

ACTION TAKEN REPORT *ON* DECISIONS OF IQAC



Internal Quality Assurance Cell



MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR

(A Govt. Aided UGC Autonomous & NAAC Accredited Institute Affiliated to RGPV, Bhopal)

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The following actions have been taken:

1: Regarding conduction of Administrative Audit once every year:

Administrative Audit was conducted on 22nd Feb. 2018 for following supporting departments: General Office, HR / Establishment, Security, Housekeeping / Guest House / Garden, EDC, Dispensary, Hostels.

2: Regarding conduction of two Academic Audits in a year (One by Internal Audit Committee & one by external experts):

Academic Audit by Internal Audit Committee and two external experts (Dr. Susheel Kumar, Former professor, Civil Engineering, MANIT, Bhopal & Dr. J.S. Chauhan, Director SATI, Vidisha) was conducted on 17th February 2018 on a 30-point format addressing all the important teaching-learning parameters.

3: On-line feedback & appreciation letter/awards to faculty members who get very good feedback:

- *The institute has taken cognizance of the matter.*
- *On-line feedback has been collected w.e.f. July-December 2017 semester.*
- *The feedback analysis has been performed by all the departments and appropriate actions are taken wherever necessary.*
- *Mechanism for giving Appreciation letters/Awards will be developed and Appreciation letters/Awards will be given to faculty members at the end of Academic Year.*

4: Moderation of question papers by external & internal members and Question paper setting to be based on Course Outcomes:

- *The matter was discussed in the Academic Council Meeting on 23.09.17 and it was suggested that random moderation can be started.*
- *A committee was constituted to prepare **new guidelines to paper setters** regarding difficulty level, distribution of marks, and for setting Question Papers based on **course outcomes aligned with Revised Bloom's Taxonomy.***

- A two-day workshop was organized by the IQAC for the **departmental OBE coordinators** on “**Effective techniques of Question Paper Setting-An OBE Approach**” during 7th-8th February 2018.
- The Question Paper setting will be based on **course outcomes**, with effect from May-June 2018 examination.

5: Regarding showing answer books of end-term examination to students for maintaining transparency and credibility:

- The matter was discussed in the Academic Council Meeting on 23.09.17 and was accepted.
- The mechanism/modalities for conducting this activity will be finalized and will be brought into practice w.e.f the next academic year.
- The Institute is shortly going for digitization of answer books also.

6: Regarding scrapping of answer book coding:

The suggestion was not accepted by the Academic Council of the institute.

7: Implementation of Flexible Academic Curriculum:

- The Institute is committed to implement flexible curriculum from July 2018.
- A committee is working on preparing the scheme and structure for the new flexible curriculum.
- The new curriculum will be developed after workshops with representatives of stakeholders & Board of Studies Meetings and will be placed in the Academic Council for approval in April/May 2018.

8: Implementation of on-line learning through platforms such as SWAYAM:

- The NPTEL (National Programme on Technology Enhanced Learning) Local Chapter has been started and has become functional in the institute from 30th Oct. 2017 to provide e-learning through on line Web and Video courses.
- The institute has appointed one SWAYAM Manager and a team of SWAYAM coordinators from all departments to promote and motivate students for self learning.
- To inculcate self learning capabilities, the students of II and III year have been registered for one SWAYAM course compulsorily, in the January-May 2018 session against self-study/seminar courses.
- Detailed guidelines for conduction and internal evaluation of students have been prepared by the institute SWAYAM team.

- *Subject Matter Experts (SMEs) have been given responsibility to monitor the teaching-learning process for the SWAYAM courses.*
- *The registration process has been completed and about 85%-90% students have been registered.*

9: Utilization of e-learning platform (MITS-MOODLE):

- *The MITS-MOODLE is completely operational. All the 4600 plus students, faculty members and staff are registered on it.*
- *A team consisting of 34 faculty members from various departments has been constituted to coordinate the following activities at the department level:*
 - i. *On-line quiz conduction*
 - ii. *Direct/indirect assessment of course outcomes (COs), Programme outcomes (POs) and Programme Educational Objectives (PEOs).*
 - iii. *Feedback and its analysis*
 - iv. *Uploading lecture notes*
 - v. *On-line assessment of assignments*
 - vi. *Dissemination of any other academic information*
- *Between 15th to 22nd December 2018 on-line quiz using MOODLE was conducted for all I year students.*
 - i. *Feedback was taken on COs, Faculty competencies and curriculum.*
 - ii. *The quiz performance was analysed student wise, subject wise, question wise*
- *The CO attainment for July-December 17 Semester has already been computed using MOODLE.*
- *The PO & PEO attainment for academic year July17-June 18 will be computed using MOODLE after the result declaration.*
- *GET (General Enterprising Tendency) test was conducted for all the students of the Institute for identifying the students who have entrepreneurial mind set for further grooming.*

10: Enhancement of student attendance in remedial/performance improvement classes:

- *A team of 12 faculty members is appointed as coordinators for the Remedial Classes/ Bridge Classes to take all necessary steps at their department level to increase the effectiveness of these classes.*
- *The departmental coordinators work under the guidance of an institutional I/c for Remedial/Bridge Classes and monitor the effectiveness of the classes/attendance on*

a weekly basis. The team is entrusted with the responsibility to identify and motivate all the backlog and less privileged students/ to attend these special classes regularly.

- *The team will also provide necessary counselling and guidance to students and help in solving their examination related problems.*

11: Regarding revising of honorarium for paper setting/checking/conducting practical examinations in MITS Autonomy structure

On the basis of recommendations of a duly constituted committee, the honorarium to external examiners for conducting practical viva-voce examination has been doubled and for evaluating UG student projects has also been substantially raised.

The honorarium to external and internal examiners for evaluating PG dissertations has been brought at par.

12: Regarding starting our own ERP system:

The procurement of examination server is in process. The institute ERP system will be started in parallel to the existing Information management System (IMS) first on trial basis. After ensuring that the performance is satisfactory, the institute ERP will be started.

13: Regarding building academic links with foreign universities/institutions:

- *Initiatives at the Department/Faculty level are being taken. Seven proposals under Global Initiative of Academic Networks (GIAN) scheme were submitted by faculty members of the institute marking the beginning of collaboration with faculty members at foreign universities/institutes.*
- *One proposal has been sanctioned on “Sustainability in the Built Environment” in collaboration with faculty member from RMIT University, Melbourne, Australia.*

14: Regarding inviting faculty members from IITs & GATE paper setters to address/motivate the students about cracking the GATE examination

Initiatives are being taken at the Department Level. Requisite measures will be taken as per the NPIU guidelines under TEQIP-III.

15: Regarding starting Full time Ph.D. fellowship in the institute

The research committee of the institute has formulated guidelines for full time Ph.D. fellowship under TEQIP-III. The implementation process will begin in March 18.

16: Regarding re-starting the Girls Wing of National Cadet Core

The matter is under consideration. It is expected that very soon the Girls wing of NCC will be restarted.

17: Regarding implementation of the Flexible Curriculum as per AICTE new guidelines:

The Scheme and Curriculum (based on AICTE guidelines for model curriculum 2018 and instructions of Rajiv Gandhi Proudyogiki Vishwavidyalay (RGPV), Bhopal was prepared by the various Board of Studies (BoS) and approved by the Academic Council in its meeting on 26th April 2018.

For students admitted in Academic Session 2017-18, this curriculum will be implemented from 3rd Semester onwards and for students admitted in academic session 2018-19, this will be effective from 1st semester itself.

The general structure of the scheme and distribution of credits in different course categories is as follows:

Approved Structure of Undergraduate Engineering Program

S. No.	Category	Suggested Breakup of Credits by AICTE	Component wise credit allotment**	No. of Courses	Weightage (Percentage)
1	Humanities and Social Sciences including Management Courses (HSMC)	12**	12	04	7
2	Basic Science Courses (BSC)	25**	20	05	11.7
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc. (ESC)	24**	21	06	12.3
4	Departmental Core Courses (DC)	48**	52	13	30.6
5	Departmental Elective Courses relevant to specialization/branch (DE)	18**	20	06	11.8
6	Open Category- Electives from other technical and /or emerging subjects (OC)	18**	15	05	8.9
7	Project work, seminar and internship in industry or appropriate work place/ academic and research institutions. (DLC/SWAYAM/NPTEL/MOOC)	15**	22	13	13
8	Mandatory Course (MC)	-	08	03	4.7

	<i>Total</i>	<i>160**</i>	<i>170</i>	<i>55</i>	<i>100</i>
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***Discipline specific minor variations possible*

Approved 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>
<i>1</i>	<i>DC</i>	<i>Departmental(Professional) Core Courses</i>	<i>45</i>	<i>19</i>	<i>127</i>	<i>48.5</i>
<i>2</i>	<i>BSAE</i>	<i>Building Science & Applied Engineering Courses</i>	<i>20</i>	<i>14</i>	<i>57</i>	<i>22</i>
<i>3</i>	<i>DE</i>	<i>Departmental(Professional) Elective Courses</i>	<i>10</i>	<i>07</i>	<i>31</i>	<i>8</i>
<i>4</i>	<i>OC</i>	<i>Open Category Courses</i>	<i>05</i>	<i>03</i>	<i>09</i>	<i>3.5</i>
<i>5</i>	<i>PAEC</i>	<i>Professional ability enhancement course</i>	<i>15</i>	<i>07</i>	<i>30</i>	<i>12</i>
<i>6</i>	<i>SEC</i>	<i>Skill Enhancement Course</i>	<i>5</i>	<i>11</i>	<i>15</i>	<i>6</i>
	<i>TOTAL</i>		<i>100</i>	<i>61</i>	<i>260</i>	<i>100</i>
	<i>MC</i>	<i>Mandatory Course</i>	<i>Qualifier</i>	<i>02(Audit)</i>	<i>06</i>	<i>-</i>

The semester wise break-up of credits is as follows:

<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>

VI	24	26	14.12	10
VII	18	27	10.58	10.4
VIII	13	26	7.65	10
IX	NA	18	-	6.9
X	NA	28	-	10.7
TOTAL	170	260	100	100

The other salient features of the new Flexible Curriculum are:

- For the award of Under Graduate Degree (UG) in Engineering/Technology & Architecture, it is required to earn minimum 170 & 260 Credits respectively.
- Students will be eligible to get UG Degree with Honours or Minor Specialization (relating to other fields of Engineering, Technology, Applied Science, Management etc.), if they earn 20 & 24 extra credits (in addition to the compulsory credits required to obtain the B.Tech & B.Architecture degrees respectively).
- These additional credits may be acquired through SWAYAM /NPTEL/MOOC platform based learning.
- There is a provision from 5th semester onwards for the desirous students to opt for additional courses in order to earn the 20/24 additional credits required for honours or minor specialization.
- Different Tracks of Specialization will be created for the students, according to their interest & career focus, for selecting additional courses to get Honours or Minor Specialization.
- **Ethics, Environmental Science, Disaster Management, Intellectual Property Rights (IPR) and Cyber Security** are included as **Mandatory Courses (MC)** at appropriate places in the scheme.
- Two Audit Courses at second and third year on '**Biology for Engineers**' and '**Indian Constitution & Traditional Knowledge**' are introduced. 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.
- Beginning with academic year 2018-19, there will be an **Induction Programme of three (03) weeks duration** for the **First Year Students**, which will include- Physical activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to local Areas, Familiarization to Department/Branch & Innovations, Foundation Courses etc. To accommodate for this activity at the beginning of the session, the credits of 1st & 2nd Semester have been kept at 21.
- 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. The detailed guidelines for evaluation will be prepared in due course of time.

- **It will be mandatory for students to undertake Three (03) Internship Programmes** as per the following details for completing the UG degree requirements.

S.No.	Detail	Hours	Year of Internship	Evaluation
1.	Summer Internship Project-I (Institute Level)	60 Hours	First Year	III Semester (02 Credits)
2.	Summer Internship Project-II (Soft Skills)	90 Hours	Second Year	V Semester (03 Credits)
3.	Summer Internship Project -III (On Job Training)	150 Hours	Third Year	VII Semester (02 Credits)

18: To Review and suggest improvements for different practices to enhance employability, skill enrichment & quality of student projects along with students' participation

- Each department has appointed a **Project Coordinator** at departmental level to identify and facilitate execution of student projects which are industry focussed/useful to society from next session onwards.
- Provision for internship in curriculum: There are three mandatory internships which will help in increasing employability and skills of students. In addition to this, student will be given the flexibility to complete all credits using MOOCS and opt for Internship for full 8th semester.
- In-house training programmes by external agency/experts for GATE and employability enhancement will be conducted from next session onwards for pre-final and final year students

19: To review the Feedback of stakeholders on curriculum and finalization of formats for the same

- **From students:** Feedback on curriculum has been taken by the departments before framing the Flexible Curriculum by conducting formal as well as informal meetings with students. In addition to this, curriculum feedback is being collected on-line on MOODLE.
- **From Teachers:** All the faculty members are also members of Board of Studies.

- **From employers:** Curriculum feedback is being collected by the Training & Placement Cell. A meeting of HoDs is also being conducted with the teams visiting for placement.
- **From Alumni:** Curriculum feedback is collected by the departments with the help of the T&P Cell and OBE coordinators.
- **Parents:** A parent-teacher meeting will be organized by each department once in a semester to identify parents who can contribute towards this activity and also to get a general feedback. Instructions regarding this have already been issued to the departments vide notice number DA/MP/18/639 dated 26/03/2018.

20: Regarding mechanism for student feedback, its analysis and corrective measures

- As discussed in the last meeting, instructions were given to class coordinators to collect the on-line feedback from only those students who are regular in their classes.
- As instructed by the House in the last meeting, a uniform and comprehensive summary of the feedback analysis and action taken for each department has been prepared.
- A **Faculty Feedback Index (FFI)** has been computed for each faculty on a scale of 5 (five) by taking weighted average of student responses in 5 classes (Excellent, Very Good, Good, Average & Below Average) for 14 (Fourteen) criteria.
- Based on the index, areas of appreciation and areas needing improvement are identified for each faculty and the same is communicated to them by the concerned Head of the Department.

21: To discuss the possibility of conducting Summer Semester for backlog students

- The matter was raised in the Academic Council Meeting on 26th April 2018 and has been raised with the Affiliating University during meeting of Directors.

22: Regarding examination reforms for establishing the credibility of evaluation procedures

- **Digitization of valuation:** As per the target, partial evaluation of answer sheets in the digital mode has been started for the ongoing April-May 2018 examination, on pilot basis.
- **Displaying Model Answer Sheet:** Model answer sheet is being prepared by the faculty members on the day of the examination and it is uploaded on MOODLE on the same day, so that students can review their performance.
- **Integrated valuation:** On a pilot basis, a few M.E./M.Tech papers are being evaluated by multiple valuers in the ongoing April-May 2018 examination.

- *On-line question paper feedback: On-line question paper feedback is taken till 6.0 pm on the day of the examination to get students' opinion on the difficulty level, quality of the question paper and to know about discrepancies if any.*

23: Regarding attainment of Course Outcomes (COs), Programme Outcomes (POs) and Programme Educational Objectives (PEOs)

- *For the Academic Session 2017-18, the attainment of COs, POs and PEOs will be computed on-line using direct as well as indirect assessment.*
- *This task will be completed after the declaration of results for the ongoing April-May 2018 examination.*
- *The report will be presented before the House in the next meeting.*

24: Regarding the status of Research and guidelines for improvement at various levels

- *Norms for providing **Research Associate (RA)** fellowships with financial assistance from TEQIP-III in eligible departments have been formed and the programme will be started from Academic Session 2017-18.*
- *The All India Council of Technical Education (AICTE) has recognized the Institute as a research centre for **National Doctoral Fellowship Programme** w.e.f. Academic session 2018-19.*
- *Financial support for research project will be provided to the identified proposals submitted by faculty members w.e.f. Academic session 2018-19.*

25: Regarding initiatives taken for Environmental Consciousness

- *The area of MITS campus is about 45 Acres out of which 15% is built area and 20% area is covered by roads, rest of the area is green (Urban forestry, gardens and sports grounds).*
- *Practices such as E-journals, use of Whatsapp for information flow, use of IMS, students' course material in soft copies, use of emails for information transfer, both side printing on paper etc. are in use for office and departments.*
- *Following Committees (constituted & amended vide order no.2239 dated 11.08.2017, 1150 dated 24.04.2018 & 1164 dated 25/26.04.2018) are regularly performing monitoring and controlling activities to strengthen the environment friendly practices in the Institute:*
 - *Energy Audit Committee*
 - *Water/Waste water Audit/Solid waste management Committee*
 - *Health Audit Committee*
 - *Inbuilt Environment/Campus/Air Quality/Transport Audit/Green Audit Committee*
 - *Good Practices Implementations Committee*

The corrective measures and new initiatives based on quarterly audit reports are being taken in a timely manner.

Based on the audit recommendations procurement is under process for the following:

- *Sewage Treatment Plant (STP) for converting black water into grey water*
- *Compost making machine*

26: Regarding conducting Inspirational lectures by well known personalities

The departments have been instructed to conduct this activity in the next Academic Year.

27: Regarding fund creation for financial support to meritorious students from economically weaker sections of the society

- *A faculty coordinator has been appointed to coordinate activities and to create a fund for partially supporting deserving, meritorious students belonging to economically weaker sections of society. For generating fund for this efforts will be made to get assistance through (i) The fund allocated to leading public sector companies under their Corporate Social Responsibility (CSR) (ii) The Alumni (iii) Social contributions/donations etc.*

28: Regarding alumni engagements and enhancement of alumni interaction

- *An Alumni Coordinator has been appointed in each Department to strengthen the alumni interaction and to build an independent alumni network for the benefit of the students.*
- *Efforts will be made from the next semester to create a database of alumni in the department and to conduct departmental alumni meets to facilitate interaction between the present students and the alumni.*

29: Enhancing collaboration with other institutions/organizations:

- *Abhigyan Abhikaushalam Students' Forum (AASF) in collaboration with ABV-IITM has been started (MoU signed) for collaborating and conducting inter-institute events as well as knowledge sharing among students from different colleges.*
- *The Institute has entered into a collaboration with PDPM Indian Institute of Information Technology Design & Manufacturing (IIITDM), Jabalpur under the Electronics & ICT Academy (an initiative of Ministry of Electronics and Information Technology, Govt. of India) for conducting Joint Faculty Development Programmes.*

As a consequence, Institute will be recognized as Nodal (Remote) Center of Electronics & ICT Academy PDPM IIITDM Jabalpur. This collaboration will explore new dimensions for the faculty and research scholars of the institute and of the entire region. Under the said collaboration, different training programmes/courses relating to emerging interdisciplinary trends/areas will be organized.

In the near future, it is proposed to organize following summer programmes

- *ANN and Deep Learning (11-15 June 2018)*
- *Internet of Things (IoT) (18-22 June 2018)*

- *The Institute has become a partner under the initiative Called “Making Deep Learning and AI skills mainstream in India by Royal Academy of Engineering, UK” to fulfil trilateral needs of entrepreneurship, Industry-Academia partnership and application-inspired Engineering Research”.*

*As a Partner, Faculty members and students of MITS Gwalior will be trained on the aspects relating to AI and deep learning technologies with the opportunity to work at **Supercomputing lab of Bennett University**.*

Moreover, students will be offered internship opportunity based on selection criteria.

30: Regarding student attendance and effectiveness of remedial/performance improvement classes:

- *The faculty In-charge for Remedial & Bridge Classes and a team of departmental coordinators were appointed for increasing the effectiveness of this activity.*
- *The team has been able to motivate a few students to attend a few classes.*
- *The overall percentage of students who attended these classes is about 26% which is expected to improve in the next semester.*

S.No.	Name of the Department	Faculty coordinator	% of students benefited
1	Civil Engineering	Prof. Aditya Agrawal	29.72
2	Mechanical/Automobile Engineering	Prof. V. Chaturvedi	43.5
3	Electrical Engineering	Prof. K. Swarnkar	31.27
4	ET/Electronics Engineering	Prof. R.P. Narwaria	28.97
5	CSE & IT	Dr. Sanjiv Sharma	Nil
6	Chemical Engineering	Prof. Sumint S.Trivedia	Nil
7	Biotechnology	Dr. Sunita Sharma	38
8	Physics Chemistry Mathematics	Dr. S. Bhattacharya Dr. Anjula Gaur Dr. Vikas Shinde	92.0 58.0 18.19
9.	MCA	Prof. Parul Saxena	56.18
10.	Architecture	Dr. Anjali Patil	69.58

*M. Pandit
10/08/2018.
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