



Madhav Institute of Technology & Science, Gwalior (M.P.)

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV Bhopal) (M.P)
(Established in 1957)

THE MITS FAMILY

WELCOMES

The Newly admitted students

of

FIRST YEAR

VISION & MISSION

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 advancements.
- To promote research in the fields of technology and science.

About MITS

- The foundation stone of the Institute was laid by ***Late Dr. Rajendra Prasad***, the first President of India on 20th October, 1956.
- The building was inaugurated on 11th December, 1964 by ***Late Dr. S. Radhakrishnan***, the then President of India.
- There are 11 Under Graduate and 18 Post Graduate full time programs being offered.
- The UG intake is 910 students and PG intake is 386.

Courses being run

Year of start	Name of Program	Intake
Undergraduate Courses		
1956	B.E. Civil Engineering	120
1956	B.E. Mechanical Engineering	120
1956	B.E. Electrical Engineering	120
1982	B.E. Electronics Engineering	120
1984	B. Architecture	40
1994	B.E. Computer Science & Engineering	120
1996	B.E. Chemical Engineering	60
2000	B.E. Information Technology	60
2002	B.E. Biotechnology	30
2015	B.E. Electronics & Telecommunication Engineering	60
2015	B.E. Automobile Engineering	60

Higher Degree Courses		
1986	M.E. Construction Technology & Management	25
1986	Master of Computer Applications(M.C.A.)	60
1987	M.E. Material Handling	21
1995	M.E. Industrial Systems & Drives	25
1995	M.E. Communication Control & Networking	25
2002	M. Tech. Production Engineering	18
2002	M.Tech. Microwave Engineering	18
2003	M.E. Structural Engineering.	07
2003	M.E. Public Health Engineering	12
2003	M.E. Measurement & Control	12
2004	M. Tech. Biotechnology	18

2004	Masters in Urban Planning	18
2011	M.Tech. Computer Science & Engineering	18
2012	M.Tech. Information Technology	18
2013	M.Tech. Cyber Security	18
2013	M.Tech. Chemical Engineering	18
2014	M.Tech. Geo Informatics	18
2014	M.Tech. Environment Engineering	18
1987	M.E. Structural Engineering (Part time)	07
1987	M.E. Material Handling(Part time)	07
1995	M.E. Construction Technology & Management (Part time)	05

Doctoral Courses

	Ph.D under QIP- Civil, Mechanical, Electrical, Computer Science Engineering, Architecture	2 seats in each programs
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Six Candidates Admitted for Ph.D. Under The National Doctoral Fellowship Programme

About MITS Autonomy

- Till 2000-01 MITS was affiliated to the **Jiwaji University**, Gwalior
- For the last 15 years now MITS is an Autonomous Institute under the **Rajiv Gandhi Proudyogiki Vishwavidyalaya (RGPV) Bhopal**
- **The degree however is conferred by the university (RGPV)**
- **With effect from July 2017, MITS was granted autonomy for 6 years by the University Grants Commission (UGC)** which permits MITS to
 - (i) Have its own courses and syllabi and
 - (ii) Evolve methods of evaluation and conduction of examination

FLEXIBLE CURRICULUM

(Implemented w.e.f. Academic Session July 2018)

TERMINOLOGY

L	Lecture
T	Tutorial
P	Practical
HSMC	Humanities and Social Sciences including Management Courses
BSC	Basic Science Courses
ESC	Engineering Science Courses
DC	Departmental Core
DE	Departmental Elective
OC	Open Category
DLC	Departmental Laboratory Courses
MC	Mandatory Course

Structure of Undergraduate Engineering Program

S. No.	Category of Courses	Component wise credit allotment**	No. of Courses	Weightage (Percentage)
1	Humanities and Social Sciences including Management Courses (HSMC)	12	04	7
2	Basic Science Courses (BSC)	20	05	11.7
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc. (ESC)	21	06	12.3
4	Departmental Core Courses (DC)	52	13	30.6
5	Departmental Elective Courses relevant to specialization/branch (DE)	20	06	11.8
6	Open Category- Electives from other technical and /or emerging subjects (OC)	15	05	8.9
7	Project work, seminar and internship in industry or appropriate work place/ academic and research institutions. (DLC/SWAYAM/NPTEL/MOOC)	22	13	13
8	Mandatory Course (MC)	08	03	4.7
	Total	170	55	100

Structure of Undergraduate Architecture Program

<i>S. No.</i>	<i>Code</i>	<i>Category</i>	<i>%Weightage as per CoA norms (2017 regulations)</i>	<i>No of courses</i>	<i>Total credits</i>	<i>Weightage (Percentage)</i>
1	DC	Departmental(Professional) Core Courses	45	19	127	48.5
2	BSAE	Building Science & Applied Engineering Courses	20	14	57	22
3	DE	Departmental(Professional) Elective Courses	10	07	31	8
4	OC	Open Category Courses	05	03	09	3.5
5	PAEC	Professional ability enhancement course	15	07	30	12
6	SEC	Skill Enhancement Course	5	11	15	6
	TOTAL		100	61	260	100
	MC	Mandatory Course	Qualifier	02(Audit)	06	-

The semester wise break-up of credits(Engineering & Architecture)

<i>Semester</i>	<i>Credits</i>		<i>Weightage in percent</i>	
	<i>Engineering</i>	<i>Architecture</i>	<i>Engineering</i>	<i>Architecture</i>
<i>I</i>	<i>21</i>	<i>27</i>	<i>12.35</i>	<i>10.4</i>
<i>II</i>	<i>21</i>	<i>27</i>	<i>12.35</i>	<i>10.4</i>
<i>III</i>	<i>24</i>	<i>27</i>	<i>14.12</i>	<i>10.4</i>
<i>IV</i>	<i>25</i>	<i>27</i>	<i>14.71</i>	<i>10.4</i>
<i>V</i>	<i>24</i>	<i>27</i>	<i>14.12</i>	<i>10.4</i>
<i>VI</i>	<i>24</i>	<i>26</i>	<i>14.12</i>	<i>10</i>
<i>VII</i>	<i>18</i>	<i>27</i>	<i>10.58</i>	<i>10.4</i>
<i>VIII</i>	<i>13</i>	<i>26</i>	<i>7.65</i>	<i>10</i>
<i>IX</i>	<i>NA</i>	<i>18</i>	<i>-</i>	<i>6.9</i>
<i>X</i>	<i>NA</i>	<i>28</i>	<i>-</i>	<i>10.7</i>
<i>TOTAL</i>	<i>170</i>	<i>260</i>	<i>100</i>	<i>100</i>

GROUP A & B

GROUP A

- **Electrical**
- **Electronics**
- **Computer Science**
- **Information Technology**
- **Electronics & Telecommunication**

GROUP B

- **Civil**
- **Mechanical**
- **Chemical,**
- **Biotech**
- **Automobile**

Subject wise distribution of marks and corresponding credits

Subject Code	Category	Course Name	Maximum Marks Allotted					Total Marks	Contact Hours per week			Total Credits
			Theory Slot			Practical Slot			L	T	P	
			End Sem.	Mid Sem Exam.	Quiz/ Assignment	End Sem.	Lab work & Sessional					
100201	BSC	Engineering Physics	70	20	10	30	20	150	2	1	2	4
100202	HSMC	Energy, Environment, Ecology & Society	70	20	10	-	-	100	3	-	-	3
100203	ESC	Basic Computer Engineering	70	20	10	30	20	150	3	-	2	4
100204	ESC	Basic Mechanical Engineering	70	20	10	30	20	150	3	-	2	4
100205	ESC	Basic Civil Engineering & Mechanics	70	20	10	30	20	150	3	-	2	4
100206	HSMC	Language Lab. & Seminars	-	-	-	30	20	50	-	-	4	2
		Total	350	100	50	150	100	750	14	1	12	21

Induction programme of 3 weeks/15 days (MC): Physical activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to local Areas, Familiarization to Dept./Branch & Innovations

GROUP B: I Semester & Group A: II Semester**W.E.F JULY 2018**Subject wise distribution of marks and corresponding credits

Subject Code	Category	Course Name	Maximum Marks Allotted					Total Marks	Contact Hours per week			Total Credits
			Theory Slot			Practical Slot			L	T	P	
			End Sem.	Mid Sem.	Quiz/ Assignment	End Sem	Lab work & Sessional					
100101	BSC	Engineering Chemistry	70	20	10	30	20	150	3	-	2	4
100102	BSC	Mathematics-I	70	20	10	-	-	100	3	1	-	4
100103	HSMC	Technical English	70	20	10	30	20	150	3	-	2	4
100104	ESC	Basic Electrical & Electronics Engineering	70	20	10	30	20	150	3	-	2	4
100105	ESC	Engineering Graphics	70	20	10	30	20	150	2	-	2	3
100106	ESC	Manufacturing Practices	-	-	-	30	20	50	-	-	2	1
		Total	350	100	50	150	100	750	14	1	10	20

TWO Credits for Summer Internship Project –I (Institute Level) (Qualifier): 2-week duration, Evaluation in III Semester

FLEXIBLE CURRICULUM

(Implemented w.e.f. Academic Session July 2018)

What does one Credit Mean ?

1 Hour Lecture (L) / week	1 credit
1 Hr. Tutorial (T) / week	1 credit
2 Hours Practical(Lab) /week	1 credit

Requirement of Credits for U.G. Degree, Honours & Minor Specialization

For Engineering	For Undergraduate Degree (Engineering)	Minimum 170 Credits
	Under Graduate degree with Honours or with additional minor specialization	Additional 20 Credits
For Architecture	For Undergraduate Degree (Architecture)	Minimum 260 Credits
	Under Graduate degree with Honours or with additional minor specialization	Additional 24 Credits

PROMOTION TO HIGHER SEMESTER AND YEAR

- To pass a particular course the **minimum required grade is D (at least 31% marks)**.
- The candidate should also separately score minimum of grade D in end semester examinations of theory and practical parts of the course.
- A candidate who has appeared in the examination of **odd semester** of a particular year, will **automatically be promoted to even semester** of that year irrespective of failing in any number of courses of previous semester.

PROMOTION Continued.....

- A candidate who fails to score **minimum of grade D in more than five courses** (Theory and Practical of the same course shall be treated as two courses) in a particular year, shall not be admitted to the next higher year.
- For the award of degree **minimum Cumulative Grade Point Average (CGPA) required is 5.0.**

PROMOTION Continued...

- A candidate shall not be admitted in the fifth or higher semester classes unless he/she has fully passed the first year examination with minimum of CGPA of 5.0.
- Also a candidate shall not be admitted in seventh or higher semester classes unless he/she has fully passed first and second year examinations with minimum CGPA of 5.0.

Credit based grading system (UG: Engineering)

Grade	% Marks range (based on absolute marks system)	Grade Point	Description of performance
A+	Greater than 90-100	10	Outstanding
A	Greater than 80-90	9	Excellent
B+	Greater than 70-80	8	Very Good
B	Greater than 60-70	7	Good
C+	Greater than 50-60	6	Average
C	Greater than 40-50	5	Satisfactory
D	Greater than 30-40	4	Marginal
F	30 and below	0	Fail
I		0	Incomplete
W		0	Withdrawal

Credit based grading system Bachelor of Architecture

Grade	% Marks range (based on absolute marks system)	Grade Point	Description of performance
A+	Greater than 90-100	10	Outstanding
A	Greater than 80-90	9	Excellent
B+	Greater than 70-80	8	Very Good
B	Greater than 60-70	7	Good
C+	Greater than 50-60	6	Average
C	Greater than 45-50	5	Satisfactory
D	Only 45	4.5	Marginal
F	Below 45	0	Fail
I		0	Incomplete
W		0	Withdrawal

Semester Grade Points Average(SGPA) & Cumulative Grade Points Average(CGPA)

The Semester Grade Points Average (SGPA) and Cumulative Grade Point Average (CGPA) shall be calculated as under:-

$$SGPA = \frac{\sum_{i=1}^n c_i P_i}{\sum_{i=1}^n c_i}$$

Where c_i is the number of credits offered in the i^{th} subject of a Semester for which SGPA is to be calculated, p_i is the corresponding grade point earned in the i^{th} subject, where $i = 1, 2, \dots, n$, are the number of subjects in that semester.

$$CGPA = \frac{\sum_{j=1}^m SG_j NC_j}{\sum_{j=1}^m NC_j}$$

here NC_j is the number of total credits offered in the j^{th} semester, SG_j is the SGPA earned in the j^{th} semester, where $j = 1, 2, \dots, m$, are the number of semesters in that course.

Calculation of SGPA

	Credits Allotted	Grade Received	Grade point
Course 1	4	A+	10
Course 2	3	B+	8
Course 3	4	C+	6
Course 4	2	A	9
$\text{SGPA} = ((4 \times 10) + (3 \times 8) + (4 \times 6) + (2 \times 9)) / (4 + 3 + 4 + 2)$ $= 8.15$			

Calculation of CGPA

	SGPA	Credits
Semester 1	8.15	13
Semester 2	8.5	15
Semester 3	7.5	12
Semester 4	8.2	14
$\text{CGPA} = \frac{((8.15 \times 13) + (8.5 \times 15) + (7.5 \times 12) + (8.2 \times 14))}{(13 + 15 + 12 + 14)}$ $= 8.11$		

ON-LINE COURSES THROUGH SWAYAM & MOOC

- **SWAYAM** is an acronym which stands for “**Study Web of Active learning by Young and Aspiring Minds**”.
- **MOOC** stands for “**Massive Open Online Course**”
- In the Flexible Curriculum the additional credits for Honours/minor specialization can be acquired through MOOCs/SWAYAM courses.

MID SEMESTER TESTS AND QUIZES

- Each student will appear in **two mid-semester tests compulsorily**. The evaluation will be based on average performance.
- There will be a **third Mid-semester examination** also for those who could not appear in one of the two mid-semester tests due to some valid reason.
- On-line quiz will be conducted in each course on institute MOODLE

Projects/Internships for increasing exposure to practical problems & Student Employability

<i>S.No.</i>	<i>Detail</i>	<i>Hours</i>	<i>Year of Internship</i>	<i>Evaluation</i>
<i>1.</i>	<i>Summer Internship Project-I (Institute Level)</i>	<i>60 Hours</i>	<i>At the end of I Year</i>	<i>III Semester (02 Credits)</i>
<i>2.</i>	<i>Summer Internship Project-II (Soft Skills)</i>	<i>90 Hours</i>	<i>At the end of II Year</i>	<i>V Semester (03 Credits)</i>
<i>3.</i>	<i>Summer Internship Project -III (On Job Training)</i>	<i>150 Hours</i>	<i>At the end of III Year</i>	<i>VII Semester (02 Credits)</i>
<i>4</i>	<i>Minor/Major Projects in Pre-final& Final year</i>			<i>06 Credits</i>
<i>5</i>	<i>Provision of Internship for full VIII semester</i>			<i>03 Credits</i>

Values, Ethics, Awareness of Societal Problems/Issues

Mandatory Courses (MC) : Ethics Environmental Science, Disaster Management, Intellectual Property Rights (IPR) and Cyber Security

Audit Courses : 'Biology for Engineers' and 'Indian Constitution & Traditional Knowledge'

(It will be compulsory to acquire the specified credits in these courses by securing the minimum pass marks. However, these credits will not be counted in the aggregate credits.)

Innovation & Personality Development

Professional Society Chapters Available

1. **Indian Society for Technical Education (ISTE)**
2. **Computer Society of India (CSI)**
3. **Association for Computing Machinery (ACM)**
4. **Institution of Electronics and Telecommunication Engineers(IETE)**
5. **Institution of Engineering and technology (IET)**
6. **The Institution of Electrical and Electronics Engineers (IEEE)**
7. **Society for Automobile Engineers of India (SAE INDIA)**

Innovation & Personality Development continued.....

For Extra & Co-Curricular Curricular Activities

THERE ARE 50 DIFFERENT CLUBS FOR STUDENTS

*01 CREDIT ALLOTTED
FOR
INNOVATIVE TECHNICAL CONTRIBUTION*

(One Credit' at the 8th semester is allotted for 'Innovative Technical Contribution' to motivate, inspire and recognize student participation at National/ International level technical events during the entire tenure of the UG programme)

ISTE Chapter : Prof. Vishal Chaudhary
(For students of all branches)

CSI Chapter : Prof. Neha Bharadwaj
(For students of CSE & IT)

IETE Chapter: Dr. Vandana Vikas Thakre
(For students of Electronics and ET)

ACM Chapter: Prof. Neha Bharadwaj
(For students of CSE & IT)

IEEE Chapter: Prof. Manish Dixit
(For students of Electrical, Electronics, Elex & Comm., CSE &IT)

IET Chapter: Prof. Vijay Bhuria
(For students of Mech, AE, EE, EL,ET, CSE,IT & BT)

SAE INDIA: Dr. Manoj Gaud & Prof. Vaibhav Shivhare
(For students of Mechanical and automobile Engineering)

Institute MOODLE

MOODLE is (Modular Object-Oriented Dynamic Learning Environment)

The institute its own MOODLE which is very well utilized.

All the new students will be required to register and login to MOODLE

In case of any difficulty the students can contact the MOODLE server administrator Shri Atul Chauhan (moodle@mitsgwalior.in)

Once they are registered, they can access

Learning material such as Lecture plans, syllabi, Notes, PPTs, Unit Wise Question banks, previous year papers etc. on-line

On-line quiz, technical as well as aptitude based are also conducted on this platform

Remedial/bridge classes for clearing doubts

Doubt clearing sessions are conducted for all courses after the college hours and on working Saturdays

The time-table for these classes is displayed on the departmental notice boards

The students must contact their Class coordinator/ Head of the Department in case of any difficulty

ACCREDITATION & OUTCOME BASED EDUCATION (OBE)

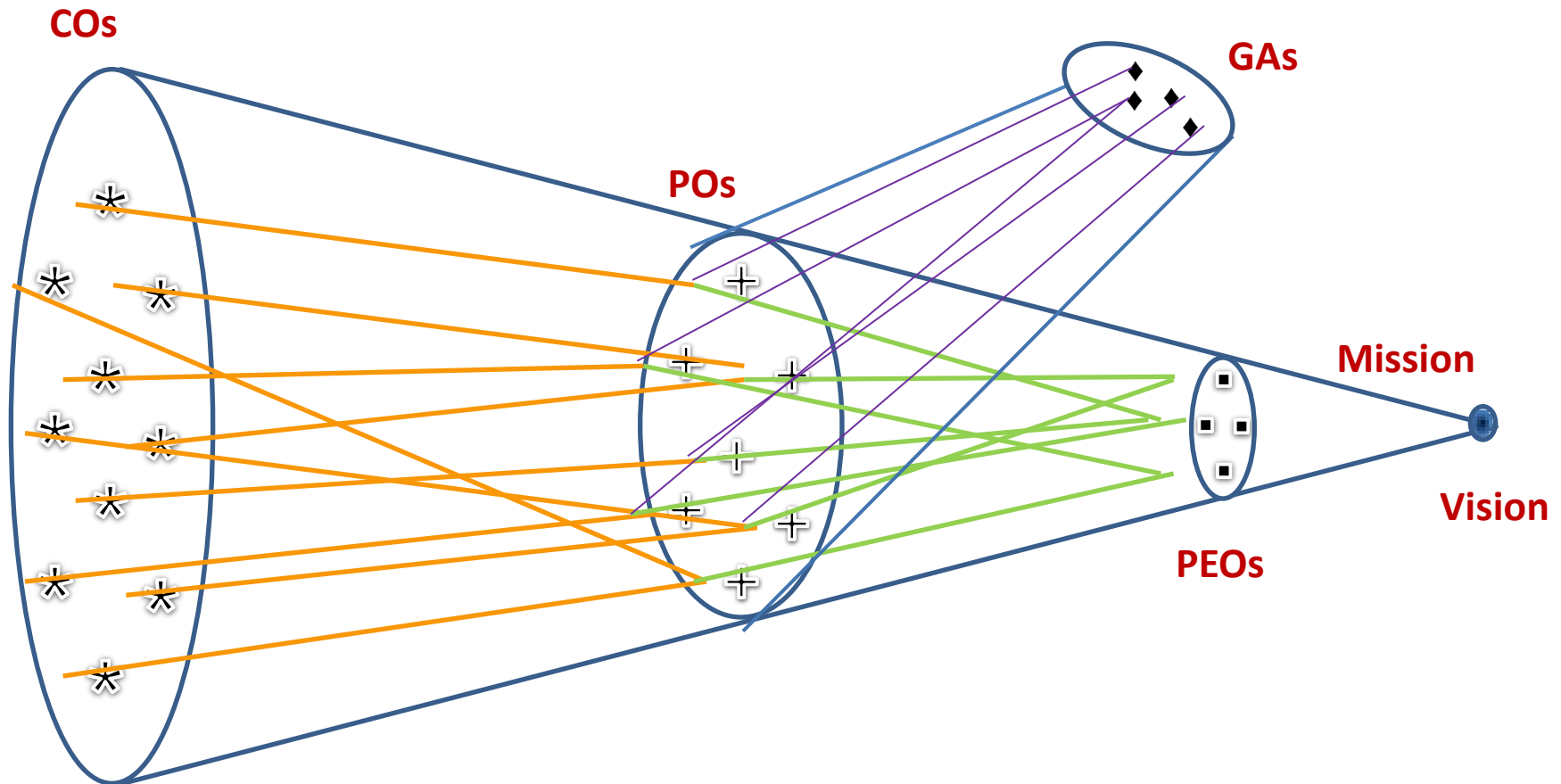
- The Govt. of India signed the Washington Accord in June 2014 for coming at par with the technical institutes all over the world.

- **Course Outcomes (COs)** are listed for each course. COs are abilities which a student is expected to achieve at the end of the course

- **Programme Outcomes (POs)** are attributes which the students are expected to obtain at the end of graduation
 - **Engineering knowledge**
 - **Problem analysis**
 - **Design & Development of Solutions**
 - **Investigation of Complex Problem**
 - **Modern tool usage**
 - **Engineer and society**
 - **Environment & sustainability**
 - **Ethics**
 - **Individual & team work**
 - **Communication**
 - **Lifelong learning**
 - **Project management & finance**

- **Programme Educational Objectives (PEOs)** are qualities which are expected to be achieved by the students about 3-5 years after graduation

Mapping between PEOs, POs and COs



Thank You

**And wish you all a very happy and successful
time
in MITS ensuring a bright future**