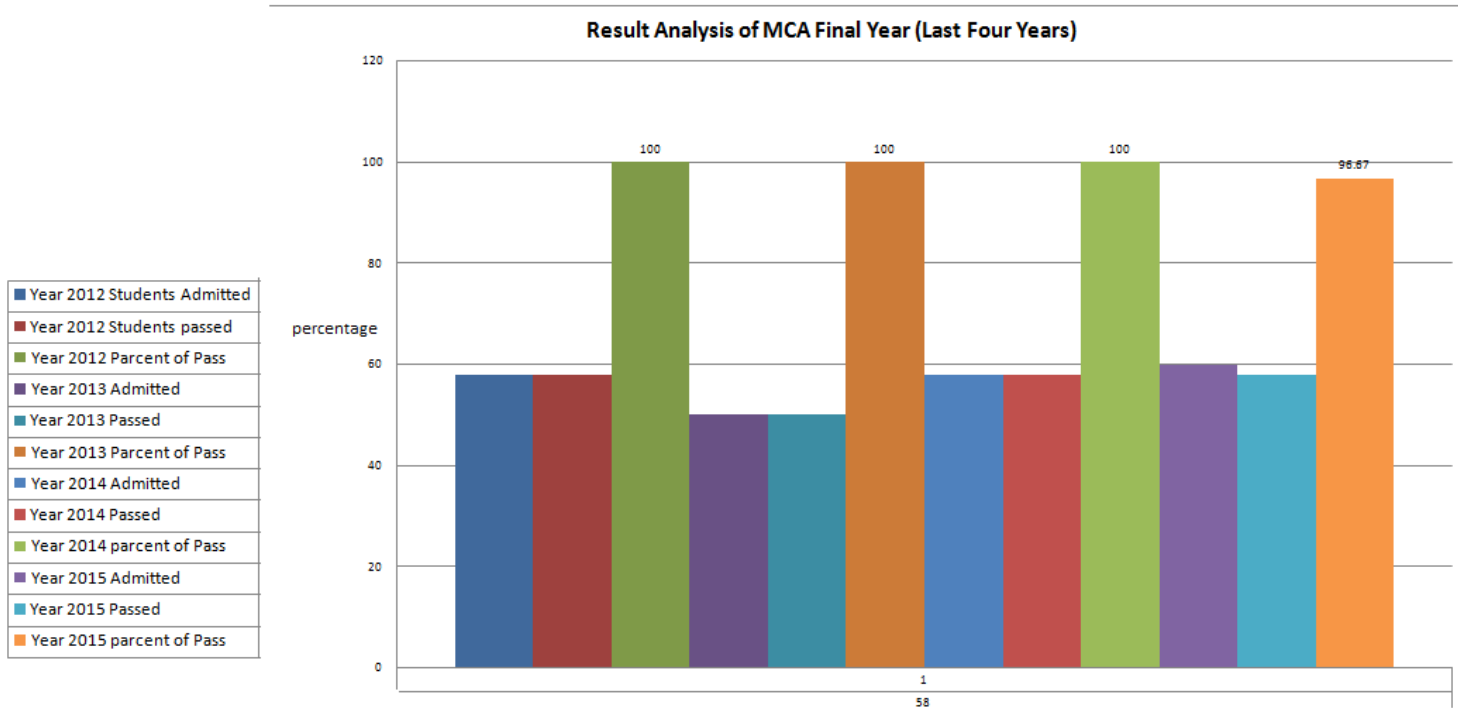


### Result Analysis of M. E./M.TECH.



### Result Analysis of M. E./M.TECH.





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

The faculty is involved in creating the learning environment. The achievement of the intended learning outcomes, the strategies of teaching, learning and assessment of the institute are done as given below:

- The institution has a conducive learning environment. Slow learners and advance learners are identified and given remedial classes and special attention.
- A course file is prepared before the beginning of each semester which includes quality policy, quality objective, Programme education objective, syllabus, lesson plan, assignments, previous year question papers and hand-written notes.
- Classroom interactions help teachers to assess the learning outcome of that session.
- Expert lectures, workshops, seminars and conferences are conducted by every department for graduate and postgraduate students.
- The training and placement cell of the college nurtures the entrepreneurs skills of the students, and encourages student in public speaking and group discussions through Personality Development Programmes (PDP) and Campus Connect Programmes (CCP).

**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?**

To enhance the social and economic relevance of the courses offered the measures/ initiatives taken by the institute are following-

- Entrepreneurship: To encourage the engineering students, through an Entrepreneurship Development Programme on Entrepreneurial Opportunities, are organized.
- Student Placement: To improve the student skills for getting quality jobs.
- Innovation: Participation in research projects, national seminars and conferences.
- Enhancement of research aptitude: Research advisory committee identifies the various fields of research and assigns the research topic to relevant department.
- Students are motivated through personality development and encouraged to participate in activities for social and community service.
- NSS: In the Institute, NSS implements the social issues such as tree-plantation, eradication of child labor and other issues in rural areas. Social activities are conducted through NSS.
- Training and Placement cell: The main objective of the placement cell is to place the students in reputed national and multi-national companies. This is achieved through campus selections conducted in the college for which the students are trained in aptitude, technical and soft skills, much ahead of campus selections. The cell believes in overall development of the students' personality, which will help them to achieve a rewarding career.

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

Institution adopts the following methods to collect and analyze data on student learning outcome:

- Institution conducts mid semester tests, seminar presentations, class assignments etc to achieve the student learning outcome.
- Minor and Major Projects.
- Internal and external practical examinations/viva.

Institute has taken following steps to overcome the barriers:

- Minimum attendance limit for students and eligibility criterion is emphasized.
- After valuation, answer books are shown to the students to make them understand their strengths and weaknesses.
- Measures like remedial classes, assignments and extra classes are arranged for slow learners
- Feedback is taken from parents, alumni and experts from industry for further action.

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

Students learning outcome is monitored and ensured by adoption of following measures

- Keeping track of attendance of students
- Mid semester test, assignments are to be evaluated and results displayed on notice board which helps to follow understand the academic progress of the students
- The class coordinators keep important information like attendance, results, and assessment record and evaluation every semester.
- The slow learners are taken care of by class coordinator and they are advised to attend remedial classes.
- The college maintains a record of the marks scored by the students in the class tests, sessional tests and university exams.

**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.**

Yes. The indicators used by institution and individual teachers to assess the student performance are:

- Students are assessed on the basis of their performance in the internal examinations and classroom/lab activity.
- Attendance of students

- Minor/Major project of students
- Seminar/ presentation for a specific topic
- Marks in Mid-Sem exam/ quiz/ assignment.

Institute adopts the modern tools for teaching and learning. The Institute has ERP dashboard to facilitate the fast communications among the stakeholders.

## **CRITERION III: RESEARCH, CONSULTANCY AND EXTENSION**

### **3.1 Promotion of Research**

#### **3.1.1 Does the institution have recognized research center/s of the affiliating University or any other agency/organization?**

Yes, the Institute is Quality Improvement Programme (QIP) centre funded by AICTE, Delhi and research centre of Rajiv Gandhi Proudyogiki Vishwavidyalaya (RGPV), Bhopal.

#### **3.1.2 Does the Institution 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, there is a research committee at the institutional level to monitor and address the issues of research. Following are the members of the committee:

- Dr. P. K. Singhal, Professor & Head, Department of Electronics
- Dr. M. K. Trivedi, Professor of Civil Engineering
- Dr. A. K. Wadhvani, Professor & Head, Electrical Engineering Department
- Dr. S. Tiwari, Associate Professor in Civil Engineering
- Dr. S. K. Jain, Professor of Civil Engineering

The recommendations of the committee are:

- Creation of facilities and infrastructure.
- Up gradation of faculty knowledge.
- To motivate and guide students.
- To provide opportunities to students and faculty for participation in National/International level contests.
- To send faculty for participation in National seminars and workshops.

#### **Impact:**

- More and more students are joining the research Programmes
- AICTE, New Delhi has given the status of QIP centre to the institute
- Good quality research papers are appearing in SCI journals
- Faculty members/research scholars are applying for patents.

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

- **Autonomy to the principal investigator**

The Principal Investigator is free to choose his area of research interest and submit the research proposal to different funding agencies for financial support.

- **Timely availability or release of resources**

The institute releases the resources as and when processed by the Principal Investigator for procurement of sanctioned items.

- **Adequate infrastructure and human resources**

The institute has well equipped laboratories and qualified technical staff in various departments to support the Principal Investigator for his analytical/ experimental work.

- **Time-off, reduced teaching load, special leave etc. to teachers**

The Principal Investigator is given duty leave for presenting his work in Conferences/seminars. However, there is no provision for time-off or reduced teaching load to a Principal Investigator.

- **Support in terms of technology and information needs**

The institute has rich library subscribing reputed Journals. In addition, the institute has high speed broad-band internet connection available for faculty members.

- **Facilitate timely auditing and submission of utilization certificate to the funding authorities**

Statement of grants received and expenditure made for different grants is well maintained by Account Section of the Institute. The Account Section and Chartered Accountant of the Institute timely audit the grants and prepare the Utilization Certificate for submission to the funding agencies.

- **Any other**

The institute is a Quality Improvement Programmeme (QIP) centre funded by AICTE, Delhi. Under this Programmeme, faculty members of other institutes are registered as research scholars for their Ph.D Programmeme. Such students, besides getting full salary from their parent institutes, also get QIP scholarship and contingency amount for the duration of three years. The centre also organizes short term courses, seminars/workshops, curriculum development workshops *etc.*

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

The students are motivated to do research oriented projects/dissertations and present their work in conferences/seminars. A large number of papers is published every year in International Journals from the Project/Dissertation work of students. Approximate number of papers published in Journals and conferences during last four years is as follows:

Year	2011-12	2012-13	2013-14	2014-15
<b>Journals</b>	125	183	198	230
<b>Proceedings</b>	102	22	65	35

### 3.1.5 Give details of the faculty involvement in active research (Guiding student research, leading Research Projects, engaged in individual/collaborative research activity, etc.

Following are the details of the faculty involvement in active research from various departments:

#### Electrical Engineering Department

S. No.	Name of the Schemes	Title of Project	Name of PI	Name of Co-PI	Grant Sanctioned
1.	DST	Setting up of Power Components and system simulation lab(FIST)	Professor & Head Elect. Engg. Deptt.	--	Rs. 38.00 Lac
2.	DST	Integrated FNN approach for voltage security assessment of MPSEB system	Dr. M. Pandit Professor	Dr.L.Srivastava Professor	Rs. 10.62 Lac
3.	AICTE (RPS)	Security Assessment of a Practical Power Network Employing soft Computing Techniques	Dr. M. Pandit Professor	Dr.L.Srivastava Professor	Rs. 5.75 Lac
4.	AICTE (RPS)	Soft computing technique for congestion management in restructured power system scenario	Dr.L.Srivastava Professor	Dr. M. Pandit Professor	Rs.10.0 Lac

5	AICTE (RPS)	Real Time Hansen (Leprosy) & Neuromuscular Disease Diagnostics	Dr.A.K.Wadhvani Professor	--	Rs. 14.60 lac
6	AICTE (RPS)	Analysis for fault Identification in rotating Electrical Machine	Prof.S. Wadhvani Associate Professor	-	Rs.7.06 Lac
7	AICTE (MODR OB)	Modernization of Measurement & Instrumentation Lab	Dr.A.K.Wadhvani Professor	-	Rs 8.00 Lac
8	AICTE (RPS)	Real Time Health Monitoring for Accurate Disease Diagnostics of Human Being	Dr.A.K.Wadhvani Professor	-	Rs. 6.40 Lac
9	UGC	Research award for PDF	Dr. M. Pandit Professor	-	Rs. 14.70 lac
10	AICTE (MODR OB)	Modernization of Electrical Machine Lab	Dr. S. Wadhvani Associate Professor	-	Rs. 11.0 lac
11	UGC	Analysis of Bio Electric Signals using Soft Computing Techniques	Dr.A.K.Wadhvani Professor	Dr.S.Wadhvani Associate Professor	Rs. 10.25 lac
12	AICTE (MODR OB)	Modernizations of High Voltage Testing Lab	Dr.A.K.Wadhvani Professor	--	Rs. 10.00 lac
13	DST	Integrated Security Assessment of Power system Using Distributed computing and its Enhancement	Dr. L. Srivastava Professor	Dr. M. Pandit Professor	Rs. 13.73 Lac
14	AICTE (RPS)	Indigenous database Creation of Bioelectric Signal and Disease Diagnosis Using Recent DSP Techniques	Dr.A.K.Wadhvani Professor	--	Rs. 7.00 lac
15	AICTE (RPS)	Intelligent Monitoring of Industrial Drive	Dr. S. Wadhvani Associate Professor	--	Rs 11.00 lac

### Mechanical Engineering Department

S.No.	Name of Faculty	Name of student	Title	year	Ph.D/ M.Tech.
1	Dr. C. S. Malvi	Nitin Verma	Fabrication of screen printed solar cell	2013	Ph. D (Pursu.)
2	Dr. C. S. Malvi	Gurjeet Singh	Human power plant	2013	Ph. D (Pursu.)
3	Dr. C. S. Malvi	Rahul Pachoriya	Unconventional Machining	2014	Ph. D (Pursu.)
4	Dr. C. S. Malvi	Bhupendra Bhadouriya	Development of Solar Polycarbonate PVT panel	2011	M.Tech.
5	Dr. C. S. Malvi	Brijendra Gond	Solar water heating system with PCM	2011	M.Tech.
6	Dr. C. S. Malvi	Jitendra K Bhartiya	Development of cost effective polymer PV panel	2012	M.Tech.
7	Dr. C. S. Malvi	Rahul Arya	Design of photovoltaic manufacturing plant	2014	M.Tech.
8	Dr. C. S. Malvi	Rajkumar Solanki	Simulation and fabrication of polymer solar hybrid panel	2013	M.Tech.
9	Dr. C. S. Malvi	Vinay Bhaskar	Diagnostic analysis of standalone Solar PV system	2015	M.Tech.
10	Dr. C. S. Malvi	Rakesh Joshi	Design and development of pedal power station	2013	M.Tech.
11	Dr. C. S. Malvi	P K Sahu	Analysis of dynamic coefficient of friction for plate	2007	M.Tech.
12	Dr. C. S. Malvi	R Tamilarasan	Optimization of the fuel analysis in a ideal automobile	2007	M.Tech.
13	Dr. C. S. Malvi	Ranjeet Singh	Hybrid Solar Car	2013	M.Tech.
14	Dr. C. S. Malvi	Richa Agarwal	Design and development of Paper Recycling Plant	2015	M.Tech.

15	Dr. C. S. Malvi	Sunil Dohare	Fabrication and design analysis of paper recycling plant	2015	M.Tech.
16	Dr. C. S. Malvi	Anil Singh Tomar	Innovative leveraged propelled Disable utility chair	2015	M.Tech.
17	Dr. C. S. Malvi	Pratishtha Sharma	Parametric Optimization of MRR in Manual Air Plasma Arc Cutting of AISI 1017 MS using Design of Experiment	2015	M.Tech.
18	Dr. Pratesh Jayaswal	Pavan Agarwal	Vibration Based Monitoring and Analysis for fault Diagnosis	2012	Ph. D (Pursu.)
19	Dr. Pratesh Jayaswal	Surendra Kumar Agarwal	Energy and exergy analyses of a new solar assisted cogeneration cycle for simultaneous heating and triple effect cooling applications	2014	Ph. D (Pursu.)
20	Dr. Pratesh Jayaswal	Pankaj Sharma	Investigation on wear rate in IC engines	2012	M.Tech.
21	Dr. Pratesh Jayaswal	Kamlesh Kushwah	Fuzzy Logic approach for decision making in Material Handling	2012	M.Tech.
22	Dr. Pratesh Jayaswal	Hemant Singh Rajput	Industrial Automation	2012	M.Tech.
23	Dr. Pratesh Jayaswal	Anshul Sahu	MCDM project in Industries	2012	M.Tech.
24	Dr. Pratesh Jayaswal	Sawan	Design and Development of Lubricating oil testing Machine	2012	M.Tech.
25	Dr. Pratesh Jayaswal	Umesh Kumar Prajapati	Production Flow Lines Implementation	2012	M.Tech.
26	Dr. Pratesh Jayaswal	Manish Kumar	Feature Extraction Method for axial Piston pump fault diagnosis	2013	M.Tech.

			based on EMD and ARX Model.		
27	Dr. Pratesh Jayaswal	Arvind Yadav	Fatigue failure analysis of a Helical Gear	2013	M.Tech.
28	Dr. Pratesh Jayaswal	Raghvendra Singh Gurger	Determination of Rolling Element Fatigue life from Computer generated Bearing Tests.	2013	M.Tech.
29	Dr. Pratesh Jayaswal	Anand Parashar	Implementation of Automated Material Handling System	2013	M.Tech.
30	Dr. Pratesh Jayaswal	Vaibhav Singh Rathore	Failure analysis of spur and Helical Gears used in gear box of automobile	2014	M.Tech.
31	Dr. Pratesh Jayaswal	Mayank Srivastava	Condition Based Maintenance of CNC turning Machine	2014	M.Tech.
32	Dr. Pratesh Jayaswal	Shilpa Sharma	Operation and maintenance of stacker cum re-clamer in coal handling plant	2015	M.Tech.
33	Dr. M. K. Gaur	Gaurav Saxena	Solar green house technology	2014-2015	Ph. D (Pursu.)
34	Dr. M. K. Gaur	D. Singh	Solar Refrigerator	2013-2014	Ph. D (Pursu.)
35	Dr. M. K. Gaur	Vivek Nanda	Total productive maintenance -A case study on jamuna auto industry	2011	M.Tech.
36	Dr. M. K. Gaur	Akanksha Kumra	Study and design of PV system for small scale cottage industry at Gwalior	2013	M.Tech.
37	Dr. M. K. Gaur	Om prakash Mishra	Two stage filtration system in full scale boiling water for thermal power plant	2013	M.Tech.
38	Dr. M. K. Gaur	Shashank Saxena	Design of PV system for a biscuit packaging	2013	M.Tech.

			making - A small scale industry		
39	Dr. M. K. Gaur	Awadesh Ahirwar	Strategic analysis for reliability of diesel locomotive in Indian railway	2013	M.Tech.
40	Dr. M. K. Gaur	Jasveer Singh	Optimization of EDM process based on the Taguchi method	2014	M.Tech.
41	Dr. M. K. Gaur	Lalit Kumar Gaur	Design and analysis of scram jet combustor with pylon injector by CFD	2014	M.Tech.
42	Dr. M. K. Gaur	Saurabh Agrawal	Optimization of machining parameters of a hard porcelain material and CNC turning machine using Taguchi and RSM	2015	M.Tech.
43	Dr. A.K.Sharma	Arvind Kumar Singh	Free vibration analysis of laminated composite plates using FEM	2011	M.Tech.
44	Dr. A.K.Sharma	Yogesh Borse	Finite Element Analysis of Pressure Vessel Fitted with nozzle and saddle supports	2012	M.Tech.
45	Dr. A.K.Sharma	Ashish kumar shrivastava	Dynamic analysis of double toggle jaw crusher	2012	M.Tech.
46	Dr. A.K.Sharma	Balendra Bhaskar	A Fuzzy logic approach in three stage selection of manufacturing process using Matlab	2012	M.Tech.
47	Dr. A.K.Sharma	Kuldeep kaushik	Modeling and finite element analysis of structures with bolted, riveted and welded connections	2013	M.Tech.
48	Dr. A.K.Sharma	Arun Singh	Characterization of aluminium metal	2015	M.Tech.

			matrix composite with SiC and B4C reinforcement with different weight percentage		
49	Dr. A.K.Sharma	Gaurav sharma	Optimization of machining parameter on rail wheel profiling using GRA coupled with Topsis approach	2015	M.Tech.
50	Dr. A.K.Sharma	Devesh P. Singh	Vibration analysis of stiffened plates using FEM	2015	M.Tech.
51	Jyoti Vimal	Vikas Agrawal (PN09017)	Optimization of extrusion blow molding process parameters by grey relational analysis and Taguchi method	2011	M.Tech.
52	Jyoti Vimal	Ashutosh Kumar Pandey	Implementation of TOPSIS method for multi criteria decision making in supplier selection	2012	M.Tech.
53	Jyoti Vimal	Vivek Singh (PN10018)	Study of automotive & industrial tribology along with tyre wear analysis	2012	M.Tech.
54	Jyoti Vimal	Bhawna Bistt (PN10005)	Optimization of electrochemical machining of steel and aluminium work piece using GRA method	2012	M.Tech.
55	Jyoti Vimal	Atul Shanker Suman (PN11003)	Failure analysis of the luffing jib mobile tower crane using solid works-12 software	2013	M.Tech.
56	Jyoti Vimal	Abhinav Shukla (PN09001)	Optimization of plant layout using work study method: A case study of steel manufacturing plant	2014	M.Tech.

57	Jyoti Vimal	Harsh Bhardwaj	Study of free vibration analysis of laminated composite plates with cutouts	2014	M.Tech.
58	Jyoti Vimal	Pushpendra Kushwaha	free vibration analysis of laminated composite with different B.C.	2014	M.Tech.
59	Jyoti Vimal	Ashish Soni	Comparative study of process variable pressure and axial displacement for hydro formable process of tabular billet	2014	M.Tech.
60	Vedansh Chaturvedi	Rahul Pachoriya (PN09013)	Electrochemical machining using rotational work piece with different shape of electrode	2011	M.Tech.
61	Vedansh Chaturvedi	Anil Choubey (MH10002)	Optimization of CNC milling machine process parameters using ANOVA and signal to noise ratio methodology	2012	M.Tech.
62	Vedansh Chaturvedi	Ravendra Singh (MH10022)	Investigation of optimal process parameters of carburized mild steel	2012	M.Tech.
63	Vedansh Chaturvedi	Leeladhar Nagdeve	Investigation of optimal processing condition of AWJM using ANOVA analysis	2012	M.Tech.
64	Vedansh Chaturvedi	Bijendra Diwakar (PN10007)	Parametric optimization of CNC wire cut EDM using taguchi and GRA method	2012	M.Tech.
65	Vedansh Chaturvedi	Yogendra Tyagi (MH10020)	Parametric optimization of process parameters of drilling process parameters	2012	M.Tech.

			using MCDM approach		
66	Vedansh Chaturvedi	D. M. Arya (PN11007)	Parametric optimization of MIG process Parameters using Taguchi method	2013	M.Tech.
67	Vedansh Chaturvedi	Dheeraj Singh (PN11006)	Investigation of optimal processing condition of TIG process Parameters using Taguchi method	2013	M.Tech.
68	Vedansh Chaturvedi	Prashant Goyal (PN09011)	Optimization of extrusion blow molding process parameters for HDPE material by MCDM approach.	2014	M.Tech.
69	Vedansh Chaturvedi	Diksha Singh (PN12006)	Multi-response optimization of AWJM of stainless steel AISI 304 using VIKOR Method	2014	M.Tech.
70	Vedansh Chaturvedi	Amit Sharma (0901ME13MT02)	Optimization of Process Parameters of Two Way Abrasive Flow Machining by Grey Relational Analysis Coupled with Principle Component Analysis	2015	M.Tech.
71	Vedansh Chaturvedi	Raj Kumar Sharma	Multi-response Optimization of Process Parameter of Spark Erosion Electric Discharge Machining Using Principal Component Analysis Coupled with TOPSIS	2015	M.Tech.
72	Sharad Agrawal	Amrita Singh	Optimized selection of R-14 tyre based on new integrated approach	2012	M.Tech.

73	Sharad Agrawal	Shankar Sharan Vajpai	Optimization of multi quality characteristic in textile machine by using GRA based fuzzy approach	2012	M.Tech.
74	Dinesh Kasdekar	K Annant Dhawan	Optimization of factory layout of rail spring factory	2009	M.Tech.
75	Dinesh Kasdekar	K Nikhil Singh Chouhan	Evaluating the best belt conveyor assembly using TOPSIS approach	2012	M.Tech

### Applied Science Department

S. No.	Name of the Schemes	Title of Project	Name of PI	Name of Co-PI	Grant Sanctioned
1.	AICTE	Investigation and data analysis of electric field variation and lightning activities using electric field monitoring system)	Dr Sourabh Bhattacharya	--	Rs. 7.25 Lac
2.	MPCST	Studies on removal of dyes from industrial effluents using eco-friendly non-conventional biosorbent	Dr. Anjula Gaur	-	Rs. 4.28 Lac

### Computer Science Engineering

Nature of the project	Name of the Funding Agency	Title of the Project	Name of P.I. / Co-PI	Total Grant Sanctioned
Minor Projects	AICTE (Under RPS Scheme)	Development of Flexible Framework For Mining Association Rules	Dr. R. K. Gupta Dr. Akhilesh Tiwari	Rs. 5.00 lac

Major Projects	Department of Science and Technology (DST), Govt. of India	An Efficient Multimodal Identification System with Reduced Recognition Time	Dr. R. K. Gupta	Rs. 29.952 lac
Any Other MODROB	AICTE (Under MODROB Scheme)	MODROB	Dr. R. K. Gupta	Rs. 5.00 lac

### ELECTRONICS DEPARTMENT

S. No.	Name of the funding agency	Name of the faculty	Project Title	Year of Funding	Duration	Amount sanctioned (Rs.)
1.	IEI	Dr. L. Shrivastava	Congestion Control in Ad hoc Networks	2009-2012	3 years	0.5 lacs
2.	MODROB	Dr. P.K. Singhal	Up gradation of Microwave & Antenna lab	2012-2015	2 years	5.5 lacs
3.	AICTE	Dr. Rekha Gupta	Spectrum Sensing for Cognitive radio applications	2012-2014	2 years	6.6 lacs

**3.1.6 Give details of workshops/ training Programmemes/ sensitization Programmemes conducted/organized by the institution with focus on capacity building in terms of research and imbibing research culture among the staff and students.**

Following list provides details of Conferences/Seminars, FDPs and other activities conducted/ organized by the institution with focus on capacity building in terms of research and imbibing research culture among the staff and students:

<b>Name of the STTP/ Conference/Workshop</b>	<b>Sponsored by</b>	<b>Year</b>
Evolutionary computing techniques for numerical and engineering optimization	AICTE	2011
Engineering Thermodynamics	MHRD	2012
Aakash for Education	MHRD	2012
Research Methodology	TEQIP-II	2013
Engineering Mechanics	MHRD	2013
Pedagogical Approach in Technical Education	TEQIP-II	2014
Hybrid Solar PVT Technologies	TEQIP-II	2014
Teaching & Research Methodology	AICTE	2014
Renewable Energy based Power Generation: Options and Challenges	TEQIP-II	2013
Innovations in Electrical Engineering	TEQIP-II	2014
Innovations in Electrical Engineering	TEQIP-II	2015
Software tools for Industrial Drives & Instruments	TEQIP-II	2015
Nature Inspired Optimization Techniques for Engineering Applications	TEQIP-II	2013
Simulation of Power Electronics Converters	TEQIP-II	2014
Application of MATLAB in Electrical Engineering	TEQIP-II	2015
National Seminar on Infrastructure Management Challenges and Advancements	AICTE	2011
Green Building for Sustainable Development	TEQIP-II	2015
Engineering Trends in Materials for Engineering Applications	TEQIP-II	2014
Advanced in Mathematical Applications for Engineering & Technology	TEQIP-II	2014

Chemistry for Life	TEQIP-II	2015
Software Foundation Level (Basic)	IBM India Pvt. Ltd	2013
Advances in Information and Communication Technology	AICTE	2013
Cloud Computing	TEQIP-II	2014
Android Programmemeing	TEQIP-II	2014
Computer Programmemeing	MHRD	2014
Cyber Security	MHRD	2014
Advances in Information and Communication Technology	TEQIP-II	2015
Introduction to Design of Algorithms	MHRD	2015
Advances in Chemical Engineering	TEQIP-II	2013
Computational Fluid Dynamics	TEQIP-II	2014
Recent trends in Digital Signal Processing Applications	TEQIP-II	2013
Emerging Trends in Communication, Control and Networking	TEQIP-II	2014
Signal and Systems	ISTE	2014
Recent Advances in Microwave Engineering	TEQIP-II	2015
Recent Advances in Microwave Engineering	AICTE	2015

**3.1.7 Provide details of prioritized research areas and the expertise available with the institution.**

Following are the details (Department) of prioritized research areas and the expertise available with the institution.

### Mechanical Engineering Department

S.No.	Name of Faculty	Area of Research
1	Dr. C. S. Malvi	Industrial Design, Solar Energy
2	Dr. Pratesh Jayaswal	Tribology and Maintenance
3	Dr. Manoj Kumar Gaur	Solar Thermal
4	Dr. Manish Sagar	Supply Chain Management
5	Prof. R. P. Kori	Metallurgical Engineering
6	Dr. Avadesh Ku. Sharma	Machine Design, Vibration
7	Prof. Vedansh Chaturvedi	Unconventional machine, optimization
8	Prof. Jyoti Vimal	CAD, Vibration , FEM, Materials, Optimization
9	Prof. Dinesh Kasdekar	CIM, Production engineering
10	Prof. Sharad Agrawal	CAD/ CAM
11	Prof. Vaibhav Shivhare	Mechanics of material, Vibration
12	Prof. Amit Aherwar	Tribology, Advanced Machining , Optimization, Composite
13	Prof. Bhupendra Pandey	Thermal, Automobile

### Electrical Engineering Department

S.No.	Faculty Name	Research Area
1.	Dr. Manjaree Pandit	Evolutionary optimization techniques for Power System optimization
2.	Dr. Laxmi Srivastava	Soft Computing and AI Applications to Power System
3.	Dr. Arun Kumar Wadhwani	Application of Soft Computing Techniques in Biomedical signals
4.	Ashish Patra	Control System and Electrical Machines
5.	Dr. Sulochana Wadhwani	Conditioning Monitoring of Rotating Electrical Machines.
6.	Hari Mohan Dubey	Industrial systems and drives
7.	Dr .Shishir Dixit	Heavy Elect. Equipment ,Power System and Facts Devices
8.	Rakesh Narvey	Industrial Systems & Drives, High Voltage Engineering
9.	Himmat Singh Ahirwar	Machine Drives
10.	Vijay Bhuria	Heavy Electrical Engineering
11.	Kuldeep Kumar Swarnkar	Economic Load dispatch
12.	Praveen Bansal	Multilevel Inverters

13.	Vishal Chaudhary	Power System
14.	Vijay Kumar Tewari	DC-DC Power Electronic Converters.

### Applied Science Department

S.No.	Faculty Name	Research Area
1.	Dr. Abhay Mishra	Digital communication nanotechnology
2.	Dr. V.P. Shinde	Queuing Theory
3.	Dr. D.K. Jain	Special Function
4.	Dr. Anjula Gaur	Organic Chemistry
5.	Dr. Shourabh Bhattacharua	Atmospheric Science
6.	Prof Jitendra Kumar	Queuing Theory
7.	Prof Angad Ojha	Epidemiology
8.	Dr Preeti Gupta	Organic Chemistry
9.	Dr Mamta Sharma	Operation Research
10.	Dr. Pooja Sharma	Organic Chemistry
11.	Prof Shweta Shrivastava	Special Function
12.	Prof Anil Shukla	Special Function
13.	Prof D K Mishra	Operation Research

### BIOTECHNOLOGY

S.NO	NAME OF THE FACULTY	RESEARCH AREA/ PROJECT
1	Dr. Sunita Sharma	Molecular Biology , Toxicology, Environmental Biotechnology
2	Prof Hotam Singh Chaudhary	Industrial Microbiology and food microbiology
3	Prof Rahul Anand	Molecular Modeling
4	Prof Savita Gupta	Molecular Biology, Immunotechnology
5	Prof Sarika Saxena	Molecular Biology , Toxicology, Plant Biotech
6	Prof Vinod Kumar Jatav	Bioinformatics
7.	Prof. Dhawal Tailang	Environmental Engineering
8.	Prof. Vyoma Singh	Microbiology , Foodtechnology
9.	Prof. Shilpi Gupta	Enzyme Technology, Molecular biology

### CHEMICAL ENGINEERING

S.NO	NAME OF THE FACULTY	RESEARCH AREA/ PROJECT
1	Dr Shriram Prasad	Computational Fluid Dynamics

2	Prof. V Sakhare	Reactive Distillation
3	Prof. S. S. Trivedia	Molecular simulation
4	Prof. Swati Gupta	Process Control
5	Prof. Anish P. Jacob	Chemical Reaction Engineering

### ELECTRONICS ENGINEERING

S.No	Expertise faculty	Prioritized research area
1.	Dr. P.K. Singhal Dr. Bimal Garg Dr. Vandana Vikas Thakare	Microwave Engineering
2.	Dr. Sarita Singh Bhadauria Dr Laxmi Shrivastav	Ad-hoc Networks
3	Dr Rekha Gupta Dr Karuna Markam	Wireless Communication
4	Dr R P Narwaria	Bio Signal processing

### CS/IT DEPARTMENT

S.No	Expertise faculty	Prioritized research area
1	Dr. R. K. Gupta	Data Mining
2	Dr. Akhilesh Tiwari	Data Mining, Terrorist Network mining
3	Prof. Manish Dixit	Image Processing, Artificial Intelligent
4	Prof. Khusboo Agrawal	Adhoc Network
5	Prof. Punit Kumar Johari	Computer vision, Parallel Processing
6	Dr. Sanjeev Sharma	Data mining, computer network, Information Security
7	Prof. Vikas Sejwar	Computer Network
8	Prof. Abhilash Sonkar	Information Security, Computer Network
9	Prof. Jaimala Jha	Information Security
10	Prof. Jamvant Kumare	Image Processing, Spatial Information
11	Prof. Rajeev Singh	Software Engineering, Image Processing
12	Prof. Neha Bharadwaj	Information Security
13	Prof. Mahesh Parmar	Computer Network, Image Processing
14	Prof. R.R.S. Makwana	Algorithm Design, Network Security
15	Prof. Amit Kumar	Data Mining

### CIVIL ENGINEERING

S.No.	Name of faculty	Area of research
1	Dr. R. Kansal	Construction Management
2	Dr. M.K.Trivedi	Water Resources, Construction

		Management, Transportation
3	Dr. S.K. Jain	Structural Engineering
4	Prof. Archana Tiwari	Structural Engineering
5	Prof. D. Rastogi	Environmental Engineering
6	Prof. A.K. Dwivedi	Construction Management
7	Prof. A.K. Saxena	Environmental Engineering
8	Dr. Sanjay Tiwari	Structural Engineering
9	Prof. Gautam Bhadoria	Construction Management
10	Prof. Aditya K. Agarwal	Environmental Engineering

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

Following are the efforts of the institution in attracting researchers of eminence to visit the campus and interact with teachers and students:

- Through guest Lectures
- Through organizing Faculty Development Programmeme  
Through conferences
- Through workshops
- Through inaugural ceremonies of various centres of excellence within the institute.

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

About 2% of the faculty members have utilized Sabbatical/Study leave for research activities. The College has a policy to depute faculty to pursue their Ph. D through QIP at reputed Universities/Institutions enabling them to promote research culture in the campus. The faculty members who are pursuing Ph.D. are granted study leave to carry out their research work.

The faculty who availed such encouragement given by the College has contributed to improve the quality of research in the following ways:

- Active involvement in research activities by guiding Ph.D. scholars
- Submission of more project proposals from various funding agencies
- Research publications in indexed journals
- Dissemination of their enhanced knowledge levels in research activity to the peers and students thereby improving teaching learning process

- Establishment of Research Lab in specified area
- Contributed in developing new research setups

Name	Department	Qualification Enhanced	Institute	Date	
				From	To
Dr. C. S. Malvi	Mechanical Engineering	Ph. D	University of Leeds	07-05-2008	11-05-2012
Dr. M. K. Gaur	Mechanical Engineering	Ph. D	IIT, Delhi	27-07-2007	30-06-2012
Dr. Tripti Jain	Electrical Engineering	Ph. D	IIT, Kanpur	01-07-2007	01-08-2010

**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).**

Following initiatives are taken up by the institution for creating awareness and propagation of research temperament to student community:

- Conduction of final year projects using novel technologies
- Briefing students by Head of Department in classrooms and seminar halls
- Conduct of guest lectures
- Access to NPTEL resources
- Library having IEEE resource (multiuser) and Springer journals etc.
- Wi-Fi Campus
- National and International level technical magazines are available in Central Library
- Industry visits
- Industrial training as a part of course curriculum
- Participation in inter and intra college technical presentations

**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.**

Financial year	2013-14	2014-15	2015-16
Allocation of fund	40 lacs	40 lacs	40 lacs
Actual expenditure on R&D activity	25.60 lacs	32.41 lacs	16.25 lacs

**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 percentage of the faculty that has availed the facility in the last four years?**

The institute provides seed money for Registration & TA/DA towards participation in International/National Conferences. A maximum amount of Rs. 25,000/- (Rs. Twenty five thousand only) may be reimbursed to a faculty for presenting paper in International conference and Rs. 5,000/- (Rs. Five thousand only) may be reimbursed for presenting paper in National conference. Amount utilized for this purpose during last four years is as follows:

Year	2011	2012	2013	2014
Amount (Rs.)	17087/-	37003/-	12458/-	6590/-

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

Each department allocates a finite proportion of their budget towards research projects of students. To support student research activities critical components, software's etc are procured from time to time. Students are encouraged for seeking funding from the agencies such as DST and UGC or any other reputed private group. However, smaller projects with better prospect and utility are financed by the college as well. Following Table shows the financial provisions to support different research activities by students:

Events	2013-2014 (Rs)	2014-2015(Rs)
BAJA	340900	-----
GO-KART	-----	-----
EFFICYCLE	108000	-----
PAPER RECYCLE PLANT	-----	40000
WHEEL CHAIR	-----	18000

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

Faculty members are guiding students in interdisciplinary areas for example:

- Faculty of Applied science department is working with faculty of Electronics Engineering Department for research work.
- Faculty of Mechanical Engineering and Electrical Engineering are working jointly for research

- Faculty of Chemical Engineering and Computer Science & Engineering are working jointly.
- Faculty of Electronics and Electrical Engineering department are jointly doing the research work.

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

- Institute ensures the library facilities and a conducive environment to encourage/ motivate the staff and students to take a step forward to pursue research in their relevant field/interests. Basic research facilities are available in all departments.
- Each department has relevant infrastructure and instruments for basic research work. A separate Computer lab has been made available to students for their research work and to access related Journals and papers. High speed internet facility has also been provided.
- Institute also ensures availability of Delnet, IEEE standard facility and students and staff are facilitated to use the equipments, books, Journals, Software and lab facilities of the department beyond the Institution timings.
- Software available in various departments are made accessible for students and faculty to carry out their research.
- Books purchased through research grant are made available for all the students and faculty members.

**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 following departments have received financial assistance for development of infrastructure from Department of Science and Technology, Govt. of India under "FIST" Programme:

- Department of Electronics
- Department of Electrical Engineering
- Department of Civil Engineering

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

Faculty members are motivated to submit the research proposals to different funding agencies, industry and other organizations on a regular basis. Details of ongoing and completed projects and grants received during the last four years are provided in Table below:

Nature of the project	Duration Year	Title of the project	Name of the funding agency	Total Grant (Rs.)		Total grant received till date (Rs.)	Name of Principal Investigator
	From..... To			Sanctioned	Received		
Minor projects	2011 to 2013	Development of Flexible Framework For Mining Association Rules	AICTE (Under RPS Scheme)	5,00,000/-	5,00,000/-	5,00,000/-	Dr. R. K. Gupta
	2011 to 2012	Isolation and Characterization of Antibody Producing Acetinomycetes from Gwalior Chambal Region	DRDE, Gwalior	2,94,000/-	1,68,000/-	99,382/-	Prof. Hotam Singh Choudhary
	2014 to 2015	Characterization of ITO Nano-practical	INUP, IIT Bombay	Reimbursement of TA/DA & arrangement for conducting experiments at IIT Bombay, Mumbai			Dr. C. S. Malvi
	2009 to 2012	Congestion Control in Adhoc Networks	Institution of Engineers (India)	50,000/-	50,000/-	50,000/-	Prof. Laxmi Shrivastava & Dr. Sarita Singh Bhadoria
	2 years	Fuzzy logic based congestion control for mobile adhoc networks	MPCST, Bhopal	3,05,000/-	3,05,000/-	3,05,000/-	Prof. Laxmi Shrivastava & Dr. Sarita Singh Bhadoria
Major projects	2011 to 2014	An Efficient Multimodal Identification System with Reduced Recognition Time	DST, Govt. of India	29,95,200/-	15,38,880/-	15,38,880/-	Prof. Poonam Sharma & Dr R.K. Gupta
	2012 to 2015	Soft Computing Techniques for Optimal Allocation of Facts Devices to improve Power System Performance	UGC, New Delhi	11,52,600/-	9,54,600/-	9,54,600/-	Dr. Laxmi Srivastava
	2008 to 2012	Seismic Protection of Heritage Building	AICTE, Delhi	13,50,000/-	13,50,000/-	13,50,000/-	Dr. S. K. Jain
	2011 to 2013	Construction Time Cost Trade Off Analysis Using Optimization Techniques	AICTE Delhi	12,75,000/-	12,75,000/-	12,75,000/-	Dr. R. Kansal
	2013 to 2016	Heat and Mass Transfer Analysis of Hybrid Solar Dryer with Uniform Heating	AICTE	13,52,941/-	12,00,000/-	12,00,000/-	Dr. M. K. Gaur
	2013 to 2015	Development of Multi-purpose Solar Lamp	DST	12,00,000/-	9,00,000/-	9,00,000/-	Dr. C. S. Malvi
	2011 to 2014	Performance Analysis of Solar operated Vapour absorption	AICTE	10,30,000/-	10,30,000/-	10,30,000/-	Dr. Rajesh Agarwal and Dr M.K. Gaur

	2012 to 2014	Spectrum sensing for cognitive application	AICTE	6,60,000/-	6,60,000/-	6,60,000/-	Dr. Rekha Gupta
<b>Interdisciplinary projects</b>	2012 to 2014	Soft sensor development for chemical process	AICTE New Delhi (RPS project head)	15,00,000/-	15,00,000/-	15,00,000/-	Dr. Sanjeev Jain & Prof. Vandana Sakhre
<b>Industry sponsored</b>	-----	-----	-----	-----	-----	-----	-----
<b>Students' research projects</b>	2015 to 2015	Sustainable paper recycling plant for an institute	Institution of Engineers (India) R&D Grant-in-aid scheme	40,000/-	40,000/-	40,000/-	Dr. C. S. Malvi (for M. Tech student Mr. Sunil Dohare)
<b>Any other (specify)</b>	2011 to 2012	Upgradation of Lab.	AICTE, Delhi (MODRO B Scheme)	5,00,000/-	5,00,000/-	5,00,000/-	Dr. R. K. Gupta
	2011 to 2012	Enhancement of Testing facility in Conc. Lab	AICTE, Delhi (MODRO B Scheme)	3,50,000/-	3,50,000/-	3,50,000/-	Dr. S. K. Jain
	2015 to 2016	Up-gradation of MOM Lab	AICTE, Delhi (MODRO B Scheme)	13,00,000/-	13,00,000/-	13,00,000/-	Dr. C. S. Malvi
	2012 to 2014	Up-gradation of Antenna lab	AICTE, Delhi (MODRO B Scheme)	550,000/-	550,000/-	550,000/-	Dr. P. K. Singhal

### 3.3 Research Facilities

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

The Institution is running UG and PG courses. Resources like laboratories, digital library (Delnet), Central computer lab and software especially for research and project work of the students are made available. The R&D Committee is available for guiding research activities and monitoring the quality of research of the students.

A central Computer lab with High speed Internet facility, Wi-Fi, E-Learning facility is also available for the students and faculty to enable them to review their academics as well as their research Programmes. IIT Bombay Remote Centre workshop lab has been provided to students and faculty.

For post graduates research unconventional machines i.e. ECM, EDM, PAM and MIG welding are available. MATLAB, CATIA v5, Ansys Fluent, ASPEN PLUS, UNISIM,

PROSIM, Lab View, WEKA, PSCAD, OMNET, NETSIM etc software are available in simulation, modeling lab and other research purposes. SKF Pune has also established reliability testing centre which can be used by the students for their research work.

### **3.3.2 What are the institutional strategies for planning, upgrading and creating infrastructural facilities to meet the needs of researchers especially in the new and emerging areas of research?**

The institute is motivating the faculty for writing research proposals. The state-of-the-art facilities are being created in various departments of the institution which are available for faculty members and the research scholars. Further, Institute has been assisted by World Bank through Technical Education Quality Improvement Programme (TEQIP) Phase II and received a total grant of Rs. 10.0 crores. 2% of this amount is allocated and being used for enhancement of R & D and institutional consultancy activities. Various Workshops/Seminars and Short term courses are being organized by the institute on new and emerging areas. Faculty members are being sent to attend training Programmes. The institute has created facilities in new and emerging areas like SKF Asset Reliability Centre, IBM Laboratory, Infosys Campus Interconnect Programme and Vibration Measurement System etc.

### **3.3.3 Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facilities? If 'yes', what are the instruments / facilities created during the last four years.**

Yes, the following departments have received financial assistance for development of infrastructure from Department of Science and Technology, Govt. of India under "FIST" Programme:

- Department of Electronics
- Department of Electrical Engineering
- Department of Civil Engineering

Along with the above, all the departments are receiving financial assistance from All India Council for Technical Education, New Delhi, University Grant Commission, New Delhi, M.P. Council for Science and Technology, Bhopal, World Bank. The following major equipment/facilities have been developed:

- Simulation of transmission and distribution system along with the protection schemes
- Microwave Measurement facilities
- Antenna Testing facilities
- Image processing facilities

- Computer networking laboratories
- Reactive distillation setup
- Ansys fluent software for CFD
- ASPEN PLUS design software
- Reliability testing center
- Instruments for fluid mechanics lab
- Recording of bio electrical signals
- Software for analysis of power system
- Virtual lab
- Microprocessor laboratory
- High performance liquid chromatography and gas liquid chromatography machines
- Universal testing machine
- Polymerase chain reaction machine
- DNA sequencer
- Network simulation lab
- AI and soft computing lab
- PHE lab

**3.3.4 What are the research facilities made available to the students and research scholars outside the campus / other research laboratories?**

Departments have entered into MoU with relevant industries for the purpose of providing training facilities to students for upgrading knowledge and to carry out research oriented project work. Students avail these facilities through Heads of the Departments. Some students look into industry or training centres for availing advanced facilities required in their research work.

**3.3.5 Provide details on the library/ information resource center or any other facilities available specifically for the researchers?**

Following facilities are available for research:

- Departmental library for every branch.
- Wi Fi Network in the campus
- LAN Internet
- Subscription of INDEST Journals, Science Direct journals, DELNET, IEEE, ASME, Springer, ACM, CSI etc.
- Technical journals, proceedings of national seminars etc.
- Digital Library

- Availability of reference books.
- Inter-library loan facility (ILLF) through DELNET

**3.3.6 What are the collaborative research facilities developed/ created by the research institutes in the college. For ex. Laboratories, library, instruments, computers, new technology etc.**

- Remote Center Programme has been connected directly from IIT, faculty and students interact with IIT faculty.
- Industry - Institute Interaction Initiatives
- Industry relevant courses and content
- Final year student project support and placement
- MoU with IIT Gandhinagar for carrying out research work
- MoU with IBM

### **3.4 Research Publications and Awards**

**3.4.1 Highlight the major research achievements of the staff and students in terms of**

- \* **Patents obtained and filed (process and product)**
  - Patent filed on the topic **“Sustainable Paper Recycling Plant”** dated on 01/10/2014. **Positive Novelty search report has been received.** The name of the applicants who filed the patent are **Dr C.S Malvi and Mr Vinay Bhaskar.**
  - Patent filed on the topic **“Dust Removing Mechanism for cleaning Solar Panel Arrays”** dated on 07/05/2014. The name of the applicants who filed the patent are **Dr C.S Malvi, Ms Richa Aggarwal and Mr. Sunil Dohare**

- \* **Original research contributing to product improvement**

Research like **“Sustainable Paper Recycling Plant”, “Dust Removing Mechanism for cleaning Solar Panel Arrays”, “Solar Panel Cleaner for Street light”** has not only improved the product but also benefited the community

- \* **Research studies or surveys benefiting the community or improving the services**

Citation of research papers published out of the research done in the department indicates that the research community is being benefited.

- \* **Research inputs contributing to new initiatives and social development**

Faculty members are working in diversified areas like:

- Biological effect of Electromagnetic radiations
- Paper recycling
- Wheel chair for physically different persons
- Solar energy harvesting
- Environmental protection
- Robotics
- Green housing
- Low cost housing
- Waste water management
- Water harvesting
- Drug testing & development
- Soil testing

**3.4.2 Does the institute publish or partner in publication of research journal(s)? If yes indicate the composition the of the editorial board, publication policies and whether such publication is listed in any international database?**

No

**3.4.3 Give details of publication by the faculty and student**

- **Publication per faculty**
- **Number of papers published by faculty and students in peer reviewed journals(National/International)**
- **Number of publications listed in international database (e.g Web of science, Scopus, Humanities International complete, Dare Database- International Social Sciences Directory, EBSCO host, etc.)**
- **Monographs**
- **Chapters in Books**
- **Books edited**
- **Books with ISBN/ISSN number with details of publishers**
- **Citation Index**
- **SNIP**
- **SJR**
- **Impact factor**
- **H-index**

### MECHANICAL ENGINEERING

S. No	Name of Faculty	No of Publication
1	Dr C.S Malvi	40
2	Dr Manoj Gaur	45
3	Dr Manish Sagar	20
4	Dr Awadhesh Sharma	30
5	Dr Pratesh Jaiswal	19
6	Prof R.P Kori	15
7	Prof Jyoti Vimal	28
8	Prof Vedansh Chaturvedi	35
9	Prof Vaibhav Shivhare	03
10	Prof Sharad Aggarwal	10
11	Prof Dinesh Kasdekar	32
12	Prof Amit Ahirwar	22

### ELECTRICAL ENGINEERING

S.No.	Faculty Name	Publications (Journals/ Conferences)
1.	Dr. Manjaree Pandit	(54,96)
2.	Dr. Laxmi Srivastava	(83,143)
3.	Dr. Arun Kumar Wadhwani	(66,95)
4.	Ashish Patra	(8,16)
5.	Dr. Sulochana Wadhwani	(48,78)
6.	Hari Mohan Dubey	(12,16)
7.	Dr .Shishir Dixit	(15,24)
8.	Rakesh Narvey	(10,07)
9.	Himmat Singh Ahirwar	(09,15)
10.	Vijay Bhuria	(20,18)
11.	Kuldeep Kumar Swarnkar	(28,15)
12.	Praveen Bansal	(10,06)
13.	Vishal Chaudhary	(03,03)
14.	Vijay Kumar Tewari	(00,02)

### APPLIED SCIENCE

S.No.	Faculty Name	Publications in the Journals
1.	Dr. Abhay Mishra	15
2.	Dr. V.P. Shinde	25
3.	Dr. D.K. Jain	30
4.	Dr. Anjula Gaur	05
5.	Dr. Shourabh Bhattacharya	08
6.	Prof Jitendra Kumar	06
7.	Dr. Pooja Sharma	03
8.	Dr Peeti Gupta	02
9.	Dr Mamta Sharma	01
10.	Prof D K Mishra	01

### COMPUTER SCIENCE & ENGINEERING AND INFORMATION TECHNOLOGY

S. No.	Name of Faculty	No. of Publications
1.	Dr. R. K. Gupta	39
2.	Dr. Akhilesh Tiwari	34
3.	Prof. Manish Dixit	13
4.	Prof. Khushboo Agarwal	02
5.	Prof. Puneet Kumar Johari	09
6.	Dr. Sanjiv Sharma	19
7.	Prof. Vikas Sejwar	10
8.	Prof. Abhilash Sonkar	02
9.	Prof. Jaimala Jha	02
10.	Prof. Jamvant Singh Kumare	03
11.	Prof. Rajeev Kumar Singh	09
12.	Prof. Neha Bhardwaj	03
13.	Prof. Mahesh Parmar	03
14.	Prof. Rajni Ranjan Singh	05
15.	Prof. Amit Kumar Manjhwari	01

### CHEMICAL ENGINEERING

S.No.	Name of Faculty	No. of Publications
1.	Dr. Shriram Prasad	33
2.	Prof. V. Sakhre	15
3.	Prof. S.S. Trivedia	5

4.	Prof. Anish P. Jacob	5
5.	Prof. Swati Gupta	2

### ELECTRONICS ENGINEERING

S. No.	Faculty Name	No. of publications
1.	Dr. P.K. Singhal	80
2.	Dr. Sarita Singh Bhadauria	62
3.	Dr. Bimal Garg	32
4.	Dr. Rekha Gupta	14
5.	Dr. Vandana Vikas Thakare	37
6.	Dr. Laxmi Shrivastava	43
7.	Dr. R.P. Narwaria	18
8.	Dr. Karuna Markam	30
9.	Prof. Madhav singh	11
10.	Prof. Pooja Sahoo	08
11.	Prof. Deep Kishore Parsediya	04

### MECHANICAL ENGINEERING

S. No.	Name of Faculty	Citation index	h-index
1	Dr C.S Malvi	42	03
2	Dr Pratesh Jaiswal	137	04
3	Dr Manoj Gaur	117	05
4	Dr Manish Sagar	-	-
5	Dr Avadesh Sharma	45	03
6	Prof R.P Kori	-	-
7	Prof Vedansh Chaturvedi	75	04
8	Prof Jyoti Vimal	37	03
9	Prof Vaibhav Shivhare	-	-
10	Prof Sharad Aggarwal	-	-
11	Prof Dinesh Kasdekar	-	-
12	Prof Amit Ahirwar	16	02

### Computer Science & Engineering and IT

S. No.	Name of Faculty	Citation	h-index
1.	Dr. R. K. Gupta	65	5
2.	Dr. Akhilesh Tiwari	63	4
3.	Prof. Manish Dixit	39	3

4.	Prof. Khushboo Agarwal	-	-
5.	Prof. Puneet Kumar Johari	09	2
6.	Dr. Sanjiv Sharm	-	-
7.	Prof. Vikas Sejwar	-	-
8.	Prof. Abhilash Sonkar	-	-
9.	Prof. Jaimala Jha	-	-
10.	Prof. Jamvant Singh Kumare	-	-
11.	Prof. Rajeev Kumar Singh	02	-
12.	Prof. Neha Bhardwaj	-	-
13.	Prof. Mahesh Parmar	-	-
14.	Prof. Rajni Ranjan Singh	09	2
15.	Prof. Amit Kumar Manjhwari	-	-

### Electrical Engineering

S. no	Name of Faculty	Citation index	h-index
1	Dr. Laxmi Srivastava	1288	17
2	Dr. Manjaree Pandit	973	13
3	Dr. Arun Kumar Wadhvani	245	07
4	Ashish Patra	-	-
5	Dr. Sulochana Wadhvani	139	07
6	Hari Mohan Dubey	84	06
7	Dr .Shishir Dixit	-	-
8	Rakesh Narvey	-	-
9	Himmat Singh Ahirwar	-	-
10	Vijay Bhuria	-	-
11	Kuldeep Kumar Swarnkar	51	04
12	Praveen Bansal	-	-
13	Vishal Chaudhary	-	-
14	Vijay Kumar Tewari	-	-

### Book Chapter

S No	Name of faculty	Book Name	Publisher Name with ISBN/ISSN no
1	Dr Manish Sagar	Book chapter is published in "Advances in Management and Technology: Mapping Strengths with Opportunities"	McGraw Hill Education (India) Private Limited, ISBN-13:978-93-392-2075-4, New Delhi,
2	Dr. Manoj Gaur	Solar energy: Problem , solution and experiment	Anamaya Publication, New Delhi. ISBN: 13978-81-88342-64-8

#### 3.4.4 Provide details (if any) of

- \* **Research awards received by the faculty**
- \* **Recognition received by the faculty from reputed professional bodies and agencies, nationally and internationally**
- \* **Incentives given to faculty for receiving state, national and international recognitions for research contributions.**
  - Dr. S.K. Jain received Japanese Government Scholarship for Post Doctoral Research.
  - Dr. S.K. Jain Biography included in Marquis Who's Who in the world.
  - Dr. S.K. Jain received Maharashtra State National Award for outstanding research work in engineering and Technology awarded by ISTE, New Delhi.
  - Dr. S.K. Jain received Dr. Jai Krishna Medal by Institution of Engineers (India) for published research paper in the area of Earthquake engineering.
  - Dr. S.K. Jain received Khosla Commendation certificate of I.I.T. Roorkee for published research paper in the field of Earthquake Engineering.
  - Dr. S.K. Jain received Khosla Second Prize of U.O.R., Roorkee for published research paper.
  - Dr. Manjaree Pandit received UGC post doctoral research award for 2 years (salary for 2 years and contingency for Rs. 3.0 lacs)

- Dr. Laxmi Srivastava rewarded for review work, provided free membership (MIEE) by Institution of Electrical Engineers (UK) for one year.
- Dr. Manjaree Pandit received ISTE-Raja Rambapu Patil National Award for promising Engineering teacher.
- Dr. Manjaree Pandit and Dr. Laxmi Srivastava received certificate of merit from Institution of Engineers, for their joint paper .
- Dr. Manjaree Pandit received ISTE-Maharashtra Government National Research Award for work done by teachers of Engineering colleges
- Dr. Laxmi Srivastava received Khosla Research Gold Medal and cash award for Best Research Paper , from I.I.T., Roorkee.
- Dr. Sulochana Wadhvani , Dr. S.P. Gupta and Dr. Vinod Kumar received certificate of merit from Institution of Engineers, for their joint paper .
- Dr. Laxmi Srivastava , received Best paper award on Energy and Power Engineering (ICEPE2011) held at VITS, Mumbai.
- Dr. P.K. Singhal, Department of Electronics received AICTE Career award.
- Dr. Sarvesh Jain, Dept. of Civil Engineering received AICTE Career award.
- Prof. Anil Kumar Saxena received award from AICTE for Best Technical Book in Hindi, “Lok Swasth Yantriki” (in Hindi).
- Dr. C. S. Malvi, Madhya Pradesh young scientist award.
- Dr. Anshu Chaturvedi, Madhya Pradesh young scientist award.
- Prof. Vedansh Chaturvedi, Madhya Pradesh young scientist award.
- **Dr. Alok Sharma**, written and prepared Drama on Solid Waste management issues named “**Kachra Rakshas**” for Public Sensitization and awareness. The drama has been performed and appreciated in Gwalior, Indore, New Delhi & in its Chandigarh show (in front of Governor & C.M. an Ministers & officers of Haryana State)
- **Dr. Alok Sharma** elected as Hon. Joint Secretary of Indian Institute of Architects of MP Chapter .(Second term) President, Parivartan Samooh, Gwalior (An Active Theatre and Art Group)
- Prof. Hotam Singh Chaudhary, elected as Secretary cum Treasurer of Association of Microbiology of India, Gwalior Unit.

- Prof. P.K.Singhal is Hon Secretary of Institution of Electronics and Telecommunication Engineers, New Delhi

### 3.5 Consultancy

#### 3.5.1 Give details of the systems and strategies for establishing institute-industry interface?

Faculty members are encouraged for testing and consultancy activities in different areas. Incentives are also given in term of finances. Institute has adequate infrastructure for testing and consultancy.

#### 3.5.2 What is the stated policy of the institution to promote consultancy? How is the available expertise advocated and publicized?

Faculty of the Institute is actively involved in providing the consultancy to the government and private organizations. Faculty members are motivated to take such works and, if required, allowed special leaves to visit the sites. Laboratories are kept up-to-date and computational facility (including softwares) are procured/ upgraded on routine basis to enable faculty members take such jobs. Further, apart of the amount received as consultancy fee is disbursed to the team involved in the consultancy work. Letters are sent to various organizations to apprise them regarding Institutes' competency in taking consultancy jobs.

#### 3.5.3 How does the institution encourage the staff to utilize their expertise and available facilities for consultancy services?

Institute makes all efforts to encourage the faculty /staff for utilization of all human resources, intellectual support and available facility in the campus. The college motivates the faculty to utilize their expertise for consultancy services. This results in promoting liaison with industry/companies. Faculty also visit the industry for delivering lecture. In return, the students get an opportunity to visit these companies and seek better placement.

#### 3.5.4 List the broad areas and major consultancy services provided by the Institution and revenue generated during the last four years:

S. no.	Project	Date	Amount in Rs.
1.	Design & Drawings of Regional office of M. P. Rajya Viparan Board, Morena	Jan. 2011	152889/-
2.	Preparation of Housing lay out for the rehabilitation of villages Dhobni, Nahar kheda and Suhela, District Sheopur, for Kaketo Dam	Jan. 2012	105058/-

3.	The consultancy charges for providing the Housing lay out for the rehabilitation of village Boorda District Shivpuri for Kaketo Dam	March, 2012	98931/-
4.	Providing consultancy for Interior Furnishing of IIDC Administration building, Gwalior	March, 2013	54540/-
5.	Checking of Design & Drawings of Hotel building of M/s Saloni Hotel & Resorts, Agra	June, 2013	49450/-
6.	Checking of Design & Drawings of IIDC, RCC overhead Tank & Sump well at Garment Park Gadaipura, Gwalior	June, 2013	19231/-
7.	Checking of Design & Drawings of IIDC, RCC overhead Tank & Sump well at Sitapur Pahadi, Morena (Phase-1)	Aug., 2013	24725/-
8.	Project Incharge IIDC for Industrial Area Development of Morena	2014-2015	2,00,000/-
9.	IIDC office Interior works	2014-2015	2,00,000/-
10.	Mukhya Mantri Infrastructure Development scheme Phase II ( Became a part of smart city Proposal now) Total Amount ( 52 lakhs)	2014-2015	7,50,000/- (received)
11	Antenna testing	2014-15	Rs.30,000/-

- Apart from this, Consultancy has also been provided in various central and state government departments like CPWD, MES, Indian Railways, Water Resources, PHE, Housing Board, SADA, GDA etc. Also, testing and consultancy is provided to large number of private contractors, builders, consultants, manufacturers, suppliers. The overall revenue generated from the consultancy services provided by the civil department during last four years amounts to approximately Rs. 60 Lacs/- Some of the clients of Electrical Engineering Department are as follows

- M/s J.B Mangha Ram Food Pvt. Ltd., Gwalior
- M/s Atlas Cycles Haryana Ltd., Malanpur.
- M/s Ranbaxy Laboratories Ltd., Malanpur.
- M/s Shiva Industries ,Bhind Road
- M/s Airport Authourty of indiaLtd., Gwalior
- M/s Punj Lloyd , Malanpur
- M/s Crompton Greaves Ltd. Malanpur
- M/s Kodak India Pvt. Ltd. Malanpur
- M/s Hindustan Petroleum Rairu ,Gwalior
- M/s Rituraj Steel Industries, Shivpuri

- M/s Shitla Engineering works Gwalior.
- M/s Godrej Consumer Product Ltd. Malanpur.

**3.5.5 What is the policy of the institution in sharing the income generated through consultancy (staff involved: Institution) and its use for institutional development?**

S.No.	Head	Share (In%)
1.	Institute Development	12
2.	Director	08+ 3.6
3.	Institute Share	20
4.	Head	1.2
5.	Accounts	2.8
6.	Typist	0.4
7.	Distribution among Team	52

Service tax as per prevailing rates is being charged from the client

**3.6 Extension Activities and Institutional Social Responsibility (ISR)**

**3.6.1 How does the institution promote institution-neighborhood network and student engagement, contributing to good citizenship, service orientation and holistic development of students?**

Faculty in-charge of NSS conducts Programmes for the benefit of rural population in the villages surrounding the Institute. These include distribution of learning material, blood donation & medical camps, adult literacy to rural schools & donation of computers. Some of the following activities are organized on a periodic basis:

- Tree plantation.
- Poor students of nearby area are taught by students of MITS in evening.
- Institute organizes various events like Singing and Dancing Competition for school students.
- Motivational programmes such as experts lectures are organized for school children.
- Organizing sports programme for school students.

- NSS activity is organized.
- Campis organized by Institute students.
- Free distribution of books, stationary and uniform to children of slum areas.
- Blood Donation camp is organized.

**3.6.2 What is the institutional mechanism to track students' involvement in various social movements/activities which promote citizenship roles?**

- NSS Programme officer and his team keeps track of student involvements.
- Each class has mentors for every 20 students who closely interact with the students for academic and personal problems. They provide continuous counseling and they are aware of the students' involvement.
- The Placement officer maintains continuous email correspondence with students on rolls and alumni.
- Induction programme and social gatherings provide a forum for interaction among the students.
- Alumni meet held twice a year gives scope for interaction among alumni and alumni with faculty and management.
- Organizing traffic awareness programme.

**3.6.3 How does the institution solicit stakeholders' perception on the overall performance and quality of the institution?**

**Alumni:**

Alumni meet is arranged twice a year. Interaction with the alumni is mostly on curriculum, new technologies and academic advice they can offer for growth of departments. Some of alumni when they visit the college, are requested to address the students.

**Parents:**

Parents are essential as they are concerned about their wards' performance. Parents meet is arranged at the admission time called orientation programmes. They discuss about the facilities in college, job/placement activities. Some of them, in professional line offer valuable advice. Another occasion is Graduation day, which is almost like exit meeting. By that time, parents are fully aware of college and offer their own experience of their wards' study in College. Further, the college has a practice of communicating the attendance, internal marks, irregularity of attendance etc to the parents.

**Students:**

Students are active in giving suggestions, particularly when they come to 3<sup>rd</sup> and 4<sup>th</sup> year. Feed back is collected twice in each semester. Their close interaction with the Placement Cell, Directors, Library staff give lot of inputs.

**Industry :**

Industry personnel are in all Statutory Boards. Guest Lectures are organized by every department Industry visits by students Experts as examiners for projects

**3.6.4 How does the institution plan and organize its extension and outreach Programmes? Providing the budgetary details for last four years, list the major extension and outreach Programmes and their impact on the overall development of students?**

The Institute is organizing a number of outreach activities which relate to academic, social, cultural and community service.

- Institute motivates faculty and students for participation in these programmes.
- Allot dedicated Programme Officers and faculty to organize awareness camps.
- Institute invites Red Ribbon Club for Blood Donation Camps.
- Institute invites Doctors for Dental and Health Checkup programme.
- Institute plans tree plantation programme every year for villages

S.No.	Year	Amount for ISR activities (Rs)
1	2012-2013	53719/-
2	2013-2014	88295/-
3	2014-2015	33000/-

**3.6.5 How does the institution promote the participation of students and faculty in extension activities including participation in NSS, NCC, YRC and other National/International agencies?**

NSS programme officer enrolls students from I year and trains them through various activities up to the IV year and till now. About 833 students have participated in NSS programme. Some students donate food items and bed sheets to the poor on a regular basis.

This Programme is aimed at educating the illiterate villagers through reading and writing of hindi language. Required study material is also supplied to the persons registered in this Programme. This Programme is running successfully under the NSS Unit of College. Certificate is also issued to the students.

**3.6.5 Give details on social surveys, research or extension work (if any) undertaken by the college to ensure social justice and empower students from underprivileged and vulnerable sections of society?**

- The institute sincerely practices state social affirmative schemes introduced by the government for the access to higher education to the under privileged communities. The college Social Service unit has been organizing blood donation camps in the college every year. Also distributes uniform, stationery and fruits to under-privileged students.
- Nukkad Natak is performed by NSS team of MITS for youth awareness.
- The institute NSS team has organized anti tobacco campaign.
- From 25 January to 31 January 2013, 7 days residential camp was organized by NSS unit at Mohanpur village near Gwalior, which includes following activities:
  - Eye camp by Madam Bhasin from Ratna Jyoti Netralaya, Gwalior
  - Medical Camp by Dr. S. Yadav of GMRC, Gwalior
  - Organized rallies for environmental protection.

**3.6.7 Reflecting on objectives and expected outcomes of the extension activities organized by the institution, comment on how they complement students' academic learning experience and specify the values and skills inculcated.**

The college is established to provide knowledge and quality education to all sections of society. It aims to:

- Maintain modern outlook with contemporary developments without compromising on moral values.
- To provide knowledge and quality based education to the students by inculcating moral values, scientific temper and employing state of the art technologies.
- To pursue excellence towards creating manpower with high degree of intellectual, professional and cultural development to meet the national and global challenges.
- Spreading awareness in the institution and motivating other students as well to stand for the cause of social upliftment.
- Organize activity plan for the villages like strategy planning for standard of living in society.
- Develop an art of teaching and learning for continuous guiding and teaching of village students.
- Develop the art of donation and become leaders to guide juniors/students.

**3.6.8 How does the institution ensure the involvement of the community in its reach out activities and contribute to the community development? Detail on the initiatives of the institution that encourage community participation in its activities?**

Institute participates in every field like studies, games and sports, cultural or social activities either in house or outside.

- Institute adopted a village to support and help the local community and villagers.
- They initially consulted Surpanch, arranged Gram Panchayat meeting, management and students participated and planned for development of the youth and villagers with the help of villagers.
- Institute implemented a plan to involve villagers in all the NSS activities.
- College students organized camps at village for tree plantation, blood donation etc.
- In camp, several points were taken as initiatives to make the society aware of social and health problems, dowry system, environment protection, consumer protection awareness, anti corruption, HIV awareness, anti tobacco and cleanliness awareness etc.
- In NSS Special camp following day to day events are held
- Inauguration and Data Collection for literacy drive
- Saaf Safaai Yojna
- Data Collection and Dental Camp
- Plantation programme
- Free general medical and Eye Check up camp
- Rally/Programmes for awareness and conducting games
- Samiksha Programme

**3.6.9 Give details on the constructive relationships forged (if any) with other institution of the locality for working on various outreach and extension activities.**

NIL

**3.6.10 Give details of awards received by the institution for extension activities and/contributions to the social/community development during the last four years.**

NIL

### 3.7 Collaboration

**3.7.1 How does the institution collaborate and interact with research laboratories, institutes and industry for research activities. Cite examples and benefits accrued of the initiatives-collaborative research, staff exchange, sharing facilities and equipment, research scholarships etc.**

- The institute collaborates and interacts with the research labs etc. by visiting these facilities and inviting them to visit the institute.
- Establishing contacts with research labs and industry by inviting resource persons.
- Industry visits of faculty and students.
- Inviting eminent resource persons from industry and reputed Institutes for seminars, special lectures.
- Organizing Workshops/seminar for students and faculty.

**3.7.2 Provide details on the MoUs/collaborative arrangements (if any) with institutions of National importance/other Universities/industries/Corporate etc. and how they have contributed to the development of the institutions?**

- The Institution has made MoUs with many Universities and Industries in India for developing the research, promotional activities for the students and the faculty community. The below is the list of organized collaborations and establishment at Institute purpose:

S.No.	Industry	Purpose
1	MMC Ontario Ltd. Canada	Research & Development
2	Ajay rubber industry, Gwalior	Student visit
3	Gyatri auto industry, Gwalior	Project of student, and subject practical
4	Shubham Enterprize, Gwalior	Quality control system
5	Lupin Chemicals, Bhopal	Student activities
6	IBM, NOIDA	Training and certification courses for students
7.	SKF, Pune	Training and certification courses

**3.7.3 Give details (if any) on the industry-institution-community interactions that have contributed to the establishment/creation/upgradation of academic facilities, students and staff support, infrastructure facilities of the institution viz. laboratories/library/new technology/placement services etc.**

The following industries are supporting the institute in developing the infrastructure facilities:

- MMC Ontario Ltd. Canada
- Ajay rubber industry, Gwalior
- Gyatri auto industry, Gwalior
- Shubham Enterprise, Gwalior
- Lupin Chemicals, Bhopal
- IBM, NOIDA
- SKF, Pune

**3.7.4 Highlighting the names of eminent scientists/participants who contributed to the events, provide details of national and international conferences organized by the college during the last four years.**

S. No	Name	Expert's organization	Topic of lecture
1	Dr. S.N. Singh	IIT Kanpur	Future of power system, challenges, Keynote address, National workshop, held at MITS
2	Dr. Kailash Shrivastava	ABB Corporate Research, Sweden	Future of power system
3	Er. Minaxi Garg	(PGCIL) Power Grid Corporation of India Limited	Renewable Energy Certificate Mechanism'
4	Er S. K. Pachnanda	MPMKVVCL	Technical and Managerial Issues in Restructured Power Market
5	Mr R K Mahapatra	BHEL	Modern transformer manufacturing / maintenance
6	Er G K Pharlia	NHPC	Reactive VAR management / control
7	Dr S C Choubey	UIT RGPV	Syncrophaser
8	Mr Gopal Aggarwal	J P Enterprise	Smart relay/metering
9	Er G K Pharlia	NHPC	Smart Grid management/control
11	Dr Pankaj Swrankar	MANIT	Design of PID controller
12	Er Tarun SAKWAR	NHPC	Hydro electric power projects(design , commissioning etc)

13	Er Sharath Nair	Crompton Greaves Ltd	Design of drive motors and transformers
14	Er G K Pharia	NHPC	Design of energy efficient smart grid
16	Ms Prena Agarwal	Upasala University	Education ,job prospective at Upasala University
17	Capt Aditya Jain	Indian Army(AAD Unit)	Job and opportunity Prospective at Indian army
18	Er. Peeyoosh Gupta	CAMTEC(GWALIOR Rail)	Preparation for IES, GATE
19	Dr Amit Kr Jain	IIT Delhi	Application of MATLAB in electrical engineering
20	Prof. D C Tiwari	Dept. Of Electronics SOS	Application of nanomaterials
21	Dr. Sanjay Tiwari	Dept. Of Electronics	Engineering of nanomaterials and their properties.
22	Dr. Prabhat Dwivedi	Sc. Officer IIT Kanpur	Characterization and 102odeling of nanomaterials
23	Dr. Gulshan Rehan	BRNS	Nuclear energy
24	Dr. P. Rajaram	Department of Physics SOS	Synthesis of nanomaterials
25	Dr. S.N. Achary	BARC	Characterization of materials using X-ray neutron diffraction technique.
26	Dr. Ravi Bhoosan	Department of chemistry	Optical isomerisation and resimization in drugs.
27	Dr. Radha Tomar	SOS Chemistry	Hazards and radioactive materials
28	Dr. S. Dharmaraja	Maths Department, IIT Delhi	Performance analysis of TCP variants using stochastic Petri Nets
29	Dr. G.C. Sharma	BRAU, Agra	Mathematical 102odeling of malaria-TB-HIV/AIDA co-infection
30	Dr. Avanish Kumar	BU, Jhansi	Distribution of tasks over distributed real time systems
31	Prof. Renu Jain	SOMAAS	Generalized Fractional Fourier Transforms and their Applications
32	Er. Prasahant Trivedi	GM Telecomm. BSNL Gwalior	GSM, 3G
33	Dr. Pachouri	IIT Indore	Applications of DSP tools in biomedical engineering
34	Dr. K.V.Arya	Professor, IIITM Gwalior	Image processing
35	Dr. SD Josh	IIT Delhi	Recent Applications in DSP
36	V.K. Saxena	VC, Amity Gwalior	Networking
37	Dr Neeraj Shrivastava	Assoc. Professor, LNMIIT Jaipur	OFDM
38	Dr. Deepak Bhatnagar	University of Rajasthan jaipur	Design of Microstrip Antenna
39	Dr. Deepak Bhatnagar	University of Rajasthan jaipur	Microwave Radiations
40	Dr. S.K. Jain	SGSITS Indore	Microstrips Antenna,Soft

			computing
41	Dr. R Tomar	LNMIIT Jaipur	Microwave Engineering
42	Dr. M.M. Sharma	Principal GEC Ajmer	Microwave filters and Antennas
43	Dr. Mithlesh kumar	GEC jhalawar	RADAR
44	Dr. Prasanna Chandra	Director Center of Financial Management Bangalore	Issues related to project Financing
45	Prof. S.K. Thakkar	Former Professor, IIT Roorkee	Earthquake Resistant Design of Structures As Per IS:1893 (Part 1) 2002
46	Dr. A.K. Mullick	Consultant, Cement & Concrete Technology, Former Director, NCBM	Advances in concrete technology
47	Er. Girraj Goyal	Superintendent Engineer (AF), Maharajpura, Gwalior	Pre Engineered Building Structure: An Overview
48	Dr. R. K. Shrivastava	Professor Civil Engg., SGSITS, Indore	National Water Policy
49	Er. U. K. Guru Vittal	Scientist 'F', CRRI, New Delhi	Geo Engg. Application in Highway Engg.
50	Dr. Rakesh Singhai	RGPV, Bhopal	Cognigent Radio

**3.7.5 How many of the linkages/collaborations have actually resulted in formal MoUs and agreements? List out the activities and beneficiaries and cite examples (if any) of the established linkages that enhanced and/or facilitated -**

- a) Curriculum development/enrichment
- b) Internship/ On-the-job training
- c) Summer placement
- d) Faculty exchange and professional development
- e) Research
- f) Consultancy
- g) Extension
- h) Publication
- i) Student Placement
- j) Twinning Programmes
- k) Introduction of new courses
- l) Student exchange
- m) Any other

Our institution has **Industry Institute Interaction (III) Cell** that encourages relationship between industry and institution. The objective of the III cell is to improve the quality of technical education to meet the needs of the industry and to ensure the participation of industry in Technical Education programmes.

To reach the above said objective, III cell works towards:

- Arranging in-plant training / industrial visits

- Inviting experts from the MOU signed industries to delivers expert lectures.
- Exploring the possibilities of having industry-sponsored research and development scheme.
- Arranging workshops/seminars/conferences jointly with industries.
- Inviting experts from industries to chair the sessions and to deliver expert lectures etc., in workshops/ awareness programmes /students technical meet etc.
- Arranging training for teaching/non-teaching staff during winter and summer vacations.
- Students do project work with MoU signed companies.
- Offering technical consultancy as per specific needs of the industries
- To share the experience and expertise between institution and industry for mutual benefit.Example:

Purpose	Detail
Curriculum development/enrichment	<ul style="list-style-type: none"> <li>• Mr. Paristosh Jain, (Member in the BOS of CSE and IT department) from Information Mosaic Software Pvt. Ltd. Has contributed towards syllabus revision and curriculum development.</li> <li>• Mr. Mani Madhukar (industrial representative) from IBM India Pvt. Ltd. has also contributed for syllabus revision and curriculum development.</li> </ul>
Internship/On-the-job-training	<ul style="list-style-type: none"> <li>• Infosys</li> <li>• IBM India Pvt. Ltd.</li> </ul>
Summer Placement	<ul style="list-style-type: none"> <li>• Jamuna Auto</li> <li>• BHEL</li> <li>• BSNL</li> <li>• Cytogene</li> <li>• IOCL</li> <li>• Biopesticide and Biofertilizer limited</li> <li>• HCL</li> <li>• Wipro</li> <li>• Infosys</li> <li>• TCS</li> <li>• Teva</li> <li>• Sanchi Dughd Sungh</li> <li>• BORL</li> <li>• BEL</li> <li>• ONGC</li> <li>• Lupin</li> </ul>

	<ul style="list-style-type: none"> <li>• Indian Rail</li> </ul>
Faculty exchange and professional development-	<b>For Professional development part</b> <ul style="list-style-type: none"> <li>• Infosys</li> <li>• IBM India Pvt. Ltd.</li> </ul>
Extension	<b>Academic Extension</b> IIT Bombay for conduction of workshops and courses under Blended MOOC concept
Publication	<b>Please see Annexure III</b>
Student Placement	Institute has developed relations with the number of industrial houses for the placement of students
Twinning Programmes	Presently, Institute is running a programme/course in collaboration with IIT Bombay
Introduction of New Courses	UG in <ul style="list-style-type: none"> <li>• Automobile Engineering</li> <li>• Electronics &amp; Telecommunication Engineering</li> </ul> Number of PG programmes
Student Exchange	Students are visiting various research laboratories for project work.
Any other	Institute is interacting with more than 100 industries for research, testing, consultancy and students project activities.

### 3.7.6 Detail on the systemic efforts of the institution in planning, establishing and implementing the initiatives of the linkages/ collaborations.

A number of workshops, conferences, seminars, lecture series, online lectures, online faculty development programmes under the National Mission for Education through Information communication technology scheme of MHRD, Quality improvement programmes, Ph.D. programme under QIP scheme of MHRD have been organized for students and faculty. Institute is pioneer in organizing such type of programmes.

Numbers of programmes have been organized with help of world Bank under Technical Education Quality Improvement Programme (TEQIP)

Internship Programme and students projects are identified and memorandum of Understanding (MOU) is signed between the industry and Institute.

## **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?**

In order to create and enhance the infrastructure that facilitates effective teaching and learning, the policy is framed according to the strength of students in different streams. The policy also conforms to the strength of the staff appointed in the institution. There are various committees such as Department Committee, Advisory Committee, College Academic Council and Governing Body to review availability and requirement of infrastructural facilities and approve creation of new facilities. Master plan of the whole campus has been developed to facilitate effective teaching and learning.

#### **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.**

- The college has excellent infrastructure facilities to run the academic programme.
- Spacious, well ventilated and furnished class rooms with ICT facilities
- Computer Centres
- Digital Library
- Seminar Halls ,Conference Halls, Open Auditorium
- Well equipped laboratories
- Examination Cell
- Central Library
- Hostel for boys and girls
- Guest House
- Faculty quarters

**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 following facilities are available for sports:

- Cricket ground
- Football ground
- Volleyball ground
- Basketball court
- Badminton court

- Table tennis
- Gymnasium

The following facilities are also available in hostels

- Badminton court
- Volleyball court
- Table tennis
- Gymnasium (In girls hostel)

Institute has

- NSS and NCC units
- Music club
- Language lab
- Seminar hall
- Student activity center
- Literacy club
- Hobby club
- Eco club

**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).**

Dean (Development and planning) ensures the optimal utilization of the available infrastructure and apprise the infrastructure committee headed by a member of board of governors, about the requirement of infrastructure. The infrastructure committee prepares the master plan of the institute. The master plan is implemented after the approval from the board of governors.

Master plan of the institute is enclosed in Annexure IV.

Details of the expenditure made on various infrastructure facilities are given in the balance sheet of the institute as per Annexure V.

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

Institute has ensured infrastructural facilities to meet the requirements of students with physical disabilities in following ways:

- By providing all major facilities at easily accessible places.

- Providing due support in laboratory and workshops.
- Ramps are provided at the entrance of the buildings
- Wheel chair for physically disabled students.
- Primary health care

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

- **Hostel facilities- accommodation available**

About 800 students are staying in various hostels of the institute. New hostel buildings are under construction to accommodate more students. All the rooms of the hostels have internet facilities.

- **Recreational facilities, gymnasium, yoga centre etc.**

- Each hostel is having separate recreation hall equipped with all the necessary facilities like internet, TV, News papers Indoor sports
- Music club, gymnasium with all the modern fitness machine, play grounds, gardens, health centre, student activity centre etc.

- **Computer facility including access to internet in hostel**

All the rooms of the hostels are having internet facilities and also WiFi.

- **Facilities for medical emergencies**

Institute has a medical dispensary with full time doctor and tie up with Birla hospital(located about 1.5Km from the institute) for all the medical emergencies.

- **Library facility in hostels**

News papers and magazines are made available in the reading room of all the hostels.

- **Internet and Wi-Fi facility**

The whole campus is having internet and Wi-Fi facility

- **Recreation facility-common room with audio-visual equipments**

All the necessary facilities are available in the whole campus.

- Available residential facility for the staff and occupancy, constant supply of safe drinking water
- Institute has a number of residential quarters for faculty and staff

- Institute also has a well furnished guest house.
- Drinking water
  - Campus has four bore wells
  - Two nagar nigam water connections
  - One overhead tank with capacity of 200KL
  - One overhead tank with capacity of 35KL
  - More than 20 water coolers with “RO” filter plant.
- **Security**
  - A team of 32 security guards and the head guard are placed on duty by the reputed security agency hired by the college. These guards maintain a 24 hours security watch of the college.
  - CCTV cameras are installed at various locations in college campus.

**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?**

- Institute has a medical dispensary for staff and students. The facilities available in the dispensary are:
  - Medical Examination Bed.
  - Emergency and life saving medicine.
  - Oxygen cylinder
  - BP Instruments
  - ECG machine
  - Nebulizer
  - Ambulance on call
- The college has set up a system for periodic preventive check up of health.

**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, Counseling and Career Guidance, Placement Unit, Health Centre, Canteen, recreational spaces for staff and students, safe drinking water facility, auditorium, etc.**

- Canteen, Bank, ATM and Guest House are available in the campus
- 30 kV sub station, and DG sets for uninterrupted power supply are available in the campus.
- Training and Placement cell
- Open Auditorium
- Women grievance cell, anti ragging cell, and Mahila Sex utpeedan cell, and discipline committee are existing as per the norms.

## 4.2 Library as a Learning Resource

Central Library of Madhav Institute of Technology & Science has rich collection of books and journals in the field of Engineering and Architecture related disciplines. Central Library currently houses around 1,00,000 books under different heads i.e Library grant, Student chapter grant & Book bank grant, comprises vast of collection including textbooks and reference books for Engineering Graduates, Post Graduates and Ph.D scholars in Civil , Mechanical, Electronics, Electrical, Computer Science & Information Technology, Biotechnology, Chemical, Automobile Engineering, and Architecture Disciplines. Library collection also includes documents in Computer Science, History of Science, Fictions, Stories, General books, Encyclopedias and Dictionaries, Magazines etc.

### 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?

The library advisory committee members meet three to six times in a year, wherein, the proposal of new addition to the stack is considered, rules and regulations for the book bank and daily issuing etc are from time to time providing better services to the library users.

The Library receives fund from the college budget, State Govt. & AICTE grants. The committee guides the library to use the fund judiciously.

#### Library Advisory Committee Members

- Prof. A K Saxena, Dean, Central Library
- Dr. P K Singhal HOD, Electronics Engineering
- Dr. A K Wadhvani HOD, Electrical Engineering
- Dr. R S Jadon HOD, MCA
- Dr. R K Gupta HOD, CSE/IT
- Dr. R S Kansal HOD, Civil Engineering
- Dr. C S Malvi HOD, Mechanical Engineering
- Prof. Vandana Sakhre Coordinator, Chemical Engineering
- Dr. Abhay Mishra HOD, Applied Science
- Dr. Sunita Sharma, Coordinator, Biotechnology
- Dr. P K Sharma Librarian, Central Library
- Smt. Sandhya Banerjee Librarian, Central Library

#### 4.2.2 Provide details of the following:

**\*Total area of the library (in Sq. Mts.): 797 Sq Mt**

- Ground Floor 487.6 Sq Mt
- Reading Room First floor 222.6 Sq Mt
- IT/E-Journals Access room 86.8 Sq Mt

**\*Total seating capacity :. 120 persons**

**\*Working hours (on working days, on holidays, before examination days, during examination days, during vacation)**

Working hours are from 10:00 AM to 5:20 PM throughout the year.

**\*Layout of the library ( individual reading carrels, lounge area for browsing and relaxed reading, IT zone for accessing e- resources)**

Please see Annexure VI for library layout

#### 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.

The amount spent on procuring new books, journals and e-resources during the last four years.

Library Holdings	2015-16		2014-15		2013-14		2012-13	
	Volumes	Amount	Volumes	Amount	Volumes	Amount	Volumes	Amount
Text Books	3736	1338772	1330	440490	316	209979.00	1794	613646.50
Reference Books	-	-		200000	-	-	-	-
Magazines/ Newspapers	13+22 Newspaper	35000	13+ 22 Newspaper	35000	13+ 22 Newspaper	35000	13+22 Newspaper	35000
e-resources	630+	800000	375+	10,0000	630+	1165456	325+	5,35,908
RFID implementation	Under process	150000	13000 RFID tags	1,80,000	35000 RFID tags + All RFID Peripherals	15,00,000	-	-

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

- \* **OPAC:** Online public Access Catalogue facility is available on the individual dashboard of students, research scholars and faculty members. Anyone can search the entire collection by the author/Title/Publisher/year on the dashboard.
- \* **Electronic Resource Management package for E-Journals:** Library has a vast collection of International E-Journals. At present the library has a collection of 630+ E-journals from IEEE, Science direct, ASME & ASCE memberships.
- \* **Federated searching tools to search articles in multiple databases :** Not available
- \* **Library Website:** Dashboard of ERP portal provides all the facility like library OPAC, individual transaction status & latest arrivals information to the users
- \* **In-house remote access to e-publication:** At the present library has an in-house access facility for students and faculty members, but in future library will try to provide remote access facility to research scholars and faculty members by the help of Easy proxy by OCLC or some other software.
- \* **Library Automation:** Central Library has recently automated their library services; now in Gwalior region MITS Central Library is the first one, which implements RFID technology with international security standards like ISO-15693/ISO 18000-3, relaying on 13.59 MHz. In last 1 ½ years, more than 53,651 books were issued/reissued to various UG/PG students. It is an automatic data capture technology that uses tiny microchips and miniature antennas affixed to the documents. RFID plays a vital role in redefining the library processes to make everyone's job easier, right from the users to the library staff.

Now for issuing books from library, students have to show their smart card at the circulation counter. All the books are already tagged with latest RFID technology. After completing transaction from circulation counter, student get the issue/return status of books on their mobile through SMS or can download their transaction status from their individual Dashboard by expanding MY Books Issued Status tab.

- \* **Total number of computers for public access:** Library Computer Lab has 15 Computers.

- \* **Total number of printers for public access:** 01
- \* **Internet band width:** 100 MBPS
- \* **Institutional Repository :** Available
- \* **Content Management System for E-Learning:** Library Staff is in the process to attend workshops/ training by competent authorities for developing e-learning packages.
- \* **Participation in resource sharing networks/ consortia:** Library has membership of DELNET consortium and provide their bibliographical details to Develop library Network.

#### **MITS Library Services to Students, Faculty & Staff Memebrs**

##### **4.2.5. Provide details on the following items:**

- **Average No of Walk-ins** : 250-300 per day
- **AverageNo of Books issued/Returned** : 500 per day
- **Ratio of Library Books to students** : 1:5
- **Average no of books added 3 yrs** : 15,000 to 17,500
- **Average number of login to OPAC** : 175-200 per day
- **Average no of login to e-resources** : 3000 + hits per month
- **Average no of e-resources downloaded/printed:** 1500 + download per month
- **Information literacy training organized** : Nil
- **Details of Weeding Out of books and other materials:** Books weed out nil in last three years. Newspaper and Magazine Weed out: previous 3 yrs magazines & Newspapers

##### **4.2.6 Give details of the specialized services provided by the library**

- **Manuscripts** : Nil
- **Reference** : Yes
- **Reprography** : Yes
- **ILL** :Yes(toDept.Libraries& DELNET)
- **Information deployment and notification** : Yes
- **Download** : Yes
- **Printing** : Yes
- **Reading list/Bibliography compilation** : Yes
- **In-house/remote access to e-resources** :Yes
- **User Orientation and Awareness** : time to time

- **Assistance in searching Databases** : Individually by Librarian
- INFLIBNET/IUC facility** :INDEST & DELNET, shodganga/shodgangotri consortium accessing facility.

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

The library staff provides full support to the students and staff in searching books, e-journals, referrals & reference services.

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

Library has magnifying glasses for visually challenged persons and barrier free slope for physically challenged persons.

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

From time to time, the library committee of institution takes feedback from the students and faculty members about the services of library and on the basis of suggestions library committee try to implement the services required by the students and faculty members.

### **4.3 IT Infrastructure**

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

**\*Number of computers with Configuration (provide actual number with exact configuration of each available system)**

The institute has computers with the following configuration:

- Core i7, 2 GB RAM, 500GB HDD (100 nos)
- Core i5, 2GB RAM, 500GB HDD (100nos)
- Core i3, 1GB RAM, 500GB HDD(100nos)
- Core2 Due, 1GB RAM, 500GB HDD(70nos)
- Dual Core, 1GB RAM, 250GB HDD(75nos)
- Pentium, 1GB RAM, 250GB HDD(70nos)

- \* **Computer-student ratio:** 1: 4
- \* **Stand alone facility:** All are on Local Area Network
- \* **LAN facility:** Available
- \* **Wi-Fi facility:** Wi-Fi facility is available through-out the campus including hostel
- \* **Licensed Software:** All systems are purchased with window license. LAN is being maintained on Linux , Freeware, like STAR-OFFICE is being used for documents and presentations. All departments are having a sufficient number of license software relevant to their Programmes and research.
- \* **Number of nodes/computer with internet facility:** All desktops and laptops are on LAN
- \* **Any other:** All departments are having sufficient number of computer peripherals like printers, scanners etc to meet their need.

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

The Institute is having 24x7 100MBPS leased line through National Knowledge Network (NKN). MHRD, New Delhi. All computers are on internet through LAN. The internet is being distributed through Linux based SQUID Proxy (which is a freeware).

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

Following are the plans for upgrading IT infrastructure:

- To procure high-end server for educational and research computations.
- To procure more computers to meet out increasing intake of students.
- To upgrade the Central Computer Centre with latest desktops.
- To enhance modern teaching aids in all classrooms and instruction-rooms
- To enhance support for online lectures in classrooms.
- To develop infrastructure for preparing video lectures.
- To upgrade laboratories for high-end research in all engineering fields.

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

The year wise budget for central computational facilities:

Year	2012-13	2013-14	2014-15	2015-16
Amount	15 lacs	15 lacs	15 lacs	15 lacs

Approximately Rs. two crores is utilized to procure items related with computers from TEQIP-II fund of world bank.

**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?**

- Most of the classrooms are equipped with projectors and audio-visual aids
- Online conferences and workshops are being held in collaboration with IIT Mumbai under NME-ICT project. Special lab/classroom is dedicated for this purpose.
- Regular online lectures are being held in collaborations with MOOC and NME-ICT.
- Faculty members are using NPTEL video lectures for instructing students and upgrading themselves.

**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 center of teaching-learning process and render the role of a facilitator for the teacher.**

- The following two courses are being taught online from IIT Bombay:
  - Thermodynamics
  - Computer Programming
- NPTEL Lectures are shown to the students.
- Online faculty development Programmes have been organized in collaboration with different IITs under the A-VIEW project of NME-ICT.

**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?**

Yes, the Institute is directly having full featured 24x7 100MBPS leased line internet connectivity through National Knowledge Network (NKN). MHRD, New Delhi.

**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)?**

S.No.	Infrastructure	Expenses in (lakhs)			
		2012-2013	2013-2014	2014-2015	2015-2016
1	Building	6.0	7.0	7.50	7.50
2	Furniture	1.00	1.20	1.10	1.20
3	Equipment	2.20	2.40	2.90	3.00
4	Computers	11.00	11.50	12.00	10.00
5	Vehicles	2.0	2.5	2.5	3.00
6	Any Others: As per the requirement of different department and electrical maintenance	4.00	4.50	6.00	5.00

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

- By appointing plumber, mason, gardner and labour for routine maintenance work
- Through contractor for major maintenance work.

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

The equipments in the labs are monitored by the Lab assistant. The lab assistant checks the working of these equipments on regular basis and if any corrective measure or calibrations are required, reports to Prof. in-charge. Prof. in charge takes an appropriate action immediately and reports to head of department who forward this to the Director. Director of institute release the fund for repairing/ maintenance of equipments. The lab assistant also ensures safety & preventive measure to the students during the practical classes. The daily report of the lab is submitted by lab assistants to the in-charge.

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

- The institute has got high powered Gensets for back up and UPS to cater for voltage fluctuation and constant power supply. The institute has 33 kV power supply to overcome voltage fluctuations.
- The generators available in the institute help in continuous power supply without any hindrance.
- The computer systems and other sensitive equipments are provided with UPS systems so that power failure do not cause any damage.
- All precautions are taken to protect the precision equipment by providing voltage stabilizers and individual MCBs. Covers are provided where-ever needed to keep the sensitive equipment in dust free environment.

- The college electrician and the supporting staff are responsible for the upkeep of electrical equipments and their maintenance.
- The institution has a separate RO system to ensure pure water supply for students and faculty.

## CRITERION V: STUDENT SUPPORT AND PROGRESSION

### 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?**

Yes, the institution publishes its prospectus annually and it includes following contents:

- Brief history of the each department
- Programmes offered by the departments
- Faculty profile of each department
- Infrastructure available in various departments
- Achievement of faculty members and students in academics, research and co-curricular and extra-curricular activities
- List of eminent alumni
- Department wise placement record of the students
- Common facilities available in the institute

The performance of students and faculty members, infrastructure modernization and upgradation of various departments is monitored by various committees constituted by the Director and report is submitted to BOG members in meetings held annually for taking corrective measures and necessary actions. Thus, the institute is accountable for each record concerned with faculty, students and other facilities generated in the campus.

**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?**

The institute endows various scholarships for meritorious, physically disabled, underprivileged and reserved category students as follows:

S.No.	Type of Scholarship	Financial Year	No. of Students	Amount	Remark
1	Handicapped	2012-13	12	4,47,600.00	Distributed
2	Handicapped	2013-14	10	3,53,000.00	Distributed
3	Handicapped	2014-15	08	2,98,400.00	Distributed
4	Handicapped	2015-16	10	3,53,000.00	Pending
5	Alumni	2014-15	05	50,000.00	Distributed (Started from FY-2014-15)
6	Alumni	2015-16	05	50,000.00	Distributed
7	Memorial	2012-13	10	81,660.00	Distributed
8	Memorial	2013-14	In process		
9	Memorial	2014-15	In process		
10	Memorial	2015-16	In process		
11	Merit Scholarship	2012-13	146	In process	
12	Merit Scholarship	2013-14	36	In process	
13	Merit Scholarship	2014-15	53	In process	
14	Merit Scholarship	2015-16	In process		
15	National Scholarship Portal	2015-16	92	In Process (Started from FY-2015-16)	
16	MP Scholarship Portal (SC+ST+OBC)	2012-13	325+202+333 =860	9988180.00+6226028+9508235.00 =25722443.00	
17	MP Scholarship Portal (SC+ST+OBC)	2013-14	348+171+400 =919	12219451.00+6658260.00+12322065.00 =31199776.00	
18	MP Scholarship Portal (SC+ST+OBC)	2014-15	326+156+427 =909	14000180.00+7085655.00+15166681.00 =36252516.00	

19	MP Scholarship Portal (SC+ST+OBC)	2015-16	In Process
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Yes, the financial aid is disbursed to the students in time.

### 5.1.3 What percentage of students receives financial assistance from state government, central government and other national agencies?

About 51% percentage of students receives financial assistance from the state government, central government and other national agencies.

### 5.1.4 What are the specific support services/facilities available for

- **Students from SC/ST, OBC and economically weaker sections**
- **Students with physical disabilities**
- **Overseas students**
- **Students to participate in various competitions/National and International**
- **Medical assistance to students: health centre, health insurance etc.**
- **Organizing coaching classes for competitive exams**
- **Skill development (spoken English, computer literacy, etc.,)**
- **Support for “slow learners”**
- **Exposures of students to other institution of higher learning/Corporate / business house etc.**
- **Publication of student magazines**

The institute provides all the necessary facilities to the students as per government norms.

- The reservation policy for ST/SC and OBC students is followed as per the state government norms during admission process.
- Tuition fee is waived off for the SC/ST and OBC students.
- Extra facilities are given by institutional library and every year umpteen number of books are purchased from the grant received from the state government.
- Stationery items with calculators are given to the SC/ST students.
- Seats are reserved at the time of admission in various Programmemes for physically disabled students. The college makes sure that the classes of such students are held at ground floor to the possible extent. Ramps and separate sanitary facilities are being provided.

- Students are trained by physical trainer and participate in various sports at regional and national level. They are also encouraged to take part in co-curricular and extra-curricular activities.
- Institute is having medical dispensary facility for health problems and a full time doctor is appointed. Also, institute has a tie up with nearby Birla hospital in case of emergency hospitalization.
- Training and Placement Cell organizes aptitude and reasoning classes for the students preparing for competitive examinations.
- Special classes for spoken English, personality development, and computer literacy are organized by Training and Placement cell.
- Remedial classes are being organized for slow learners to improve the transition rate of each semester.
- Students are encouraged to attend workshops, seminars and conferences in IITs, NITs and other reputed research institutes.
- Institute provides financial assistance to publish magazines (Alek) by the students.

**5.1.5 Describe the efforts made by the institution to facilitate entrepreneurial skills, among the students and the impact of the efforts.**

Entrepreneurship Development Cell was developed in October, 1988 at the institute by the support provided by National Science and Technology Entrepreneurship Development Board (NSTEDB), Department of Science & Technology, Government of India, New Delhi to organise Entrepreneurial activities for the benefit of students of Science & Technology as well as unemployed educated urban / rural youths. Cell has organized following training/ Programmes for students:

- Entrepreneurship Development Programmes.
- Technology Based Entrepreneurship Development Programmes on Computer Hardware Maintenance, Assembling and Networking Technology.
- Technology Based Rural Entrepreneurship Development Programmes (TREDP / REDP).
- Skill Development Programmes on Repairing, Maintenance and Servicing of TRACTORS.
- Technology Based Rural Entrepreneurship Development Programmes (TREDP) on Food Processing Industries.

- Technology Based Rural Entrepreneurship Development Programmes (TREDP) on Horticulture and Food Processing.
- Entrepreneurship Development Programmes (EDPs).
- TEDPs & Skill Development Programmes on various Trades for SC/ST Educated Youths.
- Training Programme for PMEGP Beneficiaries.
- Entrepreneurship Awareness Camps.
- Skill Development Training Through Science & Technology (STST).
- Medical Representative Development Training Programme.
- Certificate Course on Hospital Management.
- Certificate Course on Computer Hardware / Networking Training.
- Certificate Course on Computer Orientation and Communication Skills .
- Certificate Course on Mobile Phone Repairing and Servicing.
- Training Programme for PMRY Beneficiaries.
- Seminars, Workshops, Extension Lectures on different topics.

**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.**

- \* **Additional academic support, flexibility in examinations**
- \* **Special dietary requirements, sports uniform and material**
- \* **Any other**

The institute has designated Dean, Students Welfare for promoting and organizing the extracurricular and co-curricular activities. Quiz, debate, poem recitation, technical discussions, poster presentation competitions are regularly organized every year by the students.

Similarly, with the discussion of the Dean Sports, sports officers prepare sports calendar every year and accordingly events are organized at the college level. The winner team of college is further promoted to participate in inter college, regional and national level competitions. The external trainer is appointed to strengthen the team to compete at higher level.

NCC officer is deputed in the institute to organize camps and provide training to the students.

- \* **Additional academic support, flexibility in examinations:** Flexibility in attendance is given to the participants involved in such activities.
- \* **Special dietary requirements, sports uniform and materials:** Adequate diet is given to the cadets/ participants during the camps/ events. The students are also provided with uniform and necessary materials.
- \* **Any other:** Medical facilities are made available to such students.

**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, UGC-NET, SLET, ATE / CAT / GRE / TOFEL / GMAT / Central /State services, Defense, Civil Services, etc.**

- The syllabus is modified from time to time in line with technological advancements and made at par with the syllabus of GATE and NET exams. This upgradation is conducted in consultation with the members of the BOS, comprising of experts from education and industry offering their expert opinions.
- The students are encouraged and sponsored to attend the trainings conducted in-house and outside to learn the techniques beyond the syllabi.
- Experts from the institutes of national repute are invited to deliver lectures on current advances in various fields.
- Regular online lectures are being held in collaboration with MOOC and NME-ICT.
- Teaching through NPTEL video lectures for delivering updated contents to the students.

By providing such support to the students in preparing for competitive exams, a significant number of students are able to qualify GATE and NET exams as shown in table:

S.No.	Name of Department	Year/ No. of Students Qualified in Competition			
		2012	2013	2014	2015
1	Mechanical Engineering	25	30	27	23
2	Electrical Engineering	19	23	21	19
3	Civil Engineering	18	19	17	11
4	Chemical Engineering	07	12	10	06
5	Electronics Engineering	16	19	15	10
6	Biotechnology	08	14	10	05
7	Architecture	15	13	10	09

8	Computer Engineering and Information Technology	Science and	16	17	11	10
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Apart from these, students also qualify in GRE/TOEFL/GMAT/CAT examinations.

### **5.1.8 What type of counseling services are made available to the students (academic, personal, career, psycho-social etc.)**

Faculty members/ class coordinators/ mentors counsel the students as per the academic, psycho-social & personal needs of the students. The faculty identifies the students who need counseling through regular interactions and discuss their problems and weaknesses, whether personal or educational. Besides this all the students are counseled by the Director, HODs and faculty members in general from time to time during regular academic interactions. Other academic, personal and psycho-social support and guidance services offered by the institute are:

- Guest lectures by eminent people from industries/other academic institutions are arranged at regular intervals.
- Personalilty grooming classes are organized by Training and Placement cell for the students.
- The Institute sponsors and encourages the students and the faculty to present research papers in national and international seminars/workshops.
- The Institute organizes seminars and workshops by eminent professionals in their respective areas, wherein the student and faculty community actively participate to reach their benefits.
- Motivational lectures and meditation classes are conducted free of cost for stress management.

### **5.1.9 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).**

Institute has dedicated a student Placement Cell that handles all aspects of training & placements services for the graduating students of all departments, right from contacting companies to managing all logistic arrangements for tests, pre-placement talks and conducting final interviews. The Training and Placement Cell officials and volunteers provide their best possible assistance to the recruiters.

Training & Placement Office provides the infra-structural facilities to conduct group

discussions, tests and interviews besides catering to other logistics. The office interacts with many industries in the country, so that many companies visit the campus for recruitment. The industries which approach the institute come under the purview of:

- Core engineering industries
- IT & IT enabled services
- Manufacturing Industries
- Consultancy Firms
- R & D laboratories
- Pharmacy & Bio-Tech Companies etc.

**5.1.10. 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, institute has a focused mechanism for redressal of grievances with reference to academic and personal level.

The academic redressal of grievances is made through the faculty members. They show evaluated copies of mid - semester examinations to the students in the class. Student can ask the teacher if he/she has any doubt in evaluation. The teacher clarifies doubts regarding evaluation. Internal marks are displayed on the notice board to enable discussion with the subject teacher/ Faculty Advisor and the HoD in the case of any disagreement.

Within stipulated days of the announcement of the end semester examination results, students can apply for revaluation/rechecking by filling a form through the registrar of the institute. If the student is not satisfied with revaluation result, there is provision of spot valuation after forwarding application from director for speedy redressal of grievances.

There is a special counseling cell to sort out the personal grievances of girl students. Dr. Archana Tiwari, Professor, Civil Engineering, is the chairperson of the counseling committee. The committee members organize meetings with girl students and take corrective measures.

Anti ragging committee is actively working to maintain harmonious environment in the institute.

No grievances have been reported till date.

**5.1.11 What are the institutional provisions for resolving issues pertaining to sexual harassment?**

Women grievances cell of the institute deals with the issues related to sexual harassment. Dr. Archana Tiwari, Professor, Civil Engineering, is the chairperson of the committee. The other members of the cell are:

- Dr. Anshu Chaturvedi
- Dr. Anjula Gaur
- Dr. Anjali Patil
- Prof. Vandana Sakhre

**Functions of the cell:** The office of the cell is a complaint centre for the members of the campus community who have been sexually harassed. The functions of the cell are:

- To look into the complaints by informal and formal means to resolve the issues.
- To ensure fair and timely resolution cases of sexual harassment.
- To provide information regarding counseling and support services in the campus.
- To foster a respectful work and learning environment.

No such cases are reported yet.

**5.1.12 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?**

Yes, institute has a well defined mechanism to resolve any issue related to ragging. As per the directions of the Hon'ble Supreme court and notification of AICTE, New Delhi an anti ragging committee is constituted involving senior faculty members, representatives of parents, representatives of students belonging to fresher category and senior students.

Anti ragging squads are active in campus throughout the day to ensure prevention of any such activity is not taking place. Apart from this, anti ragging committee members are actively performing their duties thrice a day. No, such instances have been reported during the last four years.

**MADHAV INSTITUTE OF TECHNOLOGY AND SCIENCE, GWALIOR - 05**

Ref. No.: 2596.

Date: 9/8

**ORDER**

First year B.E./B.Arch classes will start on 17<sup>th</sup> August 2012. The following faculty & staff members are directed to assemble, as per given schedule in the porch (Main Entrance) and take a round under the guidance of Group Leader (in case of absence of Group Leader, very next present member will work as a Group Leader) and report back to Group Leader to ensure that the newly admitted students are not being ragged by the senior students.

DAY	09:45 AM to 10:15 AM		1:10 PM to 2:20 PM		04:30 PM to 5:15 PM	
MON	1.	<b>Dr. Shriram Prasad</b>	1.	<b>Prof. A.K. Dwivedi</b>	1.	<b>Prof. Manish Dixit</b>
	2.	Prof. Vikas Sejwar	2.	Dr. Vikas Shinde	2.	Prof. H.M. Dubey
	3.	Prof. Vedansh Chaturvedi	3.	Prof. Sumint S. Trivedia	3.	Prof. Abhilash Sonkar
	4.	Prof. Kuldeep Swarnkar	4.	Dr. B.P.S. Bhadouria	4.	Prof. Avadesh Sharma
	5.	Mrs. Sangita Arora	5.	Mrs. Shubhra Shrivastava	5.	Mr. Shailendra S. Bhadoria
	6.	Mr. Praveen Gupta	6.	Mrs. Shashi Goel	6.	Mr. Gajanan Pophli
	7.	Mr. Vishal Shinde	7.	Mr. Rajesh Tomar	7.	Mr. R.P. Gupta
	8.	Mr. M.S. Kushwah	8.	Mr. Love Sharma	8.	Mr. Bharat Sakwar
TUE	1.	<b>Prof. A.K. Dwivedi</b>	1.	<b>Prof. C.S. Malvi</b>	1.	<b>Prof. Ashish Patra</b>
	2.	Prof. R.P. Kori	2.	Prof. Vikas Sejwar	2.	Prof. Chandrabhan Seniya
	3.	Prof. R.P. Narwaria	3.	Prof. Jaimala Jha	3.	Prof. Abhilash Sonkar
	4.	Prof. Sumint S. Trivedia	4.	Prof. Gautam Bhadoria	4.	Prof. Kuldeep Swarnkar
	5.	Mrs. Rajni Sharma	5.	Mr. Y.D. Jaital	5.	Mr. Shailendra S. Bhadoria
	6.	Ms. Priyanka Bhadoria	6.	Mr. K.S. Dubey	6.	Mr. D.S. Tomar
	7.	Mr. V.S. Kushwah	7.	Mr. A.K. Chauhan	7.	Mr. Vishal Shinde
	8.	Mr. M.K. Golya	8.	Mr. Beerbal Jatav	8.	Mr. M.S. Kushwah
WED	1.	<b>Dr. Sulochana Wadhvani</b>	1.	<b>Prof. Laxmi Shrivastava (Elex)</b>	1.	<b>Prof. Rekha Gupta</b>
	2.	Prof. A.S. Patil	2.	Prof. Vijay Bhuria	2.	Prof. C.S. Malvi
	3.	Prof. Khushboo Agrawal	3.	Dr. Sunita Sharma	3.	Prof. Angad S. Ojha
	4.	Prof. Sumint S. Trivedia	4.	Prof. Akhilesh Tiwari	4.	Prof. Punit K. Johari
	5.	Mr. M.L. Sahu	5.	Mr. Deepak Soni	5.	Mr. Shailendra Bhadoria
	6.	Mr. S.K. Saxena	6.	Mr. Devendra Singh	6.	Mr. R.S. Yadav
	7.	Mr. Sujan Singh	7.	Mrs. Jyotsna Singh	7.	Mr. Sanjay Tiwari (Mech.)
	8.	Mr. Y.D. Jaital	8.	Mr. Love Sharma	8.	Ms. Renu Gupta
THU	1.	<b>Prof. Bimal Garg</b>	1.	<b>Dr. Shriram Prasad</b>	1.	<b>Dr. Anshu Chaturvedi</b>
	2.	Prof. Shishir Dixit	2.	Dr. Anjula Gaur	2.	Prof. Rakesh Narvey
	3.	Prof. Jyoti Vimal	3.	Dr. S. Bhattacharya	3.	Dr. Sunita Sharma
	4.	Prof. Gautam Bhadoria	4.	Prof. Himmat S. Ahirwar	4.	Prof. Manish Sagar
	5.	Mr. Prafull Dubey	5.	Mr. V.S. Kushwaha	5.	Mr. R.K. Dixit
	6.	Mr. M.D. Gaur	6.	Mr. Praveen Gupta	6.	Mrs. Sangita Arora
	7.	Mr. S.R. Das	7.	Mr. R.K. Mishra	7.	Mr. R.S. Yadav
	8.	Mr. R.P. Gupta	8.	Mr. Love Sharma	8.	Mr. Shankar Banarjee
FRI	1.	<b>Prof. D. Rastogi</b>	1.	<b>Prof. Chandrabhan Seniya</b>	1.	<b>Prof. Bimal Garg</b>
	2.	Prof. Manish Dixit	2.	Prof. Jitendra Muthale	2.	Dr. D.K. Jain
	3.	Prof. Hotam S. Chaudhry	3.	Prof. Angad S. Ojha	3.	Prof. Punit K. Johri
	4.	Prof. Poonam Sharma	4.	Prof. Y.P.S. Maravi	4.	Prof. Avadesh Sharma
	5.	Mr. S.K. Saxena	5.	Mr. M.D. Gaur	5.	Mr. Praveen Gupta
	6.	Mrs. Jyotsna Singh	6.	Mr. Rajesh Sharma	6.	Mr. R.K. Dixit
	7.	Mr. Sujan Singh	7.	Mr. Sanjay Tiwari (Mech.)	7.	Mr. S.R. Das
	8.	Mr. Beerbal Jatav	8.	Mr. Bharat Sakwar	8.	Mrs. Rajni Sharma
SAT	1.	<b>Prof. Angad S. Ojha</b>	1.	<b>Prof. Rekha Gupta</b>	1.	<b>Prof. D. Rastogi</b>
	2.	Prof. Rakesh Narvey	2.	Dr. Anjula Gaur	2.	Dr. Sanjeev Khanna
	3.	Prof. Khushboo Agrawal	3.	Prof. Vijay Bhuria	3.	Prof. Jyoti Vimal
	4.	Prof. Vedansh Chaturvedi	4.	Prof. Sanjeev Sharma	4.	Prof. Y.P.S. Maravi
	5.	Mrs. Shiva Patel	5.	Mrs. Shubhra Shrivastava	5.	Mr. R.K. Mishra
	6.	Mr. Vishal Shinde	6.	Mr. R.S. Yadav	6.	Mr. K.S. Dubey
	7.	Mr. Beerbal Jatav	7.	Mr. M.D. Gaur	7.	Mr. M.K. Golya
	8.	Mr. Deepak Soni	8.	Mr. Rajesh Sharma	8.	Mr. M.S. Kushwaha

**Group leader of each slot is required to fill up the proforma (available with the PA to undersigned) after each and every anti ragging duty and submit the same in the office of the undersigned.**

*Saj*  
(Dr. Sanjeev Jain)  
Director

Copy to:

1. All Concerning Member/Dean/HOD/Sec. Incharge/ Hostel Wardens for information & necessary action
2. Security Incharge
3. All Notice Boards
4. Director office for information
5. Dean Administration/Establishment

**5.1.13 Enumerate the welfare schemes made available to students by the institution.**

Welfare schemes made available for students are listed below:

- Merit scholarships and fee concessions for deserving students.
- Awards to class toppers.
- Travel grants to participate in competitions and conferences.
- Closed car parking and two wheeler parking facilities.
- Transport facility to all points in Gwalior and neighboring towns.
- Subsidized canteen which supplies hygienic and nutritious food.
- Medical dispensary and free consultation by the doctor.
- Ambulance facility during medical emergencies.
- Provision for insurance and accident policy.
- In the campus, bank facility, courier services, stationery and photostat facility are available.
- Provision of well-furnished rooms in hostels at minimized rates.

**5.1.14 Does the institution have a registered Alumni Association? If “yes”, what are its activities and major contributions for institutional, academic and infrastructure development?**

Yes, the alumni association is registered. Reunion of silver jubilee pass out batch is organized annually in December each year. It provides an opportunity for interaction between the alumni and institute, paves way for participation of alumni in development of institute. Alumni scholarship is awarded to meritorious students. At the departmental level, alumni are associated in various activities as follows-

1. Alumni are opted as members of board of studies. Their valuable suggestions are given due consideration while finalizing scheme and syllabi
2. Invited as keynote speaker/expert lecture in workshop/seminar for the benefit of the students.
3. Associated in the organization of educational tours of students

In mechanical engineering department, an excellence centre “SKF Asset Reliability Centre” Pune is established by the support of alumni.

Business Development service centre is set up with the support of prominent alumni. BDS centre is involved in problem solving related to business and industries.

## 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.

The following data shows that students of the institute are placed through campus selection in various reputed companies:

Student Progression (%)						
Year	Campus Selection		UG to PG	PG to M.Phil.	PG to PhD	Other Employed
	UG	PG				
2012	64.13	23.38	30	-	25	10
2013	16.94	0.64	50	-	38	15
2014	50.11	12.21	41	-	36	16
2015	58.56	19.7	35	-	20	15

Other students are employed in various firms like banking sector, PSUs, PSCs, engineering services and private firms, etc. or opted for higher education in other institutes like IIT, NITs or research institutes.

### 5.2.2 Provide details of the Programme wise pass percentage and completion rate for the last four years (cohort 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.

The following table shows Programme wise pass percentage and completion rate for the last four years:

B.E./MCA/B.Arch. Madhav Institute of Technology & Science, Gwalior (M.P.)												
	2008-12			2009-13			2010-14			2011-15		
Branch	In Take	Degree Completed in 2012	% Pass	In Take	Degree Completed in 2013	% Pass	In Take	Degree Completed in 2014	% Pass	In Take	Degree Completed in 2015	% Pass
Civil Engineering	50	42	84.00	50	42	84.00	50	47	94.00	60	48	80.00
Mechanical Engineering	65	54	83.08	65	51	78.46	65	61	93.85	65	58	89.23
Electrical Engineering	65	54	83.08	65	50	76.92	65	58	89.23	65	60	92.31
Electronics Engineering	60	50	83.33	60	54	90.00	60	53	88.33	60	57	95.00
Computer Science and Engineering	60	43	71.67	60	49	81.67	60	56	93.33	60	53	88.33
Information Technology	60	46	76.67	60	45	75.00	60	46	76.67	60	57	95.00
Chemical Engineering	30	24	80.00	30	23	76.67	30	24	80.00	30	21	70.00
Biotechnology	30	15	50.00	30	20	66.67	30	20	66.67	30	10	33.33
MCA	60	48	80	60	48	80	60	57	95	60	48	80
B.Arch.	40	24	60	40	27	67.50	40	37	92.50	40	40	100

<b>M.E./M.Tech.</b>												
	<b>20010-12</b>			<b>20011-13</b>			<b>2012-14</b>			<b>2013-15</b>		
<b>Branch</b>	<b>In Take</b>	<b>Degree Completed in 2012</b>	<b>% Pass</b>	<b>In Take</b>	<b>Degree Completed in 2013</b>	<b>% Pass</b>	<b>In Take</b>	<b>Degree Completed in 2014</b>	<b>% Pass</b>	<b>In Take</b>	<b>Degree Completed in 2015</b>	<b>% Pass</b>
<b>CTM</b>	25	04	16	25	02	8.00	25	01	4.00	25	07	28.00
<b>ST</b>	07			07			07			07	01	14.29
<b>ENV</b>	12			12			12			12		
<b>PN</b>	18	06	33.33	18	03	16.67	18	01	5.56	18	05	27.78
<b>MH</b>	21	13	61.90	21	03	9.52	21			21	04	19.05
<b>ISD</b>	25	20	80.00	25	16	64.00	25	23	92.00	25	17	68.00
<b>MAC</b>	12	10	83.33	12	10	83.33	12	11	91.67	12	05	41.67
<b>CCN</b>	25	14	56.00	25	19	76.00	25	11	44.00	25	15	60.00
<b>MW</b>	18	03	16.67	18	10	55.56	18	18	100.00	18	08	44.44
<b>CSE</b>	18			18	04	22.22	18	08	44.44	18	02	11.11
<b>IT</b>	18			18			18	07	38.89	18	01	5.56
<b>CM</b>	18			18			18			18	05	27.78
<b>BT</b>	18	13	72.22	18	13	72.22	18	02	11.11	18	07	38.89
<b>CTM (PT)</b>	05			05			05	01	20.00	05		

As per the results shown in the table, the performance of the students has improved with that of previous results of the institute and that of the colleges of the affiliating university.

### 5.2.3 How does the institution facilitate student progression to higher level of education and/or towards employment?

- Institute offers following postgraduate courses, which encourage students to pursue higher education.

Year of start	Name of Programme
<b>Department of Civil Engineering</b>	
1986	M.E. Construction Technology & Management
2003	M.E. Structural Engineering.
2003	M.E. Public Health Engineering
2014	M.Tech. Geo Informatics
2014	M.Tech. Environment Engineering
1987	M.E. Structural Engineering (Part time)
1995	M.E. Construction Technology & Management (Part time)
<b>Department of Mechanical Engineering</b>	
2002	M. Tech. Production Engineering
<b>Department of Electrical Engineering</b>	
1995	M.E. Industrial Systems & Drives
2003	M.E. Measurement & Control
<b>Department of Electronics Engineering</b>	
1995	M.E. Communication Control & Networking
2002	M.Tech. Electronics & Communication (Microwave Engineering)
<b>Department of Computer Science &amp; Engineering and Information Technology</b>	

2011	M.Tech. Computer Science & Engineering
2012	M.Tech. Information Technology
2013	M.Tech. Cyber Security
<b>Department of Chemical Engineering</b>	
2013	M.Tech. Chemical Engineering
<b>Department of Biotechnology</b>	
2004	M. Tech. Biotechnology

- Institute has dedicated student placement cell that guide students to access employers and provide off campus job opportunities. Placement cell in the institute with the coordination of department of humanities and external work forces, organizes personality development sessions regularly.
- Institute also encourages students towards higher education by awarding students who qualify in competitive examinations (GATE, CAT, GRE, NET, etc.)
- Well stocked library with latest books and journals provides latest and comprehensive information to students.
- WiFi facility throughout the campus enables the students to access career prospectives.

#### 5.2.4 Enumerate the special support provided to students who are at risk of failure and drop out?

- Special classes for spoken English, personality development, and computer literacy are organized.
- Remedial classes are being arranged for slow learners to improve the transition rate in each semester.
- Counseling sessions are organized for weaker students regularly.
- Extra academic facilities such as library, tutorials etc. are provided to students.

#### 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 Programme calendar.

### **List of the Sports activities at the Institute level:**

#### **Sports Activities- 2013-2014**

- Inter-Collegiate Table Tennis Tournament
- Inter-Collegiate Badminton Tournament
- Inter-Collegiate Chess Tournament
- RGPV Cross Country Championship

#### **Sports Activities- 2014-15**

- Inter-Collegiate Cricket Tournament
- Inter-Collegiate Football Tournament
- Inter-Collegiate Table Tennis Tournament
- Inter-Collegiate Athletics Meet
- Inter-Collegiate Badminton Tournament
- Inter-Collegiate Chess Tournament
- RGPV State Level Table Tennis Tournament

#### **Sports Activities- 2015-16**

- Men's Table Tennis Inter-Collegiate Tournament
- Women's Table Tennis Inter-Collegiate Tournament
- State Level Women's Cross Country Championship
- State Level Men's Cross Country Championship
- Inter-Collegiate Chess Tournament
- Inter-Collegiate Women's Basketball Tournament
- Inter-Collegiate Men's Basketball Tournament
- Inter-Collegiate Women's Badminton Tournament
- Inter-Collegiate Football Tournament

**MADHAV INSTITUTE OF TECHNOLOGY AND SCIENCE, GWALIOR**

**(SPORTS)**

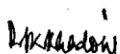
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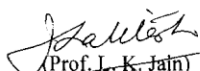
Date: 15/07/2015

**Subject:** Sports activities schedule 2015-16

S. No.	Games / Sports	Dates for Events
1	Table Tennis (M&W)	22.07.15 To 31.07.15
2	Badminton (M&W)	01.08.15 To 15.08.15
3	Chess (M&W)	16.08.15 To 31.08.15
4	Cross Country (M&W)	05.09.15
5	Basketball (M&W)	01.09.15 To 15.09.15
6	Football	16.09.15 To 30.09.15
7	Volleyball (M&W)	01.10.15 To 15.10.15
8	Athletics (M&W)	16.10.15 To 31.10.15
9	Cricket	01.11.15 To 15.11.15
10	Kabaddi	16.12.15 To 30.12.15

1. For registration and details contact sports officer at sports office.
2. Selection of college team will be made on the basis of above tournaments to represent the institute at RGPV nodal level/ state level and intervarsity level and others.

  
(Dr. B. P. S. Bhadoria)  
Sports Officer

  
Prof. J. K. Jain 15/07/15  
Dean, Sports

Copy to:

1. Director for information
2. Dean administration for information
3. All HOD's with the request to display at the department notice board.
4. Sports notice board

माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर, म.प्र.

क्रमांक/स्पोर्ट्स/०२

दिनांक...12/08/2015

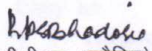
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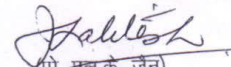
निदेशक,  
समस्त महाविद्यालय ग्वालियर नोडल,  
ग्वालियर

विषय: ग्वालियर नोडल स्तरीय खेलकूद प्रतियोगिता कलेण्डर सत्र 2015-16

क्रं	खेल का नाम	आयोजन दिनांक	आयोजक महाविद्यालय का नाम
1	टेबिल टेनिस म./पु.	21 से 22 अगस्त 2015	आई.टी.एम. ग्वालियर
2	क्रॉस कंट्री म./पु.	11 सितम्बर 2015	एम.आई.टी.एस. ग्वालियर
3	कबड्डी पु.	8 से 9 सितम्बर 2015	एम.आई.टी.एम.(मालवा) ग्वालियर
4	बास्केट बाल म./पु.	14 से 15 सितम्बर 2015	एम.आई.टी.एस. ग्वालियर
5	शतरंज म./पु.	12 से 13 अक्टूबर 2015	एस.आर.सी.ई.एम बानमौर
6	बेसबॉल म./पु.	8 जनवरी 2016	एम.आई.टी.एस. ग्वालियर
7	व्हाली बाल म./पु.	28 से 29 सितम्बर 2015	एम.पी.सी.टी. ग्वालियर
8	जूडो म./पु.	14 से 15 जनवरी 2015	आई.पी.एस. ग्वालियर
9	बैडमिंटन म./पु.	8 से 9 अक्टूबर 2015	आई.पी.एस. ग्वालियर
10	हैडबॉल म./पु.	24 से 25 सितम्बर 2015	एम.आई.टी.एस. ग्वालियर
11	तैराकी म./पु.	21 से 22 सितम्बर 2015	आर.जे.आई.टी. टेकनपुर
12	एथलेटिक्स म./पु.	2 से 3 नवम्बर 2015	एम.आई.टी.एस. ग्वालियर
13	नेटबॉल म./पु.	23 से 24 नवम्बर 2015	एम.आई.टी.एस. ग्वालियर
14	टेनिस म./पु.	26 से 27 नवम्बर 2015	आई.पी.एस. ग्वालियर
15	हॉकी पु.	2 से 3 दिसम्बर 2015	आई.पी.एस. ग्वालियर
16	क्रिकेट पु.	20 नवम्बर से 5 दिस. 2015	वी.आई.टी.एम. (विक्रात) ग्वालियर
17	फुटबॉल पु.	5 से 6 नवम्बर 2015	आर.जे.आई.टी. टेकनपुर
18	खो-खो म./पु.	4 से 5 दिसम्बर 2015	एम.आई.टी.एम.(मालवा) ग्वालियर

1. क्रीड़ा प्रतियोगिताओं की प्रविष्टि आयोजक महाविद्यालय को टूर्नामेंट के आयोजन से एक सप्ताह पहले भेजनी होगी।
2. खेलों का आयोजन म.प्र. शासन खेलकूद मार्गदर्शिका एवं रा.गा.वि.वि. भोपाल के नियमानुसार करनी होगी।
3. प्रतियोगिताओं में विजयी/उपविजयी एवं व्यक्तिगत वरीयता (मेरिट) प्रमाण पत्र खिलाड़ीयों को आयोजक महाविद्यालय द्वारा प्रतियोगिता स्थल पर ही अनिवार्य रूप से वितरित किये जावेंगे।
4. आयोजक महाविद्यालय द्वारा चयन समिति प्रतिवेदन, प्रतियोगिता परिणाम, प्रतियोगिता सम्पन्न होने पर प्रतियोगिता संबंधी अन्य प्रतिवेदन, अनिवार्य रूप से नोडल महाविद्यालय में प्रेषित करेंगे।

  
(डॉ. बी.पी.एस. भदौरिया)  
क्रीडा अधिकारी

  
(डॉ. अनिल गोयल)  
डीन स्पोर्ट्स

प्रतिलिपि-

1. निदेशक एम.आई.टी.एस. ग्वालियर।
2. डॉ. अनिल गोयल अधिष्ठाता छात्र कल्याण  
राजीव गांधी प्रौद्योगिकी विश्वविद्यालय भोपाल।

**List of the Co-curricular activities at the Institute level:**

Activities	Year
Galarío De Photo	2013
Technofiera (Event)	2013
Paper Published- Sniffing HTTPS Using Yamas	2014
Paper Presentation on "ROLE OF SOCIAL MEDIA IN ACEDEMICS" In Nacit	2015
Essaria(Arambh) (Event)	2013
Fun-N-Zeila (Event)-2 <sup>nd</sup> Prize	2014
Best out of waste Under CSI(Event)-1 <sup>st</sup> Rank	2014
Organizer in ISTE(Best Student Chapter Award In MP and CG)	2015
Organized a National Level Event (Make In India)	2015
Code Crunch C,C++	2014
Code-E-Thon	2013
Code C Zar	2013
NPTEL IIT Madras C Programing	2015

**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.**

**Details of major student achievements in co-curricular, extracurricular and cultural activities at different levels: University / State / Zonal / National / International, etc.**

Department of CSE & IT

Sr. no.	Name of Student	Achievements	Year
1.	Rohan Ahuja	Galarío De Photo (Event)-2 <sup>nd</sup> Prize	2013
		Technofiera (Event)- 2 <sup>nd</sup> Prize	2013
		Paper Published- Sniffing HTTPS Using Yamas	2014
		Football State and National Level Player	2014

		Cricket Nodal Winner	2014
		Internship Under Cybercell Police Gudgaun Awarded Best Project on Location Tracking	2015
		Football Nodal Silver Winner Representing Gwalior in State Level	2015
2.	Shikha Patel	Table Tennis Nodal Winner And State Player	2013
		Table Tennis Nodal Winner And State Player	2014
		Branch Topper	2014
		Table Tennis Nodal Winner And State Player	2015
3.	Harsh Jaria	Chess Nodal Winner	2012
		Chess Nodal Level-2 <sup>nd</sup> Position	2014
		Chess Nodal Level-3 <sup>rd</sup> Position	2014
		Paper Presentation on "ROLE OF SOCIAL MEDIA IN ACCEDEMIC" In Nacit	2015
4.	Anjul Ravi Gupta	2 <sup>nd</sup> Position Essaria(Arambh) (Event)	2013
		Selected in Accenture, Infosys	2015
5.	Mukul Sharma	1 <sup>st</sup> Position in Nodal Chess Championship	2014
		Paper Presentaion on " Role of Socieal Media In Academics" in Nacit	2015
6.	Mahipal Yadav	Cross Country Event (College Level 2 <sup>nd</sup> )	2015
		Nodal Level 7 <sup>th</sup>	2015
		State Level 10 <sup>th</sup>	2015
		National 777 <sup>th</sup>	2015
		Gwalior Nodal in 400M Race(4 <sup>th</sup> Rank)	2015
		Gwalior Nodal in 10000M Race(3 <sup>th</sup> Rank)	2015
7.	Divya Chandron Vikalp Agrawal	Fun-N-Zeila (Event)-2 <sup>nd</sup> Prize	2014
8.	Divya Chandran Kashish Gahoi Anuj Arya	Best out of waste Under CSI(Event)-1 <sup>st</sup> Rank	2014
9.	Divya Chandron	Antakshari In Aurora Organized By IIITM (Event)-2 <sup>nd</sup> Prize	2013

	Depak Bamoriya		
10.	Shweta Dwivedi	Athletics Nodal 100m Race-2rd Rank	2015
11.	AArti Bhadoriya	State Level Participants in Women Basketball & Cross Country	2015
12.	Rashmi Parashar	State Level Participants In Women Basketball, Table Tennis & Cross Country	2015
13.	Nilesh Kumar Rohan Ahuja	Organizer in ISTE(Best Student Chapter Award In MP and CG)	2015
	Rashmi Parashar	Organized a National Level Event (Make In India)	2015
14.	Pragam Gandhi Anshul Sheohaliya Deepak Baghel	Successfully Cleared Asia-Chennai First Round Online Programing Contest	2015
15.	Somya Gupta	Achieved First Position In “ Rifle Shooting” In The Women Empowerment Camp Organized by Shaheed Shashindra Memorial Women Wisdom Society	2014
		Achieved First Position In “Gulel” in The Women Empowerment Camp Organized by Shaheed Shashindra Memorial Women Wisdom Society	2014
		Entitled As”Gwalior little Master Chef” by Central Park	2013
16.	Gaurav Mishra	Chess Nodal-2 <sup>nd</sup> Position	2014
17.	Ravi Kumar	Cricket Tournament-1 <sup>st</sup> Position	2014
18.	Krishna Kumar Agrawal Shivam Tomar	TCS Code Vita- All- India Rank33	2015
19.	Apoorv Mishra Shivam Tomar Deepak Singh Tomar	Aspiration 20-20 by Infosys-Selected Team From MPCG	2014
20.		Code Crunch C,C++- 1 <sup>st</sup> Rank	2014

	Krishna Kumar Agrawal	Code-E-Thon-4 <sup>th</sup> Rank	2013
		Code C Zar- 2 <sup>nd</sup> Rank	2013
		NPTEL IIT Madras C Programming-83 Percentile	
		Test Suhrer	2013
21.	Rajkumar Jain	Got Achievement Award in Microsoft Empowered Classes in The Field of Computer Networks	2015
		Got Consellation in Quiz Contest/story Writing Organized in Internshala	2015
		Published Paper Based on Algorithm in IEEE Conference	2014
		Got 2 <sup>nd</sup> Prize in weekly MEC Referral Challenge Contest	
22.	Akrati Sharma	Paper Published In IJCESR on “ A Storage of Database on Cloud With Security Issues” And Was Ranked Third by Google on SEO	2015
23.	Nikita Upadhyaya	Paper Published in IJERMT on “ Nature Inspired optimization Algorithms: An Insight to Image Processing Application”	2015
		Paper Published in SERSC on “ An Exhaustive Survey on Nature Inspired optimization Algorithms”	2015

#### Department of Chemical Engineering

Sr. no.	Name of the Student	Details of Activity/achievement	Year
1.	Abhishek Bajpai(3 <sup>rd</sup> Year)	1.Lawn Tennis (RGPV lawn tennis team, inter university)	2015
		2. Lawn Tennis(Official ITF futures International tennis Tournament)	2015
		3. Lawn Tennis(College state held at Indore selection in university team)	2015
		4.Lawn Tennis(Gold medal, KVS national sports meet)	2012
		5. Lawn Tennis(Gold medal, KVS national sports meet)	

		6. Lawn Tennis(Quarter finals in MP ranking tennis Championship)	2013
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#### Department of Mechanical Engineering

Sr. no.	Name of the Student	Details of Activity/achievement	Year
1.	Sunil Dohare	Received membership of IE, India	2015
2.	Chandan Saxena	Developed Wire free wheel system	2015
3.	Jyoti Dohare	First Prize in Essay Competition District level(santa hare krashna nyas Gwalior)	2011
		First Prize in Essay Competition District level(Nirvachan Ayoge Gwalior)	2014
		Second Prize in Debate Competition (Nirvachan Ayoge Gwalior)	2014
		Second Prize in Leeter Writing Division Level(Mama Manik Chand Smarti Samaroh Nai Sadak Gwalior)	2014
		First Prize in Essay Competition District Level(Nirvachan Ayoge Gwalior)	2015
		Second Prize in Essay Competition at college level D.L.S. sports & social society, Gwalior	2012
4.	Veer Singh Sikarwar	Cited as tops young Poet at MANIT Bhopal	2015
5.	Saurabh Mangal	Third rank in GATE	2012
6.	Avankitak Nigam	Represented Gwalior in Badminton state level Tournament (RGPV)	2014
7.	Sweety Rathore	Gold Medal First Price 400m race in Nodal Zone MITS , Gwalior	2015

#### Department of Biotechnology

Sr. no.	Name of the Student	Details of Activity/achievement	Year
1.	Ekant shama, Yashwant Kushwah, Shailesh Gautam and Ipsita Gosh	Poster on "Microbes can be used as antibacterial paints/dyes" in National	

		Conference on Biotech and Human Welfare: New Vistas Deptt. of biotechnology and VBS Purvanchal University Jaunpur, Banaras U.P.	
2.	Ankita Jain and Priya Dulani	Participated in Basketball RGPV nodal Tournament, MITS, Gwalior	2015
3.	Ankita Jain	Participated in Basketball RGPV State Tournament Indore	2015
4.	Ankita Jain	Participated in Basketball Inter University Tournament held at Jaipur	2015
5.	Bhanu Jaseja and Priyanka Karoriya	Won 2 <sup>nd</sup> prize in Poster Presentation event organized by Architecture Deptt. MITS, Gwalior	2013
6.	Abhishek Shrivastava, Ashish Tilanthe and Mohit Sharma	Participated in Sixth Summer Biotech Training Camp 2013 on Advanced Tissue Culture and Molecular Biology Techniques at HariHar Biotech, Agra	2013
7.	Deeksha Tripathi	Presented a Paper in Aarohan-2013 sponsored by ISTE at MITS, Gwalior	2013
8.	Smriti Gupta	Awarded 'Major Dhyanchand Award' in Karate Sports	2013
9.	Prashant Soni	Won Prize in Quiz Event in 'Manthan' in MITS, Gwalior	2013
10.	Ankita Jain	Was selected for RGPV state level Basketball Competition	2012
11.	Smriti Gupta	Awarded in various Karate Events 2 Gold Medals and 1 Silver Medal at International Karate event held at Goa	2012
12.	Prashant Soni	Won Prize in Special Contribution in 'Social Awareness' in "Aurora 2012" at IITM, Gwalior	2012
13.	Abhilash Tiwari, Akash Pawar, Ankit Gupta, Dhawal Tailang	Prize in 'Short Film Competition' in "Aurora 2012" at IITM, Gwalior and won Rs.10,000 as Prize	2012

Department of Architecture

Sr. no.	Name of the Student	Details of Activity/achievement	Year
1.	Anand Chourasiya & Jagriti Jain	Poster Presentation Eco 360 Organized by Deptt. of Biotechnology First Prize	2015
2.	Jenwin Baby	Republic day stamp design Conducted by Indian Posts & Telegraph department-Third Prize	2015
3.	Pragya Singh	Yuva Ratna Birla White' 14- Second Prize	2015
4.	Harshita Sharma	Vidyut' 15 NIT Trichy-First Prize	2015
5.	Ankita Singh& Shivam Sagar Gupta	Spotlight' 15 IIT Roorkee-Second Prize	2015
6.	Jagriti Jain and Anand Chaurasiya	Junk Morphia- JuryRecommendation	2015
7.	Ankita Singh	Poster Designing' 15 IIT Roorkee,(Womwn Harassment)-First Prize	2015
8.	Shubham Nema	IIT Roorkee' 15 -July,Recommendation	2015
9.	Satyam Shukla and Ashish Choudhary	Spotlight'15 IIT Roorkee-Third Prize	2015
10.	Satyam Shukla	1.Cadsmith'15 IIT Roorkee-First Prize	2015
		2. Zakyanta, 15-Special Recognition	
		3.Bambootech,15- Shortlisted Entry	
		4.Spotlight' 15 IIT Roorkee	
11.	Ashish Chaudhary	Paper Presentation: TECH-ENDOWMENT SITM,Guna.March'15 on Topic Transport- First Prize	2015
12.	Ashish Chaudhary	Logo Design for NATCON'15(IIA) to be held in Kolkata,W.B.-First Prize	2015
13.	Kapil Patidar	1. Urban Innovation challenge- Jury Recommendation 2. Ethose NASA Scholarship Hyderabad- Second Prize 3. Bangalore building documentation-First Prize 4. NDTV DAA Awards- Special Recognition	2015

		5. Ethose NASA Scholarship Tamil Nadu- July Recommendation	
14.	Raghav	Zonal Nasa 1. 2 <sup>nd</sup> Runner-up in Main Design 2. Special Mention in Photography 3. Special Mention in Graffiti	2014
15.	Shelly Vaish, Nityam Chourasiya, Deepak Patel	Transparence 2014 (Design Problem- Metro Station Complex)	2014
16.	Joseph Victor and Kajal Goyal Rachit Pamnani and Thoudam Sudha Jagrti Jain and Anand Chourasiya	Junk Morphia (Design Mafia) 2014 (Design Problem- Shelter)-Jury Recommendation	2014
17.	Tapas Upadhyay	COA Best Architectural Thesis Award 2014 (topic-Hybrid Solid Waste Management) (Special Mention)- First Prize	2014
18.	Ashish Choudhary	VNIT NAGPUR 2014 (Design Problem- Sabji Mandi At Nagpur)- First Prize	2014
19.	Pranay Gururn	<ul style="list-style-type: none"> <li>• Participation in State Level football</li> <li>• Shortput Gwalior nodal Gold</li> </ul>	2014
	Phalit Patel	<ul style="list-style-type: none"> <li>• 100 meter Gwalior nodal Gold</li> <li>• Participation in State Level Football</li> <li>• Shortput Gwalior nodal Gold</li> <li>• 100 meter Gwalior nodal Gold</li> <li>• 100 meter Gwalior nodal Gold</li> <li>• Short-put Silver Medal in State Level</li> </ul>	
20.	Shivam Sagar Gupta	Singing- 1 <sup>st</sup> position in college level Singing- 3 <sup>rd</sup> Position in College Level	2014

**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?**

The institute has a clearly set and defined mechanism of obtaining the feedback from the students and stake holders to improve the performance and quality of the institutional provisions. Following feedbacks are taken so as to assess attainment of Programme Objectives and Programme Education Objectives;

- Semester end feedback from the students

- Exit feedback from graduating students
- Alumni feedback
- Employers feedback
- Parents feedback
- Faculty feedback

The feedback is analyzed and efforts are taken by the management to implement viable recommendations for improving the quality of the infrastructure and other facilities

**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.**

Institute provides financial assistance to students to publish materials like catalogues, wall magazines, college magazine, and other material. Institute also publishes newsletter and upload on the institute website regularly. Institute encourages various extracurricular activities and motivates students to publish various magazine materials.

**5.3.5 Does the college have a Student Council or any similar body? Give details on its selection, constitution, activities and funding.**

Each class has two ambassadors one male and one female. The ambassadors represents the class. They are selected on the basis of merit.

**5.3.6 Give details of various academic and administrative bodies that have student representatives on them.**

The institute has various academic and administrative bodies having student representatives on them. Such bodies are:

- Class Representatives/Ambassadors
- Anti Ragging Committee
- Literacy Club
- ISTE Student Chapter
- CSI Student Chapter
- IChE Student Chapter

**5.3.7 How does the institution network and collaborate with the Alumni and former faculty of the Institution.**

The institution networks and associates with the alumni by involving them in academic activities such as lecture delivery, as a member of BOS. Their expertise is used in upgrading the knowledge and their suggestion are implemented in designing the syllabus. Silver jubilee meets are organized annually in December each year. It provides

an opportunity for interaction between alumni and institute, paves way for participation of alumni in development of institute. Alumni scholarship is awarded to meritorious students. At departmental level, alumni are associated in various activities as follows-

1. Alumni are opted as members, board of studies. Their valuable suggestions are given due consideration while finalizing scheme and syllabi
2. Invited as keynote speaker/expert lecture in workshop/seminar for the benefit of the students.
3. Association in the organization of educational tours of students.

## **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 create world-class quality Engineers and Technocrats capable of providing leadership in all spheres of life and society.

**Mission:**

- To provide quality education in technical and allied disciplines.
- To organize and arrange innovative courses in Engineering and Technology.
- To arrange vocational courses in the upcoming fields and innovative subjects to meet global advancement.
- To promote research in the fields of Technology and Science

This commitment is translated into practice through:

- Regularly updating syllabi and curriculum as per the current need.
- Updating the skill of faculty and staff
- Carrying out the quality research in the frontier of engineering and technology.
- Continuous renewal of infrastructure and facilities.
- Creating congenial and conducive environment for stakeholders.

The alumni of the institute are deployed in various recognized institutions related to research and industry in India and abroad. The alumni are contributing at national level. Example: Mr. V.K. Saraswat is member of NITI Ayoug, Dr. R.K. Shegaonkar was the Director of Indian Institute of Technology, Delhi etc.

**6.1.2 What is the role of top management, Principal and Faculty in design and implementation of its quality policy and plans?**

The faculty members are actively involved in decision-making process at individual level. They are members of College Academic Council, which is involved in decision making in academic matters.

Faculty members are in the committees like Anti-ragging Committee, Research and Development Cell, Consultancy Cell, Examinations Committee, Sports day Committee, Cultural festival Committee, and many other committees that are constituted for the smooth conduction of various events. All the new and revised policies to improve academic activities, methodology of conducting examinations are reviewed and discussed at appropriate level before implementation.

### **6.1.3 What is the involvement of the leadership in ensuring?**

- the policy statements and action plans for fulfillment of the stated mission
- formulation of action plans for all operations and incorporation 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 authorities gather information about the various aspects of institutional functioning through a number of ways. The management encourages the participation of the staff in the process of decision-making in institutional functioning. Both teaching and non-teaching staff have their representatives at appropriate level for decision-making.

The college has constituted different committees comprising of teaching and non-teaching staff which play an important role in the planning and implementation of activities in different spheres of institutional functioning.

The personal interaction of the Director with the stakeholders, play an important role in implementation of policies. Apart from this, information available in student feedback forms and in self-appraisal forms of faculty members help the authorities to plan and provide proper support for the policies. The participatory role of the management encourages and sustains the involvement of the college staff, which is necessary for the efficient and effective running of the college.

The role of the Director is multi-dimensional. As the Head of the Institution, the Director is responsible for both the academic and administrative functioning of the College. He prepares the agenda for Governing Body meetings. He places before the Body, academic and administrative matters for the body's approval and is responsible for executing its decisions. The Director receives reports from the different College Committees, which offer advice to him in matters defined in the terms of reference of their functions.

### **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?**

The Director in coordination with HODs, Deans, section incharge, committee members and hostel wardens monitors all the institutional activities. The director consults with stakeholders for evaluating the policies and plans for effective implementation and improvement from time to time.

**6.1.5 Give details of the academic leadership provided to the faculty by the top management?**

The academic leadership is provided to the faculty by constituting different committees and units of the college:

- Academic council ;
- Board of Studies for different streams
- Research committee
- Library committee
- Examination committee;
- Controller Examinations
- Newsletter committee;
- Admission committee;

These committees include senior, young faculty members and students which help them to share and learn leadership qualities. The committee members actively perform their duties and submit the report to the director of the institute.

**6.1.6 How does the college groom leadership at various levels?**

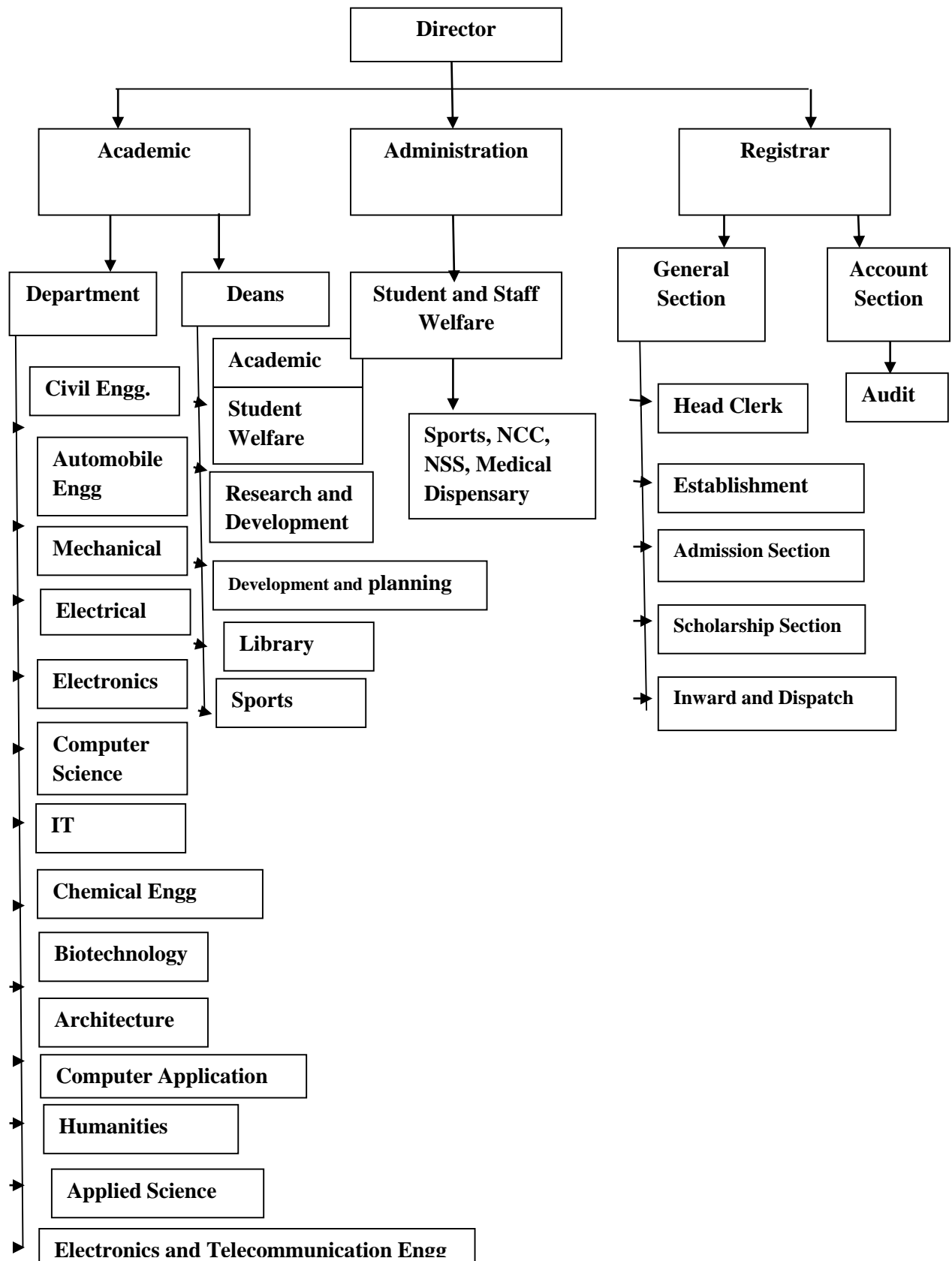
The different committees are constituted in combination of senior faculty members and junior faculty members, which helps in grooming of leadership at various levels. The students of the institutes are involved in organizing various activities in various co-curricular and extracurricular activities, which provide the platform to groom leadership at various level. Class ambassadors /representatives are involved in running day-to-day affairs of the college and bring it to the notice to the class coordinators, HODs and other competent authorities. Opportunity for all the professors is given to serve as head of the department by rotation for a period of two years. Similar is for Deans and section incharges.

**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?**

The College provides operational autonomy to the various departments and committees and the College administration works towards a decentralized functioning system as follows:

- Director is the final approving authority and has drawing and disbursing powers.
- The administration always seeks advice from the academic committee on various academic activities.
- The Heads of various Departments look after the day-to-day administration of the Departments and interact with the Director.
- The various committees in consultation with the Director make decisions regarding various co-curricular, extra-curricular and extension activities.
- Official activities are under the purview of the office superintendent.
- HODs give advice to the administration on departmental purchases & purchases of the College and have a monitoring autonomy.
- All the departments are academically autonomous.

6.1.8 Does the college promote a culture of participative management? If “yes”, indicate the levels of 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, the institution has a quality policy. The internal quality assurance cell, academic council, research committee, Library committee, and board of studies in coordination with the director develops the quality policy from time to time. Section incharge, wardens, deans, head of the departments of the institute are involved in quality deployment. The meetings are conducted with the class ambassadors of the each semester of different courses and the suggestions are incorporated in developing the policies as and when required. Directives issued by state government, All India Council for Technical Education, New Delhi and affiliating university are implemented from time to time. Board of governors also plays an important role in drafting quality policies.

### 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 College has a perspective plan for academic and infrastructure development. It is prepared for next ten years. All the stakeholders – students, faculty members, non-teaching staff including local community member are involved in the preparation of the plan. It begins with informal consultation between

- Departmental Heads and faculty members,
- Non-teaching staff members.
- Students

#### Academic expansion (year-wise)

- Introduction/ augmentation of Programmes/courses.
- Recruitment of additional faculty.
- Additional requirement of supporting staff.

#### Infrastructure development (year-wise)

Construction of additional building with measurement and projected cost.

Proposed plan for next years are given in Annexure VII

### 6.2.3 Describe the internal organizational structure and decision making processes.

#### Internal Organizational Structure:

The Director is the administrative Head of the institution. Committees like Anti-Ragging Committee, Committee against Sexual Harassment and Discipline Committee discuss and take decisions of administrative activities. The Heads of various Departments are responsible for the day-to-day administration of the Departments and report to the Director. Organizational structure is also given in 6.1.8

### **Decision Making Process:**

All external major decisions, like annual budget allocation, teaching staff and non-teaching staff recruitment, physical infrastructure development, student support and welfare scheme are managed by the Board of Governors. The institution uses various data and information obtained from the feedback from students, HODs and faculty, committees and cells, the non-teaching staff in decision-making. The decisions are then circulated to all concerned stakeholders for deployment.

### **6.2.4 Give a broad description of the quality improvement strategies of the institution for each of the following**

- **Teaching and Learning**
- **Research and Development**
- **Community engagement**
- **Human resource management**
- **Industry interaction**

The quality improvement strategies of the College in teaching & learning, research & development, community engagement, human resource management, industry interaction are described broadly as under:

Strategies to improve the quality of **Teaching & Learning** process:

- Taking introductory classes to bridge the knowledge gap of the enrolled students to enable them to cope with the Programme of their choice.
- Providing remedial coaching classes for the socially-backward and economically-weaker students to enable them to cope with the Programme of their choice.
- Following the academic calendar.
- Providing the learning facilities like smart classrooms, modern teaching aids like LCD projector, well-equipped laboratories with lab assistants, well-stocked library with reading room and internet connection to make learning effective.
- Balancing between sanctioned and filled recruitment of teachers.
- Upgradation of the main library with new text books and reference books, internet connection.
- Faculty members are given permission with study leave to enrich their knowledge through seminars, orientation programmes, refresher courses, etc.

Strategies to improve the quality in **Research & Development**:

Institute always promotes research activates in all the departments and Dean (R&D) monitors the research activities:

- All the departments are having state-or-art laboratories for cutting edge research.

- Number of research scholars are pursuing their Ph.D. degree.
- Number of faculty members is having research projects funded by different agencies.
- Departments are also having links with industries to do the cutting edge research.

Strategies to improve the quality **in community engagement**:

- The College has active NSS unit performing social service at different levels like literacy, blood donation, health and hygiene tree plantation, environment protection etc. The NCC wings participate in various state level and regional level parades and special camps in which basic military training is given to develop capacity among students to face emergencies and natural disasters. Science Forum has many annual programmes like participation in science drama competition at inter-college, district and state levels, science fair etc. to eradicate superstitions and to generate awareness among the community.
- Students are also motivated to participate in various seminars and discussions to give them exposure to current societal problems and generate awareness regarding their roles and responsibilities in society.

Strategies to improve the quality **in human resource management**:

- Encouragement to faculty members to attend various faculty development programmes.
- Provision of pay scale to faculty members as per State Government norms and AICTE norms.
- Provision of Self-Appraisal Reporting system for faculty members at the time of promotion from one post to another post and one grade pay to another grade pay.
- Access to computers to all sections of administration.
- Encouragement to students to attend seminars/symposiums/workshops/invited lectures.

Strategies in **industry interaction**:

- Institute has SKF Asset Reliability Centre in Department of Mechanical Engineering which provides training on vibration analysis
- Department of computer science and engineering has IBM centre of excellence which works as a training and certificate provider.
- Institute is engaged in Infosys intercampus connected programmes.
- Department of Chemical Engineering has collaboration with Lupin Chemicals.

- Department of Civil Engineering is providing testing and consultancy services to different industries/organizations like Nagar Nigams, PHE, PWD, National Highway authorities, soil testing etc.

**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?**

The Director being the Head of the institution collects feedback from stack holders like faculty, staff and students and takes requirement about finance and infrastructure from head of the department and Deans and compiles the information to present before the board of governors for final approval and necessary guidance.

Adequate information to all the stakeholders is published in the College Website and Prospectus.

**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 chairman, BOG members, secretary and director of the institute conducts the meeting of the HODs, faculty members and staffs at regular durations to encourage and support involvement of the staff in improving the effectiveness and efficiency of the institutional processes

**6.2.7 Enumerate the resolutions made by the Management Council in the last year and the status of implementation of such resolutions.**

Please see Annexure VIII.

**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, institute is an autonomous body and affiliated by RGPV. The university team members make visit from time to time for providing the autonomous status to the institute.

**6.2.9 How does the Institution ensure that grievances / complaints are promptly attended to and resolved effectively? Is there a mechanism to analyse the nature of grievances for promoting better stakeholder relationship?**

The grievances/complaints come from the students and teaching and non-teaching staff. The common and individual complaints from the teaching staff are discussed and solved in the meeting in a healthy manner. Faculty members are also free to express their individual complaints and problems directly to the Director privately. The complaints from the students individually or through the Discipline committee are directly brought freely to the notice of the Director. The complaints/grievances are attended promptly and resolved immediately. One complaint box is kept nearer to the Director's chamber. The

complaints from the other stakeholders are promptly attended by the Director. In some cases, the Director takes necessary action alone while in some other cases, decisions are taken jointly by the Director and concerned committee members.

**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?**

Please see Annexure IX

**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 Institute has a set mechanism of obtaining student feedback on its institutional performance. The Director collects feedback on its institutional performance from passing out students. The obtained data is analyzed and used for the improvement of institutional 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?**

Institute organizes faculty development programmes funded by AICTE, DST, ISTE, CSIR, TEQIP and other funding agencies regularly which enhance the knowledge of faculty and non teaching staff.

Institute also encourages and sponsors faculty members and non teaching staff to participate in various workshops and short term training programmes organized by other institutes.

**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?**

- The staff is encouraged to attend seminars and workshops and keep in touch with latest theories and concepts in their subjects.
- The staff is permitted to attend faculty development programmes conducted at different institutions.
- The staff is encouraged to participate in Conferences and travel grant is provided for the same.
- The teaching staff is encouraged to publish research work in indexed journals.

**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.**

The institute has a self-appraisal system to evaluate the performance of the faculty and ensure that information on multiple activities, like teaching, research and activates other than teaching etc. is appropriately captured and considered for better appraisal. The

College also appraises the performance of its non-teaching staff at the time of promotion recommended by the Director and increments are provided according to the recommendation.

Format of self appraisal form for faculty is given in Annexure X.

**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 outcome is considered during promotion and new grade pay as per the norms.
- Outcomes and decisions are communicated to the appropriate stakeholders through the Director.
- In case of any adverse remark by the competent authority it is communicated to the concerned faculty/staff.

**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?**

The College has several welfare schemes, listed below, for its teaching and non teaching staff. About 80% staff/faculty has availed the benefit of such schemes in the last four years (2011-2015):

S. No	Employees Welfare Schemes and Facilities	Teaching Staff	Non Teaching Staff
1.	Health Care	Yes	Yes
2.	Bank Facility (In Campus)	Yes	Yes
3.	Medical Allowance	Yes	Yes
4.	Conveyance Allowance	Yes	Yes
5.	House Rent Allowance	Yes	Yes
6.	Uniform and Washing Allowance	No	Yes (For Class IV)
7.	Harassment Policy	Yes	Yes
8.	Maternity and Paternity Leave	Yes	Yes
9.	Casual Leave	Yes	Yes
10.	Optional Leave	Yes	Yes
11.	Earned Leave	Yes	Yes
12.	Medical Leave	Yes	Yes
13.	Duty Leave	Yes	Yes
14.	Skill Development Policies	Yes	Yes
15.	Sponsor Programmes	Yes	Yes

16.	Promotions/Time Scale Promotions	Yes	Yes
17.	Group Insurance	Yes	Yes
18.	DCRG Payment	Yes	Yes
19.	Leave Encashment Payment	Yes	Yes
20.	EPF Payment	Yes	Yes
21.	Ex-Gratia Payment	Yes	Yes

- **Duty leave -**

Duty leave is given, if applicable. 100 percent of teachers has availed duty leave for attending orientation programmes/refresher courses/seminars/conferences/training Programmes/ workshops/acting as resource person etc. Thirty percent of non-teaching staff availed duty leave for attending staff development programmes.

- **Medical Leave -**

- Medical leaves are given to all the staff members. All teaching staff and all non-teaching staff has availed medical leave at least once within the last four years.
- Maternity leave is provided to its female staff. 10% staff has availed maternity leave.
- 15 days paternity leave is provided to the male staff. 20% staff has been availed such leave.

- **Insurance -** An insurance policy named Group Insurance is available to all the staff members of the college. The monthly premiums are automatically deducted from the salary as per Groups - A, B, C, D.

- **GPF -** Provision of provident fund is available for all the staff members.

- **Gratuity -** Gratuity benefit is provided after retirement.

### 6.3.6 What are the measures taken by the Institution for attracting and retaining eminent faculty?

The Institution has the following provisions to attract and retain eminent and talented faculties,

- Faculty members have the free access to Institutional facilities for carrying out research work.
- The Institution meets all expenditures incurred by the faculty members in presenting papers at National and International seminars, registration fees, TA, DA and other expenses including on-duty leave.
- The institute funds seed money to short-term and long-term teacher-led student projects.
- Institutional support is provided to faculty members who undertake funded projects.
- The faculty is deputed to undergo training in Research laboratories.
  - Professors from reputed foreign universities are invited to give guest lectures to enhance the research capabilities of faculty members.

- The faculty members involved in consultancy work are motivated by appreciation in term of finance.

## **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?**

Before the start of next financial year, the director asks from each department about their budgetary requirements. Head of the department ask from all the faculty in charge about the funds requirements in their laboratories and then heads send the proposal to the Director. The Director compile all the information and presents to the finance committee of the board of governors and the recommendations of the finance committee are placed before the Board of Governors. Considering the recommendations of the finance committee, Board of governors approves the budget for each financial year.

Utilization of annual budget report is submitted to the director by each department. Principal investigators of research projects submit the report to the funding agency time to time.

### **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.**

Institute has the policy of pre audit. There are two type auditors in the institute:

- State government has appointed auditor do the auditing before making any payment of the funds received from state government
- Board of Governors appoints a Chartered Accountant for the auditing of all the other funds.

For major audit Refer Annexure XI

### **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.**

Major source of receipts are from the state government, fee and financial assistance from the central government. There is no deficit.

Please refer Annexure XII for audited balance sheet of last four years.

### **6.4.4 Give details on the efforts made by the institution in securing additional funding and the utilization of the same (if any).**

Additional fund is procured from world bank through TEQIP and by various research funding agency such as AICTE, UGC, DST, CSIR, AAYUSH, M.P. Council of Science and Technology etc,

## **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?**

Yes, institute has recently constituted an internal quality assurance cell.

**b. How many decisions of the IQAC have been approved by the management/authorities for implementation and how many of them were actually implemented?**

Following are the decisions of the IQAC which have been approved for implementation:

- To conduct academic activities in thrust areas
- To conduct workshops for updating the syllabus as per the demand of time
- To monitor the teaching quality of the faculty by taking periodic feedback from the students

**c. Does the IQAC have external members on its committee? If so, mention any significant contribution made by them.**

Yes, IQAC has external members. They are contributing in upliftment of the institute time to time.

**d. How do students and alumni contribute to the effective functioning of the IQAC?**

Class ambassadors /representatives are involved in running day to day affairs of the college and bring it to the notice to the class coordinators, HODs and other competent authorities. Students feedback about the teaching methodology are collected and analysed during the semester. Corrective actions are taken accordingly. Alumni Association has been formed to maintain links between the institute and the old students. The alumini association with academia – industry tie ups identifies the thrust areas and provide training to the students.

**e. How does the IQAC communicate and engage staff from different constituents of the institution?**

Through the meetings and interactions with faculty, staff, class coordinator, mentor, class ambassadors, stakeholders etc.

**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.**

Yes, the institution have an integrated framework for Quality assurance of the academic and administrative activities through systematic recordkeeping and frequent training sessions of the administrative staff to make aware them about the latest trends in technology.

The performance appraisal system for the faculty is integrated through result analysis of the students at the end of the semester and, wherever necessary, counselling is provided to students.

**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.**

Yes, the institution provide training to its staff for effective implementation of the Quality assurance procedures by organizing various in-house workshops, training, conferences

and seminars on a regular basis. Staff is also encouraged to attend training at various national institutes.

**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 institute undertake internal academic audit through end semester result analysis.

**6.5.5 How are the internal quality assurance mechanisms aligned with the requirements of the relevant external quality assurance agencies/regulatory authorities?**

The internal quality assurance mechanisms are aligned with the requirements of the relevant external quality assurance agencies through TEQIP by world bank fund.

**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?**

- Dean(Academic) prepares the academic calendar before the start of the semester classes.
- All the faculty members prepare the lesson plan.
- Students manual for all the classes are prepared. The student manual contains, academic calendar, lesson plans, syllabi, timetable, tutorial sheets, question ion paper of previous end semester examinations.
- Class coordinators for each class are appointed.
- Day to day monitoring of students attendance is done through ERP software.
- Letters are send to the parents of the students whose attendance is less than the norm.
- Two mid semester examinations are conducted.
- Class Review Committee meetings are held regularly for all classes to review effectiveness of teaching learning process.
- Students feedback about the teaching methodology are collected and analysed during the semester. Corrective actions are taken accordingly.

**6.5.7 How does the institution communicate its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders?**

Yes, the institution communicate its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders.

- The college website is regularly updated on all the notifications and development/activities pertaining to the administrative and academic matters for the different internal and external stakeholders. Besides the college prospectus, students' and teachers' notice boards are the other means of staying connected with our stakeholders.

- An exhaustive and comprehensive Annual Report serves as an important tool to apprise the members of the Governing Body and the University of Delhi of the functioning and performance of the college.
- At the commencement of the new academic session, an orientation program for the freshers is organized by the college wherein the Director, Head of the Departments and Deans introduces the students to the rules, regulations, and facilities at the college, and the quality assurance policy.

## CRITERIA VII: INNOVATIONS AND BEST PRACTICES

### Environment Consciousness

#### 7.1.1 Does the Institute conduct a Green Audit of the campus and facilities?

There has been no formal procedure developed for Green Auditing as of now. The Institute has a lush green and environment friendly campus. The staff and students have planted many tree saplings from time to time during various occasions. The authority and management are taking all necessary steps to avoid the use of plastic bags inside the college campus and are promoting the use of 3'R's - **Reduce, Recycle & Reuse**. Many community based environment awareness programmes have been conducted by the NSS unit of the college. The institute also maintains a checklist of the following:

- Periodic assessment and disposal of unwanted stationery, waste materials and discarded equipments.
- Regular maintenance of water sump and sewer lines.
- NSS activities pertaining to maintaining neat and clean environment and plantation activity in the Institute campus.
- Lawn maintenance and tending of plants by skilled gardeners.

Besides this, the pre-requisite to have a Green audit is to have all the construction work completed. However, the Institute is planning to pioneer a comprehensive Green Audit procedure in compliance to the use of water, energy and green cover once the construction work gets completed.

#### 7.1.2 What are the initiatives taken by the college to make the campus eco-friendly?

##### \* Energy Conservation

- The institute maintains a checklist of energy audit to monitor the energy consumption and its optimum utilization.
- Awareness has been created among the staff and the students through various energy conservation Programmes.
- All the electrical utilities are switched off whenever not required.
- Incandescent bulbs are replaced with energy saving compact fluorescent lamps and LED bulbs.
- The classrooms are constructed to have maximum air circulation and natural lighting.
- All the old computer monitors are replaced with LCD/LED monitors.
- Window ACs are phased out with more efficient split ACs and temperature is set at 25°C.

\* **Use of renewable energy**

There has been a proposal to harness solar energy in the form of solar water heaters for providing hot water in the institute guest house and hostels. The prospects of setting up of a biogas plant that uses the domestic waste from canteens, hostels and guesthouse are also being investigated.

\* **Water harvesting**

The institute is giving utmost importance to rain water harvesting. The college is planning to make provisions of rain water harvesting system in all the buildings which would help in minimization of water shortage and maximization of available water usage. This would also help in improving the quality of ground water in the college campus.

\* **Check dam construction**

A check dam like structure has been constructed in open rain water channel to prevent soil erosion in rainy seasons and also to divert the water stream for irrigation purposes in the plantation.

\* **Efforts for Carbon neutrality**

- The college location is quite far from any industrial area.
- LPG cylinders are only used in guesthouse, canteen, hostels and other places for cooking purposes.
- There is no burning activity anywhere near the campus.
- Specific parking places are allocated for staff and students.
- Gardens and tree plantations are developed inside the institute premises.
- Minimal use of Generator sets within the campus.
- Printing is done on both sides of paper and all documents are thoroughly edited before printing.
- Plastic cups are strongly discouraged in the college campus.
- Institute is focusing on Eco-concerns, 3'R's - Reduce, Reuse and Recycle.

\* **Plantation**

There are a number of trees at various places in the institute campus. Tree plantation Programmes are organized on a regular basis by the NSS unit of the college. There are well manicured lush green lawns and gardens inside the campus. There is a large well maintained teak plantation in the hostel zone. Eucalyptus, ashok and other shady trees are planted on either side of the avenues. The layout of the campus has sufficient scope for landscaping and greening of the campus.

\* **Hazardous waste management**

There is minimal generation of hazardous waste in the campus. The used chemicals and exhausted batteries are disposed through external agencies. Awareness Programmes have been conducted on waste management. The waste chemicals in labs are diluted with water and then disposed properly. The use of plastic bags is

strongly discouraged in the college campus. Dustbins are provided at suitable places for collection of waste, if any.

\* **e-waste management**

Electronic waste, such as discarded computers, office electronic equipments, gadgets and other peripherals are disposed off as per their conditions or delivered to companies engaged in recycling of e-waste.

## 7.2 Innovations

### 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.

The institute has taken many innovative steps in the last four years for its smooth functioning. Some of them are listed below:

\* **Innovations in academic system**

- Student manual with lecture plan, assignment questions, old question papers and references are distributed to the students at the beginning of the semester.
- Faculties are appointed as class coordinators for monitoring and arrangement of classes, to keep track of students' performance and to address issues pertaining to the respective classes.
- Student feedback is taken periodically on individual courses.
- Performance review of faculty based on the student feedback is done.
- The Entrepreneurship Development Cell of the institute organize faculty development Programme, skill development training through science & technology on different areas etc to equip the faculty with the latest trends in teaching and research.
- The institute has taken adequate steps to wedge the gap between academia and industry. Many departments have signed MOUs with industries in this regard.
- Workshops, training, conferences and seminars are organized on a regular basis.
- Teaching assistantships are given to post graduate students in order to motivate them for quality research.
- Faculty mentors are assigned to every 15 students for keeping a close check on their performance.
- Remedial classes are arranged to make up for weak and slow learners.
- Experienced people from reputed institutions and industry experts are invited on a regular basis for delivering guest lectures.
- Parents are kept well informed about the performance of the students. The attendance of the students is closely monitored.
- Classroom lectures are supplemented with appropriate online lessons from reputed course websites whenever required.

- The institute has implemented the Choice Based Credit System (CBCS) from this academic session in the first year. Under this system, the students will be offered a range of optional courses, both within their respective departments as well as in other departments.
- Special communication and personality development classes are being conducted by the Training and Placement cell for students.
- Several new courses such as M.Tech. Geo Informatics, M.Tech. Environmental Engineering, B.E. Automobile Engineering, B.E. Electronics & Telecommunication Engineering and M.Tech. Cyber Security have been introduced in the last four years.

\* **Innovations in Administration & Infrastructure**

- The admission procedure has been centralized where the students and parents are assisted with all joining formalities at one place.
- Highly qualified and experienced faculties are recruited against the vacancies created in various departments.
- The functioning of various sections such as establishment, examinations, accounts, students' office etc has been decentralized.
- Classrooms are equipped with provision of conducting smart classes.
- The library facilities are fully computerized and there is good enhancement of resource material on various topics.
- Setting up of regional nodal centre of RGPV has made the process of submission of exam fee and getting professional degree certificate quite easy.
- The college, being an autonomous institute, has decided to show the answer sheets of the end semester examination to the students to have transparency in the valuation system.
- New dormitories for boys and girls are being constructed in the campus.
- Anti ragging duty is assigned to the faculties to have a peaceful and harmonious environment in the college campus.
- All the labs and computing facilities are equipped according to the needs of students and latest trends in different engineering fields.
- The number of students getting placement has increased greatly over the last four years.
- The campus is enabled with 24 hours wi-fi facility.

\* **Innovations involving students' participation**

The students' representation is ensured in bodies having student support activity such as class committee, hostel committee, fine arts and sports committee.

- The college has many professional bodies with student members like IEEE student chapter, CSI student chapter, ISTE student chapter etc.

- The students are given opportunities to interact with the industries and do in-plant training as a part of their curriculum.

\* **Innovations in Research and Development**

- The faculties are encouraged to publish their research work in different journals.
- Inter-departmental research projects are encouraged.
- R&D facility has been set up in the mechanical engineering department.
- Consultancy projects are undertaken by various departments of the institute.

\* **Innovative strategies Governance and Leadership**

Alumni Association has been formed to maintain links between the institute and the old students.

### 7.3 Best Practices

7.3.1 Elaborate on any two best practices which have contributed to the achievement of the institutional objectives and / or contributed to the quality improvement of the core activities of the college.

The two best practices which have contributed to the achievement of the institutional objectives and / or contributed to the quality improvement of the core activities of the college are as under:

#### 7.3.1.1 The Mentor - Mentee System

**1. Title of the practice**

The Mentor - Mentee System

**2. Goal**

The purpose of this practice is to bridge the gap between the students and the faculty, to provide guidance to students on all academic matters besides personal counseling and to enhance their capabilities. The main focus of mentorship is to develop the all round personality and to make them more professionally competent, mature and responsible citizens by the time they leave the thresholds of the institute. Each faculty functions as a counselor cum mentor for a group of students in a particular semester. The faculty assists the students to cope with the curriculum, understand the institute's expectations of its students, participate in co-curricular and extra-curricular activities, solve personal issues, as well as groom their skills and aid in all round personality development. In addition to the mentor, the students may seek counsel from other faculty members.

**3. The Context**

The main issue that had to be addressed was the lack of healthy interaction between the faculty and the students. This happened partly due to the lack of time to address

the issues of students from the faculty's side and partly due to the attitude of the students towards the teachers. On one hand, students did not find the concerned faculty approachable mainly due to his busy schedule, and on the other hand, the students themselves were reluctant to approach and interact with the faculties. Also, the students were more interested in getting marks rather than understanding the practical application and fundamental principles underlying a concept. So it took a while to inculcate a good teacher-student relation.

#### **4. Practice**

The mentor - mentee system helps the faculty in recording the academic progress of each and every student. Every faculty is in charge of 15 - 20 students and act as a mentor for those students, so that they can approach their respective faculty in case of any academic / personal help. This personal mentoring system helps the faculty in identifying the academically weak students. Those students are called for personal counseling and the mentor tries to understand the nature of the problem faced by these students.

On analysis, the poor performance of the students has been attributed to reasons of two types. One may be due to their academic background and the other may be due to their economic and social background.

While analyzing the academic reasons it has been found that Students who have completed their schooling in Hindi medium find it difficult in understanding the technical concepts as they are taught in English. This problem when left unaddressed leads to lack of interest in the subject, which reflects on their end semester results and in worst cases may even lead to drop outs. Such students are given special emphasis and are encouraged for group studies. Special classes are arranged during morning hours to enhance their capabilities to understand the English medium deliberations. This concept helps in not only creating a better rapport among the students but also helps them in understanding the concepts well because they may find it easy in asking the help of their friends in studies.

Incidentally the students predominantly are from weaker and disadvantaged section of the society. The financial constraints faced by the students also have its effect on their academic performance. When the mentors come to know of such difficulties they suggest the students about the external financial options that are available like, bank loans, Government scholarships etc., In a few cases the Management also sponsors the education of such students through scholarships and free-ships.

The performance of the students in the class is reviewed every 15 days in the department and as stated, the faculty members care for the academically weak students by way of personal counseling and mentoring. When identified at the beginning of the course and in some cases even before that (with the help of analysis of their performance in higher secondary examinations and class room interaction during the bridge courses), it becomes easier to bring them to the main stream and

instill a sense of confidence in them so that they can perform well in their subsequent semester examinations.

## 5. Evidence of Success

It has been noted that the academic performance of students has always been on the rise and the result analysis done every semester is a proof of it. The result analysis not only give the data about the performance of the students during the semester exams, but also on analysis the faculty will be able to judge whether a particular student is good in analytical or theory subjects, what kind of remedial measure is needed to solve his problem etc.

Every semester the faculty is encouraged to achieve 100% results in their respective subjects. The management has clearly understood that the process of achieving good academic results is not only in the hands of the students and faculty, but also the backing of the management plays a major role in achieving the same. The management provides all possible help in this regard.

The review of the results has shown that the students have performed better as the course progresses and there has been an incremental academic growth in their performance.

## 6. Problems Encountered and Resources Required

As every reform has a turbulent phase, so also this system, when implemented, had its own share of problems like

- Hesitation on the part of the rural students to mingle with their city counterparts.
- Non co-operation from the students in accepting the study hours at the hostel.
- Lack of self-belief and motivation among such students.
- Faculties finding it difficult in staying back after college working hours.
- Transportation problems for the faculty and day scholar students.
- Counseling the students and making them understand the importance of overcoming the demon inside them that prevented them from accepting the additional study hours at the hostel.
- Personality development sessions for the rural students.

## 7. Notes (optional)

The mentor – mentee system for the academic growth of the students is a flagship model of MITS. It has to be understood that when this system was introduced there were a few problems faced by the management as mentioned above. However these problems were overcome by the strong belief of the management on its systems and practice, guidance of the Director and other senior faculties, support of the faculty and students. When the above stake holders are convinced about the workability

and implement ability of a system then it can be assured that the results will surely be there for everyone to see.

## 8. Contact Details

Name of the Director : **Dr. Sanjeev Jain**

Name of the Institution : **Madhav Institute of Technology & Science**

City : **Gwalior**

Pin Code : **474005**

Accredited Status : **Applying for the first time (various depts. are already accredited by NBA)**

Work Phone : **0751-240-9300**

Fax : **0751-266-4684**

Website : [www.mitsgwalior.in](http://www.mitsgwalior.in)

E-mail : [dr\\_sanjeevjain@yahoo.com](mailto:dr_sanjeevjain@yahoo.com)

Mobile : **09425149630**

### **7.3.1.2 Execution of Short Term Training Programmes (STTP) under TEQIP**

#### **Phase-II and imparting industrial exposure to students**

##### **1. Title of The Practice**

Execution of Short Term Training Programmes

##### **2. Goal**

The institution has a strong vision of promoting R & D activities in diverse areas aiming to practical oriented studies in Science, Engineering and Technology. MITS aims at facilitating the Research activities with cross cutting functions of Institute-Industry partnerships, Knowledge and Technology, Transfer, analysis of concepts and Programme integration. This should also help in gathering, disseminating and forecasting the information about the availability of various research grants from funding agencies such as DST, UGC, AICTE, CSIR etc., culminating in providing help and guidance for the preparation of the research proposals. The practice should also initiate teacher - led student research projects in innovative fields of science and technology for involving the students in research activities. This practice also imparts practical exposure to students in upcoming technologies by conducting workshops, guest lectures and seminars by internal and external academicians/industrialists and through industrial visits.

##### **3. The Context**

The main issue that had to be addressed was the lack of awareness among the young faculty about the research opportunities that were available in their respective fields. The faculty were more focused on making the students achieve good results rather than training their young minds towards looking for something new; innovate some product or process; question the existing system and thinking outside the box. A need was felt to motivate and create awareness among the students and faculties about various areas of research and also to impart practical knowledge to the students.

##### **4. Practice**

The students are expected to be strong in academics and have good industrial exposure. They are encouraged to update their knowledge with latest developments in their respective disciplines and allied subjects. In addition to good academic record, the students need to develop leadership qualities and good communication skills and soft skills. In this aspect, eminent personalities from various reputed institutes and industries like Mr. D.P. Agrawal etc. are invited to impart the practical exposure to the students through workshops, seminars, guest lectures, etc. Also, the students are motivated to share their ideas with the outside world by presenting their research work in National /International conferences. To gain industrial knowledge, the students are encouraged to visit the industries. Various Short Term Training Programmes (STTPs) on relevant research fields are organized under TEQIP Phase II by the institute from time to time. As a result, the

faculties and the students are benefited and oriented to carry out novel research activities.

## **5. Evidence of Success**

The research activities carried out in various departments of the institute have received thrust through these STTPs. The following results have been achieved:-

- Several consultancy works have been taken up by the faculty of various departments.
- Institute has applied for research grants from funding organizations such as AICTE, DST etc.
- Faculties have published several research papers in Journals and Conferences.
- Many staff members have enrolled for their doctoral Programmes and are involved in active research.
- Additional equipment has been procured for R&D.
- Industrial exposure has led to increase in campus placements.
- A number of research journals are subscribed by the central library.
- Many faculties have registered for Ph. D.
- The student projects for UG and PG courses are conducted in the college under the guidance of the faculty.
- Quality Improvement Programmeme (QIP) centre has been set up in the institute.

These achievements clearly indicate that the efforts taken by the institution to promote R&D activities has given the desired results. This has led to more faculties being motivated to take up research oriented projects that would not only help them in acquiring higher qualifications but also will benefit the society at large.

## **6. Problems Encountered and Resources Required**

The main issue that cropped up while conducting the STTPs was in identifying the avenues of research and inviting experts from academia and industries. Another issue was in ensuring participation of students, researchers and faculties from other institutions and organizations.

So the first task was to make them aware of the technological innovations that were going on in various innovative and developing areas in their respective fields. Once the faculty knew about these it kindled the eagerness in them to know more about the technological advancements and to pass on this new information to their students. This subsequently made their lectures more interesting and the students were also willing to learn something new that was not available in their text books. Secondly, association with the alumni and academia - industry tie ups were essential to execute this practice in reality. Even, development of attractive and meaningful brochures and publicity of the event was indispensable to enhance the participation from other institutes and organizations.

## Notes (optional)

Today's competitive world has made most of the teachers to train the students in the given domain rather than train them in searching for knowledge. They are no more asking questions or seeking answers but they are busy learning the answers. As a premier institution in the state of Madhya Pradesh, MITS management realized that it had the responsibility of being the guiding light to other institutions. In this context the execution of STTPs was floated in a planned and phased manner. As it happens with every great endeavor, the management came across quite a number of hurdles. However the management firmly believed in the policy of encouraging research activities and to churn out not just routine engineers but technocrats who would take the country in the path of success. This persistence and self-belief combined with the cooperation of its faculty under the able guidance of senior researchers has made MITS one of the most sought after institutions not only by the students but also by young aspiring teachers who are willing to travel that extra mile to achieve their dreams.

### 7. Contact Details

Name of the Director	: <b>Dr. Sanjeev Jain</b>
Name of the Institution	: <b>Madhav Institute of Technology &amp; Science</b>
City	: <b>Gwalior</b>
Pin Code	: <b>474005</b>
Accredited Status	: <b>Applying for the first time (various depts. are already accredited by NBA)</b>
Work Phone	: <b>0751-240-9300</b>
Fax	: <b>0751-266-4684</b>
Website	: <b><a href="http://www.mitsgwalior.in">www.mitsgwalior.in</a></b>
E-mail	: <b><a href="mailto:dr_sanjeevjain@yahoo.com">dr_sanjeevjain@yahoo.com</a></b>
Mobile	: <b>09425149630</b>

There are several other practices followed by the institute which are given below:

- \* The institute library issues 3 books, now increased to 5 books to the general category and 8 books to the socially deprived students so as to help them in their curriculum.
- \* Technical fest is organized in every alternate year to provide a platform for the students to promote their innovative ideas.
- \* The institute has implemented the system of showing the end semester examination answer sheets to the students from the academic year 2015-16 in order to impart transparency in the valuation system.

- \* The present 1<sup>st</sup> year students are enrolled under the Choice Based Credit System (CBCS), enabling the students to choose courses according to their interest.
- \* The mid – semester answer copies are shown to the students so that they can learn from their shortcomings and fair better in the final exams.
- \* Continuous evaluation and assessment of the employees and the students is being done for identifying the avenues for scope of improvement.
- \* Special classes and training Programmes are conducted at regular intervals for value addition in professional skills such as a training Programme was conducted by the civil Engg. Dept on Electronic Total Station.
- \* The institute management provides suitable funding to the UG & PG students and faculties to undertake training in laboratories and institutes of national repute like NITTR Bhopal, NITTR Chandigarh, NPC New Delhi, IIM Indore, IIM Ahmedabad, IIT Bombay, IIT Kharagpur, etc.
- \* Remote centre of IIT Bombay for 10 KTK has been established which provides information of latest developments in relevant areas.
- \* Orientation Programme is conducted every year for the 1<sup>st</sup> year students which is participated jointly by the candidate and his/her parents.



11. List of senior visiting faculty      NA

12. Percentage of lectures delivered and practical classes handled (Programmeme wise)

by temporary faculty

<b>Bachelor's of Engineering</b>	<b>First Year</b>	<b>80%</b>
<b>Bachelor's of Engineering</b>	<b>Third Year</b>	<b>90%</b>
<b>Bachelor's of Engineering</b>	<b>Third Year</b>	<b>90%</b>
<b>Bachelor's of Architecture</b>	<b>First Year</b>	<b>100%</b>
<b>Master's of Computer Application</b>	<b>I/II Year</b>	<b>100%</b>
<b>M. Tech.</b>	<b>I Year</b>	<b>50%</b>

13. Student -Teacher Ratio (Programmeme wise) **Departmental/class**

<b>Bachelor's of Engineering</b>	<b>First Year</b>	<b>1:60</b>
<b>Bachelor's of Engineering</b>	<b>Third Year</b>	<b>1:65</b>
<b>Bachelor's of Engineering</b>	<b>Third Year</b>	<b>1:65</b>
<b>Bachelor's of Architecture</b>	<b>First Year</b>	<b>1:40</b>
<b>Master's of Computer Application</b>	<b>I/II Year</b>	<b>1:60</b>
<b>M. Tech.</b>	<b>I Year</b>	<b>1:25</b>

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled      Nil

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG. **Ad hoc**

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the
Arti Pipariya	Ph.D. (UGC JRF NET)	Assistant Professor	Management	12	NA
Priyanka Jagtap	MBA	Assistant Professor	Management	03	NA
Pallavi Sharma	MA English Literature	Assitant Professor	English Fiction	04	NA
Anupama Shrivastava	MA English Literature	Assitant Professor	English Fiction	03	NA
Nustaran Bano	MA English Literature	Assitant Professor	English Fiction	06	NA

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received      NA

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received **NIL**

18. Research Centre /facility recognized by the University **NA**

19. Publications:

\* a) Publication per faculty

**Regular 12 + 03 books**

**Ad hoc 03 + 01 book**

\* Number of papers published in peer reviewed journals (national / international) by faculty and students

**Regular 06**

**Ad hoc Nil**

\* Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

\* Monographs **01**

\* Chapter in Books **01**

\* Books Edited **Nil**

\* Books with ISBN/ISSN numbers with details of publishers

Faculty Name: Sanjeev Khanna

➤ Communication Skills. Shree Ram Prakashan: (2/ed.) Gwalior, 2011. ISBN 9789382077039.

➤ Polytechnic Communication. Shree Ram Prakashan: (2/ed) Gwalior, 2010 ISBN 9789382077060.

➤ Joseph Conrad: His Mind and Art: A book dealing with narrative perspective in the writings of Conrad with special reference to the use of supernatural machinery and sea symbolism. (1/ed) Adhyayan Publishers: New Delhi, 2008. ISBN 9788184350982.

\* Citation Index **NA**

\* SNIP **NA**

\* SJR **NA**

\* Impact factor **NA**

\* h-index **NA**

20. Areas of consultancy and income generated **Nil**

21. Faculty as members in

- a) National committees b) International Committees c) Editorial Boards....

**Sanjeev Khanna     On board of 02 Journals**

22. Student projects

- a) Percentage of students who have done in-house projects including inter departmental/Programmeme     **Nil**
- b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies     **Nil**

23. Awards / Recognitions received by faculty and students     **Nil**

24. List of eminent academicians and scientists / visitors to the department     **Nil**

25. Seminars/ Conferences/Workshops organized & the source of funding a) National     **NA**

b) International     **NA**

26. Student profile Programmeme/course wise: Not applicable

Name of the Course/Programmeme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	

\*M = Male    \*F = Female

27. Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
<b>BE</b>	<b>90</b>	<b>10</b>	<b>00</b>
<b>B Arch</b>	<b>90</b>	<b>10</b>	<b>00</b>
<b>MCA</b>	<b>95</b>	<b>05</b>	<b>00</b>
<b>M. Tech</b>	<b>100</b>	<b>00</b>	<b>00</b>

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.? **NA**

29. Student progression

<b>Student progression</b>	<b>Against % enrolled</b>
UG to PG	<b>NA</b>
PG to M.Phil.	<b>NA</b>
PG to Ph.D.	<b>NA</b>
Ph.D. to Post-Doctoral	<b>NA</b>
<p style="text-align: center;"><b>Employed</b></p> <ul style="list-style-type: none"> <li>• Campus selection</li> <li>• Other than campus recruitment</li> </ul>	<b>NA</b>
Entrepreneurship/Self-employment	<b>NA</b>

30. Details of Infrastructural facilities a) Library **NA**

b) Internet facilities for Staff & Students **Available**

c) Class rooms with ICT facility **Available**

d) Laboratories **Language laboratory with 35 systems**

31. Number of students receiving financial assistance from college, university, government or other agencies **NA**

32. Details on student enrichment Programmes (special lectures / workshops / seminar) with external experts **NA**

33. Teaching methods adopted to improve student learning

1. **Interactive Learning**

2. **Students Demonstration/Teaching**

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

1. **Participation in students academic co-curricular activities**

2. **Other Institute duties like exams/Special classes/Personality Development classes and the like.**

35. SWOC analysis of the department and Future plans **NA**

## Department of Biotechnology

1. **Name of the department**  
Department of Biotechnology
2. **Year of Establishment**  
2002
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)**
  - I. B. E.
  - II. M. Tech
4. **Names of Interdisciplinary courses and the departments/units involved**  
NIL
5. **Annual/ semester/choice based credit system (programme wise)**  
CBCS from current year
6. **Participation of the department in the courses offered by other departments**  
B.E., Chemical Engineering, and  
M.E., Environmental Engineering.
7. **Courses in collaboration with other universities, industries, foreign institutions, etc.**  
NIL
8. **Details of courses/programmes discontinued (if any) with reasons**  
NIL
9. **Number of Teaching posts**

Teaching Post	Sanctioned	Filled
Professors	1	0
Associate Professors	2	0
Asst. Professors	6	9

**10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)**

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
Dr. Sunita Sharma	PhD	Asst. Professor	Biochemistry	12	Nil
Hotam Singh Chaudhary	M.Tech.	Asst. Professor	Industrial Microbiology	07	Nil
Rahul Anand	M.Tech.	Asst. Professor	Molecular Modeling	07	Nil
Sarika Saxena	M.Tech.	Asst. Professor	Plant Biotechnology	08	Nil
Vinod Kumar Jatav	M.Tech.	Asst. Professor	Bioinformatics	05	Nil
Savita Gupta	M.Tech.	Asst. Professor	Biotechnology	05	Nil
Shilpi Gupta	M.Tech.	Asst. Professor	Biotechnology	Nil	Nil
Vyoma Singh	M.Tech.	Asst. Professor	Biotechnology	Nil	Nil
Dhawal Tailang	M.Tech.	Asst. Professor	Environmental Engineering	Nil	Nil

**11. List of senior visiting faculty**  
NIL

**12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty**  
NIL

**13. Student -Teacher Ratio (programme wise)**  
a. 1:20 for B.E.  
b. 1:10 for M.Tech;

**14. Number of academic support staff (technical) and administrative staff; sanctioned and filled**

Category	Sanctioned	Filled
Academic support staff	2	2
Administrative staff	2	1

**15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.**

<b>Name</b>	<b>Qualification</b>	<b>Designation</b>	<b>Specialization</b>
Dr. Sunita Sharma	PhD	Asst. Professor	Biochemistry
Hotam Singh Chaudhary	M.Tech.	Asst. Professor	Industrial Microbiology
Rahul Anand	M.Tech.	Asst. Professor	Molecular Modeling
Sarika Saxena	M.Tech.	Asst. Professor	Plant Biotechnology
Vinod Kumar Jatav	M.Tech.	Asst. Professor	Bioinformatics
Savita Gupta	M.Tech.	Asst. Professor	Biotechnology
Shilpi Gupta	M.Tech.	Asst. Professor	Biotechnology
Vyoma Singh	M.Tech.	Asst. Professor	Biotechnology
Dhawal Tailang	M.Tech.	Asst. Professor	Environmental Engineering

**16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received**

NIL

**17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received**

NIL

**18. Research Centre /facility recognized by the University**

Department of Biotechnology

**19. Publications:**

**a) Publication per faculty**

- **Number of papers published in peer reviewed journals (national / International) by faculty and students.**
- **Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)**
- **Monographs**
- **Chapter in Books**
- **Books Edited**

- **Books with ISBN/ISSN numbers with details of publishers**
- **Citation Index**
- **SNIP**
- **SJR**
- **Impact factor**
- **h-index**

<b>S. No.</b>	<b>Name of the Faculty</b>	<b>Qualification</b>	<b>Designation</b>	<b>No. of Publication</b>
1	Dr. Sunita Sharma	PhD	Asst. Professor	18
2	Hotam Singh Chaudhary	M.Tech.	Asst. Professor	20
3	Rahul Anand	M.Tech.	Asst. Professor	03
4	Sarika Saxena	M.Tech.	Asst. Professor	10
5	Vinod Kumar Jatav	M.Tech.	Asst. Professor	11
6	Savita Gupta	M.Tech.	Asst. Professor	01
7	Shilpi Gupta	M.Tech.	Asst. Professor	02
8	Vyoma Singh	M.Tech.	Asst. Professor	04
9	Dhawal Tailang	M.Tech.	Asst. Professor	Nil

**20. Areas of consultancy and income generated**

NIL

**21. Faculty as members in**

- National committees**
- International Committees**
- Editorial Boards....**

NIL

**22. Student projects**

**a) Percentage of students who have done in-house projects including inter departmental/programme**

Programme	% (in house project)
BE (2012- 2015)	95
M.Tech (2012-2015)	92

**b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies**

10% students got placed for projects outside the institutes in research laboratories.

**23. Awards / Recognitions received by faculty and students**

NIL

**24. List of eminent academicians and scientists / visitors to the department**

Programme	Name of the programme	Date	Expert Name& designation
Training	Plant Tissue Culture	Feb	Amit Sharma (Harihar biotech, Agra)
Workshop	Computer aided drug designing	15-16 April 2013	1.Dr. Sobia Elizabeth (NIPGER, , Mohali Punjab) 2.Dr.Naidu Sabhraw (CCB, JNU, New Delhi) 3.Dr.Kal Ramnarayan President 4. Prof. Dr. Sarvesh Paliwal (Head, Department of Pharmacy, Banasthali University, Jaipur) 5. Dr. Chakresh Jain Senior Lecturer (Jaypee Instittue of Information Technology, Greater Noida)

**25. Seminars/ Conferences/Workshops organized & the source of funding**

**a) National**

- Two days workshop on Computer aided Drug Design – TEQIP funded
- Fifteen days training on Plant Tissue culture – TEQIP funded

**b) International**

Nil

**26. Student profile programme/course wise:**

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	
NA	NA	NA	NA	NA	NA

\*M = Male \*F = Female

**27. Diversity of Students**

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
B.E.	77	33	Nil
M. Tech	80	20	Nil

**28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?**

**List of GATE-2013 qualified students**

**B.E VIII sem**

S.No	Name of Student	Marks	Rank
1.	Dhawal Tailang	53	377
2.	Upadhi Shukla	41	1990
3.	Manisha Shukla	50.33	571
4.	Aditya Nagori	42	1766

5.	Ankit Gupta	44	1327
6.	Abhilash Tiwari	42.33	1705
7.	Akash Pawar	42	1766
8.	Prashant Soni	50	377 (OBC)

**M.Tech II Sem**

S.No	Name of Student	Marks	Rank
1.	AnandiKavimandan	40.67	2086
2.	Shilpi Gupta	49.6	638

**M.Tech IV Sem**

S.No	Name of Student	Marks	Rank
1.	Nidhi Raj Yadav	44.67	
2.	Rajini Kiroriya	30.67	5513
3.	Smriti Verma	42.33	534(Life Science)
4.	Bhavana Soni	40	2232

**List of GATE-2015 qualified students**

S. No	Name of Student	Rank
1.	Anirudh Singh	271
2.	Palash Khandelwal	657

**29. Student progression**

Student progression	Against % enrolled (2012-2015)
UG to PG	25
PG to M.Phil.	Nil
PG to Ph.D.	10
Ph.D. to Post-Doctoral	Nil
<b>Employed</b>	
• Campus selection	20
• Other than campus recruitment	40

Entrepreneurship/Self-employment	10
----------------------------------	----

**30. Details of Infrastructural facilities**

**a) Library**

Departmental Library

**b) Internet facilities for Staff and Students**

Yes

**c) Class rooms with ICT facility**

Yes

**d) Laboratories**

Laboratories in the Department of Biotechnology are listed below;

1. Biochemistry lab
2. Microbiology lab
3. Molecular biology lab
4. Plant tissue culture lab
5. Microscope lab
6. Instrumentation lab
7. Bioinformatics lab

**31. Number of students receiving financial assistance from college, university, government or other agencies.**

- Scholarship (HTTA) are given to 7 M.Tech. students from TEQIP Fund.
- GATE Scholarship (HTTA) are given to 2 M.Tech. students from AICTE Fund.
- SC/ST scholarship are given to 10 students according to governmental policy.

**32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts**

Programme	Name of the programme	Date	Expert Name& designation
Training	Plant Tissue Culture	Feb	Amit Sharma (Harihar biotech, Agra)
			1.Dr. Sobia Elizabeth (NIPGER, , Mohali Punjab)

Workshop	Computer aided drug designing	15-16 April 2013	2. Dr. Naidu Sabhraw (CCB, JNU, New Delhi) 3. Dr. Kal Ramnarayan President 4. Prof. Dr. Sarvesh Paliwal (Head, Department of Pharmacy, Banasthali University, Jaipur) 5. Dr. Chakresh Jain Senior Lecturer ( Jaypee Institute of Information Technology, Greater Noida)
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Name of Expert	Expert's Organization	Expert from	Topic of Lecture	Date of visit from	Date of visit To
Dr. Sunil Gupta	CRI	Kasauli	Development of DNA Vaccine	22/10/13	22/10/13
Dr. Kameshwar Rao	DRDE, Gwalior	Gwalior	Mass-Spectrometry in Proteomics	12/10/2013	12/10/2013
Dr. Pradeep Shrivastava	IIT, BHU	Varanasi	controlling in Bioprocess	16/10/2013	16/10/2013

### 33. Teaching methods adopted to improve student learning

1. The teachers adopt presentation and group discussion method to make the topics more interesting.
2. The teachers frequently give the illustrations and discuss the special technical conditions to acquaint the students with the practical insight of the subject.
3. The visits are arranged to industries, institution of higher education and research, and national laboratories to make the subjects more informative.
4. The Practical Training manual is made available to the students of all classes, which contain suitable assignments in order to develop reading and research habits.
8. Strengthening of library resources and services.
5. Apart from it, the college provides a state of the art seminar hall where students participate in GDs, Debates and Seminars. The college also encourages the use of internet and computers by the staff and students to keep them abreast of the latest developments in their respective field of study.

6. NPTEL video lectures are available in the department and the same are used by the faculty and the students.

### **34. Participation in Institutional Social Responsibility (ISR) and Extension activities**

Institution promotes institution-neighborhood-community network and student engagement, contributing to good citizenship, service orientation and holistic development of students by enrolling the students in NCC and NSS. Through NSS students literate the under privileged children and promote the education among these children. Institution also involves the students to organize the blood donation camp and to distribute the clothes to the under privileged children. Department of biotechnology encourages students to participate in these activities. In newly implemented curriculum for B.E. first year students, social outreach programme has been included.

### **35. SWOC analysis of the department and Future plans**

#### **Strength:**

- Dedicated and highly efficient faculty
- No of publications by faculty members in last 4 tear are commendable
- Infrastructure of the department is up to mark
- Departmental library is rich with reference books

#### **Weaknesses:**

- Socio-economic background of students admitted in the course is responsible for unsatisfactory result in the first two semesters.
- Insufficient funding.

#### **Opportunities:**

- Level of academic excellence, which the college has acquired, make it possible for students to get absorbed in the core companies.
- College has to device a mechanism to materialize it.
- New labs like bioprocess engineering lab, tissue culture labs may be established by utilizing the skill of faculty and staff.

#### **Challenges:**

- The vacant post must be filled and the recruitment of senior faculty should be done, for this permission from the government is a great challenge.
- Retaining students in the biotech branch is a challenge.

## Chemical Engineering

1. Name of the Department : Chemical Engineering
2. Year of Establishment : 1996
3. Names of Programmes / Courses offered (UG, PG, M. Phil, Ph.D., Integrated Masters; Integrated Ph.D., etc) :

Programme	Description
B.E. in Chemical Engineering (UG)	Started in 1996 with intake 30. Increase in take from 30 to 60 in the year 2013.
M.Tech in Chemical Engineering (PG)	Started in 2013 with intake of 18

4. Names of Interdisciplinary courses and the departments / units involved

SL. No.	Interdisciplinary Courses	Year	Departments / units involved
1	Engineering Mathematics - I (BCHL101)	1st	Applied Science
2	Engineering Physics (PH101)	1st	Applied Science
3	Communication Skills (HU102)	1st	Humanities
4	Fundamentals of Mechanical Engineering (BCHL103)	1st	Mechanical Engineering
5	Engineering Graphics (BCHL105)	1st	Mechanical Engineering
6	Manufacturing Practices (ME203)	1st	Mechanical Engineering
7	Engineering Chemistry (CY101)	1st	Applied Science
8	Engineering Mathematics - II (MA201)	1st	Applied Science
9	Basic Computer Programming (CS201)	1st	Computer Science Engineering & Information Technology

10	English Language (HU101)	1st	Humanities
11	Environmental Science (AS103)	1st	Civil Engineering
12	Fundamentals of Electrical Engineering (EE102)	1st	Electrical Engineering
13	Engineering Mathematics (CHL301)	2nd	Applied Science
14	Instrumentation & Measurement (CHL303)	2nd	Electrical Engineering
15	Computer Programmemeing - III(CHL306)	2nd	Computer Science Engineering & Information Technology
16	Engineering Mathematics - III (CHL401)	2nd	Applied Science
17	Principles of Management & Managerial Economics (CHL402)	2nd	Humanities
18	Computer Programmemeing - IV (CHL406)	2nd	Computer Science Engineering & Information Technology
19	Advanced Mathematics	M. Tech 1st yr	Applied Science

5. Annual / semester / choice based credit system (Programmeme wise): Current B.E. 1st Semester 2015 -16 batch admitted under Choice Based Credit System. Other batches are under the semester credit system.
6. Participation of the department in the courses offered by other departments: NA
7. Courses in collaboration with other universities, industries, foreign institutions, etc.: Nil
8. Details of courses / Programmemes discontinued (if any) with reasons : Nil
9. Number of Teaching posts

	Sanctioned	Filled
Professors	01	Nil

Associate Professors	03	01
Assistant Professors	09	04

10. Faculty profile with name, qualification, designation, specialization

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph. D. guided for the last 4 years
Dr. S. Prasad	Ph. D.	Associate Professor	Fluidized bed coal combustion	12 (R&D), 1 (Industry), 19 (Teaching)	01
Prof. Vandana Sakhre	M. Tech	Assistant Professor	Chemical Engineering	17.5	-
Prof. S.S. Trivedia	M. Tech	Assistant Professor	Chemical Engineering	5.6	-
Prof. Swati Gupta	M. Tech	Assistant Professor	Chemical Engineering	3	-
Prof. Anish P. Jacob	M. Tech	Assistant Professor	Chemical Engineering	4.2	-

11. List of senior visiting faculty : Nil

12. Percentage of lectures delivered and practical classes handled (Programmeme wise) by temporary faculty

Programmeme	Theory Lectures	Practical Classes
UG	43.86%	6.8%
PG	62.12%	1.51%

13. Student - Teacher Ratio (Programmeme wise)

- UG :- 32 : 1
- PG :- 2 : 1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
--	------------	--------

Support staff (technical)	-	1
Administrative staff	-	1

**15. Qualifications of teaching faculty with D Sc / D. Litt / Ph. D / M. Phil. / PG.**

Name of the faculty	Qualification (D Sc / D. Litt / Ph. D / M. Phil. / PG)
Dr. S. Prasad	Ph. D.
Prof. V. Sakhre	M. Tech.
Prof. S. S. Trivedia	M. Tech.
Prof. Swati Gupta	M. Tech.
Prof. Anish P. Jacob	M. Tech.

**16. Number of faculty with ongoing projects from a) National, b) International funding agencies and grants received : Not yet**

**17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received : Not yet**

**18. Research Centre / facility recognized by the University: Not yet**

**19. Publications :**

- \* a) Publication per faculty
- \* Number of papers published in peer reviewed journals (national / international) by faculty and students
- \* Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)
- \* Monographs: Nil
- \* Chapter in Books: Nil
- \* Books Edited: Nil
- \* Books with ISBN /ISSN numbers with details of publishers
- \* Citation Index
- \* SNIP
- \* SJR
- \* Impact factor

h - in de	Faculty Name	No. of Publications		Books / Monographs
		Journals	Conferences	

x SL. No		Internati onal	Nationa l	Internati onal	National	/ Chapters Published
1.	Dr. S. Prasad	7	-	-	-	-
2.	Prof. V. Sakhre	2	2	3	-	-
3.	Prof. S. S. Trivedia	3	2	-	-	-
4.	Prof. Swati Gupta	-	-	-	-	-
5.	Prof. Anish P. Jacob	-	-	-	-	-

20. Areas of consultancy and income generated : Not yet received

21. Faculty as members in National committees, b) International committees, c) Editorial Boards...: Not yet

22. Student projects

a) Percentage of students who have done in - house projects including inter departmental / Programmeme : 100 %

b) Percentage of students placed for projects in organizations outside the institution, ie; in Research laboratories / Industry / other agencies : Nil

23. Awards / Recognitions received by faculty and students : Not yet

24. List of eminent academicians and scientists / visitors to the departments

Academic year with date	Name of the Resource person	Designation	Organization	Purpose
21st - 25th Oct, 2013	Dr. V. S. Sakpal	Professor	Amravati University	Short Term Training Programmeme
21st - 25th Oct, 2013	Dr. Uday Pratap Singh	Assistant Professor	LNCT, Bhopal	Short Term Training Programmeme

21st - 25th Oct, 2013	Mr. Avinash Mishra	General Manager	Godrej Consumers Pvt. Ltd., Malanpur, Gwalior	Short Term Training Programmeme
14th Jan, 2014	Dr. K. Wasewar	Associate Professor	VNIT, Nagpur	Expert Lecture
14th Jan, 2014	Dr. Ghanshyam Singh	Director	MPCT, Gwalior	Expert Lecture
14th Jan, 2014	Dr. Rajesh Agrawal	Associate Professor	DIT, New Delhi	Expert Lecture
15th Jan, 2014	Dr. Mohammad Athar	Professor	Aligarh Muslim University	Expert Lecture
9th Feb, 2015	Dr. G. N. Tiwari	Professor	IIT Delhi	Key note Lecture
9th Feb, 2015	Dr. Sanjay Agrawal	Reader	IGNOU, Delhi	Expert Lecture
9th Feb, 2015	Dr. S. K. Dubey	Assistant Director	RIFD, AICTE, Delhi	Expert Lecture

25. Seminars / Conferences / Workshops organized & the source of funding

a) National , b) International

Academic Year	Date	Name of the conference / workshop / seminars	Source of funding (national / international) / Name of funding agency
2013-14	21st - 25th October	Short Term Training Programmeme (STTP) on "Advances in	TEQIP -II

		Chemical Engineering”	
2013-14	14th -15th January	Workshop on “Computational Fluid Dynamics”	TEQIP -II
2014-15	9th February	Seminar on “Recent Advances in Solar Energy”	TEQIP -II

26. Student profile Programmeme / course wise :

Name of the course / Programmeme (refer question no. 4)	Applications received	Academic year	Selected	Enrolled		Pass Percentage
				*M	*F	
B.E.	NA	2012-13	26	19	7	73.91 %
		2013-14	70	52	18	72.41 %
		2014-15	65	55	10	73.84 %
M. Tech.	NA	2013-14	11	2	9	100 %
		2014-15	6	1	5	83.33 %
		2015-16	6	2	4	Yet to be published

\*M = Male      \*F = Female

27. Diversity of Students

Name of the course	Year	% of students from the same state	% of students from other States	% of students from abroad
B.E.	2012-13	92	8	NA
	2013-14	100	0	

	2014-15	97	3	
M. Tech.	2013-14	100	0	NA
	2014-15	100	0	
	2015-16	100	0	

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil Services, Defense Services, etc.?

GATE: 03, GRE / TOEFL: 06, GMAT / TOEFL: 01

29. Student Progression

Student Progression	Against % enrolled	
UG to PG	20 %	
PG to M. Phil.	NA	
PG to Ph. D.	NA	
Ph. D. to Post - Doctoral	NA	
Employed	UG	PG
Campus Selection	63.33 %	9.09 %
Other than campus recruitment	3.33 %	90.91 %
Entrepreneurship / Self - employed	-	-

30. Details of Infrastructural facilities

- a) Library: Not yet
- b) Internet facilities for Staff & Students: Yes
- c) Class rooms with ICT facility: 02
- d) Laboratories: 09

31. Number of students receiving financial assistance from college, university, government or other agencies: Academic year 2014-15: OBC - 28, SC - 17,

ST – 03.

32. Details on student enrichment Programmes (special lectures / workshops seminars) with external experts

SL. No.	Title of the Special Lecture / Workshop / Seminar organized	Date	Name of the Resource Person	Background (Industry / Academic / R&D)
1.	Special Lecture on "Industrial Prospects and Career options in Industry"	19th Feb 2013	Shri Avinash Mishra	General Manager, Godrej Consumers Pvt. Ltd., Malanpur, Gwalior
2.	Special Lecture on "Career options in LUPIN"	26th Feb 2013	Mr. Sudhanshu Sharma	Engineer, Lupin Chemicals, Bhopal
3.	Invited Talk on "Overview of process design"	2013	Mr. Harsh Sahu	Design Engineer, Honeywell UOP LLC, Gurgaon

33. Teaching methods adopted to improve student learning

- Interactive lectures using various aid such as Black / white board, computer presentations, etc.
- Small group tutorials and assignments.
- Laboratories.
- Project based learning by assigning experimental projects to students enabling them to think out of the box.
- Industrial internship.
- Use of online educational supplements such as NPTEL.
- Report writing and Seminars.
- Faculty development training.

- Conduct workshops, conferences and seminars.
- Guest lecture & Industrial visits.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

**Students:**

- Participation in inter and intra - college symposiums -Programmemeing contest  
paper presentations, project presentations etc.
- Participation in cultural events and competitions.
- Active participation in department level and University level Students associations.

**Faculty:**

- Participation in administrative activities.
- Participation in student welfare activities.
- Helping students in association and club activities.

35. SWOC analysis of the department and Future Plans

Strengths:

- Qualified and dedicated Faculty.
- Collaborative effort of faculty members and technical staff members.
- Organizing Seminars, Workshops, and Conferences by receiving grants from funding agencies such as TEQIP - II.
- Mentors constantly provide care for students in solving their technical problems.
- All the courses are approved by AICTE.
- Quality research projects & Good laboratory facility.

Weaknesses:

- Shortage of faculty & department library.
- Lack of Consultancy work.
- Lack of Inter-disciplinary projects.
- Lack of establishment of alumni association.
- Research and development and extension activities are to be strengthened.
- Needs to improve the student enrolment in M.Tech. Course.
- Need to improve the placement in core companies.
- Need of more analytical equipment for research.
- Need to develop strong thrust areas of research.
- Lack of adequate industry institute interaction.

#### Opportunities:

- Provide consultancy services to nearby industries.
- Develop expertise in core/emerging areas.
- Establish collaboration with overseas institutes/agencies as well as with Indian institutions.
- Partnership with premier industries for new product development.
- To apply for more research funds from funding agencies like AICTE, UGC, DST, etc.
- Revision of Curriculum as per need.
- Student participation in club activities, inter college competitions, paper competition, model competition etc.
- Continuous up gradation of knowledge.
- Innovation in teaching learning process.
- Increase of high quality research publications.

#### Challenges:

- Rapidly advancing technology may require more human resources and equipment.
- Quality of intake is coming down as good students are opting for deemed universities within and outside the state.
- Competing with other institutions.
- Achieving high job placement for students.
- Faculty retention.
- Creating interdisciplinary teaching/research environment.
- Adapting to changing student expectations.

#### Future plans:

- Develop smart classrooms with interactive teaching aids.
- To promote inter disciplinary research.
- To establish industry / academic interactions or collaborations with Regional /state level/ national / international organizations.
- Improve teaching methodology.
- Improve campus placements for students.
- Recruit more number of qualified faculty and staff.
- To have research tie-ups with national and international reputed institutions.

## Applied Sciences

1. Name of the department **Applied Sciences**
2. Year of Establishment **1957**
3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) **NA/13**
4. Names of Interdisciplinary courses and the departments/ units involved  
**13 Courses**
5. Annual/ semester/choice based credit system (Programme wise)- **09**  
**Bachelor's of Engineering:**  
**Engineering Mathematics (I, II, II)**  
**Discrete structure**  
**Engineering Physics**  
**Engineering Chemistry**  
**Mathematical Foundation of CS**  
**Operation Research**
6. Participation of the department in the courses offered by other departments **NA**
7. Courses in collaboration with other universities, industries, foreign institutions, etc. **NA**
8. Details of courses/Programmes discontinued (if any) with reasons **NA**
9. Number of teaching posts

	Sanctioned	Filled
Professors	-	<b>01</b>
Associate Professors	-	<b>00</b>
Asst. Professors	-	<b>06</b>

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. students guided for
<b>Dr. Abhay Mishra</b>	<b>Ph.D.</b>	<b>Professor</b>	<b>Digital communication</b>	<b>27</b>	<b>02</b>

Dr. V.P. Shinde	Ph.D.	Assistant Professor	Queuing Theory	14	01
Dr. D.K. Jain	Ph.D.	Assistant Professor	Special Function	15	01
Dr. Anjula Gaur	Ph.D.	Assistant Professor	Organic Chemistry	09	00
Dr. Shourabh Bhattacharua	P.hD	Assistant Professor	Atmospheric Science	08	00
Prof Jitendra Kumar	M. Phil	Assistant Professor	Queuing Theory	08	00
Prof Agand Oiha	M.Sc. (NET)	Assistant Professor	Epidemiology	08	00

11. List of senior visiting faculty NA

12. Percentage of lectures delivered and practical classes handled (Programmeme wise)

by temporary faculty

Bachelor's of Engineering	First Year	50%
Bachelor's of Engineering	Third Year	50%
Master's of Computer Application	I/II Year	30%
M. Tech.	I Year	10%

13. Student -Teacher Ratio (Programmeme wise) Departmental/class

Bachelor's of Engineering	First Year	1:60
Bachelor's of Engineering	Third Year	1:65
Master's of Computer Application	I/II Year	1:40
M. Tech.	I Year	1:25

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled 01

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG. Ad hoc

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for
Dr Peeti Gunta	P.hD	Assistant Professor	Organic Chemistry	07	NA
Dr Mamta Sharma	P.hD	Assistant Professor	OR	06	NA

Dr. Pooja Sharma	P.hD	Assistant Professor	Organic Chemistry	04	NA
Prof Shweta	M.Phil.	Assistant Professor	Special Function	04	NA
Prof Anil Shukla	M.Sc.	Assistant Professor	Special Function	01	NA
Prof D K Mishra	M.Sc.	Assistant Professor	OR	06	NA

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

S. No.	Name of the Schemes	Title of Project	Name of PI	Name of Co-PI	Grant Sanctioned
1.	AICTE	Investigation and data analysis of electric field variation and lightning activities using electric field monitoring system)	Dr Sourabh Bhattacharya	--	Rs. 7.25 Lac
2.	MPCST	Studies on removal of dyes from industrial effluents using eco-friendly non-conventional biosorbent	Dr. Anjula Gaur	-	Rs. 4.28 Lac

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received **Rs. 11.53 Lakh**

18. Research Centre /facility recognized by the University **Yes**

19. Publications:

\* a) Publication per faculty

\* Number of papers published in peer reviewed journals (national / international) by faculty and students

S.No.	Faculty Name	Publications in the Journals
1.	Dr. Abhay Mishra	15
2.	Dr. V.P. Shinde	25

3.	Dr. D.K. Jain	30
4.	Dr. Anjula Gaur	05
5.	Dr. Shourabh Bhattacharya	08
6.	Prof Jitendra Kumar	06
7.	Dr. Pooja Sharma	03
8.	Dr Peeti Gupta	02
9.	Dr Mamta Sharma	01
10.	Prof D K Mishra	01

\* Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

\* Monographs           **NA**

\* Chapter in Books   **01**

\* Books Edited       **Nil**

\* Books with ISBN/ISSN numbers with details of publishers

**Faculty Name: Dr D K Jain**

1. *Engineering Mathematics -I, Page 624+32, Seventh edition 2015-16*  
**ISBN 978-81-922064-0-0**      By Shriram Prakashan Gwalior.

2. *Engineering Mathematics -II, Page 430 + 24, Seventh edition 2014-15*  
**ISBN 978-81-922064-1-7**      By Shriram Prakashan Gwalior.

3. *Engineering Mathematics -III Page 568+24, New edition 2015*  
**ISBN 978-81-922064-3-1**      By Shriram Prakashan Gwalior.

4. *Discrete Structure, Page 472+24, Fifth edition 2014-15*  
**ISBN 978-81-922064-2-4**      By Shriram Prakashan Gwalior.

\* Citation Index       **NA**

\* SNIP                   **NA**

\* SJR                     **NA**

\* Impact factor       **NA**

\* h-index               **NA**

20. Areas of consultancy and income generated   **Chemistry (Oil)**



27. Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
BE	88	12	00
MCA	95	05	00
M. Tech	80	20	00

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.? **NA**

29. Student progression

Student progression	Against % enrolled
UG to PG	NA
PG to M.Phil.	NA
PG to Ph.D.	NA
Ph.D. to Post-Doctoral	NA
<b>Employed</b> <ul style="list-style-type: none"> <li>• Campus selection</li> <li>• Other than campus recruitment</li> </ul>	NA
Entrepreneurship/Self-employment	NA

30. Details of Infrastructural facilities a) Library **NA**

b) Internet facilities for Staff & Students **Available**

c) Class rooms with ICT facility **Available**

d) Laboratories **Physics and Chemistry Labs**

31. Number of students receiving financial assistance from college, university, government or other agencies **NA**

32. Details on student enrichment Programmes (special lectures / workshops / seminar) with external experts **NA**

33. Teaching methods adopted to improve student learning

1. **Interactive Learning**
  2. **Students Demonstration/Teaching**
34. Participation in Institutional Social Responsibility (ISR) and Extension activities
1. **Participation in students academic co-curricular activities**
  2. **Other Institute duties like exams/Special classes/Personality Development classes and the like.**
35. SWOC analysis of the department and Future plans
- To develop Research lab and PG Programmeme**

## Mechanical Engineering

1. **Name of the Department :** Mechanical Engineering
2. **Year of Establishment :** 1957
3. **Names of Programmes / Courses offered (UG, PG, M. Phil, Ph.D., Integrated Masters; Integrated Ph.D., etc) :**

Programme	Intake
B.E. in Mechanical Engineering (UG)	120
B.E. in Automobile Engineering (UG)	60
M.Tech in Production Engineering (PG)	18

4. **Names of Interdisciplinary courses and the departments / units involved**

SL. No.	Interdisciplinary Courses	Year	Departments / units involved
1	Engineering Mathematics - I (BMEL101)	I	Applied Science
2	Engineering Physics (PH101)	I	Applied Science
3	Communication Skills (HU102)	I	Humanities
7	Engineering Chemistry (CY101)	I	Applied Science
8	Engineering Mathematics - II (MA201)	I	Applied Science
9	Basic Computer Programmimg (CS201)	I	Computer Science Engineering & Information Technology
10	English Language (HU101)	I	Humanities
11	Environmental Science (AS103)	I	Civil Engineering

12	Fundamentals of Electrical Engineering (EE102)	I	Electrical Engineering
13	Engineering Mathematics (MEL301)	II	Applied Science
14	Instrumentation & Measurement (MEL303)	II	Electrical Engineering
15	Computer Programmemeing - III (MEP306)	II	Computer Science Engineering & Information Technology
16	Engineering Mathematics - III (MEL401)	II	Applied Science
17	Computer Programmemeing - IV (MEP406)	II	Computer Science Engineering & Information Technology
18	Principles of Management & Managerial Economics (MEL501)	III	Humanities

5. **Annual / semester / choice based credit system (Programmeme wise):** Current B.E. 1<sup>st</sup> Semester 2015 -16 batch admitted under Choice Based Credit System. Other batches are under the grading system.

6. **Participation of the department in the courses offered by other departments:**

S.No.	Subject	Semester	Branch
1	Engineering Graphics	I & II	All Branch
2	Fundamental of Mechanical Engineering	I	Chemical Engineering
3	Manufacturing Practice	I & II	All Branch

4	Prime Movers	IV	Electrical Engineering
5	Concept in Engineering Design	II	All Branch

**7. Courses in collaboration with other universities, industries, foreign institutions, etc.:**

Nil

**8. Details of courses / Programmes discontinued (if any) with reasons :**

- (M.E.) Material Handling, Due to poor quality of students.

**9. Number of Teaching posts**

Designation	Sanctioned	Filled
Professors	02	Nil
Associate Professors	06	04
Assistant Professors	19	09

**10. Faculty profile with name, qualification, designation, specialization**

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph. D. guided for the last 4 years
Dr. C. S. Malvi	Ph. D.	Associate Professor	Industrial Design, Solar Energy	12	-
Dr. Pratesh Jayaswal	Ph. D.	Associate Professor	Tribology and Maintenance	12	-
Dr. Manoj Kumar Gaur	Ph. D.	Associate Professor	Solar Thermal	12	-
Dr. Manish Sagar	Ph. D.	Associate Professor	Supply Chain Management	08	-
Prof. R. P. Kori	M. Tech	Assistant Professor	Metallurgical Engineering	13	-
Dr. Avadesh Ku. Sharma	Ph. D.	Assistant Professor	Machine Design, Vibration	14	-
Prof. Vedansh Chaturvedi	M. Tech	Assistant Professor	Unconventional machine, optimization	5.5	-

Prof. Jyoti Vimal	M. Tech	Assistant Professor	CAD, Vibration, FEM, Materials, Optimization	10	-
Prof. Dinesh Kasdekar	M. Tech	Assistant Professor	CIM, Production engineering	05	-
Prof. Sharad Agrawal	M. Tech	Assistant Professor	CAD/ CAM	03	-
Prof. Vaibhav Shivhare	M. Tech	Assistant Professor	Mechanics of material, Vibration	05	-
Prof. Amit Aherwar	M. Tech	Assistant Professor	Tribology, Advanced Machining, Optimization, Composite	05	-
Prof. Bhupendra Pandey	M. Tech	Assistant Professor	Thermal, Automobile	02	-

11. List of senior visiting faculty : NIL

12. Percentage of lectures delivered and practical classes handled (Programmeme wise) by temporary faculty

Programmeme	Theory Lectures	Practical Classes
UG	30%	26.5%
PG	11.11%	20%

13. Student - Teacher Ratio (Programmeme wise)

- UG :- 16: 1
- PG :- 10 : 1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Support staff (technical)	6	5
Administrative staff	1	NIL

**15. Qualifications of teaching faculty with D Sc / D. Litt / Ph. D / M. Phil. / PG.**

Name	Qualification	Designation
Dr. C. S. Malvi	Ph. D.	Associate Professor
Dr. Pratesh Jayaswal	Ph. D.	Associate Professor
Dr. Manoj Kumar Gaur	Ph. D.	Associate Professor
Dr. Manish Sagar	Ph. D.	Associate Professor
Prof. R. P. Kori	M. Tech	Assistant Professor
Dr. Avadesh Ku. Sharma	Ph. D.	Assistant Professor
Prof. Vedansh Chaturvedi	M. Tech	Assistant Professor
Prof. Jyoti Vimal	M. Tech	Assistant Professor
Prof. Dinesh Kasdekar	M. Tech	Assistant Professor
Prof. Sharad Agrawal	M. Tech	Assistant Professor
Prof. Vaibhav Shivhare	M. Tech	Assistant Professor
Prof. Amit Aherwar	M. Tech	Assistant Professor
Prof. Bhupendra Pandey	M. Tech	Assistant Professor

**16. Number of faculty with ongoing projects from a) National, b) International funding agencies and grants received : 1 faculty**

Name of Faculty	Title of Project	Funding Agency
Dr. C. S. Malvi	Characterization of ITO Nano-practical	INUP, IIT Bombay
Dr. C. S. Malvi	Sustainable paper recycling plant for an institute	Institution of Engineers (India) R&D Grant-in-aid scheme

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received : Yes

Name of Faculty	Title of Project	Funding Agency
Dr. M. K. Gaur	Heat and Mass Transfer Analysis of Hybrid Solar Dryer with Uniform Heating	AICTE
Dr. C. S. Malvi	Development of Multi-purpose Solar Lamp	DST
Dr. C. S. Malvi	Up-gradation of MOM Lab	AICTE

18. Research Centre / facility recognized by the University: Yes (QIP centre)

19. Publications :

\* a) Publication per faculty

Sr. No	Name of Faculty	No of Publication
1	Dr C.S Malvi	40
2	Dr Manoj Gaur	45
3	Dr Manish Sagar	20
4	<b>Dr Avadhesh Sharma</b>	<b>30</b>
5	<b>Dr Pratesh Jaiswal</b>	<b>19</b>
6	<b>Prof R.P Kori</b>	<b>15</b>
7	<b>Prof Jyoti Vimal</b>	<b>28</b>
8	<b>Prof Vedansh Chaturvedi</b>	<b>35</b>
9	<b>Prof Vaibhav Shivhare</b>	<b>03</b>
10	<b>Prof Sharad Aggarwal</b>	<b>10</b>
11	<b>Prof Dinesh Kasdekar</b>	<b>32</b>
12	<b>Prof Amit Ahirwar</b>	<b>22</b>

- \* **Number of papers published in peer reviewed journals (national / international) by faculty and students**

Sr. No	Name of Faculty	No of Publication
1	Dr C.S Malvi	10
2	Dr Manoj Gaur	12
3	Dr Manish Sagar	08
4	Dr Avadhesh Sharma	06
5	Dr Pratesh Jaiswal	14
6	Prof R.P Kori	02
7	Prof Jyoti Vimal	05
8	Prof Vedansh Chaturvedi	05
9	Prof Vaibhav Shivhare	03
10	Prof Sharad Aggarwal	04
11	Prof Dinesh Kasdekar	06
12	Prof Amit Ahirwar	05

- \* **Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)**

\* **Monographs:** Nil

\* **Chapter in Books:** Nil

\* **Books Edited:** Dr. Pratesh Jayaswal (V. B. Bhandari, Machine Design)

\* **Books with ISBN /ISSN numbers with details of publishers**

Sr no	Name of faculty	Book Name	Publisher Name with ISBN/ISSN no
1	Dr Manish Sagar	Book chapter is published in "Advances in Management and Technology: Mapping Strengths with Opportunities"	McGraw Hill Education (India) Private Limited, ISBN-13:978-93-392-2075-4, New Delhi,

2	Dr. Manoj Gaur	Solar energy: Problem , solution and experiment	Anamaya Publication, New Delhi. ISBN: 13978-81- 88342-64-8
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\* Citation Index

\* SNIP

\* SJR

\* Impact factor

\* h - index

S. no	Name of Faculty	Citation index	SNIP	SJR	Impact factor	h-index
1	Dr C.S Malvi	42	-	-	-	03
2	Dr Pratesh Jaiswal	137				04
3	Dr Manoj Gaur	117	-	-	-	05
4	Dr Manish Sagar	-	-	-	-	-
5	Dr Avadesh Sharma	45	-	-	-	03
6	Prof R.P Kori	-	-	-	-	-
7	Prof Vedansh Chaturvedi	75	-	-	-	04
8	Prof Jyoti Vimal	37	-	-	-	03
9	Prof Vaibhav Shivhare	-	-	-	-	-
10	Prof Sharad Aggarwal	-	-	-	-	-
11	Prof Dinesh Kasdekar	-	-	-	-	-
12	Prof Amit Ahirwar	16	-	-	-	02

**20. Areas of consultancy and income generated :** Minor consultancy of Thermal Analysis, Design (Approx income generated last year 15000/- rupees)

**21. Faculty as members in National committees, b) International committees, c) Editorial Boards.**

- Dr. Pratesh Jayaswal have nominated as **reviewer** for the Journal of Vibration and Control. Reviewed Three research papers for the journal
- Dr. Pratesh Jayaswal have nominated as **reviewer** for the Journal of Quality in Maintenance Engineering. Reviewed one research paper. for the journal
- Dr. Pratesh Jayaswal have nominated as **reviewer** for the proceeding of the Institution of Mechanical Engineers, Part C, Journal of Mechanical Engineering Science, London UK. Reviewed seven research papers for the journal
- Dr. Pratesh Jayaswal have nominated **reviewer** for the "Australian Journal of Mechanical Engineering. Reviewed two research papers for the journal.
- Dr. Pratesh Jayaswal have nominated **reviewer** for the "Journal of Manufacturing Engineers" (JME) published by Society for Manufacturing Engineering. Reviewed one research paper for the journal.
- Dr. Pratesh Jayaswal have **reviewed** three books on Machine Design for Tata McGraw Hill.

**22. Student projects**

- c) Percentage of students who have done in - house projects including inter departmental / Programmeme : 100 %
- d) Percentage of students placed for projects in organizations outside the institution, ie; in Research laboratories / Industry / other agencies : Nil

**23. Awards / Recognitions received by faculty and students : 2**

- Dr. C.S Malvi, Associate Professor, Mechanical received the Madhya Pradesh Young Scientist Award by MPCST, Bhopal in 2004
- Prof. Vedansh Chaturvedi Assistant Professor, Mechanical received the Madhya Pradesh Young Scientist Award by MPCST, Bhopal in 2014.

**24. List of eminent academicians and scientists / visitors to the departments**

Name of Visitor	Visitor's Organization	Visitor From	City	Country	Purpose	Date of Visit	Year
Er.Shripad Baokar	ONGC	Industry	Mumbai	India	Expert Lecture	19/09/13	2013
Dr Sainath Pawaskar	Sandhiasthi India Ltd	Industry	Chhindwara	India	Expert Lecture	09/07/14	2014
Mr.Abhas Acharya	SKF India limited	Industry	Pune	India	Expert Lecture	10/09/14	2014

**25. Seminars / Conferences / Workshops organized & the source of funding**

- b) National , b) International

1	Details of the short term courses organized/ Attended:			
	Name of the short term course	Duration (days)	Sponsored by	Year
	Engineering Thermodynamics	12	MHRD	2012
	Research Methodology	05	TEQIP-II	2013
	Engineering Mechanics	12	MHRD	2013
	Pedagogical Approach in Technical Education	06	TEQIP-II	2014

Hybrid Solar PVT Technologies	02	TEQIP-II	2014
Teaching & Research Methodology	02	AICTE	2014

**26. Student profile Programmeme / course wise :**

Name of the course / Programme (refer question no. 4)	Applications received	Academic year	Selected	Enrolled		Pass Percentage
				*M	*F	
B.E.	NA	2012-13	76	50	26	84.29%
		2013-14	76	52	24	96.1 %
		2014-15	74	40	34	89.84 %
M. Tech.	NA	2013-14	34	29	05	92 %
		2014-15	28	23	05	90.33 %
		2015-16	18	18	00	Yet to be published

\*M = Male \*F = Female

**27. Diversity of Students**

Name of the course	Year	% of students from the same state	% of students from other States	% of students from abroad
B.E.	2012-13	92	08	No
	2013-14	90	10	
	2014-15	89	11	
M. Tech.	2013-14	90	10	No
	2014-15	82	18	
	2015-16	85	15	

**28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil Services, Defense Services, etc.?**

GATE: 28, GRE / TOEFL: NIL, GMAT / TOEFL: NIL

**29. Student Progression**

Student Progression	Against % enrolled	
UG to PG	30	
PG to M. Phil.	NA	
PG to Ph. D.	15	
Ph. D. to Post - Doctoral	NA	
<b>Employed</b>	UG	PG
Campus Selection	30 %	NIL %
Other than campus recruitment	40 %	80 %
Entrepreneurship / Self - employed	2%	10%

**30. Details of Infrastructural facilities**

- a) **Library:** Departmental Library
- b) **Internet facilities for Staff & Students:** Yes
- c) **Class rooms with ICT facility:** 03
- d) **Laboratories:** 09

**31. Number of students receiving financial assistance from college, university, government or other agencies:**

Academic year 2014-15: OBC - 27, SC - 15, ST - 07

### 32. Details on student enrichment Programmes (special lectures / workshops seminars) with external experts

Name of Expert	Expert's Organization	Expert From	City	Topic of Lecture	Date of Visit
Dr.P.K.Jain	IIITM,	Academic	Jabalpur	Rapid Prototyping	7/10/13
Dr Ghanshyam Singh	Lead Engineer, GE, Bangalore	Industry	Bangalore	Simulation based innovation	05/10/13
Er.A.R.Tupe	Central Railway	Industry	Gwalior	Bio-Energy	13/03/14
Dr Pankaj Agarwal	S.A.T.I.	Teaching	Vidisha	Flexible manufacturing system	12/09/14

### 33. Teaching methods adopted to improve student learning

To improve the students learning institution have provided smart E Board/ Projector classes. The faculty adopted methods to improve the learning of students as following way:

#### Learning with Multi-media:

- Digital library facility
- Language lab facility
- Availability of video lectures through NPTEL
- LCD projectors for presentation

#### Classroom Presentations:

- Allowing students to prepare and present topics from curriculum
- Presentation on advanced mechanical engineering topic which are beyond the syllabus.

#### Technical Symposiums:

Motivating students to participate national/ international conferences, recently undergraduate students also publish paper in various journal and some of them looking for patent.

### 34. Participation in Institutional Social Responsibility (ISR) and Extension activities

The institute runs a society for social cause to create awareness about social responsibility

among the students. The societies are named as National Social Service (NSS) are running under Dr. Manish Kumar Sagar (Associate Professor, Mechanical Engineering Department) under the guidance of the Director. The students of various department and semester actively participate in such activities. NSS MITS unit has registered more than 800 students.

**NSS Activities:**

- NSS day celebrations
- NSS camp (village adaptation)
- Aids Awareness Programmeme
- Tree Plantation
- International women day celebration

**NCC Activities**

- Independence day celebration
- Republic day celebration
- Voters day Awareness Programmeme
- Tree plantation Programmeme
- Traffic regulation in festival seasons

**35. SWOC analysis of the department and Future Plans**

The department has highly qualified faculty and well skilled staff to undertake the theory and practical classes of the students. The department is also well equipped with various Lab facilities, training aids and other infrastructures to disseminate the required knowledge according to the syllabus and beyond syllabus to the students. However on analysis certain deficiencies were felt by the faculty and adequate measure has been taken to improve this areas. The details of the above are as follows.

**Strengths:**

- Faculty are actively involved in research activities, two faculty member received M.P. young scientist award.
- Faculty guide students for GATE exam from II year of their undergraduate, So student is having very good result in All India exam. In year 2013 sourabh mangal secured all India 3<sup>rd</sup> rank in GATE.
  - Five Ph.D. Degree holders and four are Ph.D. pursuing
  - Committed & dedicated faculty with good team work spirit.
  - University recognized Research Centre to enrich research activities.
  - The Department was accredited by NBA-AICTE.

- Student faculty ratio has been consistently maintained over the years.

**Weaknesses:**

- More effort for skill up gradation of technical supporting staff needed.
- Effort for entrepreneurship also needed.
- More budgets for in house R & D needed.
- Publication of students and faculty to be enhanced.
- Lack of Consultancy and Funded Projects.
- Lack of collaborative research with research institutions.
- Lack of English communication skill in the students.
- Lack of placement in core companies

**Opportunities:**

- Scope for strengthening the Industry Institute interaction for better placements of students.
- Networking with other Institutions for sharing/acquiring knowledge in advanced technologies.
- To develop students into successful entrepreneurs for the economic development of the country.
- Strong alumni from the department who are entrepreneurs, executives / directors in industries and scientists/academicians in Institutes.
- To get funded projects and research innovations from various organizations.
- To have consultancy and other industry involvement.

**Challenges:**

- Creating entrepreneurship awareness and skills to the students.
- Encouraging students to do In-house project in a stipulated time period.
- Motivating higher education awareness to the students
- Creating awareness to the faculty members to utilize the complete facilities from our department and college.
- More number of R&D Projects/Consultancy work to be achieved in the coming years.
- To place students in core companies.
- Attracting High quality students to post graduate studies / Research

**Future plans:**

- Planning to get funded projects and seminars from government organizations such as DRDO, ISRO, CSIR etc.
- Signing MOU with various universities and companies.
- To Improve the consultancy work through industry interaction.
- To improve the success and placement rate of the students.
- To create the centre of excellence.

## Electrical Engineering

1. Name of the department: **Electrical Engineering**
2. Year of Establishment: **1957**
3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

**The Programmes / Courses offered by the department of Electrical Engineering are:**

- **BE in Electrical Engineering**
- **ME in Industrial Systems & Drives**
- **ME in Measurement & Control**
- **Ph.D**

4. Names of Interdisciplinary courses and the departments/units involved

Names of Interdisciplinary courses	Names of Department
Mathematics, Engineering Chemistry & Engineering Physics	Applied Science
Basic Electronics Engineering, Electronics	Electronics
Computer Programming	CSE & IT
Basic Mechanical Engineering, Engineering Drawing, Prime Mover	Mechanical Engineering
English Language, Communication Skills, Language laboratory, Rural Outreach, Principle of Management	Humanities
Environmental Science, Engineering Mechanics	Civil Engineering

5. Annual/ semester/choice based credit system (Programme wise)

**UG: Semester/Choice Based Credit System**

**PG: Semester/Choice Based Credit System**

6. Participation of the department in the courses offered by other departments

Names of Interdisciplinary courses	Names of Department
Basic Electrical Engineering	Electronics, Electronics & Telecommunication, Civil,

	Mechanical, CSE, Information Technology, Chemical, Biotechnology, Automobile
Measurement & Instrumentation	Electronics, , Mechanical, Information Technology, Chemical

7. Courses in collaboration with other universities, industries, foreign institutions, etc. **QIP Minor center (Ph.D).**

8. Details of courses/Programmes discontinued (if any) with reasons:  
**PTDC in Electrical Engineering**

9. Number of Teaching posts

	Sanctioned	Filled
Professors	03	03
Associate Professors	05	01
Asst. Professors	11	09

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
Dr. Laxmi Srivastava	Ph.D.	Professor	Power System	30	4
Dr. Manjaree Pandit	Ph.D	Professor	Power System	30	2
Dr. Arun Kumar Wadhwani	Ph.D	Professor	Signal Processing	27	4
Ashish Patra	M.E.	Associate Professor	Control System	24	NIL
Dr. Sulochana Wadhwani	Ph.D	Associate Professor	Condition Monitoring	18	3
Hari Mohan Dubey	M.E.	Assistant Professor	Drives	12	NIL
Dr .Shishir Dixit	Ph.D	Assistant Professor	Power System	12	NIL
Rakesh Narvey	M.E.	Assistant Professor	Drives	8	NIL

Himmat Singh Ahirwar	M.E.	Assistant Professor	Machines	8	NIL
Vijay Bhuria	M. Tech	Assistant Professor	Machines	7	NIL
Kuldeep Kumar Swarnkar	M.E.	Assistant Professor	Drives	5	NIL
Praveen Bansal	M. Tech	Assistant Professor	Drives	3	NIL
Vishal Chaudhary	M.E.	Assistant Professor	Power System	1	NIL
Vijay Kumar Tewari	M. Tech	Assistant Professor	Power Electronic Converters.	1	NIL

11. List of senior visiting faculty  
**NIL**

12. Percentage of lectures delivered and practical classes handled (Programmeme wise)

by temporary faculty

- Percentage of lectures delivered:
- Percentage of practical classes held

13. Student -Teacher Ratio (Programmeme wise)

- UG :- 17: 1
- PG :- 15 : 1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Support staff (technical)	-	6
Administrative staff	-	4

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.

Name of the faculty	Qualification
Dr. Laxmi Srivastava	Ph.D.
Dr. Manjaree Pandit	Ph.D
Dr. Arun Kumar Wadhwani	Ph.D
Ashish Patra	M.E.
Dr. Sulochana Wadhwani	Ph.D
Hari Mohan Dubey	M.E.

Dr. Shishir Dixit	Ph.D
Rakesh Narvey	M.E.
Himmat Singh Ahirwar	M.E.
Vijay Bhuria	M. Tech
Kuldeep Kumar Swarnkar	M.E.
Praveen Bansal	M. Tech
Vishal Chaudhary	M.E.
Vijay Kumar Tewari	M. Tech

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received :

Following are the faculty members who have received projects from various national funding agencies:

S.No	Name of the Faculty	Designation
1.	Dr. Laxmi Srivastava	Professor
2.	Dr. Manjaree Pandit	Professor
3.	Dr. Arun Kumar Wadhvani	Professor
4.	Dr. Sulochana Wadhvani	Associate Professor

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received: **Rs.178.11 Lac**

18. Research Centre /facility recognized by the University : Yes the department is offering Ph.

D. Programmeme under QIP and the affiliating university, RGPV Bhopal.

19. Publications:

20. Areas of consultancy and income generated:

- Testing of transformer oil
- Meter testing.
- Relay testing.
- Welding plant testing

21. Faculty as members in

a)National committees b) International Committees c) Editorial Boards

- Dr. Manjaree Pandit has been made Technical Programmeme Committee Member of IEEE Sponsored International Conference on Energy Economics and

Environment ICEEEE-2015 to be held from March 27-28, 2015 at Greater Noida, India.

- Dr. Manjaree Pandit was Programmeme Committee Member of IEEE Sponsored International Conference on Fifth International Conference on Computational Intelligence and Communication Systems, CICN-2013, September 27-29, 2013.
- Dr. Manjaree Pandit is made Programmeme Committee Member of the 9th International Conference on Bio-inspired Computing: Theories and Applications (BIC-TA 2014) to be held on 16th -19th October, 2014, Wuhan, China
- Dr. Manjaree Pandit is made Programmeme Committee Member 14<sup>th</sup> IEEE Students' Conference on Electrical, Electronics and Computer Science (SCEECS) to be held at MANIT, Bhopal on 1<sup>st</sup>-2<sup>nd</sup> March 2014.

## 22. Student projects

(a) Percentage of students who have done in-house projects including inter departmental/Programmeme: **100%**

b) Percentage of students placed for projects in organizations outside the institution

i.e.in Research laboratories/Industry/ other agencies: **Nil**

## 23. Awards / Recognitions received by faculty and students :

## 24. List of eminent academicians and scientists/ visitors to the department :

- Dr. Pramod Agarwal, IIT Roorkee.
- Dr. S. P. Shrivastava, IIT Roorkee.
- Dr. S.N .Singh , IIT Kanpur
- Dr. Kailash Shrivastava , ABB Corporate Research, Sweden.
- Dr. Shailendra Jain, MANIT Bhopal
- Er. Minaxi Garg, (PGCIL) Power Grid Corporation of India Limited.
- Er S. K. Pachnanda, MPMKVVCL., MPSEB
- Er R K Mahapatra BHEL, Jhansi.
- Er G K Pharlia NHPC. Ministry of Power.
- Dr S C Choubey, UIT RGPV Bhopal.
- Er. Gopal Aggarwal, J P Enterprise Gwalior.
- Dr Pankaj Swrankar, MANIT Bhopal.
- Er Tarun Sakwar , NHPC India.
- Er Sharath Nair , Crompton Greaves Ltd ,Malanpur.
- Capt Aditya Jain, Indian Army(AAD Unit)
- Er. Peeyoosh Gupta ,CAMTEC(GWALIOR Rail)
- Dr Amit Kr Jain,IIT Delhi

- Dr. Jagdeesh Kumar, PEC Chandigarh.

25. Seminars/ Conferences/Workshops organized & the source of funding:

- One day National Workshop on **Renewable Energy based Power Generation: Options and Challenges** on 14 Sep 2013 under TEQIP-II.
- One day National Conference on **Innovations in Electrical Engineering** on 22 February 2014 under TEQIP-II
- 2<sup>nd</sup> National Conference on “**Innovations in Electrical Engineering**” on 10-11<sup>th</sup> February 2015 under TEQIP-II
- One day National workshop on **software tools for Industrial drives & Instruments** March 24 ,2015.
- One week short Term Training Programmmed on “**Nature Inspired Optimization Techniques for Engineering Applications**” during 2<sup>th</sup> -6<sup>th</sup> December 2013. under TEQIP-II
- One week short Term Training Programmmed on **Simulation of Power Electronics Converters** during May 12<sup>th</sup> -16<sup>th</sup> , 2015 under TEQIP-II.
- Two day Natinal workshop on “ **Application of MATLAB in electrical Engineering** ”, during 14<sup>th</sup> -15<sup>th</sup> October 2015. under TEQIP-II.

26. Student profile Programmeme/course wise:

Name of the Course/Programme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	
-	-	-	-	-	-

\*M = Male \*F = Female

27. Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
BE	61%	39%	NIL
ME	59%	41%	NIL

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

Year	UPSC Examination	State Govt Examination	GATE	CAT	Others

					(Private sector)
2012-13	--	--	20	--	--
2013-14	--	--	18	--	--
2014-15	--	--	10	02	17

29. Student progression

Student progression	Against % enrolled
UG to PG	10%
PG to M.Phil.	NA
PG to Ph.D.	4%
Ph.D. to Post-Doctoral	NA
<b>Employed</b> <ul style="list-style-type: none"> <li>• Campus selection</li> <li>• Other than campus recruitment</li> </ul>	63%
Entrepreneurship/Self-employment	5%

30. Details of Infrastructural facilities

a) Library: Yes, apart from the Centrl Libray , the department has its own library.

b) Internet facilities for Staff & Students: Yes, high speed internet facility is available.

c) Class rooms with ICT facility: **Yes**

d) Laboratories: **Yes,**

31. Number of students receiving financial assistance from college, university, government or other agencies: **50%**

32. Details on student enrichment Programmemes (special lectures / workshops / seminar) with external experts:

S.No	Name	Expert's organization	Expert from	Topic of lecture
1	Dr. S.N. Singh	IIT Kanpur	IIT	Future of power system, challenges, Keynote address, National workshop, held at MITS
2	Dr. Kailash Shrivastava	ABB Corporate Research, Sweden	ABB Corporate Research	Future of power system
3	Er. Minaxi Garg	(PGCIL) Power Grid Corporation of India Limited	PGCIL)	Renewable Energy Certificate Mechanism'
4	Er Er S. K. Pachnanda	MPMKVVCL	MPEB	Technical and Managerial Issues in Restructured Power Market
5	Mr R K Mahapatra	BHEL	BHEL-Jhansi	Modern transformer manufacturing/maintenance
6	Er G K Pharlia	NHPC	Ministry of power	Reactive VAR management/control
7	Dr S C Choubey	UIT RGPV	RGPV Bhopal	Syncrophaser
8	Mr Gopal Aggarwal	J P Enterprise	J P Enterprise	Smart relay/metering
9	Er G K Pharlia	NHPC	Ministry of power	Smart Grid management/control
11	Dr Pankaj Swrankar	MANIT	MANIT bhopal	Design of PID controller
12	Er Tarun SAKWAR	NHPC	NHPC	Hydro electric power projects(design , commissioning etc)
13	Er Sharath Nair	Crompton Greaves Ltd	Malanpur	Design of drive motors and transformers
14	Er G K Pharlia	NHPC	Ministry of power	Design of energy efficient smart grid
16	Ms Prena Agarwal	Upasala University	Upasala University	Education ,job prospective at Upasala University
17	Capt Aditya Jain	Indian Army(AAD Unit)	Indian Army(AAD Unit)	Job and opportunity Prospective at Indian army
18	Er. Peeyoosh Gupta	CAMTEC(GWALIOR Rail)	--	Preparation for IES, GATE
19	Dr Amit Kr Jain	IIT Delhi	IIT Delhi	Application of MATLAB in electrical engineering

### 33. Teaching methods adopted to improve student learning

- Interactive lectures using various aid such as Black / white board, computer presentations, etc.
- Small group tutorials and assignments.
- Laboratories.

- Project based learning by assigning experimental projects to students enabling them to think out of the box.
- Industrial internship.
- Use of online educational supplements such as NPTEL.
- Report writing and Seminars.
- Faculty development training.
- Conduct workshops, conferences and seminars.
- Guest lecture & Industrial visits.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities  
Students:

- Participation in inter and intra - college symposiums -Programmemeing contestpaper presentations, project presentations etc.
- Participation in cultural events and competitions.
- Active participation in department level and University level Students associations.

Faculty:

- Participation in administrative activities.
- Participation in student welfare activities.
- Helping students in association and club activities.

35. SWOC analysis of the department and Future plans

- Qualified and dedicated Faculty.
- Collaborative effort of faculty members and technical staff members.
- Organizing Seminars, Workshops, and Conferences by receiving grants from funding agencies such as TEQIP - II.
- Mentors constantly provide care for students in solving their technical problems.
- All the courses are approved by AICTE.
- Quality research projects & Good laboratory facility.

**Weaknesses:**

- Shortage of faculty & department library.
- Lack of Consultancy work.
- Lack of Inter-disciplinary projects.
- Lack of establishment of alumni association.
- Research and development and extension activities are to be strengthened.
- Need to improve the placement in core companies.
- Need of more analytical equipment for research.
- Need to develop strong thrust areas of research.

- Lack of adequate industry institute interaction.

**Opportunities:**

- Provide consultancy services to nearby industries.
- Develop expertise in core/emerging areas.
- Establish collaboration with overseas institutes/agencies as well as with Indian institutions.
- Partnership with premier industries for new product development.
- To apply for more research funds from funding agencies like AICTE, UGC, DST, etc.
- Revision of Curriculum as per need.
- Student participation in club activities, inter college competitions, paper competition, model competition etc.
- Continuous up gradation of knowledge.
- Innovation in teaching learning process.
- Increase of high quality research publications.

**Challenges:**

- Rapidly advancing technology may require more human resources and equipment.
- Quality of intake is coming down as good students are opting for deemed universities within and outside the state.
- Competing with other institutions.
- Achieving high job placement for students.
- Faculty retention.
- Creating interdisciplinary teaching/research environment.
- Adapting to changing student expectations.

**Future plans:**

- Develop smart classrooms with interactive teaching aids.
- To promote inter disciplinary research.
- To establish industry / academic interactions or collaborations with Regional /state level/ national / international organizations.
- Improve teaching methodology.
- Improve campus placements for students.
- Recruit more number of qualified faculty and staff.
- To have research tie-ups with national and international reputed institutions.

## Computer Science and Engineering and IT

**1. Name of the department**

Computer Science & Engineering and Information Technology

**2. Year of Establishment**

2007

**3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)**

1. B. E. (Computer Science & Engineering )
2. B.E.( Information Technology)
3. M.Tech. (Computer Science & Engineering)
4. M. Tech.(Information Technology)
5. PhD(Computer Science & Engineering and Information Technology)

**4. Names of Interdisciplinary courses and the departments/units involved**

NIL

**5. Annual/ semester/choice based credit system (Programme wise)**

First Year BE (Computer Science & Engineering and Information Technology) curriculum offer choice based credit system (CBCS) from current year and all courses based on semester system

**6. Participation of the department in the courses offered by other departments**

All Branches of Engineering

**7. Courses in collaboration with other universities, industries, foreign institutions, etc.**

Name Course	Name of other universities, industries, foreign institutions
Internet & Web Technology (BE VII Sem)	IBM

Cloud Computing & Security (MTech Cyber Security)	IBM
Computer Programming ( BE I Year)	IIT

**8. Details of courses/Programmes discontinued (if any) with reasons**

NIL

**9. Number of Teaching posts**

**Computer Science and Engineering**

Teaching Post	Sanctioned	Filled
Professors	1	1
Associate Professors	5	
Asst. Professors	13	3
Reader cum System Analyst	1	0

**Information Technology**

Teaching Post	Sanctioned	Filled
Professors	1	0
Associate Professors	4	2
Asst. Professors	11	9

**10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./ M. Phil. etc.,)**

NAME OF FACULTY	NO.OF YEAR EXP	HIGEST QUALIFICATION	SPECIALIZATION	NO.OF P.H.D STUDENT GUIDED
Dr. R.K.Gupta	27 Yrs	PhD	Data Mining	01(Awarded) 03(Ongoing)
Dr. Akhilesh Tiwari	10 Yrs	PhD	Data Mining	02(Ongoing)
Prof. Manish Dixit	19 Yrs	M.Tech, Phd (Pursuing)	Image Processing	Nil
Prof.Khushaboo Agrawal	8 Yrs	M.Tech	Computer Science and Engineering	Nil

Prof. Punit Johari	12 Yrs	M.Tech(IT), Phd(Pursuing)	Information Technology	Nil
Dr. Sanjiv Sharma	09 Yrs	PhD	Data Mining	Nil
Prof. Vikas Sejwar	7 Yrs	M.Tech	Computer Network	Nil
Prof. Abhilash Sonkar	7 Yrs	M.Tech, PhD (Pursuing)	Information Security	Nil
Prof. Jaimala Jha	10 Yrs	M.Tech, Phd(Pursuing)	Information Technology	Nil
Prof. Jamvant Singh	4yr 8mth	M.Tech	Software Engineering	Nil
Prof. Rajiv Kumar Singh	4yr 6mth	M.Tech	Software Engineering	Nil
Prof. Neha Bhardwaj	2 Yr 8 Mth	M.Tech	Computer Network Data Security	Nil
Prof. Mahesh Parmar	6 Yrs	M.Tech	Computer Science and Engineering	Nil
Prof. R.R. Makvana	6 Yrs	M.Tech, Phd(Pursuing)	Network Security	Nil
Prof. Amit Kumar	3yr 7mth	M.Tech	Data Mining	Nil
Prof. Saumil Maheshwari	1yr 5 Mth	M.Tech	Data Mining	Nil
Prof. Monika Tripathi	5 Month	M.Tech(EC)	Control Communication & Networking	Nil
Prof. Hardev Singh Pal	5 Month	M.Tech (CSE)	Image Processing	Nil
Prof. Nishtha Parashar	3 Month	M.Tech (CSE)	Image Processing	Nil

**11. List of senior visiting faculty**

NIL

**12. Percentage of lectures delivered and practical classes handled (Programmeme wise) by temporary faculty**

NIL

**13. Student -Teacher Ratio (Programmeme wise)**

c. 1:33 for B.E.

d. 1:8 for M.Tech

**14. Number of academic support staff (technical) and administrative staff; sanctioned and filled**

Category	Sanctioned	Filled
Academic support staff	6	5
Administrative staff	2	1

15. **Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil/ PG.**

NAME OF FACULTY	HIGEST QUALIFICATION	SPECIALIZATION
Dr. R.K.Gupta	PhD	Data Mining
Dr. Akhilesh Tiwari	PhD	Data Mining
Dr. Sanjiv Sharma	PhD	Data Mining
Prof. Manish Dixit	M.Tech, Phd(Pursuing)	Image Processing
Prof. Punit Johari	M.Tech(IT), Phd(Pursuing)	Information Technology
Prof.Jaimala Jha	M.Tech, Phd(Pursuing)	Information Technology
Prof.Rajiv Kumar Singh	M.Tech	Software Engineering
Prof.Abhlah Sonkar	M.Tech, PhD (Pursuing)	Information Security
Prof.Vikash Sejwar	M.Tech	Information Security
Prof. R.R. Makmana	M.Tech, Phd(Pursuing)	Network Security
Prof.Amit Kumar	M.Tech	Data Mining
Prof.Khushaboo Agrawal	M.Tech	Computer Science and Engineering
Prof.Neha Bhardwaj	M.Tech	Computer Network Data Security
Prof.Jamvant Singh	M.Tech	Software Engineering

Prof.Mahesh Parmar	M.Tech	Computer Science and Engineering
Prof.Saumil Maheshwari	M.Tech	Data Mining
Prof.Monika Tripathi	M.Tech(Ec)	Control Communication & Networking
Prof.Hardev Singh Pal	M.Tech (Cse)	Image Processing
Prof.Nishtha Parashar	M.Tech (Cse)	Image Processing

**16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received**

NIL

**17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received**

Nature of the project	Duration Year		Title of the Project	Name of the Funding Agency	Total Grant Sanctioned	Name of P.I./ Co-PI
	From	To				
Minor Projects	01.12.2011	01.12.2013	Development Of Flexible Framework For Mining Association Rules	AICTE (Under RPS Scheme)	Rs. 500000/-	Dr. R. K. Gupta Dr. Akhilesh Tiwari
Major Projects	30.12.2011	30.12.2014	An Efficient Multimodal Identification System with Reduced Recognition Time	Department of Science and Technology (DST), Govt. of India	Rs. 29,95,200/-	Dr. R. K. Gupta
Any Other MODROB	09.12.2011	09.12.2012	MODROB	AICTE (Under MODROB Scheme)	Rs. 500000/-	Dr. R. K. Gupta

18. **Research Centre /facility recognized by the University**

Department of Computer Science & Engineering and Information Technology

19. **Publications:**

e) **Publication per faculty**

- **Number of papers published in peer reviewed journals (national / international) by faculty and students**
- **Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)**
- **Monographs**
- **Chapter in Books**
- **Books Edited**
- **Books with ISBN/ISSN numbers with details of publishers**
- **Citation Index**
- **SNIP**
- **SJR**
- **Impact factor**
- **h-index**

Detail regarding (a) and (b)

S. No.	Name of Faculty	No. of Publications
1.	Dr. R. K. Gupta	39
2.	Dr. Akhilesh Tiwari	34
3.	Prof. Manish Dixit	13
4.	Prof. Khushboo Agarwal	02
5.	Prof. Puneet Kumar Johari	09
6.	Dr. Sanjiv Sharma	19
7.	Prof. Vikas Sejwar	10
8.	Prof. Abhilash Sonkar	02
9.	Prof. Jaimala Jha	02

10.	Prof. Jamvant Singh Kumare	03
11.	Prof. Rajeev Kumar Singh	09
12.	Prof. Neha Bhardwaj	03
13.	Prof. Mahesh Parmar	03
14.	Prof. Rajni Ranjan Singh	05
15.	Prof. Amit Kumar Manjhwari	01

- (a) No. of publications listed in international database : 29  
 (b) Monographs: NIL  
 (c) Chapters in Books: 04  
 (d) Books Edited: NIL  
 (e) Books: Nil

Detail regarding citation index, h-index, etc.

S. No.	Name of Faculty	Citation	h-index
16.	Dr. R. K. Gupta	65	5
17.	Dr. Akhilesh Tiwari	63	4
18.	Prof. Manish Dixit	39	3
19.	Prof. Khushboo Agarwal	-	-
20.	Prof. Puneet Kumar Johari	09	2
21.	Dr. Sanjiv Sharma	-	-
22.	Prof. Vikas Sejwar	-	-
23.	Prof. Abhilash Sonkar	-	-
24.	Prof. Jaimala Jha	-	-

25.	Prof. Jamvant Singh Kumare	-	-
26.	Prof. Rajeev Kumar Singh	02	-
27.	Prof. Neha Bhardwaj	-	-
28.	Prof. Mahesh Parmar	-	-
29.	Prof. Rajni Ranjan Singh	09	2
30.	Prof. Amit Kumar Manjhar	-	-

**20. Areas of consultancy and income generated**

NIL

**21. Faculty as members in**

- d) National committees
- e) International Committees
- f) Editorial Boards....

**Dr RK Gupta**

- Member of Autonomy review committee at Vishveshwarya Technology Karnataka.
- UPSC Advisor since 2004
- Member of DOEACC accreditation committee
- NBA Member
- Chairman of Board of studies in LNIPE(Lakshmibai National University of Physical Education), Jiwaji University and RGPV.

**Prof. Punit Johari**

- Member of "International Association of Computer Science and Information Technology" (IACSIT).
- Member of "Mathematica".

**Dr Sanjiv Sharma**

- Member of editorial board in "International Journal of Emerging Technology and Advanced Engineering (ISSN 2250-2459).
- Member of editorial board in "International Journal of Knowledge Engineering & Technology (ISSN No. 0976-5487).
- Member of "International Association of Computer Science and Information

*Technology” (IACSIT).*

- Member of Computer Society of India (CSI) Chapter.

### **Prof. Vikas Sejwar**

- Member of “*International Association of Computer Science and Information Technology” (IACSIT).*

Prof. Abhilash Sonkar

- Member of “*International Association of Computer Science and Information Technology” (IACSIT).*

### **Prof. Neha Bhradwaj**

- Member of Association for Computing Machinery (ACM) Chapter.

## **22. Student projects**

- c) Percentage of students who have done in-house projects including inter departmental/Programmeme**

Programmeme	% (in house project)
BE (2012- 2015)	100
M.Tech (2012-2015)	100

- d) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies**

10% students got placed for projects outside the institutes in research laboratories.

## **23. Awards / Recognitions received by faculty and students**

NIL

## **24. List of eminent academicians and scientists / visitors to the department**

Many eminent academicians/ scientists/ researchers/ industry persons from IIT's, IIITs, NITs, and other reputed organizations visited the institute in the many seminars and conferences. Names of some of the dignitaries are given below

- Prof. D. P. Agrawal, Ex- Chairman UPSC

- Prof. K. K. Biswas, IIT Delhi
- Prof. S. G. Deshmukh, Director, ABV-IIITM Gwalior
- Prof. S. Dutta Roy, IIT Delhi
- Mr. Mani Madhukar, IBM India Pvt. Ltd.
- Mr. Sanjay Khullar, Sr. Manager CISCO Inc. Pvt. Ltd
- .....many more

**25. Seminars/ Conferences/Workshops organized & the source of funding**

**a) National**

- National Conference on “Advances in Information and Communication Technology” under TEQIP Phase -II during 23<sup>rd</sup> -24<sup>th</sup> Feb. 2015.
- AICTE sponsored National Conference on “Advances in Information and Communication Technology” during 28<sup>th</sup> -29<sup>th</sup> October 2013.

**b) International**

Nil

**26. Student profile Programmeme/course wise:**

Name of the Course/Programme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	
NA	NA	NA	NA	NA	NA

\*M = Male \*F = Female

**27. Diversity of Students**

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
BE(CSE)	18	82	Nil
BE(IT)	16	84	Nil
M.Tech (CSE)	11	89	Nil
M.Tech (IT)	7	93	Nil
M.Tech (Cyber Security)	4	96	Nil

**28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?**

**List of GATE qualified students**

S.No.	Name of the Student	Department	GATE Marks	GATE Score
Year: 2014				
1	AJAY GUPTA	CSE	-	359
2	ANIRUDDHA SINGHAL	CSE	-	645
3	ASHISH KUMAR KHARE	CSE	-	600
4	DEEPAK BHATNAGAR	CSE	-	280
5	GAURAV BOHARE	CSE	-	507
6	MOHAMMAD ANISH KHAN	CSE	-	375
7	NAINCY JAIN	CSE	-	467
8	NEHA SINGH BHATI	CSE	-	409
9	PRATEEK CHHARIYA	CSE	-	519
10	RAHUL RAJPUT	CSE	-	502
11	SHASHANK GUPTA	CSE	22.17	379
12	SHIWANGI SWAMI	CSE	-	429
13	SOUMYA SHARMA	CSE	-	334
14	ANJALI KUMARI	IT	-	-
15	APEKSHA JADON	IT	-	-
16	KETAN	IT	-	-
17	MOHIT GARG	IT	30.13	-
18	POOJA JAIN	IT	-	-
19	PRANSHU GUPTA	IT	38	-
20	PRERNA GUPTA	IT	28.65	-
21	RAHUL KUMAR	IT	55	-
22	SAHIL	IT	37	-
23	SANU KHAN	IT	40.36	-
24	SONIA RAJPUT	IT	-	-

25	SUWETA SHAKYA	IT	-	-
26	VARSHA DHARIYA	IT	-	-
27	ATUL AGRAWAL	IT	-	-
28	VIKAS KASHYAP	IT	-	-
Year:- 2015				
1	ADITYA SATAM	CSE	42.58	-
2	ANURAG SHARMA	CSE	45.64	-
3	DIVYSHRI JAIN	CSE	53.73	-
4	GARVITA NAAGAR	CSE	49.33	-
5	HARSIT TIWARI	CSE	30.87	-
6	KULDEEP MATHUR	CSE	24.32	-
7	MAYANK AGARWAL	CSE	30.87	-
8	RAJU RAGHUWANSHI	CSE	48	-
9	SURAJ SINGHAL	CSE	34	-
10	VINAY RIJHWANI	CSE	73.71	-
11	ASHUTOSH KUSHWAH	IT	53.35	692
12	AKHIL BAJPAYEE	IT	54.28	705
13	ARUN PRAJPATI	IT	-	-
14	RAHUL KUMAR GOYAL	IT	486	36.19
15	NAGESH SINGH PARMAR	IT	-	-
16	ALKA KUMARI	IT	572	-
17	HARSHA SHAKYA	IT	438	-

## 29. Student progression

Student progression	Against % enrolled (2012-2015)
UG to PG	15
PG to M.Phil.	Nil

PG to Ph.D.	Nil
Ph.D. to Post-Doctoral	Nil
<b>Employed</b>	
• Campus selection	70
• Other than campus recruitment	20
Entrepreneurship/Self-employment	10

### 30. Details of Infrastructural facilities

#### a) Library

Departmental Library

#### f) Internet facilities for Staff and Students

Yes

#### g) Class rooms with ICT facility

Yes

#### h) Laboratories

Laboratories in the Department of Biotechnology are listed below;

9. IBM Lab

10. Microprocessor Lab

11. Hardware Lab

12. High Performance Computing Lab

13. Linux Lab

14. Data Mining lab

15. Artificial Intelligence and soft Computing lab

16. Computer Programmaming Lab

### 31. Number of students receiving financial assistance from college, university, government or other agencies.

- 58 M.Tech. students are receiving scholarship from TEQIP Fund.
- 31 M.Tech. students are receiving GATE Scholarship from AICTE Fund.
- 132 SC/ST students are receiving scholarship according to governmental policy.

### 32. Details on student enrichment Programmes (special lectures / workshops /

#### seminar) with external experts

- Workshop on “Software Foundation Level (Basic)” from 2<sup>nd</sup> to 4<sup>th</sup> August 2013, conducted by IBM India Pvt. Ltd.
- AICTE sponsored National Conference on “Advances in Information and Communication Technology” during 28<sup>th</sup> -29<sup>th</sup> October 2013.
- Short Term Training Programme (STTP) on “Research Methodology” (under TEQIP-II) during 11<sup>th</sup> -15<sup>th</sup> November 2013.
- National workshop on “Cloud Computing” under TEQIP-II during 13<sup>th</sup> - 15<sup>th</sup> May 2014. This workshop was jointly organized by the deptt. of CSE & IT, MITS Gwalior and IBM India Pvt. Ltd.
- Training on “Android Programmemeing”, under TEQIP-II during 16<sup>th</sup> Jan. to 1<sup>st</sup> Feb., 2014 by Cetpa Infotech Pvt. Ltd Noida.
- Expert Lecture of Prof. Sumantra Dutta Roy from IIT Delhi on 8<sup>th</sup> March 2014 (under TEQIP-II).
- Organized “ISTE Workshop on Computer Programmemeing” under the MHRDs National Mission on Education through ICT, Conducted by IIT Bombay, 16<sup>th</sup> -21<sup>st</sup> June 2014.
- Organized “ISTE Workshop on Cyber Security” under the MHRDs National Mission on Education through ICT, Conducted by IIT Bombay, 10-20 July 2014.
- Motivational Lecture by Mr. Sanjay Khullar, Sr. Manager CISCO Inc. Pvt. Ltd., USA, 25 July 2014.
- Rubiks Revenge (workshop) on 27 – 28 Sept., 2014 under ACM Chapter
- National Conference on “Advances in Information and Communication Technology” under TEQIP Phase –II during 23<sup>rd</sup> -24<sup>th</sup> Feb. 2015.
- SQL Workshop on 26-27 Feb., 2015 under ACM Chapter
- Workshop on “Introduction to Design of Algorithms” under the MHRDs National Mission on Education through ICT, Conducted by IIT Kharagpur, 25<sup>th</sup> – 30<sup>th</sup> May 2015.

### 33. Teaching methods adopted to improve student learning

These are the following steps taken by the faculties for increasing the understandability of subject in students:-

1. Department is also a remote center of IIT Bombay and IIT Kaharagpur for the conduction of workshops and other academic activities under MHRDs National Mission on Education through ICT. Faculty members are regularly attending the workshops which are being conducted by IIT Bombay and IIT Kharagpur and thus enhancing their knowledge for achieving effectiveness in teaching.
2. SMART board with data storage facility, multimedia projectors, OHPs, etc. In addition to this, faculty members provide necessary guidance to students for accessing NPTEL lectures.

3. Almost all class rooms are upgraded into smart class-rooms.
4. Recently, Department has signed MOU with IIT Bombay for IIT Bombay Blended MOOC and currently running two courses: Computer Programmemeing and Thermodynamics.
5. Department has been awarded the status of IBM software centre of excellence and this centre is offering training Programmemes based on different IBM tools and platforms to supplement the student's knowledge base.
6. Department is also running Infosys campus connect Programme and student's are provided with the opportunity to attend Infosys webinars on recent advancements in technological fields.
7. Industrial visits in institution of higher education and research, and national laboratories are conducted for the students so that they can solve their queries regarding subjects from experts.
8. Subscription of NPTEL video lectures and IEEE papers are provided to students as well as faculties for their usage in studies.
9. The college provides a state of the art seminar hall where students participate in GDs, Debates and Seminars. The college also encourages the use of internet and computers by the staff and students to keep them abreast of the latest developments in their respective field of study.

#### **34. Participation in Institutional Social Responsibility (ISR) and Extension activities**

There are various activities are conducted by the institution for the betterment of students behavior towards society:-

1. Tree plantation.
2. Students of the institution are educating poor children's available in the close proximity of the campus.
3. Organized sports Programme
4. NSS Activity organized.
5. Camp organized by Institute students.
6. Blood Donation camp organized.
7. Organized fund raising for providing relief to people affected by natural calamity.

#### **35. SWOC analysis of the department and Future plans**

##### **STRENGTHS**

1. Adequate faculty member available in department and all faculty members have excellence academic background.

2. Department has well equipped and modern labs that satisfy the curriculum requirements.
3. Curriculum and course content offers basic and advance knowledge about subject.
4. Sufficient fund and resources are available for research, conduction of conferences, workshops, expert lectures and teaching method improvement.
5. The department has collaboration with INFOSYS and IBM for nurturing the students with latest technology and making them industry ready.

#### WEAKNESSES

1. Less number of faculty members who have doctoral degree.
2. Strength of faculty members is less.
3. Lack of Consultancy work.

#### OPPORTUNITIES

1. All graduates of the department find excellent placements in research-oriented industries and top ranking global companies.
2. Partnership with premier industries for training, campus placement and innovative research and project development.
3. Seeking for more research funds from funding agencies like AICTE, UGC, DST, etc.
4. As per the requirement of industry, revise the curriculum.

#### CHALLENGES

1. Lack of sponsored projects and consultancy
2. To develop a good research infrastructure.
3. Fast pace of developments in technology (e.g. IT, emerging new fields).

## Departments of Architecture

1. Name of the department : **Architecture**
2. Year of Establishment : **1984**
3. Names of Programmemes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) :
  1. **UG**
  2. **Masters in urban development\***
  3. **Masters in Panning\***  
\*Admissions yet to start.
4. Names of Interdisciplinary courses and the departments/units involved  
**Civil , Humanities. Computer Science, Mechanical & Electrical Engineering.**
5. Annual/ semester/choice based credit system (Programmeme wise)  
**CBCS - In First Year**  
**Semester - From II year to V year**
6. Participation of the department in the courses offered by other departments : **NA**
7. Courses in collaboration with other universities, industries, foreign institutions, etc.  
**As a part of curriculum students of B.Architecture have to undergo training for two semesters ( one-year) in Final Year with reputed offices of Architects and consulting firms led by Architects.**
8. Details of courses/Programmemes discontinued (if any) with reasons: **M.Arch**
9. Number of Teaching posts

	Sanctioned	Filled
Professors	02	04
Associate Professors	04	*
Asst. Professors	08	05

**\*02 Nos promoted from Associate Professor to Professor**

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
Dr. R. K. Pandit	Ph.D	Professor	Constuction Management	32	7
Prof. L. K. Jain	Ph.D(pursuing)	Professor	Construction Technology & Management	35	
Dr. Alok Sharma	Ph.D	Professor	PHE& Environmental	26	
Dr. S. S. Jadon	Ph.D	Professor	Building Engineering & Management	24	
Dr. A. S. Patil	Ph.D	Assistant Professor	Town & Country Planning	18	
Prof. D. Ludhekar	M. Arch	Assistant Professor	Urban Design	2.5	
Prof. V. Sharma	B. Arch	Assistant Professor (contract)	Architecture	0.5	
Prof. Amber Mittal	B. Arch	Assistant Professor (contract)	Architecture	0.5	
Prof. Archee Sharma	B. Arch	Assistant Professor (contract)	Architecture	0.5	

11. List of senior visiting faculty

1. Prof. Anurag Roy - GATEWAY, Sonapat
2. Prof. Vaishali Anagal - BMCA, Pune
3. Prof. Pushkar Kanvinde - BMCA, Pune
4. Prof. Anil Kumar - GATEWAY, Sonapat
5. Prof. Rajendra Kumar - Ansal University Gurgaon

12. Percentage of lectures delivered and practical classes handled (Programmeme wise) by temporary faculty: **UG -40%**

13. Student -Teacher Ratio (Programmeme wise) : **1:15**

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Technical	04	04
Administrative	02	01

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.  
PhD - 4 Nos.  
PG - 2 Nos.
16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received : Nil
17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received : Nil
18. Research Centre /facility recognized by the University - Yes
19. Publications:

\* a) Publication per faculty

**JOURNAL PUBLICATIONS:**

- 1) A. Choudhary, Tyagi. T & *R.K. Pandit* , “**Comparison Between BRTS and Personnel Vehicle as Travel Choice In Indore**”, **STM Journal of Trends in Transport Engineering and Applications**, Volume 2, Issue 3, ISSN: 2394-7284(online) Page 12-18
- 2) **Pandit.R.K** & Somya Dubey “**The Rural-Urban Metamorphosis**” **Journal of Advanced Research in Civil and Environmental Engineering**,\_ISSN: 2393-8307 ( August 2015) Vol II, No 2, Page 6-11.
- 3) Soma A.Mishra & **Pandit.R.K** “**Evaluation of Urban Transformation of Indore City**”, **An International Research Journal** (Indexed & Refereed Research Journal,) ISSN-0974-2832, (Print) E-ISSN-2320-5474, May-August 2015, (Combined), VOL-VII,\*ISSUE-76-79, Page 22-24
- 4) Soma A.Mishra & **Pandit.R.K**, “**Role of Urban Transformation and Environmental Design in Social Sustainability - A Case of Indore City**” ,**International Journal of Engineering and Technical Research (IJETR)** ISSN: 2321-0869 (O) 2454-4698 (P), Volume-3, Issue-7, July 2015,Page 173-177
- 5) Soma A.Mishra, G V Kulkarni & **Pandit.R.K**, “**Comparative Analysis of Urban Transformation at Four Locations of Indore City by Anova**”, **International Journal of Research –Granthaalayah**, ISSN- 2350-0530(O) ISSN- 2394-3629(P),Vol.3(Iss.7):July,2015, Page 31-39
- 6) A.Choudhary,Thakur M S & *R.K.Pandit*, “ **Vivid Sustainable Building Materials in various Topographical Regions in India**” , **Journal of Construction Engineering, Technology and Management** ISSN: 2249-4723(online), ISSN: 2347-7253(print) Volume 5, Issue 2, Page 61-73.

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#### X SEMINAR/CONFERENCE PUBLICATIONS:

1. Dubey Meenakshi, **Pandit, R.K.**, " Learning from Traditional Building Cultures" International Conference on Contemporary Architecture - Beyond Corbusierism , organized by IIA Chandigarh Chapter from 14<sup>th</sup> to 16<sup>th</sup> October, 2011.
2. Mishra A . Soma & **Pandit R.K.**, Urban Transformation of Indore, **National Seminar SURJAN 2011**, Organized by CED, IES IPSA, Indore Page 01-08.
3. Jain Minakshi, **Pandit R.K.**, "Regenerating Community Based Sustainable Villages of Human Mass" International Transatlantic Studies Conference, organized by School of Environment, University of Dundee, Scotland, UK on 11-14 July 2011.
4. Chaurasia.D, **Pandit.R.K.**, "Green Travel Infrastructure Management : Approach Towards Sustainable Development" International Conference on Urbanism & Green Architecture" organized by NIT, Hamirpur and IIA Chapter Chandigarh on 30<sup>th</sup> & 31<sup>st</sup> October 2010.
5. Chaurasia.D, **Pandit.R.K.**, Ranjan A. "Impact of major traffic Corridor Movement (Highway) on Urban Setup: A Case of Gwalior Region" 57th National Town & Country

- Planners Congress, Institute of Town Planners of India (ITPI), NIO Auditorium, Dona Paula, Tiswadi, Goa, January, 23rd -25th, 2009.
6. **Pandit R. K.**, Patil Anjali "Application of GIS tools in Urban Built Resource Management" 10-12 December 2008 ,IIA National Convention (NATCOM 2008) Bangaluru.
  7. **Pandit R. K.**, "Application of cosmic Energy in Sustainable Planning" National Workshop on Sustainable Development for Hill Areas" organized by NIT , Hamirpur,31<sup>st</sup> October & 1<sup>st</sup> November,2008.
  8. **Chaurasia D.**, Pandit R. K., "Sustainable Urban Development with Emphasis on Healthy Transport Planning "International Conference on Emerging Technologies and Applications in Engineering, Technology and Sciences", Saurashtra University, Rajkot, Gujarat, 13-14,Jan 2008.
  9. Tomar Pallavi, Patil S. Anjali, **Pandit R. K.**, "Transportation Planning Through Remote Sensing and GIS " National Seminar on Infrastructure Management for New World Order, Sponsored by AICTE, N. Delhi Organised by Department of Architecture, MITS, Gwalior, 28<sup>th</sup> -29<sup>th</sup> Dec. 2007.
  10. Vinodia A., **Pandit R. K.**, "Model for Land-use Evolution and impact assessment: A Study of Comprehensive Urban Planning Support System" National Seminar on Infrastructure Management for New World Order, Sponsored by AICTE, N. Delhi Organised by Department of Architecture, MITS, Gwalior, 28<sup>th</sup> -29<sup>th</sup> Dec. 2007.
  11. Chaurasia D., **Pandit R. K.**, "Rural Re-Construction: An Overview of Infrastructure gestation in Indian Rural Setup" National Seminar on Infrastructure Management for New World Order, Sponsored by AICTE, N. Delhi Organised by Department of Architecture, MITS, Gwalior, 28<sup>th</sup> -29<sup>th</sup> Dec. 2007.
  12. Chaurasia D., **Pandit R. K.**, "Decision Support Systems for Sustainable Urban Planning, Development & Management" National Conference on "Emerging Trends In Information Technology", Sponsored by AICTE, N. Delhi Organised by Computer Science Department, Shri G.S. Institute Of Technology And Science Indore (M.P), 18th -20th Dec. 2007.
  13. Anjali S Patil, **Pandit R. K.** "Impact of Peri urban Development and Compact City Models" 56<sup>th</sup> National Conference of Town Planners,Kolkata, organized By ITPI, December 2007.
  14. Chaurasia D., **Pandit R. K.**, "Sustainable Urban Transport Applications: A Need of Present Urban Setup" National Seminar on Renewable Energy: Potential & Sustainable Development, Organised by Department of Architecture & Mechanical Engineering, MITS, Gwalior, 25<sup>th</sup> -26<sup>th</sup> Sept.. 2007.
  15. **Pandit.R.K** "Techno Scientific Impact on Human Behaviour and Social System" International Conference on Technology Management (ICTM 2006), Malaysia 4<sup>th</sup> -5<sup>th</sup> December 2006.
  16. Chaurasia.D, **Pandit.R.K** "Global Positioning System advanced Information and Communication System- An application to road transport"AICTE Sponsored National Conference , MITS,Gwalior 29-30<sup>th</sup> November,2006.
  17. Chaurasia.D, **Pandit.R.K** "Urban road transport management through intelligent transport systems"National Seminar on GIS,GPS & RS applications in Transportation Planning and Management St.Peters Engineering College, Chennai ,21<sup>st</sup> -22<sup>nd</sup> November 2006.
  18. Chaurasia.D, **Pandit.R.K**, "Pre & post disaster management of urban corridors by applying intelligent urban transport techniques" National Seminar on Technology for Disaster Mitigation. NIT Hamipur, 29-30 Sept. 2006.

19. Chaurasia.D, **Pandit.R.K** & Patil A.S., "Intelligent Urban Transport Systems For Heterogeneous Environment Conditions" National Seminar on Infrastructure Management for New World Order and Systems. MITS, Gwalior, March 2006.
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22. **Pandit.R.K.** "Quality Through Resource Sustainability in Technical Education." National Seminar ,Kongu Engg. College , Erode,TN,Dec 1999.
23. **Pandit.R.K.**& R.N.Munshi. "Construction Management by Distance Education Method: Scope, Strategies and Programmemes" Second Regional Workshop on Construction Management Education and Training in the Asia and Western Pacific Region, Kathmandu, Nepal, Organised By NICMAR and NEC, Nepal, December 1999.
24. **Pandit.R.K.**,R.N.Munshi.&R.D.Gupta."Total Quality Management of Technical Education" Symposium on Technical Education in India in the Next Millennium our Preparedness, organised by Rajiv Ghandi Proudयोगiki Vishwadalaya-Bhopal, Nov'99
25. **Pandit R.K.** "BOT in Housing Sector", International Conference on High Rise Structures, Coimbatore. TN, Oct 1999.
26. **Pandit.R.K.** "The Technical Education System and The Next Generation". II Asia Pacific Forum on Engineering and Technology Education, Sydney, Australia, July, 1999.
27. **Pandit.R.K.** "Attributes of Sustainable Urban Development." XXVI IAHS World Housing Congress, San Francisco, California, USA, June, 1999.
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29. **Pandit.R.K.**"Technical Education & the New Millennium" - International Conference Guwhati, Assam - Jan 1999.
30. **Pandit.R.K.**"Urbanization and the Shelter" XXV World Housing Congress, Lisboa Portugal June 1998
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32. **Pandit.R.K.**& R.N.Munshi. "Academic Audit- A Management Tool for Quality in Technical Education" International Conference Sponsored by D.T.E.(M.P.), Bhopal Jan 1998.
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35. **Pandit.R.K.**& R.N.Munshi."Quality Information Management Transfer System" National Seminar, M A C T Bhopal Dec 1997
36. **Pandit.R.K.**& R.N.Munshi."Power Planning in Remote areas of Developing Countries" International Conference U.O.R.Roorkee Oct. 1997
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39. **Pandit.R.K.**&Y.P.Singh."Urbanization"International Conference, U.O.R.Roorkee, Oct 1997

40. R.N.Munshi.& **Pandit.R.K.**“T Q M in Construction” (The Needs & Attributes) National Conference, C.E.P.T Ahmedabad Mar 1997.
41. **Pandit.R.K.**& R.N.Munshi. “Performance Appraisal, A TQM Tool In Technical Education” National Seminar SV.RC of Engineering and Technology Surat Jan 1997
42. **Pandit.R.K.**& R.N.Munshi. “Quality Learning System in Engineering Colleges” National Seminar MACT,Bhopal Dec 1996
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44. **Pandit.R.K.**& A..Sharma. “Management of Energy In Buildings” National Seminar MITS, Gwalior Nov 1993.
45. **Pandit.R.K.** “Settlement Planning And Management” National Seminar MACT, Bhopal Mar 1992.
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#### **Prof. L.K.Jain**

1. **Design of Energy Efficient Buildings**, Proc. of All India Seminar on Energy conservation by Institution of Engineers( India) , M.P. Chapter, Bhopal, June,1991
2. **Energy Saving in Existing and New Buildings**, Proc. of National at U.O.R., Roorkee, Dec.1992.
3. **Energy Management in Built Environment, Theme Paper** , National Seminar on Management of Energy in Buildings at M.I.T.S. Gwalior, Nov.1993 ( Co-author : Dr. R.N.Munshi)
4. **Thermal Human Response in Built environment**, proc. of National Seminar on Management of Energy in Buildings at M.I.T.S.Gwalior, Nov.1993 ( Co-Author : Dr. R.N.Munshi)
5. **System Model for Energy Management in Built Environment** , Proc. of National seminar on Management of Energy in Buildings at M.I.T.S. Gwalior, Nov.1993 ( Co-author : Dr. R. N. Munshi)
6. **Peoples Participation in Settlement Planning and its Management** , National seminar at M.A.C.T., Bhopal, April 1995( Co-Author: S. S. Jadon)
7. **Coordination Among Different Specialized People Achieving through Construction Management** , Proc. on Role of Engineering Institutions and Building Research Institutes in Low Cost Construction at M.I.T.S., Gwalior, Jan.1996( Co-Author: Alok Ranjan , and S. K. Jain).
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9. **Low Cost Housing - Some Basic Issues**, Proc. on Role of Engineering Institutionns and Building Research Institutes in Low Cost Construction at M.I.T.S., Gwalior, Jan.1996( Co-Author: Dr. R.N.Munshi , and S.K.Jain).
10. **Economy of Housing**, Proc. on Role of Engineering Institutions and Building Research Institutes in Low Cost Construction at M.I.T.S., Gwalior, Jan.1996 ( Co-Author: Dr. R. N. Munshi , and S. K. Jain and R. K. Goyal).
11. **Recycling and reuse of Waste as construction Material; A Sustainable approach** published in National journal Research link Vol Vi (07) No.42(A) PP 112-114, Sept 07.

12. **Factors affecting design of Energy efficient & climatic responsive building within hot arid zones in India** – Research link Vol VI (07) No 42(A) pp 127-131 Sept 07( Co- author A.K. Vinodiya)
13. **Investigating process of urban transformation & dynamics of urban sprawl:**  
A case study of Gwalior City. Published in national Journal JIIA, Vol. 72, No.09. PP25-27 (Co- author A.K. Vinodiya and Alok Sharma)
14. **Nostalgia for Heritage, a Revitalisation of Multiculturalism** - Republished in National Magazine of Architecture, Time space and people  
(Co- author: Prof. L. K. Jain, Ar. Tarun Jaiswal, Ar Anil Balani)
15. **Earthquakes : The Hammers of GOD An Uncalled Global Catastrophe Shaking the planet** - published in National Journal of JIIA Vol. 71, Issue 01, Jan 2006, (Co- author: Prof. L. K. Jain, Ar. Tarun Jaiswal, Ar Anil Balani)
16. **Nostalgia for Heritage, a Revitalisation of Multiculturalism** - published in National Journal of JIIA Vol. 70, Issue 7, August 2005, (Co- author: Prof. L. K. Jain, Ar. Tarun Jaiswal, Ar Anil Balani)
17. **“Seismic Protection of Heritage Buildings”** - Published in International Conference, at Rome (Author: Dr. S. K. Jain, co author -Prof. L. K. Jain)
18. **“Review of Problems in Engineering Education”**, Proc. of National Seminar on Technical Education in Current Perspective (TECP-2007), University College of Engineering, Kota. (L. K. Jain and S. K. Jain)

#### **Dr. Alok Sharma**

**Water loss and Global Warming issues in cooling tower and chimney..** Published by Radha Publications, DaryaGanj, New Delhi.(Edited by Dr. Sanjeev Jain & Dr. Deep K. Sharma. Year 2015.pages 86-92

#### **Dr. S.S. Jadon**

##### **Papers/ Articles in Journals/ Publications:**

1. “Role of landmark as Identity in city image - a case study of Gwalior” in the ITPI Journal, Vol 9 No.2 April-June 2012.
2. “Revitalisation of an historic precinct - case study Gwalior, India” in the book publication, ‘New Architecture and Urbanism : Development of Indian Traditions’, published by INTBAU India, 2007.
3. “Basic concepts in urban design - a research review” in the ITPI Journal, Vol 4 No.1 Jan-March 2007.
4. “A divine saga in stone” in the Journal of the Indian Institute of Architects, Vol 70 issue 02 Feb-Mar 2005.
5. “Historic city and conservation research” in the Journal of the Indian Institute of Architects, Vol 69 issue 09 Sept. 2004.

##### **Papers at International level meets:**

6. “Urban Lakes - searching sustainable solutions. Case study: Datia, India” at the 12th World Lake Conference (Taal2007) at Jaipur, India. (Oct-Nov 2007)
7. “Revitalization of an historic precinct” at the INTBAU International Conference - New Architecture and Urbanism: Development of Indian Traditions at New Delhi (Jan2007)
8. “Urban renewal of a historic city core” at the International Conference on Built Environment (ICiBE) 2006 at Malaysia.(Jun 2006)
9. “Historic city and conservation research” at the 7th International Symposium of the Organization of World Heritage Cities (OWHC) 2003 at Rhodes, Greece.(Sept 2003)

10. "Environmental Imperatives for a pilgrimage event – case study Orchha" Joint research paper at the 38th International Conference of the International Society of City and Regional Planners (IsoCarp) (2002)
11. Traditional Housing Forms in India at the XXVII IAHS World Housing Congress 1999 at Dept. of Civil Engineering, University of Portland, Oregon, USA (June 1999)
12. Role of Culture and Tradition in Housing Parameters at the XXVII IAHS World Housing Congress 1999 at Dept. of Civil Engineering, University of Portland, Oregon, USA (June 1999) (joint paper with R.S. Jadon)
13. Revitalization of a historical residential zone at the XXV IAHS World Housing Congress 1998 at Dept. of Civil Engineering, Universidade do Porto, Lisboa, Portugal (June 1998)
14. Architectural Conservation in Architectural Education at the UIA-IIA International Meet on Architecture and Heritage at Aurangabad, Maharashtra (Mar. 1998)
15. Conservation of Historic towns of India at the UIA-IIA International Meet on Architecture and Heritage at Aurangabad, Maharashtra (Mar. 1998) (joint paper with R.S. Jadon)
16. Revitalization of a Civic Square at the ARCASIA Seminar on Urban Renewal at New Delhi (Feb 1998)
17. Quality Management for Concrete Structures at the International Conference on Maintenance and durability of concrete structures at JNTU, Hyderabad (March 1997)
18. Conceptual Modelling of repair/ rehabilitation management information at the International Conference on Maintenance and durability of concrete structures at JNTU, Hyderabad (March 1997) (Joint paper with Sudhir S. Bhadauria, Dr. M.C. Gupta)

**Papers at National Level meet:**

1. Integration of services in Hospital Planning at the National Seminar on Services in multi-storeyed buildings at CEPT, Ahmedabad (Dec. 1996)
2. Urban Built Environment at the National Conference on New Paradigms in Civil Engineering Practices at AFC, Bhatkal, Karnataka (November 1996)
3. Settlements and Energy Patterns at the National Conference on New Paradigms in Civil Engineering Practices at AFC, Bhatkal, Karnataka (November 1996) ( joint paper with R.S. Jadon)
4. Prediction of residual service life of concrete structures at the National Conference on New Paradigms in Civil Engineering Practices at AFC, Bhatkal, Karnataka (Nov. 1996) (joint paper with Sudhir S. Bhadauria, Dr. M.C. Gupta)
5. Energy conservation through Management at the National Seminar on Management of Energy in Buildings at MITS, Gwalior. ( Nov.1993)
6. Energy Consciousness in Building Design - a perspective at the National Seminar on Management of Energy in Buildings at MITS, Gwalior. ( Nov.1993)
7. People's participation in Settlement Planning and its Management at the National Seminar in Urban Development and management at the Department of Architecture, MACT, Bhopal (Mar. 1992)

**Dr. A.S. Patil**

(A) Details of published work: Research papers in **journals (National)**

1. "Urban Morphological Study of Gwalior" JIIA, Sept 2008,
2. "Planning of Sanitation System in Peri-Urban Slums" ITPI Journal April- June 2008

(B) Details of published work: Research papers in **journals (International)**

1. Socio Economic Development Indicators, A critical appraisal of Gwalior Region, IJAET, Oct- Dec 2010

\* Number of papers published in peer reviewed journals (national

/International) by faculty and students

- \* Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)
- \* Monographs
- \* Chapter in Books
- \* Books Edited
- \* Books with ISBN/ISSN numbers with details of publishers
- \* Citation Index
- \* SNIP
- \* SJR
- \* Impact factor
- \* h-index

20. Areas of consultancy and income generated

S. no.	Project	Date	Amount in Rs.
1.	Design & Drawings of Regional office of M. P. Rajya Viparan Board, Morena	Jan. 2011	152889/-
2.	Preparation of Housing lay out for the rehabilitation of villages Dhobni, Nahar kheda and Suhela, District Sheopur, for Kaketo Dam	Jan. 2012	105058/-
3.	The consultancy charges for providing the Housing lay out for the rehabilitation of village Boorda District Shivpuri for Kaketo Dam	March, 2012	98931/-
4.	Providing consultancy for Interior Furnishing of IIDC Administration building, Gwalior	March, 2013	54540/-
5.	Checking of Design & Drawings of Hotel building of M/s Saloni Hotel & Resorts, Agra	June, 2013	49450/-
5.	Checking of Design & Drawings of IIDC, RCC overhead Tank & Sump well at Garment Park Gadaipura, Gwalior	June, 2013	19231/-
6.	Checking of Design & Drawings of IIDC, RCC overhead Tank & Sump well at Sitapur Pahadi, Morena (Phase-1)	Aug., 2013	24725/-
8.	Project Incharge IIDC for Industrial Area Development of Morena	2014-2015	2,00,000/-
9.	IIDC office Interior works	2014-2015	2,00,000/-
10.	Mukhya Mantri Infrastructure Development scheme Phase II ( Became a part of smart city Proposal now) Total Amount ( 52 lakhs)	2014-2015	7,50,000/- (received)

21. Faculty as members in
    - a) National committees b) International Committees c) Editorial Boards....
  22. Student projects
    - a) Percentage of students who have done in-house projects including inter departmental/Programmeme
    - b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies
  23. Awards / Recognitions received by faculty and students
  24. List of eminent academicians and scientists / visitors to the department
25. Seminars/ Conferences/Workshops organized & the source offunding
- a) National

**I. CONFERENCES & WORKSHOPS ORGANIZED:**

*Dr. R.K. Pandit*

1. Organized and Convened “**National Seminar on Infrastructure Management Challenges and Advancements**” sponsored by AICTE, New Delhi, 2<sup>nd</sup> and 3<sup>rd</sup> May 2011.
2. Organized and Convened National Workshop on “**Quality Assurance in Technical Education**” sponsored by MPCOST, Bhopal 6<sup>th</sup> & 7<sup>th</sup> February 2010.
3. Organized and Convened National Workshop on “**Quality Management in Technical Education**” sponsored by AICTE, New Delhi, 6<sup>th</sup> & 7<sup>th</sup> March 2009.
4. Organized and Convener National Workshop on “**Quality Management in Technical Education**” sponsored by AICTE, New Delhi, 16<sup>th</sup> & 17<sup>th</sup> February 2008.
5. Organized and Convened National Seminar on “**Infrastructure Management for New World Order (Technology, Techniques & Systems)**” sponsored by AICTE, New Delhi & MPCOST, Bhopal , 28<sup>h</sup> & 29<sup>th</sup> December 2007.
6. Organized Workshop on “**Urban Management**” sponsored by Govt. of MP, Bhopal, 15<sup>th</sup> December 2007.
7. Organized and Convened “**National Seminar on Infrastructure Management for New World Order and Systems**” sponsored by AICTE, New Delhi, 24<sup>th</sup> & 25<sup>th</sup> March 2006.

b) International

26. Student profile Programmeme/course wise: N.A

Name of the Course/Programmeme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	


\*M = Male \*F = Female

27. Diversity of Students: N.A

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

<b>Performance in Public Examinations</b>					
	UPSC Examinations	SLET	Gate	NET	Others
2014-15	-	-	06	-	-
2013-14	-	-	01	-	-
2012-13	01	-	-	-	-

29. Student progression

<b>Student progression</b>	<b>Against % enrolled</b>
UG to PG	
PG to M.Phil.	
PG to Ph.D.	
Ph.D. to Post-Doctoral	
<b>Employed</b> <ul style="list-style-type: none"> <li>• Campus selection</li> <li>• Other than campus recruitment</li> </ul>	
Entrepreneurship/Self-employment	

30. Details of Infrastructural facilities

a) **Library**

Total No. of Books : 2097

**Journals**

National: 06 Nos.

International : 03 Nos.

**e-journals**

ASCE, Delnet, NPTEL

b) Internet facilities for Staff & Students  
**24 Hrs x 7 days (100MB Ps Leased line)**

c) Class rooms with ICT facility

d) Laboratories

1. CAAD Lab
2. GIS-GPS Lab
3. Photography Lab
4. Climatology Lab
5. Building Science Lab
6. Audio Visual Lab

31. Number of students receiving financial assistance from college, university, Government or other agencies

**All the Sc/St students get scholarship from the State Government.**

32. Details on student enrichment Programmes (special lectures / workshops / seminar) with external experts

33. Teaching methods adopted to improve student learning

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

35. SWOC analysis of the department and Future plans

## Department of Electronics

1. Name of the department - Electronics
2. Year of establishment - 1987
3. Names of the Programmes / Courses offered (UG,PG,M.Phil., Ph.D., Integrated Masters; Integrated Ph. D., etc.)

UG

- B.E (Electronics Engg.)
- B.E. (Electronics & Telecommunication Engg.)

PG

- M.E. (Communication control and networking)
- M.Tech. (Microwave Engg.)

4. Names of the Interdisciplinary courses and the departments / units involved.-Nil
5. Annual / semester / choice based credit system(Programme wise)

Programme	Scheme
B.E. 1 <sup>st</sup> year	Semester (ET, EL) & CBCS (EE & BT)
B.E. 2 <sup>nd</sup> year	Semester
B.E. 3 <sup>rd</sup> year	Semester
B.E. 4 <sup>th</sup> year	Semester
M.E.	Semester

6. Participation of the department in the courses offered by other departments:  
Department of Electrical Engineering  
Department of Computer Science and Engineering  
Department of Applied Sciences  
Department of Humanities
7. Course in collaboration with other universities. Industries, foreign institutions, etc. - Nil
8. Details of course / Programmes discontinued(if any) with reasons
9. Number of Teaching posts

	Sanctioned	Filled
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Professors	2	2
Associate Professors	5	3
Asst. Professors	6	6

10. Faculty profile with name, qualification, designation, specialization, (D. Sc. / D. Litt. / Ph.D./ M. Phil. etc)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph. D. Students guided for the last 4 years
Dr. P.K. Singhal	Ph.D	Professor	Microwave Engineering	24	04
Dr. Sarita Singh Bhadauria	Ph.D	Professor	Ad-hoc networking	29	04
Dr. Bimal Garg	Ph.D	Associate Professor	Microwave Engineering	29	-
Dr. Rekha Gupta	Ph.D	Associate Professor	Communication Engineering	27	-
Dr. Vandana Vikas Thakare	Ph.D	Associate Professor	Microwave Engineering	16	-
Dr. Laxmi Shrivastava	Ph.D	Assistant Professor	Ad-hoc networking	16	-
Dr. R.P. Narwaria	Ph.D	Assistant Professor	Signal Processing	07	-
Dr. Karuna Markam	Ph.D	Assistant Professor	Communication Engineering	13	-

Prof. Madhav singh	M.tech	Assistant Professor	VLSI Designing	5	-
Prof. Pooja Sahoo	M.tech	Assistant Professor	Communication Engineering	4	-
Prof. Deep Kishore Parsediya	M.tech	Assistant Professor	Mechatronics	3.5	-

11. List of senior visiting faculty - Nil

12. Percentage of lectures delivered and practical classes handled (Programmeme wise) by temporary faculty -5%

13. Student -Teacher Ratio(Programmeme wise)

Student	Teacher
B.E.	1:15
M.E.	1:12

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Support Staff	07	07
Administrative Staff	01	01

15. Qualifications of teaching faculty with D. Sc./ D. Litt./ Ph.D. / M. Phil./PG.

Name	Qualification
Dr. P.K. Singhal	B.E., M. Tech, Ph.D
Dr. Sarita Singh Bhadauria	B.E., Mtech, Ph.D
Dr. Bimal Garg	B.E., Mtech, Ph.D
Dr. Rekha Gupta	B.E., Mtech, Ph.D

Dr. Vandana Vikas Thakare	B.E., Mtech, Ph.D
Dr. Laxmi Shrivastava	B.E., Mtech, Ph.D
Dr. R.P. Narwaria	B.E., Mtech, Ph.D
Dr. Karuna Markam	B.E., Mtech, Ph.D
Prof. Madhav singh	B.E., M.tech
Prof. Pooja Sahoo	B.E., M.tech
Prof. Deep Kishore Parsediya	B.E., M.tech

16. Number of faculty with ongoing projects from a) National b) international funding agencies and grants received

S. No.	Name of the funding agency	Name of the faculty
01.	IEI	Dr. Laxmi Shrivastava
02	MPCST	Dr. Laxmi Shrivastava
03	AICTE	Dr. P.K. Singhal
04	AICTE	Dr. Rekha Gupta

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received

S. No.	Name of the funding agency	Name of the faculty	Project Title	Year of Funding	Duration	Amount sanctioned (Rs.)	Status: Ongoing/ Completed
01.	IEI	Dr. Laxmi Shrivastava	Congestion Control in Adhoc Networks	2009-2012	3 years	0.5 lacs	Completed
02	MPCST	Dr. Laxmi Shrivastava	Fuzzy Logic based congestion Control for Mobile Adhoc Networks	2014-2016	2 years	3.05 lacs	Sanctioned

03	AICTE	Dr. P.K. Singhal	Up gradation OF Antenna	2012-2015	02 years	5.5 lacs	on going
04	AICTE	Dr. Rekha Gupta	Spectrum sensing for native radio applications	2012-2014	02 years	6.6 lacs	Completed

18. Research centre / facility recognized by the University. -Yes, RGPV Bhopal

19. Publications

a) Publication per faculty numbers of papers published in peer reviewed journals (national / international ) by faculty and students,

- Number of publication listed in international data base (For Eg: Web of Science

Faculty Name	No. of publications
Dr. P.K. Singhal	80
Dr. Sarita Singh Bhadauria	62
Dr. Bimal Garg	32
Dr. Rekha Gupta	14
Dr. Vandana Vikas Thakare	37
Dr. Laxmi Shrivastava	43
Dr. R.P. Narwaria	18
Dr. Karuna Markam	30
Prof. Madhav singh	11
Prof. Pooja Sahoo	08
Prof. Deep Kishore Parsediya	06

Scopus, Humanities International complete, Dare database - International social science Directory, EBSCO host, etc)- Nil

- Monograph -Nil
- Chapter in books
- Books with ISBN/ISSN Number with detail of publishers
- Citation Index
- SNIP
- SJR
- Impact factor
- H-index

20. Areas of consultancy and income generated

- Antenna Fabrication and testing.
- Income generated Rs.15000/- r per year

21. Faculty as members in

a) National committees b) international committees c) editorial board....

Faculty Members	Professional Bodies
Dr. Bimal Garg	IETE, ISTE
Dr. Vandana Vikas Thakare	ISTE, IETE, IEI, AeSI
Dr. Karuna Markam	ISTE, IEI
Dr. R.P. Narwaria	IEI
Prof. Pooja Sahoo	IEI
Prof. Deep Kishore Parsediya	IEI

22. Subject projects.

a) Percentage of student who have done in - house project including inter departmental/ Programme

90% students have done in-house projects.

b) Percentage of student placed for project in organization outside the institution i.e. in research laboratories/ industry/ other agencies

10% students placed for project in organization outside the institution

23. Award / Recognition received by faculty and student

S.No.	Title of Award	Name of the awarded faculty	Reference of award
1	ShayestaAkhtar Memorial National Award for Best Women Engineering College Teacher, 2011	Dr Vandana Vikas Thakare	Indian Society for Technical Education (ISTE)
2	young person of Gwalior award for academic leadership, 2015	Dr Vandana Vikas Thakare	Gwalior JCI club
3	Recognized contribution as a teacher in the field of engineering	Dr Vandana Vikas Thakare	Gwalior vikasParishad

	and technology		
4	GOLD MEDALIST-2014 in Master in Engineering.	Pooja Sahoo	MITS Gwalior

24. list of eminent academicians and scientists/ visitors to the department

S.No	Name of the expert	Guest Lecture Topic
1.	Er. Prasahant Trivedi, GM Telecomm. BSNL Gwalior	GSM, 3G
2.	Dr. Pachouri IIT Indore	Applications of DSP tools in biomedical engineering
3.	Dr. K.V.Arya, Professor, IIITM Gwalior	Image processing
4.	Dr. SD Josh, IIT Delhi	Recent Applications in DSP
5.	V.K. Saxena, VC, Amity Gwalior	Networking
6.	Dr Neeraj Shrivastava, Assoc. Proffessor, LNMIIT Jaipur	OFDM
7.	Dr. Deepak Bhatnagar, University of Rajasthan jaipur	Design of Microstrip Antenna
8.	Dr. Deepak Bhatnagar, University of Rajasthan jaipur	Microwave Radiations
9.	Dr. S.K. Jain, SGSITS Indore	Microstrips Antenna, Soft computing
10.	Dr. R Tomar. LNMIIT Jaipur	Microwave Engineering
11.	Dr. M.M. Sharma, Principal GEC Ajmer	Microwave filters and Antennas
12.	Dr. Mithlesh kumar, GEC jhalawar	RADAR
13.	Dr. Rakesh Singhai, RGPV Bhopal	Green Wireless via Cognitive Radio Dimension
14.	Dr. R. S. Jadon, MITS Gwalior	Intelligence Multimedia data processing

15.	Dr. Mithlesh Kumar, GEC Jhalawar	Introduction to Monolithic Integrated Circuit (MIC) antenna
16.	Dr. Deepak Bhatnagar, University of Rajasthan, Jaipur	Basic antenna designing concepts
17.	Dr. Ashwin Kothari, VNIT Nagpur	Antenna design issues and challenges
18.	Dr. S.K. Jain, SGSITS Indore	Artificial Neural Network and its applications in Microstrip patch antenna
19.	Dr. C.S.Malvi, MITS Gwalior	How to write a research paper

25. Seminars / conferences / workshops organized & the sources of funding

a) National

b) International

1. Organized a One day national workshop on “ **Recent trends in Digital Signal Processing Applications** ” under TEQIP -II at MITS Gwalior on 5<sup>th</sup> October 2013.
2. Organized a **two day industrial trip at BSNL Gwalior** under TEQIP -II at MITS Gwalior on 10<sup>th</sup> & 11<sup>th</sup> October 2013.
3. Organized a Two days national Conference on **Emerging Trends in Communication, Control and Networking** during 01/02/14 -02/02/14 at MITS Gwalior
4. Organized Online **ISTE workshop on Signal and Systems** organized by IIT Kharagpur during 2-12 Jan2014 at MITS Gwalior
5. Two weeks main Workshop On Control System during 2/12/14 - 12/12/14 organized by National Mission on Education through Information and Communication Technology, IIT Kharagpur at MITS Gwalior
6. Organized a Science day a Paper contest on **Hazards due to Electromagnetic radiations** on 25<sup>th</sup> Feb 2015
7. Organized a Two days national Conference entitled “**2015 National conference on Recent Advances in Microwave Engineering**” during 28 Feb. -1 March 2015 at MITS Gwalior
8. Organized **Two week AICTE(QIP) sponsored STP on Recent Advances in Microwave Engineering ( March 16-27,2015)** at MITS Gwalior..
9. Organized a Paper Contest entitled “**Smart City**” during 30 october 2015

10. Organized a Two days national Conference entitled “**Recent Advances in Communication Engineering**” during 4,5 Dec. 2015 at MITS Gwalior

11. Organized **one week TEQIP sponsored STTP on Recent Advances in Microwave Engineering ( Dec 7-11,2015)** at MITS Gwalior

26. Students profile Programme/ course wise: Not applicable

\*M= male \*F= Female

27. Diversity of Students

Name of the course	% of students from the same state	% of the students from other states	% of students from abroad
B.E. -EL	80%	20%	Nil
B.E. -ET	80%	20%	Nil
M.E.-CCN	90%	10%	Nil
M.tech-MW	90%	10%	Nil

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

30% students have qualified respective exams.

29. Student progression

Student progression	Against % enrolled
UG to PG	40%
PG to M.Phil.	Nil
PG TO Ph.D.	10%
Ph.D. to post - Doctoral	Nil
Employed	60%
- Campus selection	20%
- Other than campus recruitment	
Entrepreneurship/ self - employment	10%

### 30. Detail of Infrastructural facilities

#### a)Library

- Our institute has one central Library on ground floor of separate building. College also has separate departmental library with good quality books.
- Library has the following additional resources
  - Reputed e-journal.
  - NPTEL course lectures.
  - Open Source.
  - Stanford University and MIT Material etc.
  - Students make use of digital Library outside teaching hours.
  - Teachers also use various CDs, open source material, hard copy and e-journals to improve their knowledge skills.
  - Various faculty members doing Ph.D. find convenient preparation time using Research Cubicles and other e-sources.

#### b) Internet facilities for staff & Student

24×7 hours Internet facilities are available.

#### c) Class rooms with ICT facility

All Classrooms have ICT facility

#### d)Laboratories

1. Communication lab
2. Electronics lab
3. Microprocessor lab
4. Microwave lab
5. TV & Radar lab
6. Computer lab

31. Number of student receiving financial assistance from college , university, government or other agencies.- Nil

32. Detail on student enrichment Programmes (special lectures / workshops / seminars) with external experts

S.No	Name of the expert	Guest Lecture Topic
1.	Er. Prasahant Trivedi, GM Telecomm. BSNL Gwalior	GSM, 3G

2.	Dr. Pachouri IIT Indore	Applications of DSP tools in biomedical engineering
3.	Dr. K.V.Arya, Professor, IITM Gwalior	Image processing
4.	Dr. SD Josh, IIT Delhi	Recent Applications in DSP
5.	V.K. Saxena, VC, Amity Gwalior	Networking
6.	Dr Neeraj Shrivastava, Assoc. Professor, LNMIIT Jaipur	OFDM
7.	Dr. Deepak Bhatnagar, University of Rajasthan jaipur	Design of Microstrip Antenna
8.	Dr. Deepak Bhatnagar, University of Rajasthan jaipur	Microwave Radiations
9.	Dr. S.K. Jain, SGSITS Indore	Microstrips Antenna, Soft computing
10.	Dr. R Tomar. LNMIIT Jaipur	Microwave Engineering
11.	Dr. M.M. Sharma, Principal GEC Ajmer	Microwave filters and Antennas
12.	Dr. Mithlesh kumar, GEC jhalawar	RADAR
13.	Dr. Rakesh Singhai, RGPV Bhopal	Green Wireless via Cognitive Radio Dimension
14.	Dr. R. S. Jadon, MITS Gwalior	Intelligence Multimedia data processing
15.	Dr. Mithlesh Kumar, GEC Jhalawar	Introduction to Monolithic Integrated Circuit (MIC) antenna
16.	Dr. Deepak Bhatnagar,	Basic antenna designing

	University of Rajasthan, Jaipur	concepts
17.	Dr. Ashwin Kothari, VNIT Nagpur	Antenna design issues and challenges
18.	Dr. S.K. Jain, SGSITS Indore	Artificial Neural Network and its applications in Microstrip patch antenna

### 33. Teaching methods adopted to improve student learning

- Teaching methodology is completely based on smart technology like smart classroom, e-station, and virtual library etc.
- Faculty attend various advanced short term Programmes organized by reputed institutions.
- Institutes like NIT, IIT, IIIT and other organize advanced Industry Oriented Programmes. College staff are sponsored for such Programmes
- Students feedback also gives information on effectiveness of teaching by staff member

### 34. Participation in Institutional Social Responsibility (ISR) and Extension activities

- Evening classes for poor students are conducted by students.
- Poor students have been given exposure to computers and smart classes.
- NCC, NSS, Blood donations camps are organized.

### 35. SWOC analysis of the department and Future plans

**Strength:** The strength of the college may be described in terms of

- (i) Physical resources
- (ii) Human resources
- (iii) Learning resources

**Weakness:** Following are the some weakness in teaching- learning methods in the institution—

- (a) Insufficient numbers of class rooms and shortage of permanent faculty members in majority of the departments
- (b) Inadequate research laboratories and facilities for enthusing faculty members

(c) Insufficient recreation facilities for faculty members

(d) Limitation of opening job oriented and skill development courses for the students.

**Opportunities:**

(a) To introduce job oriented and skill development, self employed courses and other emerging subjects

(b) Research and extension activities

**Challenges:**

(a) To provide job opportunities to the degree holders

(b) To provide hostel facilities to all the needy students

(c) To start research activities for the development of the faculty members with available facilities in collaboration with nearby Universities and research institutes.

## Computer Applications

1. Name of the department: Dept. of Computer Applications
2. Year of Establishment: 1986
3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.): MCA
4. Names of Interdisciplinary courses and the departments/units involved: NIL
5. Annual/ semester/choice based credit system (programme wise): Semester
6. Participation of the department in the courses offered by other departments: NIL
7. Courses in collaboration with other universities, industries, foreign institutions, etc.: Study center of IGNOU MCA and BCA Programme
8. Details of courses/programmes discontinued (if any) with reasons: NIL
9. Number of Teaching posts

	Sanctioned	Filled
Professors	01	01
Associate Professors	01	01 (Reader)
Asst. Professors	03	02

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
Dr. R.S. Jadon	Ph.D.(IIT Delhi)	Professor	Video Data Processing	26	04
Dr. Anshu Chaturvedi	Ph.D.(Jiwaji Univ.)	Reader	Adhoc Computer Networks	12	NIL

Prof. Prabhakar Sharma	BE(Computer Sc & Engg)	Assistant Professor(SG)	Cognitive Radio	23	NIL
Prof. Parul Saxena	MCA	Assistant Professor	Video Processing	2	NIL

11. List of senior visiting faculty:

1. Dr. K.K. Biswas, IIT Delhi
2. Dr M.P. Singh, Agra Univ.

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty

Name of Faculty	Lectures delivered	Practical classes
Prof Dharamveer Singh	40%	40%
Prof Vinod Tyagi	40%	40%

13. Student -Teacher Ratio (programme wise): 15 ( incl.Humanities and Maths Dept)

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Academic support staff (technical)	02	02
Administrative staff	01	NIL

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.: 03

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received : NIL

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received: Two AICTE projects completed for 5.0 lcs and 10.0 lcs each.

18. Research Centre /facility recognized by the University:

Research Center of RGPV Bhopal

19. Publications:

- \* a) Publication per faculty: 20 publications per faculty
- \* Number of papers published in peer reviewed journals (national / international) by faculty and students : 37
- \* Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.): 16
- \* Monographs: NIL
- \* Chapter in Books: 02
- \* Books Edited (PS 1): 02
- \* Books with ISBN/ISSN numbers with details of publishers: NIL
- \* Citation Index :
- \* SNIP
- \* SJR
- \* Impact factor : 7.0
- \* h-index: 4.7

20. Areas of consultancy and income generated: NIL

21. Faculty as members in

- a) National committees 02
- b) International Committees 01
- c) Editorial Boards 02

22. Student projects

(a) Percentage of students who have done in-house projects including inter departmental/programme

	Percentage of students in-house Projects
2013-14	04
2014-15	02

(b) Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories/Industry/ other agencies

	No. of students placed for projects in outside the institution
2013-14	56
2014-15	58

23. Awards / Recognitions received by faculty and students :

1. Dr. R. S. Jadon Academician of the Year Award by Junior JCS Gwalior in the year 2000.
2. Dr. R.S. Jadon Chairman, CSI Gwalior Chapter for the session 2004-2005.

24. List of eminent academicians and scientists / visitors to the department

1. Dr. Shegaonkar IIT Delhi
2. Dr. D.P. Agrawal, Chairman UPSC

25. Seminars/ Conferences/Workshops organized & the source of funding

a) National

Month & Year	Seminars/conferences/workshops
Feb 2014	<b>National Workshop on Computer Vision, Graphics and Image Processing (WVGIP'04)</b> organized in the Department of Computer Applications on 21-22 <sup>nd</sup> Feb 2004 and partially funded by A.I.C.T.E.
March 2015	"Innovations in teaching and research methods" organized by Department of Computer Application sponsored by QIP

b) International: NIL

26. Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Applications received	Selected	Enrolled		Pass percentage
			*M	*F	
MCA	N/A	60	37	23	90%

\*M = Male \*F = Female

27. Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
MCA	78%	22%	NIL

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.? 07

29. Student progression

Student progression	Against % enrolled
UG to PG	N/A
PG to M.Phil.	03
PG to Ph.D.	05
Ph.D. to Post-Doctoral	NIL
<b>Employed</b>	
·Campus selection	23 (2014 placement)
·Other than campus recruitment	22 (2014 placement)
Entrepreneurship/Self-employment	03

30. Details of Infrastructural facilities a)

Library: Well equipped Central Library

b) Internet facilities for Staff & Students:

c) Class rooms with ICT facility:

All Classes

d) Laboratories : Two Labs

31. Number of students receiving financial assistance from college, university, government or other agencies: SC/ST/OBC as per state govt. norms

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts: Department organizes various special lectures for students

33. Teaching methods adopted to improve student learning :

- Faculty Self-Disclosures in the College Classroom
- A Tree Falling in the Forest: Helping Students 'Hear' and Use Your Comments
- Case Method. Providing an opportunity for students to apply what they learn in the classroom to real-life experiences has proven to be an effective way of both disseminating and integrating knowledge. The case method is an instructional strategy that engages students in active discussion about issues and problems inherent in practical application. It can highlight fundamental dilemmas or critical issues and provide a format for role playing ambiguous or controversial scenarios.
- Cooperative Learning. Cooperative Learning is a systematic pedagogical strategy that encourages small groups of students to work together for the achievement of a common goal. The term 'Collaborative Learning' is often used as a synonym for cooperative learning when, in fact, it is a separate strategy that encompasses a broader range of group interactions such as developing learning communities, stimulating student/faculty discussions, and encouraging electronic exchanges.
- Integrating Technology. Today, educators realize that computer literacy is an important part of a student's education. Integrating technology into a course curriculum when appropriate is proving to be valuable for enhancing and extending the learning experience for faculty and students. Many faculty have found electronic mail to be a useful way to promote student/student or faculty/student communication between class meetings. Others use listserves or on-line notes to extend topic discussions and explore critical issues with students and colleagues, or discipline-specific software to increase student understanding of difficult concepts.
- Distance Learning. Distance learning is not a new concept. We have all experienced learning outside of a structured classroom setting through television, correspondence courses, etc. Distance learning or distance education as a teaching pedagogy, however, is an important topic of discussion on college campuses today. Distance learning is defined as 'any form of teaching and learning in which the teacher and learner are not in the same place at the same time.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities  
Students participate in these activities through NSS/NCC

35. SWOT analysis of the department and Future plans

■ STRENGTHS

- Highly Qualified Core faculty
- Latest state-of-the art computing facilities
- Govt. aided status and Recognition
- Oldest MCA Programme in the whole country
- High Speed internet connectivity

- Highly successful alumni
- Best students opting for MCA in the whole state

■ WEAKNESSES

- Building space: More space is required for departmental library, seminar hall, faculty rooms and class rooms
- No. of Faculty required according to AICTE norms
- Govt. Binding on Fee structure
- There are no software units in Gwalior and nearby areas due to which student training activity is affected

■ OPPORTUNITIES

- Connectivity to capital
- Campus Placement
- Continuous Demand of IT Manpower
- Support of Engineering Faculty

■ THREATS

- Decline in number of students opting for Science graduation (B.Sc.) which is the potential input for MCA Programme
- Rare availability of good faculty due to demand in industry
- Fluctuating job market in IT sector

## Civil Engineering Department

1. **Name of the Department:** Civil Engineering Department
2. **Year of establishment:** 1957
3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.):**

<u>Under Graduate Courses</u>	
1.	Bachelor of Engineering (B.E.) in Civil Engineering – 4 years duration – 120 intake at present in the First Year.
<u>Post Graduate Courses</u>	
1.	Master of Engineering (M.E.) in Construction Technology & Management – 2 years duration – 25 intake in the First Year.
2.	Master of Technology (M.Tech) in Environmental Engineering – 2 years duration – 18 intake in the First Year.
3.	Master of Engineering (M.E.) in Structural Engineering – 2 years duration – 7 intake in the First Year.
4.	Master of Engineering (M.E.) – Part Time in Construction Technology & Management – 3 years duration – 5 intake.
<u>Ph.D. Courses</u>	
The department is recognised as QIP centre for Ph.D.	

4. **Name of Interdisciplinary courses and the departments / units involved:**

Name of the Course	Level of the Course	Departments involved
Engg. Mathematics – I.	U.G. – B.E. Ist Year Ist Semester Civil Engg.	Applied Science
Engg. Chemistry	U.G. – B.E. Ist Year Ist Semester Civil Engg.	Applied Science
English Language	U.G. – B.E. Ist Year Ist Semester Civil Engg.	Humanities
Basic Computer Programming	U.G. – B.E. Ist Year Ist Semester Civil Engg.	Computer Science & Engineering
Environmental Studies	U.G. – B.E. Ist Year Ist Semester Civil Engg.	Applied Science
Communication Skills	U.G. – B.E. Ist Year Ist Semester Civil Engg.	Humanities
Engineering	U.G. – B.E. Ist Year IInd Semester	Applied Science

Mathematics – II	Civil Engg.	
Engineering Physics	U.G. – B.E. Ist Year IInd Semester Civil Engg.	Applied Science
Engineering Graphics	U.G. – B.E. Ist Year IInd Semester Civil Engg.	Mechanical Engineering
Concepts in Engineering Design	U.G. – B.E. Ist Year IInd Semester Civil Engg.	Mechanical Engineering
Manufacturing Practices	U.G. – B.E. Ist Year IInd Semester Civil Engg.	Mechanical Engineering
Language Lab	U.G. – B.E. Ist Year IInd Semester Civil Engg.	Humanities
Rural Outreach	U.G. – B.E. Ist Year IInd Semester Civil Engg.	Humanities
Mathematics – II	U.G. – B.E. IInd Year IIIrd Semester Civil Engg.	Applied Science
Computer Programming – III	U.G. – B.E. IInd Year IIIrd Semester Civil Engg.	Computer Science & Engineering
Mathematics – III	U.G. – B.E. IInd Year IVth Semester Civil Engg.	Applied Science
Computer Programming – IV	U.G. – B.E. IInd Year IVth Semester Civil Engg.	Computer Science & Engineering
Engg. Economics & Mangement	U.G. – B.E. IIIrd Year VIth Semester, Civil Engg.	Humanities

**5. Examination System: Annual/Semester/Trimester/Choice Based Credit System (Programme Wise):**

<b><u>Under Graduate Courses</u></b>	
1.	Bachelor of Engineering (B.E.) in Civil Engineering – First Year – Choice Based Credit System Scheme has been introduced in the current session 2015 – 2016 starting from August 2015 onwards.
2.	Bachelor of Engineering (B.E.) in Civil Engineering – Second Year, Third Year, Final Year – Currently Semester examination system is being followed.
<b><u>Post Graduate Courses</u></b>	
1	Master of Engineering (M.E.) in Construction Technology & Management – Currently Semester examination system is being followed.
2	Master of Technology (M.Tech) in Environmental Engineering – Currently Semester examination system is being followed.

3	Master of Engineering (M.E.) in Structural Engineering – Currently Semester examination system is being followed.
5	Master of Engineering (M.E.) – Part Time in Construction Technology & Management – Currently Semester examination system is being followed.

**6. Participation of the department in the courses offered by other departments:**

Name of the Course	Level of the Course	Department which offers the course
Engineering Mechanics	U.G. – B.E. Ist Year, Ist Sem. (Mechanical Engg. & Automobile Engg.)	Mechanical Engineering
Structure – I	U.G. – B.Arch Ist Year, Ist Sem.	Architecture
Structure – II	U.G. – B.Arch. IInd Year, IIIrd Sem.	Architecture
Structure – III (Modern Structural Systems)	U.G. – B.Arch. IIIrd Year, Vth Sem.	Architecture
Structure – II	U.G. – B.Arch Ist Year, IInd Sem.	Architecture
Structure – IV	U.G. – B.Arch. IInd Year, IVth Sem.	Architecture
Survey & Levelling	U.G. – B.Arch. IIIrd Year, VIth Sem.	Architecture

**7. Courses in collaboration with other universities, industries, foreign institutions etc. :**  
NIL

**8. Details of programs discontinued, if any, with reasons:** NIL

**9. Number of teaching posts**

	Sanctioned	Filled
<b>Professor</b>	2	1
<b>Associate Professor</b>	5	1
<b>Assistant Professor</b>	16	8

**10. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance**

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
Dr. Rajeev Kansal	Ph.D.	Professor and H.O.D	Construction Technology & Management	28 Years	NIL
Dr. S.K. Jain	Ph.D.	Professor	Structural Engineering	25 Years	02

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
Dr. M.K. Trivedi	Ph.D.	Professor	Water Resources Engineering, Construction Technology & Management	23 Years	01
Prof. Archana Tiwari	M.E.	Professor	Structural Engineering	31 Years	NIL
Prof. Deepak Rastogi	M.E.	Associate Professor	Environmental Engineering	31 Years	NIL
Prof. A.K. Dwivedi	M.E.	Associate Professor	Construction Technology & Management	30 Years	NIL
Prof. A.K. Saxena	M.Tech	Associate Professor	Environmental Engineering	27 Years	NIL
Dr. Sanjay Tiwari	Ph.D.	Associate Professor	Structural Engineering	23 Years	NIL
Prof. Gautam Bhadoriya	M.E.	Assistant Professor	Construction Technology & Management	7 Years	NIL
Prof. Aditya K. Agarwal	M.Tech	Assistant Professor	Environmental Engineering	3 Years	NIL

**11. List of senior Visiting Fellows, adjunct faculty, emeritus professors:**

- a) Dr. R.N. Munshi, Former Advisor, CIDC, New Delhi.

**12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:**

<u>Under Graduate Courses</u>	% Lectures Delivered	% Practical Classes Taken
Bachelor of Engineering (B.E.) in Civil Engineering – First Year	NIL	NIL
Bachelor of Engineering (B.E.) in Civil Engineering – Second Year	20 %	67 %
Bachelor of Engineering (B.E.) in Civil Engineering – Third Year	NIL	56 %

Bachelor of Engineering (B.E.) in Civil Engineering – Final Year	28 %	50 %
<b><u>Post Graduate Courses</u></b>	<b>% Lectures Delivered</b>	<b>% Practical Classes Taken</b>
Master of Engineering (M.E.) in Construction Technology & Management	NIL	NIL
Master of Technology (M.Tech) in Environmental Engineering	28 %	25 %
Master of Engineering (M.E.) in Structural Engineering	NIL	NIL
Master of Engineering (M.E.) – Part Time in Construction Technology & Management	NIL	NIL

**13. Student Teacher Ratio (Program-wise):**

<b><u>Under Graduate Courses</u></b>	<b>Student Teacher Ratio</b>
Bachelor of Engineering (B.E.) in Civil Engineering	17.15
<b><u>Post Graduate Courses</u></b>	<b>Student Teacher Ratio</b>
Master of Engineering (M.E.) in Construction Technology & Management	10
Master of Technology (M.Tech) in Environmental Engineering	7
Master of Engineering (M.E.) in Structural Engineering	4
Master of Engineering (M.E.) – Part Time in Construction Technology & Management	3

**14. Number of academic support staff (technical) and administrative staff; sanctioned and filled:**

	<b>Sanctioned</b>	<b>Filled</b>
<b>Technical Support Staff</b>		07
<b>Administrative Staff</b>		02

**15. Qualification of teaching faculty with DSc / D.Litt / Ph.D. / MPhil / PG.**

<b>Highest qualification</b>	<b>Professor</b>	<b>Associate Professor</b>	<b>Assistant Professor</b>	<b>Total</b>

	Male	Female	Male	Female	Male	Female	
Permanent Teachers	03	01	04	00	02	00	10
D.Sc./D.Litt./Pdf	01	00	00	00	00	00	01
Ph.D.	03	00	01	00	00	00	04
M.Phil.	----	---	---	----	---	---	---
PG	03	01	04	----	02	----	10
Temporary teachers							
Ph.D.	---	---	---	---	---	---	---
M.Phil.	---	---	---	---	---	---	---
PG	--	---	----	---	01	---	01
UG	---	---	---	---	01	02	03

**16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received: one**

**17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, AICTE, etc.; and total grants received.**

S.No.	Project	Funding Agency	Grants Received
1.	Optimization Techniques in Time Cost Trade off analysis in civil engineering projects.	AICTE	Rs. 12.75 lacs
2.	Seismic Protection of Heritage Building	AICTE	Rs. 13.5 lacs
3.	Enhancement of Testing facility in Concrete Lab	AICTE	Rs. 3.51 lacs

**18. Research facility / centre recognized by the university:**

QIP Centre for Ph.D.

**19. Publications:**

\* a) Publication per faculty

\* Number of papers published in peer reviewed journals (national / international) by faculty and students

- \* **Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, Medline, etc.)**
  - \* **Monographs**
  - \* **Chapters in Books**
  - \* **Books edited**
  - \* **Books with ISBN / ISSN numbers with details of publishers**
  - \* **Citation Index**
  - \* **SNIP**
  - \* **SJR**
  - \* **Impact Factor**
  - \* **h-index**
1. Abhishek Raj Singh & **Sanjay Tiwari**, “EPC: An Innovative Tool for Mega Project Construction”, International Journal in IT and Engineering, Impact Factor- 4.747 (IJITE), ISSN 2321-1776 ; Vol.3, issue-07; July- 2015, p.p. 21-28.
  2. Abhishek Raj Singh & **Sanjay Tiwari**, “EPC & EPCM: The Misunderstood Construction Contracts”, Journal of Civil Engineering and Environmental Technology, ISSN 2349-8404; (Online) ISSN: 2349-879X; (Print) Vol.2, No.13; July-Sept. 2015, p.p. 51-55.
  3. Ankesh BIRTHARIA & **S.K. Jain**, “Application of Ambient Vibration Testing :An Overview,” International Journal of Engineering Research & Technology (IJERT), e-ISSN 2395-0056 ; p-ISSN 2395-0072 Vol.2, issue 4;July. 2015, p.p.969-976
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  5. Apeksha Kanojia & **S.K. Jain**, “Concrete with Alternative Aggregates” Journal of Civil and Construction Engineering , Vol.1, issue-2; 2015, p.p1-12
  6. Apeksha Kanojia & **S.K. Jain**, “Performance of Coconut Shell as Coarse Aggregate in Concrete : A Review,” International Journal of Engineering Research & Technology (IJERT), e-ISSN 2395-0056 ; p-ISSN 2395-0072 Vol.2, issue 4; July 2015, p.p. 1096-1100
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10. Chandra Prakash Bastani & **R. Kansal**, “Effect of Fine Aggregate Particles on Compressive Strength of Cement Mortar”, International Journal of Engineering Studies and Technical Approach (IJESTA), ISSN 2395-0900; Vol.1, No. 7; July 2015, p.p. 8-12.
11. **D. Rastogi** & R. Bisaria, “Coagulation studies on Wastewater from Vanaspati manufacturing plant”, Proceedings of National seminar on soil degradation and water pollution caused due to hazardous waste of industries in Bhopal sponsored by EPCO Bhopal, Nov. 7, 2015.
12. **D. Rastogi** & S. Dixit, “Determination of optimum binder content with polymer modified bitumen in B.C.”, IJERT, Vol.3, Issue 2, Feb. 2014.
13. Dwarika Puri & **Sanjay Tiwari**, “Efficient Contractor Selection and Bid Evaluation methods for construction industry in India”, International Journal of Science & Research(IJSR), ISSN(Online):2319-7064, Vol.4, issue 8; August 2015, p.p. 1027-1035.
14. Dwarika Puri & **Sanjay Tiwari**, “Evaluating the Criteria for Contractors’ Selection and Bid Evaluation”, International Journal of Science Invention, ISSN (Online)2319-6734; ISSN(Print) 2319-6726 Vol.3, issue-07; July- 2014, p.p. 44-48
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18. L.M. Sharma & **Sanjay Tiwari**, “Resource Constraint: A Major Impediment for infrastructure Growth”, International Journal of Advances Technology in Engineering and Science, ISSN 2348-7550; (Online) Vol.2, issue 6; June 2014, p.p. 199-205.
19. Manish Kumar Sharma & **R. Kansal**, “Quality – Cost Trade Off (QCT) Based Bidding Strategy”, Recent Trends in Civil Engineering & Technology (RTCET), ISSN 2249-8753 (Online): ISSN: 2321-6476; (Print); Vol.5, issue 1; 2015, p.p. 1-5.
20. Manish Kumar Sharma & **R. Kansal**, “Quality – Cost Trade Off (QCT) For Contractor Selection”, International Journal of Research in Engineering Technology (IJRET), eISSN 2319-1163 | pISSN:2321-7308; Vol.4, issue 4; April 2015, p.p. 311-314
21. Manoj Katiyar & **A. Tiwari**, “Sustainable Concrete Production Through Use of Marble Waste Powder and Silica Fume”, Journal of Construction and Building Materials Engineering, Vol.1, issue 1; 2015, p.p. 1-8.
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23. P.S. Jatav & **D. Rastogi**, “Energy Saving in buildings using green building construction techniques”, International Research Journal of Management Sociology & Humanity (IRJMSH), ISSN 2277-9809 (Online) 2348-9359 (Print) Vol.5, Issue , 8, 2014, p.p. 342-351.
  24. P.S. Jatav, **D. Rastogi & M.K. Trivedi** “Energy Saving in buildings using energy efficient green building material ”, International Research Journal of Management Science & Technology (IRJMST), ISSN 2250-1959 (Online) 2348-9367 (Print) Vol.5, Issue , 11, 2014, p.p. 53-70.
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43. Wajid Hussain, **M.K.Trivedi & R.Kansal**, “Optimization of Construction Resource Allocation and Levelling Using Genetic Algorithm”, International Journal of Research in Science , Engineering and Technology, ISSN(Online):2319-8753 ; ISSN(Print) 2347-6710 Vol.4, issue 6; June, 2015 , p.p. 4573-4578.
44. Wajid Hussain, **M.K.Trivedi & Dr. R.Kansal**, “Application of Genetic Algorithm in Resource Levelling and Allocation”, Recent Trends in Civil Engineering and Technology(RTCET), ISSN(Online):2249-8753 ; ISSN(Print) 2321-6476 Vol.5, issue 6;2015 , p.p. 1-8.

## 20. Areas of consultancy and income generated:

- Over head tank design
- Intake well design

- Water supply and sewerage system design
- Multistorey building design
- Concrete mix design
- Soil testing – Safe bearing capacity.
- Water and waste water testing.

Consultancy has been provided in various central and state government departments like CPWD, MES, Indian Railways, Water Resources, PHE, Housing Board, SADA, GDA etc.. Also testing and consultancy is provided to large number of private contractors, builders, consultants, manufacturers, suppliers. The overall revenue generated from the consultancy services provided by the department during last four years amounts to approximately Rs. 60 Lacs/-.

## 21. Faculty as members in

- a) National committees b) International committees c) Editorial Boards d) any other**

Dr. S.K. Jain – Member, BOS, SATI Vidisha & JP University Guna.

Dr. M.K. Trivedi – Member, Green Tribunal, Jabalpur High Court & Coordinator, STA, MPRRDA.

## 22. Student projects

- a) percentage of students who have done in-house projects including inter-departmental programme – 100%**  
**b) percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies**

\*Note: students take the help from outside agencies for data collection.

## 23. Awards / recognitions received by faculty and students

### • Faculty:

Dr. S.K. Jain - Young Scientist Award, AICTE

- Khosla Award

- Engineer's Institution of India Award

## 24. List of eminent academicians and scientists / visitors to the department:

Name of Person	Date of Visit	Purpose of Visit
Dr. Prasanna Chandra, Director Center of Financial Management Bangalore	8/3/2013	Deliver Expert Lecture on topic "Issues related to project financing".
Prof. S.K. Thakkar, Former Professor, IIT Roorkee	15/3/2013	Deliver Expert Lecture on topic "Earthquake Resistant Design of Structures As Per IS:1893(Part 1) 2002"
Dr. A.K. Mullick, Consultant, Cement & Concrete Technology, Former Director, NCBM	13/4/2013	Deliver Expert Lecture on topic "Advances in concrete technology".

Er. Girraj Goyal, Superintendent Engineer (AF) Maharajpura, Gwalior	28/9/2013	Deliver Expert Lecture on topic “Pre Engineered Building Structure: An Overview”.
Dr. R. K. Shrivastava, Professor, Civil Engg., SGSITS, Indore	19/8/2014	Deliver Expert Lecture on topic “National Water Policy”.
Er. U. K. Guru Vittal, Scientist ‘F’, CRRI, New Delhi	10/9/2014	Deliver Expert Lecture on topic “Geo Engg. Application in Highway Engg.”

## 25. Seminars/ Conferences/Workshops organized and the source of funding

### a) National:

S. No.	Details of activities	Name of Programme	Dates	Source of Funding
1	STTP	Utilization of Waste in Construction & Energy Sectors	21 <sup>st</sup> - 25 <sup>th</sup> October 2013	TEQIP - II
2	Workshop	Application of GIS & Remote Sensing in Engineering	25 <sup>th</sup> – 26 <sup>th</sup> February 2014	TEQIP - II
3	STC	Earthquake resistant design of structures	19 <sup>th</sup> – 29 <sup>th</sup> March, 2014	QIP
4	Workshop	Use of Local Waste material in Rural Road	11 <sup>th</sup> September, 2014.	TEQIP – II
5	National Conference	Alternative and Innovative Construction Materials & Techniques	27 <sup>th</sup> September, 2014	CRRI, New Delhi
6	Workshop	Scheduling of Construction Project	24 <sup>th</sup> & 25 <sup>th</sup> January, 2015	TEQIP – II
7	National Conference	Green Building For Sustainable Development	19 <sup>th</sup> – 20 <sup>th</sup> March, 2015	TEQIP – II

### b) International: NIL

## 26. Student profile program / course wise:

Name of the Course/Programme	Applications received	Selected		Enrolled		Pass percentage	
		Male	Female	Male	Female	Male	Female
B.E. Civil Engineering – First Year				93	33		
- Second Year				105	40		
- Third Year				52	20		

Name of the Course/Programme	Applications received	Selected		Enrolled		Pass percentage	
		Male	Female	Male	Female	Male	Female
- Final Year				50	18		
M.E. Construction Technology & Management - First Year				23	02		
- Second Year				18	07		
M.Tech Environmental Engineering - First Year				15	02		
- Second Year				08	03		
M.E. Structural Engineering – First Year				07	00		
- Second Year				05	02		

### 27. Diversity of students

Name of the Course/Programme	% of students from the same state	% of students from other States	% of students from abroad
B.E. Civil Engineering	100 %	NIL	NIL
M.E.	Approx. 75 %	Approx. 25 %	NIL

### 28. How many students have cleared national and state competitive examinations such as Civil Services and Defense Services examinations, NET, SLET, GATE, etc.?

S.No.	Competitive Examination Cleared along with Year	No. of Students
1	GATE – 2015	10
2	GATE – 2014	13
3	GATE – 2013	21
4	GATE – 2012	11
5	GATE – 2011	19

### 29. Student progression:

Student progression	Against Percentage enrolled
<b>UG to PG</b>	15 %
<b>PG to M.Phil.</b>	N.A.
<b>PG to Ph.D.</b>	N.A.
<b>Ph.D. to Post-Doctoral</b>	N.A.
<b>Employed</b>	
• <b>Campus selection</b>	20 % Approx.
• <b>Other than campus recruitment</b>	25 % Approx.
<b>Entrepreneurship / Self - employment</b>	10 % Approx.

**30. Details of departmental infrastructural facilities with regard to**

- a) **Library:** PG library is available.
- b) **Internet facilities for staff and students:** Partly available
- c) **Class rooms with ICT facility:** Partly available
- d) **Laboratories:**

S.No.	Name of Laboratory
1.	Concrete Lab
2.	Computer Lab
3.	Geotech Lab
4.	Geology Lab
5.	Highway Lab
6.	SM Lab
7.	Survey Lab
8.	Structure Lab
9.	PHE / Environment Lab
10.	Water & Wastewater Lab

**31. Number of students getting financial assistance from college, university, government or other agencies:** No. of students are getting scholarships from SC / ST welfare department of the government of M.P., alumni sponsored scholarship, GATE scholarship & Teaching Assistantship.

**32. Give details of student enrichment programs (special lectures / workshops /**

**seminar) with external experts:**

S. No.	Details of activities	Name of Programme	Dates
1	Expert Lecture by Dr. Prasanna Chandra, Director of Financial Management Bangalore	Issues Related to Project Financing	8 <sup>th</sup> March 2013
2	Expert Lecture by Prof. S.K.Thakkar, Former Professor, IIT Roorkee	Earthquake Resistant Design of Structures As Per IS:1893 (Part 1) 2000	15 <sup>th</sup> March 2013
3	Expert Lecture by Dr. A.K. Mullick, Consultant Cement & Concrete Technology and Former Director General, NCBM	Advances in Concrete Technology	13 <sup>th</sup> April 2013
4	Workshop	Utilization of Waste in Construction Energy Sectors	24 <sup>th</sup> August 2013
5	Expert Lecture by Er. Giriraj Goyal, Superintendent Engineer (AF) Maharajpura, Gwalior	Pre Engineered Building Structure: An Overview	28 <sup>th</sup> Sept. 2013
6	Workshop	Application of GIS & Remote Sensing in Engineering	25 <sup>th</sup> – 26 <sup>th</sup> February 2014
7	Expert Lecture by Dr. R.K. Shrivastava, Professor Civil Engg., SGSITS, Indore	National Water Policy	19 <sup>th</sup> August 2014
8	Expert Lecture by Er. U.K. Guru Vittal, Scientist CRRI, Delhi	Geo Engg. Application in Highway Engg	10 <sup>th</sup> Sept. 2014
9	Workshop	Use of Local Waste material in Rural Road	11 <sup>th</sup> Sept. 2014.
10	National Conference	Alternative and Innovative Construction Materials & Techniques	27 <sup>th</sup> Sept. 2014
11	Workshop	Scheduling of Construction Projects	24 <sup>th</sup> & 25 <sup>th</sup> January 2015
12	National Conference	Green Building For Sustainable Development	19 <sup>th</sup> – 20 <sup>th</sup> March 2015

**33. Teaching methods adopted to improve student learning:**

All the faculty uses conventional method of teaching that involves class room Black board / White board teaching. With the advent of new technology, some of the faculty have now started to use the techniques involving the use of projector based smart class rooms wherein the faculty prepares and delivers his lectures on Microsoft power point along with the help of online web

courses available on NPTEL etc. Apart from these some of the faculty involves the use of following innovative practices to improve the learning of the students.

**Project Based Learning:**

In this method of learning students are assigned a task of putting theory into practice to develop some small application. Generally students of third year and final year of engineering are given minor/major projects in groups of 2-3 students either as a course requirement or additional task beyond curriculum. This activity helps students to understand the relevance of the theory, and develop hands on and professional skills.

**Seminar Based Learning:**

Faculty assigns the topics beyond curriculum and of current relevance from their area to the active students of the class for presenting a seminar to the class. For the final year UG project, presenting the synopsis of the seminar topic is a course requirement while every student of PG is required to deliver seminars in his program.

**Computer Assisted Learning:**

The department has procured the required software packages to learn their courses through various simulation software. Some of such application software help to design the civil structures etc. Students learn the design courses effectively using such tools.

**Field Visits:**

The department organizes visit to relevant construction sites / projects, generally for the third year of UG students to expose them to construction practices. The students actively take part in above activities and learn the courses.

**34. Participation in Institutional Social Responsibility (ISR) and Extension activities:**

Some of the students of the department are actively involved in various club's run by different group's in the college e.g. music club etc. Apart from it some of students are enrolled in NCC, NSS units & EDC cell too. There are various programmes organized by these club's and units like Shramdan for road cleaning, blood donation camps, social awareness, Voter awareness, Eye check-up camps, Competitions, Personality development etc.

**35. Detail of major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department and Future plans of the department.**

**Strengths:** The strengths of the department include:

- (i) Qualified and experienced faculty members.
- (ii) Adequate infrastructure
- (iii) Excellent team work among faculty and students.
- (iv) Good performance of students in examination
- (v) Revised and updated curriculum

**Weakness:** The weakness of the department lies under:

- (i) Inadequate no. of faculty and supporting staff.
- (ii) Lack of PhD research scholars.

**Opportunities:** The department looks forward to grab following opportunities:

- (i) Enhanced R & D consultancy
- (ii) Improved campus placement
- (iii) Starting new courses
- (iv) Increased revenue generation
- (v) Development of faculty and supporting staff
- (vi) Networking with National R & D labs, IIT's.

**Challenges:** The challenges faced by the department are:

- (i) Competency of supporting staff.
- (ii) Employment opportunities for fresh graduates.

**Future Plans:** The department future plans include:

- (i) Up – gradation of various research facilities in the department like water & waste water lab also establishment of a diagnostic lab for materials, establishment of GIS lab & Remote Sensing centre and giving more stress on use of software's in curriculum.
- (ii) The department is planning to establish project management cell along with the induction of project management software in UG & PG syllabi and provide outsource training to students on Prima-vera software.
- (iii) The department aims at establishing linkages with reputed Indian/Foreign Universities.
- (iv) The department aims at establishing fully functional research lab for PG & PhD students.
- (v) The department also aims at establishing student chapter like ASCE, ISTE, ICI.
- (vi) The department is planning to develop an entrepreneur cell especially for its students.
- (vii) The department is targeting to organize more Industry Institute interaction program which will benefit its students, faculty & staff.

### **Declaration by the Head of the Institution**

I certify that the data included in this Self-study Report (SSR) are true to the best of my knowledge.

This SSR is prepared by the institution after internal discussions, and no part thereof has been outsourced.

I am aware that the Peer team will validate the information provided in this SSR during the peer team visit.

Signature of the Head of the institution  
with seal:

Place:

Date