Minutes of Meeting Board of Studies

Department of Engineering Mathematics and Computing

(Conducted online on date, *06 Dec. 2024*)

MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE,

GWALIOR – 474005

Reference: MAC/2024/ **Dated: 06.12.2024**

Department of Engineering Mathematics and Computing

Minutes of the Meeting of the Board of Studies held on 06/Dec./2024

A meeting of the Board of Studies of ***Department of Engineering Mathematics and Computing*** was held on 06/Dec./2024 on line at 4:00 PM. The BOS committee constituted the following members:

Name	Affiliation	Stature
Dr.DK Jain	Professor & Head, Engineering Mathematics & Computing	Chairman, BOS
Dr. Aparna Mehra	Professor, Department of Mathematics, IIT, New Delhi	Vice-Chancellor Nominee
Dr. Madhu Jain	Associate Professor, Department of Mathematics, IIT Roorkee,	Subject Expert
Dr. Badam Singh Kushwah	Associate Professor, Department of Mathematics and Computing, IMS Dhanbad	Subject Expert
Dr. D.P. Agrawal	Department of Mathematics, Govt. SMS Science College, Gwalior	Alumnus
Mr. Ankit Mundra	Director plus 91 labs, Gwalior	Industry Expert

Faculty of the Department

Dr. Vikas Shinde
Dr. J. K. Muthele
Dr. Atul Ku. Ray
Dr. Minakshi
Dr. Divya Chatuervedi
Dr. Barkha Tiwari
Dr. Lav Kumar Singh
Dr. Vijay S Sharma
Dr. D. K. Mishra
Dr. S. K. Bharadwaj

The minutes of the BOS meeting are following:

1. The minutes of the previous BOS meeting held on 30.05.2024 have been confirmed.
2. The courses of Engineering Mathematics-I and II do not have any changes.
3. The courses of Calculus & Optimization Techniques, Linear Algebra and Probability & Random Process for other department have no changes.
4. The course outcomes attainments have been analyzed with identified gap thereof action taken report (ATR) has been prepared according to respective courses.
5. The syllabus for B. Tech. programme in Mathematics and Computing IV sem, VI sem and VIII sem. have been proposed by the department and approved by the committee.
6. The course outcomes of all courses have been discussed in detail.
7. The list of various subjects is proposed for Departmental elective, Minor and Honors specialization have been prepared.

Total No of courses	**Total number of COs**	**Number of COs not attained**	**Percentage of COs not attained**	**Page No.**
20	100	00	Nil	Item No. 17

Dr. Divya Chatuervedi
(Member)

Dr. Minakshi
(Member)

Dr. Atul Ku. Ray
(Member)

Dr. J. K. Muthele
(Member)

Dr. VP Shinde
(Member)

Dr. Badam Singh Kushvah
(Subject Expert)

Dr. Madhu Jain
(Subject Expert)

Dr. Aparna Mehra
(Subject Expert)

Dr. D.P. Agrawal
Alumnus

Mr. Ankit Mundra
Industry Expert

Dr. DK Jain
(Professor & Head)

माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
Deemed University
(Declared under Distinct Category by Ministry of Education, Government of India)
NAAC ACCREDITED WITH A++ Grade
Gola Ka Mandir, Gwalior (M.P.)- 474005, INDIA
Ph.:+91-751-2409300, E-mail: vicechancellor@mitsgwalior.in, Website: www.mitsgwalior.in

Agenda of the BoS Meeting

(BoS Meeting Scheduled to be held1st Week of December 2024)

Instructions for preparing BoS Proceedings

{All information is to be uploaded on the webpage under suitable heading (such as Board of Studies) and separate links to be provided for each category mentioned below}

1. **Minutes should have a summary/cover page mentioning all the significantchanges made in the following givenformat :**

Courses where revision was carried out*

(Course/subject name)	Course Code	Year/Date of introduction	Year/Date of revision	Percentage of content added or replaced	Agenda Item No.	Page No.	Link of relevant documents/minutes
NIL							

Courses focusing on employability/entrepreneurship/ skill development*

(Course/subject name)	Course Code	Activities/contents which have a bearing on increasing skill and employability	Agenda Item No.	Page No.	Link of relevant documents/minutes
Object Oriented Methodology and Programming with C++	**2250223**	This subject enhances the programming skill of the students by enabling them to use the concepts of object-oriented programming. Students are taught to use Classes, Inheritance, and Polymorphic Behaviour by developing middle level projects.	11	1-4	https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Skill.pdf
Database Management System & SQL	**250402**	Students are taught to develop collection of interrelated data and a set of software tools and programs which access, process, and manipulate data. They learn to access, retrieval, and use of that data by considering appropriate security measures. This subject is useful for better data integration and security. Students are given mini projects to develop normalized database by using MySQL.			
Project Management & Financing	**1000005**	This course is very useful for the students which indeed enhance the knowledge, how to complete the project for academic or industry purpose. There are so many things such as effective communication, time management leadership, negotiation, risk management, technical expertise, critical thinking			
Computer Graphics	250601	Computer Graphics skills elevate employability by meeting the growing demand for visual content in industries such as gaming, advertising, and virtual reality. Proficiency in graphic design, animation, and 3D modeling showcases adaptability, creativity, and technical prowess, making individuals valuable assets in the evolving job market.	7	2 - 4	https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item%20-06%20Syllabus%20%20MAC-%20VI%20%20Sem.%202022.pdf
Compiler Design	250602	Programmer develop the specifies algorithms in the language as per their need and the compiler must translate it to the target language. Higher-level programming languages are sometimes easier to develop in but they are inefficient, therefore the target applications run slower. Compiler design enhances the knowledge of students through which they analyze the complexity of			

		algorithms and their execution.			
Artificial Intelligence & Machine Learning	250603	It is useful for daily needs such as cyber and homeland security, anti-money laundering, payments, financial markets, biotech, healthcare, marketing, natural language processing (NLP), computer vision, electrical grids, nuclear power plants, air traffic control			
Computer Aided Applied Single Objective Optimization	**NPTEL/ SWAYAM**	Computer-Aided Applied Single Objective Optimization boosts employability and entrepreneurship by developing problem-solving, critical thinking, and data-driven decision-making skills. It equips individuals with advanced computational tools to optimize systems in industries like engineering, manufacturing, and IT, while also enhancing programming, algorithm design, and simulation expertise.	4 & 7	1-3	https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Employability.pdf
Machine Learning for Engineering and science applications	**NPTEL/ SWAYAM**	Machine Learning for Engineering and Science applications enhances employability and entrepreneurship by developing expertise in data analysis, algorithm design, and predictive modeling. It equips individuals with skills to solve complex problems, optimize processes, and innovate across fields like robotics, energy, and materials science.			
Block chain and its Applications	**NPTEL/ SWAYAM**	Its provide transparent, secured, tamper-proof solution for interconnecting different stakeholders in a trust less setup. Block chain is useful in cryptographic Hash and Digital Signature.			
Cloud Computing	**NPTEL/ SWAYAM**	The demand for cloud services is increasing so fast and the global cloud computing market is growing at that rate. A large number of organizations and different business sectors are preferring cloud services nowadays as they are getting a list of benefits from cloud computing. Different organizations using cloud computing for different purposes and with respect to that Cloud Service Providers are providing various applications in different fields.			

New Courses added*					
(Course/subject name)	Course Code	Activities/contents which have a bearing on increasing skill and employability	Agenda Item No.	Page No.	Link of relevant documents/minutes
NIL					

Feedback on curriculum received from stakeholders: Analysis& ATR*				
Stakeholder	**Student**	**Faculty**	**Alumni**	**Employer**
No. of responses	515	14	-	-
Link of Analysis	https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Feedback_Crriculum%20by%20faculty%20July-%20Dec.-2024%20f%20sheet.pdf	https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item-%2019%20Syllabus%20Feedback%20%20%20July-%20Dec.%202024.pdf	-	-
ATR Link	https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/item%20-17%20%20ATR%20with%20COs%20Attainment%20JJ-2024.pdf	https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/ATR%20%20Curriculum%20FB%20by%20%20F%20July-%20Dec.%202024f.pdf	-	-

	Link showing Excel sheet of Google Form details of stakeholders	https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/FB%20%20Curriculum%20feedback_Student%20July-%20Dec.%20-2024.pdf	https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Feedback_Crriculum%20by%20faculty%20July-%20Dec.-2024%20f%20sheet.pdf	-	-
	* **Separate page(s) for each of the above four points; Agenda point wise minutes to be appended with each point and a separate link to be given in the appropriate column for each point.**				
2.	The BoS minutes along with the cover/summary page (under point number 1, above) must be uploaded on the departmental web page and **link for the same must be shared with the office of the Dean Academics.**				
3.	The following must be uploaded on the departmental web page and link for the same must be shared with the office of the Dean Academics. • *The Stakeholder feedback collected & analyzed to find the index out of five • Action Taken Report on each feedback *The details/data of the stakeholder responded through Google form showing responses from alumni, employer, student, faculty etc must also be shared with the office of the Dean Academics .				
4.	Minutes should have footer with department name, page number, and month of meeting.				
5.	Each page should be signed by all faculties, scanned and then submitted to the Dean Academics office.				

BoS Agenda Items

Item 1	To confirm the minutes of previous BoS meeting held in the month of May-June 2024. https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item%20-01%20BOS%202024%20III%20V%20and%20VII%20sem%2030%20may%202024%20Final.pdf
Item 2	To propose the scheme structure of **VIII Semester** with the provision of **ONE DE & ONE OC course** to be offered in **online mode** with credit transfer for the **batch admitted in academic year 2021-22**. (**The total credits from I-VIII semester should not be less than 160 for this batch**). https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/F%20Item%20-02%20SCHEME%20of%20B.Tech.%20MAC%20%208th%20Sem%20Admitted%20batch%202021.pdf
Item 3	To propose the list of courses which the students can opt from SWAYAM/NPTEL/ other MOOC Platforms/ Institution (MITS) MOOC, to be offered in online mode under **Departmental Elective (DE) category courses (DE-5) and open category (OC3)** for credit transfer in the **VIII Semester** under the flexible curriculum (**Batch admitted in academic year 2020-21)** https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item%20-03%20DE-V%20%20CO-%20III%20NPTEL%20courses%20for%20VIII%20Sem.pdf

S. No.	Name of Course	Duration
1	Machine Learning for Engineering and science applications	12 Weeks
2	Introduction to Queueing Theory	12 Weeks
3	Computer Aided Decision Systems - Industrial practices using Big Analytics	12 Weeks

Item 4	To propose the list of "Additional Courses" which can be opted for getting an (i) Honours (for students of the host department) (ii) Minor Specialization (for students of other departments) **[These will be offered through SWAYAM/NPTEL/MOOC based Platforms for the B.Tech. VIII semester students (for the batch admitted in 2021-22)] and for B.Tech. VI semester (for the batch admitted in 2022-23)]** **https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/F%20Item%20-04%20list%20of%20Additional%20Courses%20VI%20%20VIII.pdf**

S. No.	Name of Course	Duration
1	Natural Language Processing	12 Weeks
2	Algebraic Combinatorics	12 Weeks
3	Getting Started with Competitive Programming	12 Weeks
4	Advanced Graph Theory	12 Weeks
1	Algebraic Number Theory	12 Weeks
2	Optimization from Fundamentals	12 Weeks
3	Advanced Linear Algebra	12 Weeks
4	Advanced Probability Theory	12 Weeks

Item 5	To review and finalize the **scheme structure of B.Tech VI Semester under** the flexible curriculum **(Batch admitted in 2022-23)** https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/F%20Item%20-05%20SCHEME%20of%20B.Tech.%20MAC%206-%20Sem%202022.pdf
Item 6	To review & finalize the **syllabi for all Departmental Core Courses (DC)**of **B. Tech VI Semester** (**for batch admitted in 2022-23)** under the flexible curriculum along with their COs. https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item%20-06%20Syllabus%20%20MAC-%20VI%20%20Sem.%202022.pdf
Item 7	To propose the list of courses from SWAYAM/NPTEL/MOOC Platforms to be offered for batches admitted in 2022-23 **in online mode under Departmental Elective (DE) Course** with credit transfer, **in the VI Semester.** https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item%20-07%20Syllabus%20%20swayam%20Nptel.pdf
Item 8	To review and finalize the courses & syllabi to be offered (for batch admitted in 2022-23) under the **Open Category (OC) Courses to be offered in traditional modefor B TechVI semester** of other departments along with their COs. https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/ITEM%20-08%20List%20of%20New%20Courses%20OC%20VI%20Sem%202022-23.pdf
Item 9	To review and finalize the **Experiment list/ Lab manual/Skill based mini-project** for all the Laboratory Courses to be offered in **B.Tech.VI semester*(for batch admitted in 2022-23).*** https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item-%2009%20%20List%20of%20Experiments%20-AIML.pdf
Item 10	To review and finalize the **scheme structure of B. Tech. IV Semester** under the flexible curriculum (**for batch admitted in 2023-24**) https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/F%20Item-10%20SCHEME%20of%20B.Tech.%204%20Sem%20Admitted%20batch%202023.pdf
Item 11	To review and finalize the syllabi for all Departmental Core (DC) Courses of ***B. Tech. IV Semester*** (for **batch admitted in 2023-24**) under the flexible curriculum along with their Cos https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Syllabus%20MAC_%20IV%20Sem.%20Item%20-11.pdf
Item 12	To review and finalize the Experiment list/ Lab manual/Skill based mini-project for all the Laboratory Courses to be offered in Batch IV semester **(for batch admitted in 2022-23)** https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item%20-12%20Skill%20based%20mini-project%20IV%20Sem.%202022-23.pdf
Item 13	To review and finalize the scheme and syllabi of **B. Tech. IV Semester** (**for batch admitted in**

<table>
<tr><td></td><td>2023-24) under the flexible curriculum along with their COs.

https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item%20-13%20SCHEME%20of%20B.Tech.%20MAC%204th%20Sem%20Admitted%20batch%202023.pdf</td></tr>
<tr><td>Item 14</td><td>To review and finalize the Experiment list/ Lab manual/skill based mini project for all the Laboratory Courses to be offered in B.Tech IV semester(for batch admitted in 2023-24)

https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item-%2014%20List%20of%20Exper.%20%20Skill%20MAC_%20IV%20Sem.%202023%201.pdf</td></tr>
<tr><td>Item 15</td><td>To finalize the Skill Internship Project (SIP) module to be offered in Dec 2024.
<table>
<tr><th>Code</th><th>Name of Couse</th><th>Name of Faculty</th></tr>
<tr><td></td><td>Application of Optimization Techniques</td><td>Dr. Divya Chaturvide</td></tr>
<tr><td></td><td>Finite Difference Method</td><td>Dr. Minakshi</td></tr>
</table></td></tr>
<tr><td>Item 16</td><td>To propose the content of the courses identified for MITS-MOOC development to be offered in blended mode for VII Semester DE/OC courses for the batch admitted in 2022-23.
<table>
<tr><th>Subject Code</th><th>Subject</th><th></th><th>MOOC Course developed by Faculty</th></tr>
<tr><td>250731</td><td>Engineering Reliability</td><td>DE-II</td><td>Dr. V.P. Shinde</td></tr>
<tr><td>250732</td><td>Distributed Computing</td><td>DE-II</td><td>CSE/ IT Deptt.</td></tr>
</table></td></tr>
<tr><td>Item 17</td><td>To review the CO attainments, identify gaps and suggest corrective measures for the improvement in the CO attainment levels for the courses taught in Jan-June 2024 Session.

https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/item%20-17%20%20ATR%20with%20COs%20Attainment%20JJ-2024.pdf</td></tr>
<tr><td>Item 18</td><td>To review the PO attainment, CO-PO mapping matrix and action to be taken to improve PO attainment level.

https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item%20-18%20PO%20Attainment%20%20with%20ATR%20MAC-%202020-2024.pdf</td></tr>
<tr><td>Item 19</td><td>To review curricula feedback from various stakeholders, its analysis and impact

https://web.mitsgwalior.in/images/Departments/engineering_mathematics/BOS/BoS%2006.12.2024/Item-%2019%20Syllabus%20Feedback%20%20%20July-%20Dec.%202024.pdf</td></tr>
<tr><td>Item 20</td><td>To discuss and recommend the scheme structure & syllabi of PG Programme (M.E./M.Tech./MCA/MBA) along with their Course Outcomes (COs) (for batch admitted in 2023-24). NA</td></tr>
<tr><td>Item 21</td><td>Any other matter.</td></tr>
</table>