माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR
Deemed to be University
(Declared under Distinct Category by Ministry of Education, Government of India)
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Academic Council Meeting

The meeting of the Academic Council (AC) was held on **11th December 2024 at 12.30 P.M. onwards** in the Convention Hall of the institute.

The meeting was chaired by **Dr. R. K. Pandit,** Vice Chancellor of the Institute. **Shri Prashant Mehta**, Member, Board of Governors (Nominee of Hon'ble Chairman, BoG) attended the meeting while **Er. Ramesh Agarwal**, Secretary, Scindia Engineering College Society (SECS) Gwalior could not attended the meeting.

Prof. Lalit Kumar Awasthi, Vice Chancellor, Sardar Patel University, Mandi (H.P.), Prof. Mahesh Chandra Govil, Director, NIT Sikkim and special Invitee Dr. Rommel Mehta, Former Professor, School of Planning & Architecture, New Delhi joined the meeting through video conferencing.

Dr. Binod Kumar Kanaujia, Director Dr. B R Ambedkar National Institute of Technology, Jalandhar (Punjab), Prof. Manoj Singh Gaur, Director, IIT Jammu and other nominees of the Hon'ble Vice Chancellor of RGPV Bhopal Dr. Mohan Sen, Registrar, RGPV and Prof. Sudhir Singh Bhadauria, Director, UIT RGPV Bhopal could not attend the meeting.

The following internal members attended the meeting:

S. No.	Name	Designation	Status in AC
1.	Dr. R. K. Pandit	Vice Chancellor	Chairperson
2.	Dr. Manjaree Pandit	Professor, Electrical Engineering	Dean, Faculty of Engineering & Technology
3.	Dr. Sanjay Tiwari	Professor & Head, Civil Engineering	Member
4.	Dr. Sulochana Wadhwani	Professor & Head, Electrical Engineering	Member Secretary
5.	Dr. Vandana V Thakare	Professor & Head, Electronics Engineering	Member
6.	Dr. Manish Dixit	Professor & Head, Department of Computer Science & Engineering	Member
7.	Dr. Sanjiv Sharma	Coordinator, Department of Information Technology	Member
8.	Prof. Anish P Jacob	Coordinator, Chemical Engineering	Member
9.	Dr. D. K. Jain	Professor & Head, Engineering Mathematics and Computing	Member
10.	Dr. R. R. S. Makwana	Head, Centre for Artificial Intelligence	Member
11.	Dr. Praveen Bansal	Coordinator, Centre for Internet of Things, SWAYAM Manager	Member
12.	Dr Anjali S Patil	Professor & Head, Department of Architecture	Member
13.	Dr. M. K. Gaur	Professor & Head, Chemical Engineering	Member

S. No.	Name	Designation	Status in AC
14.	Dr Akhilesh Tiwari	Professor & Head, Centre for Computer Science & Business Management	Member
15.	Dr. Anjula Gaur	Coordinator, Applied Sciences	Member
16.	Dr. Sanjeev Khanna	Coordinator, Humanities	Member
17.	Dr. P.K. Singhal	Professor, Electronics Engineering	Faculty Nominee
18.	Dr. Shishir Dixit	Professor, Electrical Engineering	Faculty Nominee
19.	Dr. Himmat Singh Ahirwar	Associate Professor, Electrical Engineering	Faculty Nominee
20.	Dr. Pratesh Jayaswal	Professor, Mechanical Engg & Registrar	Invitee Member

Dr C.S. Malvi, Professor & Head, Department of Mechanical Engineering could not attend the meeting.

The following deliberations took place in the meeting:

Item: AC-1

To confirm the minutes of the last Academic Council Meeting held on 11th June, 2024.

The Minutes of the last Academic Council Meeting held on 11th June 2024 had been circulated to the Honourable members and no comments were received from any of the members.

The compliance status of the key aspects approved in the previous academic council are as follows:

- **To consider the proposal regarding the ratification in the component "Summer Internship Programs" for credit transfer in the third, fifth & seventh semesters for the 2023 admitted batch.**

For 2023 admitted batch, the Summer Internship Project-I is **renamed** as the "**Skill Internship Project**". Summer Internship Project-II is renamed as the "**Soft Skill Internship**" Also, Summer Internship Project-III is now renamed as "**Skill Enhancement Program" (SEP)** in which after completing the third year, students may take an internship in the industry or join as research interns under the faculty of the institute or may attend the SEP organized by the institute in collaboration with industry.

Summary of Internships offered to 2023 admitted batch

S. No.	Course Name	Minimum Hours	Internship to be offered	Evaluation
1.	Skill Internship Project (Institute Level)	30 Hours (Min one week)	Second Year (Winter Break in III Sem)	III Semester (02 Credits)
2.	Soft Skill Internship (Institute Level)	45 Hours (Min two week)	Third Year (Winter Break in V Sem)	V Semester (02 Credits)
3.	Skill Enhancement Program (Institute/ Industrial training)	90 Hours (Min four week)	After Third Year	VII Semester (02 Credits)

The House approved this proposal.

- **To consider the registration towards Novel Engaging Course (NEC) for 2023-2024 admitted lateral entry students**

	In the spirit of NEP 2020, the provision of "Novel Engaging Course" is made as a part of regular courses in the Flexible Scheme/ Curriculum for the **UG students admitted in 2020-21 onwards.** It has a total of Four (04) Credits with the arrangement of One (01) Credit in each semester, starting from the 3rd semester to the 6th semester. It was observed that due to late admission/lack of information, some of the **laterally admitted students** could not register timely for these courses. In this regard, the following ratification was proposed to consider: **"If any student fails to register for NEC course in any semester, he/she may be allowed to register in two Novel Engaging Courses from the pool being offered in the current semester with the condition that he/she has to fulfil the academic requirements such as attendance criteria etc."** **The House approved this proposal.** • **Review and subsequent approval of Recommendations made by different Board of Studies meeting held in the month of May-June 2024, regarding the scheme/ curriculum/courses for the July-December 2024 Semester.** As per the approval, the scheme/curriculum & proposed courses were offered during the July-Dec 2024 Semester. ***Hence, the minutes of the previous Academic Council meeting held on 11th June 2024 are confirmed.***
Item: AC-2	To review and approve the minutes of meeting/proceedings of the Board of Studies (BoS) of various departments/disciplines held in the month of December 2024. **The deliberation of the Board of Studies meetings of the following departments are summarized and are annexed as Annexure.** [Computer Science & Engineering, Information Technology, Engineering Mathematics and Computing, Centre for Artificial Intelligence, Centre for Internet of Things, Electronics, Civil Engineering, Mechanical Engineering, Electrical Engineering, Chemical Engineering, Architecture, Applied Sciences, Humanities and Management Studies]. **The presentation covered the Agenda items of the respective BoS, as per the Annexure-I.** The summary primarily outlines the list of DC, DE, and OC courses to be offered in traditional mode for the IV and VI semesters, as well as the list of DE and OC courses to be offered online through the SWAYAM/NPTEL platform for the VI and VIII semesters. Additionally, for the award of honors/ minor specializations, the courses available on the SWAYAM/NPTEL platform for the VI and VIII semesters are also finalized by the respective Board of Studies. **The List of the courses to be offered from various departments are annexed at Annexure-II.** **The house approved the minutes and recommendations made by different Board of studies (BoS).**
Item: AC-3	Any other matter: **To consider 4-week duration course from SWAYAM/NPTEL/MOOC platform for credit transfer towards honors/minor specialization in VIII Semester**

	It is approved by the Academic Council meeting held on 01/06/2019 (vide Item No AC-2), that the credit transfer policy under Departmental Elective (DE) and Open Category (OC) courses and additional courses (for Honours / Minor Specialization, seminar/self-studies/professional development) are as per the following: **Duration of Course** / **Credits** 04 week course / 01 06 week course / 02 08 week course / 03 12 week course / 04 It is approved that the 4-week courses of one credit are to be **offered only under seminar/self-study/professional development purposes.** However, it is observed that sometimes in the VIII semester, students require only 1 credit to complete the additional 20 credits needed for the award of Honors/Minors specialization. In this regard, it is proposed to offer 4-week courses for Honors/Minors specialization as well. **The revised guidelines are proposed as follows:** **The 04-week duration courses from SWAYAM/NPTEL/MOOC platform can be offered for credit transfer towards honors/minor specialization in VIII Semester** in addition to **courses like seminar/self-study/professional development.** House approved the proposal.
AC-4	To review & finalize the Complete Scheme Structure of 2022 and 2023 admitted batch. **The scheme structure of 2022 and 2023 admitted batch is presented and is approved by the House.**

The meeting ended with the vote of thanks to the chair

(Prof. Anish P. Jacob) (Dr. Anjula Gaur) (Dr. Praveen Bansal) (Dr. R. R. S. Makwana)

(Dr. Sanjiv Sharma) (Dr. Himmat Singh) (Dr. Sanjeev Khanna) (Dr. Anjali S. Patil)

(Dr. Vandan V Thakare) (Dr. D. K. Jain) Dr. Manish Dixit) (Dr. Akhilesh Tiwari)

(Dr. M.K. Gaur) (Dr. Shishir Dixit) (Dr. Pratesh Jayaswal) 11.12.2024 (Dr. Sulochana Wadhwani)

(Dr. P.K. Singhal) (Dr. Sanjay Tiwari)

11/12/2024
(Dr. Manjaree Pandit)
Dean, Faculty of Engineering & Technology

Present Online
(Dr. Rommel Mehta)
External Expert

Present Online
(Prof. Lalit Kumar Awasthi)
Vice Chancellor, Sardar Patel University,
Mandi (H.P.)
External Expert

Present Online
Prof. Mahesh Chandra Govil
Director, NIT Sikkim
External Expert

(Shri. Prashant Mehta)
Member, EC

(Dr. R. K. Pandit)
Vice Chancellor

Annexure-1

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 significant changes made in the following format :**

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

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

Feedback on curriculum received from stakeholders: Analysis& ATR*				
Stakeholder	**Student**	**Faculty**	**Alumni**	**Employer**
No. of responses				
Link of Analysis				
ATR Link				
Link showing Excel sheet of Google Form details of stakeholders				

*** 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 columnfor 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 Faculty of Engg & Technology.**

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 faculty, scanned and then submitted to the office of the Dean Faculty of Engg & Technology.

BoS Agenda Items	
Item 1	To confirm the minutes of previous BoS meeting held in the month of May-June 2024.
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**).
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 2021-22)**
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)]**
Item 5	To review and finalize the **scheme structure of B.Tech VI Semester under** the flexible curriculum **(Batch admitted in 2022-23)**
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.
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.**
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 mode for B Tech VI semester** of other departments along with their COs.
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).**
Item 10	To review and finalize the **scheme structure of B. Tech. IV Semester** under the flexible curriculum (**for batch admitted in 2023-24**)
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
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 2023-24)**
Item 13	To finalize the **Skill Internship Project** (SIP) module to be offered **in Dec 2024.**
Item 14	**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 2023-24.
Item 15	**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.**
Item 16	To review the PO attainment, CO-PO mapping matrix and action to be taken to improve PO attainment level.
Item 17	To review curricula feedback from various stakeholders, its analysis and impact
Item 18	To discuss and recommend the scheme structure & syllabi of PG Programme (M.E./M.Tech./MCA/MBA) along with their COs **(for batch admitted in 2023-24).**
Item 19	Any other matter: To Review Scheme Structure for 2022 & 2023 admitted batch

Annexure-II

Summary of the BoS from Various Departments

Contents

Centre for Internet of Things

C_IoT

BoS Agenda Item	Semester	Details	S.no.	Course Name	*Duration of Course (NPTEL Platform)
CIoT1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)	1	Cloud Computing and Distributed Systems	8 weeks
			2	Theory of Computation	12 Weeks
			3	Discrete Time Signal Processing	8 Weeks
			4	Machine Learning for Engineering and science applications	
			5	Cryptography and Network Security	12 weeks
		*List of courses to be offered in online mode under Open Category (OC3)	1	Introduction To Internet Of Things	12 Weeks
			2	Introduction To Soft Computing	8 weeks
			3	Fuzzy Sets, Logic and Systems & Applications	12 Weeks
			4	Sensors and Actuators	12 Weeks
CIoT2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization		**Track 1: Artificial Intelligence**	
			1	Introduction to Machine Learning	12 weeks
			2	Programming, Data Structures And Algorithms Using Python	8 weeks
			3	Artificial Intelligence (AI) for Investments	12 weeks
			4	Machine Learning for Engineering and science applications	12 Weeks
			5	Artificial Intelligence: Knowledge Representation and Reasoning	12 Weeks
				Track 2: Computational Techniques	
			1	Programming, Data Structures And Algorithms Using Python	8 weeks
			2	The Joy of Computing using Python	12 Weeks
			3	Discrete Mathematics	12 Weeks
			4	Programming in Modern C++	12 Weeks
			5	Introduction To Haskell Programming	8 Weeks
				Track 3: Communication and Signal Processing(VIII Sem)	
			1	Digital Signal Processing and its Applications	12 Weeks
			2	Evolution of Air Interface towards 5G	8 Weeks
			3	Embedded System Design with ARM	8 Weeks
			4	Discrete Time Signal Processing	8 Weeks
				Track 3: Embedded System Design(VI Sem)	
			1	Embedded Sensing, Actuation and Interfacing Systems	12 Weeks
			2	Embedded Systems Design	12 Weeks
			3	Embedded System Design with ARM	8 Weeks
			4	Discrete Time Signal Processing	8 Weeks
				Track 3: Robotics-VIII Sem	
			1	Embedded Systems Design	12 weeks
			2	Sensors and Actuators	12 Weeks
			3	Microprocessors and Microcontrollers	12 weeks
			4	Introduction to Machine Learning	12 weeks
			5	Programming, Data Structures And Algorithms Using Python	8 Weeks
	For VI & VIII Semester	*List of courses to be offered in online mode under Minor Specialization	1	Introduction To Internet Of Things	12 Weeks
			2	Introduction To Industry 4.0 And Industrial Internet Of Things	12 Weeks
			3	Introduction To Soft Computing	8 Weeks
			4	Cloud Computing	12 Weeks
			5	Sensors and Actuators	12 Weeks
CIoT3	VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	Soft Computing Techniques (2220601)	IoT
			2	IoT System Design (2220602)	
			3	Artificial Intelligence & Machine Learning (2220603)	
			1	Compiler Design (2230601)	IT-IoT
			2	IoT System Design (2230602)	
			3	Artificial Intelligence & Machine Learning (2230603)	
			1	Foundation of Cloud IoT Edge ML	8 weeks

		***List of courses to be offered in online mode under Departmental Elective (DE1)**	**2**	Edge Computing	8 weeks
			3	Introduction To Industry 4.0 And Industrial Internet of Things	12 weeks
			4	Foundations of Cyber Physical Systems	12 weeks
		Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	**1**	Intelligent Motor Control using Microcontrollers	
			2	Communication Systems for Modern Applications	
CIoT4	**B. Tech. IV Semester (2023 admitted batch)**	**Departmental Core (DC) Courses (Theory & Lab)**	**1**	Embedded Control of Electric Motors (3220401)	IoT
			2	Wireless Technologies for IoT (3220402)	
			3	Microprocessor & Embedded Systems (3220403)	
			4	Software Engineering (3220404)	
			5	Network and Web Security (3220405)	
			6	Microprocessor & Embedded Systems Lab (3220403)	
			7	Software Engineering Lab (3220404)	
			1	Computer Architecture and Microprocessor (3230421)	IT-IoT
			2	IoT Embedded Systems Design (3230422)	
			3	Software Engineering (3230423)	
			4	IoT Architecture and Protocols (3230424)	
			5	Network & Web Security (3230425)	
			6	Computer Architecture and Microprocessor Lab (3230421)	
			7	IoT Embedded Systems Design Lab (3230422)	
			8	Software Engineering Lab (3230423)	
CIoT5	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	**1**	Electronic Circuit Simulation with Proteus: A Hands-On Approach	
			2	IoT & Embedded Systems Simulation with ESP32	
			3	Open-source simulation platform for IoT with hardware implementation	
			4	Printed Circuit Board Design, Analysis using Proteus Software	
			5	Solar PV System: Design, Analysis & Data Visulization using Python	
			6	Virtual Simulation of Arduino Kits using Wokwi Simulator	

CSE

BoS Agenda Item	Semester	Details	S.no.	Course Name	*Duration of Course (NPTEL Platform)
CS1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)	1	Natural Language Processing noc25-cs51	12 Weeks
			2	Blockchain and its Applications noc25-cs08	12 Weeks
			3	Selected Topics in Algorithms noc25-cs64	12 Weeks
		*List of courses to be offered in online mode under Open Category (OC3)	1	GPU Architectures and Programming noc25-cs37	12 Weeks
			2	Deep Learning - IIT Ropar noc25-cs21	12 Weeks
			3	Selected Topics in Algorithms noc25-cs64	12 Weeks
			1	Affective Computing noc25-cs04	12 Weeks
			2	Cloud Computing noc25-cs11	12 Weeks
			3	Compiler Design noc25-cs13	12 Weeks
CS2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization	1	Cryptography and Network Security	12 Weeks
			2	Quantum Algorithms and Cryptography	08 Weeks
			3	Foundation of Cloud IoT Edge ML	08 Weeks
			4	Design and Engineering of Computer Systems	08 Weeks
			5	Edge Computing	12 Weeks
			6	Embedded System Design with ARM	12 Weeks
		*List of courses to be offered in online mode under Minor Specialization	1	Foundations of Cryptography noc25-cs31	12 Weeks
			2	Secure Computation: Part I noc25-cs63	12 Weeks
			3	Introduction To Industry 4.0 And Industrial Internet Of Things noc25-cs43	12 Weeks
			4	Wireless Ad Hoc and Sensor Networks noc25-cs74	08 Weeks
			5	Parallel Computer Architecture noc25-cs54	12 Weeks
			6	Linear programming and its applications to computer science noc25-cs77	08 Weeks
			1	Advanced Computer Networks noc25-cs02	12 Weeks
			2	Data Mining noc25-cs19	08 Weeks
			3	Getting Started with Competitive Programming noc25-cs36	12 Weeks
			1	Programming in Modern C++ noc25-cs58	12 Weeks
			2	Introduction To Internet Of Things noc25-cs44	12 Weeks
CS3	VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	Digital Image Processing	
			2	Machine Learning	
		*List of courses to be offered in online mode under Departmental Elective (DE1)	1	IOT System Design	
			2	Artificial Intelligence & Machine Learning	
			1	User-centric Computing For Human-Computer Interaction noc25-cs72	08 Weeks
			2	Games and Information noc25-cs35	12 Weeks
			3	Getting Started with Competitive Programming noc25-cs36	12 Weeks
			1	Reinforcement Learning noc25-cs62	12 Weeks
			2	Digital Design with Verilog noc25-cs25	12 Weeks
			3	Getting Started with Competitive Programming noc25-cs36	12 Weeks
		Open Category (OC 1) in traditional mode for B Tech VI semester	1	Operating Systems	
			2	Data Base Management System	
CS4	B. Tech. IV Semester (2023 admitted batch)	Departmental Core (DC) Courses (Theory & Lab)	1	Computer Networks	
			2	Software Engineering	
			3	Data Mining & Warehousing	
			4	Theory of Computation	
			5	Artificial Intelligence & Neural Network	
			6	Programming Lab	

			1	Web Technologies	
			2	Microprocessor Design & Interfacing	
			3	Software Engineering	
			4	Theory of Computation	
			5	Computer Networks	
			6	Programming Lab	
CS5	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	1	Website Development	
			2	Problem Solving Through Programming	
			3	Machine Learning for Computer Vision Using Python	
			4	Developing a Python-based Visual Interface	
			5	Concepts of Statistical Data Analysis & Visualization Using R	
			6	Introduction to data analysis using power BI	

Civil Engineering

CE

BoS Agenda Item	Semester	Details	S. no.	Course Name	*Duration of Course (NPTEL Platform)
CE1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)	1	Introduction to Civil Engineering Profession	8 weeks
			2	Plastic Waste Management	8 weeks
			3	Retrofitting and Rehabilitation of Civil Infrastructure	12 weeks
		*List of courses to be offered in online mode under Open Category (OC3)	1	Natural Hazards	8 weeks
			2	Strategies for Sustainable Design	12 weeks
CE2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization	**VI Semester Track 1: Structure Engineering**		
			1	Structural Dynamics	12 weeks
			2	Construction Methods & Equipment Management	8 weeks
			3	Soil Structure Interaction	12 weeks
			VI Semester Track 2: Environmental Engineering		
			1	Environmental Impact Assessment	12 weeks
			2	Applied Environmental Microbiology	12 weeks
			3	Biological process design for wastewater treatment	8 weeks
			VIII Semester Track 1: Structure Engineering		
			1	Applied Seismology for Engineers	12 weeks
			2	Finite Element Method	12 weeks
			VIII Semester Track 2: Environmental Engineering		
			1	Environmental Remediation of Contaminated Sites	12 weeks
			2	Climate Change Science	12 weeks
		*List of courses to be offered in online mode under Minor Specialization		**VI Semester**	-
			1	Hydraulic Engineering	12 weeks
			2	Water & Waste Water Treatment	12 weeks
				VIII Semester	
			1	Strategies for Sustainable Design	12 Weeks
			2	Rural Water Resources Management	12 Weeks
			3	Stuctural Analysis - I	12 Weeks
			4	Concrete Technology	12 Weeks
CE3	VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	Artificial Intelligence & Machine Learning	-
			2	Structural Design & Drawing (Steel)	-
			3	Solid & Hazardous Waste Management	-
		*List of courses to be offered in online mode under Departmental Elective (DE1)	1	Geotechnical Engineering II - Foundation Engineering	12 weeks
			2	Remote Sensing & GIS for Rural Development	12 weeks
		Open Category (OC 1) in traditional mode for B Tech VI semester	1	Building Maintenance & Services	-
			2	Sustainable Materials & Green Buildings	-
CE4	B. Tech. IV Semester (2023 admitted batch)	Departmental Core (DC) Courses (Theory & Lab)	1	Fluid Mechanics - II	-
			2	Theory of Structure - II	-
			3	Water Supply Engineering	-
			4	Water Supply Engineering Lab	-
			5	Water Resources Engineering	-
			6	Civil Drawing Lab	-
			7	Cyber Security	-
CE5	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	1	Elementary Planning & Design of Building	-
			2	Introduction to Sustainable Engineering	-
			3	Elements of Waste Management	-

Chemical

BoS Agenda Item	Semester	Details	S.no.	Course Name	Duration of Course (NPTEL Platform
CM1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)	1	Chemical Reaction Engineering - II	12 Weeks
			2	Biomass Conversion & Biorefinery	12 Weeks
			3	Chemical Process Utilities	12 Weeks
		*List of courses to be offered in online mode under Open Category (OC3)	1	Environmental Quality Monitoring & Analysis	12 Weeks
			2	Electrochemical Technology in Pollution Control	8 Weeks
CM2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization		**VI Semester Track 1: Energy Engineering**	
			1	Renewable Energy Engineering: Solar, Wind & Biomass Energy Sysems	12 Weeks
			2	Waste to Energy Conversion	8 Weeks
				VI Semester Track 2: Separation Processes	
			1	Biological Process Design for Wastewater Treatment	8 Weeks
			2	Physico- Chemical Processes for Wastewater Treatment	12 Weeks
				VI Semester Track 3: Unit Operations	
			1	Chemical Engineering Fluid dynamics & Heat Transfer	12 Weeks
			2	Thermodynamics of Fluid Phase Equilibria	8 Weeks
				VI Semester Track 4: Polymer Technology	
			1	Polymer Reaction Engineering	12 Weeks
			2	Characterization of Polymers, Elastomers and Composites	12 Weeks
				VI Semester Track 5: Environmental Engineering	
			1	Industrial Waste Water Treatment	12 Weeks
			2	Environmental Quality Monitoring & Analysis	12 Weeks
				VIII Semester Track 1: Energy Engineering	
			1	Carbon Materials and Manufacturing	12 Weeks
			2	Clean Coal Technology	12 Weeks
			3	Cryogenic Hydrogen Technology	8 Weeks
				VIII Semester Track 2: Separation Processes	
			1	Bioreactor Design and Analysis	8 Weeks
			2	Soft Nanotechnology	8 Weeks
				VIII Semester Track 3: Unit Operations	
			1	Cooling Technology: Why and How utilized in Food processing and Allied Industries	12 Weeks
			2	Food Science and Technology	12 Weeks
				VIII Semester Track 4: Polymer Technology	
			1	Plastic Waste Management	8 Weeks
			2	Processing of Polymers and Polymer Composites	8 Weeks
				VIII Semester Track 5: Environmental Engineering	
			1	Air Pollution and Control	12 Weeks
			2	Environmental Chemistry and Microbiology	12 Weeks
		*List of courses to be offered in online mode under Minor Specialization		**VI Semester**	
			1	Chemical Process Technology	12 Weeks
			2	Membrane Technology	12 Weeks
			3	Basic Principles and Calculations in Chemical Engineering	12 Weeks
				VIII Semester	

			1	Inorganic Chemical Technology	12 Weeks
			2	Chemical Engineering Thermodynamics	12 Weeks
			3	Momentum Transfer in Fluids	12 Weeks
CM3	**VI Semester (2022 admitted batch)**	**Departmental Core Courses (DC)**	1	Process Modeling & Simulation	
			2	Process Equipment Design	
		***List of courses to be offered in online mode under Departmental Elective (DE1)**	1	Multiphase Flow	8 Weeks
			2	Membrane Technology	12 Weeks
			3	Physical and Electrochemical Characterizations in Chemical Engineering	8 Weeks
		Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	1	Fuels & Combustion	
CM4	**B. Tech. IV Semester (2023 admitted batch)**	**Departmental Core (DC) Courses (Theory & Lab)**	1	Instrumentation & Process Control	
			2	Mass Transfer - I	
			3	Mechanical Design of Process Equipment	
			4	Inorganic Process Technology	
			5	Cyber Security	
			6	Process Control Lab	
CM5	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	1	Energy Generation from Waste	
	Gaps and suggest corrective measures for the improvement in the CO attainment levels for the courses taught in Jan-June 2023 Session https://drive.google.com/file/d/1xW61W-BK6Xt3y0U_r3Gcp3wL7S8V9VsR/view?usp=drive_link				
	PO attainment, CO-PO mapping matrix and action to be taken to improve PO attainment level https://drive.google.com/file/d/1eqyBv5cUVqE6_RyIOJXkNsZDYrO40BnY/view?usp=drive_link				
	Curricula feedback from various stakeholders, its analysis and impact https://drive.google.com/file/d/1_T4EUBwGmazPTNfVR3-2emtxy5r1dZF4/view?usp=drive_link				
	Any other matter				

Electrical Engineering

Electrical

BoS Agenda Item	Semester	Details	S.no.	Course Name	*Duration of Course (NPTEL Plateform)
EE1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)	1	State space Approach to Control System Analysis and Design	12 Weeks
			2	Smart Grid: Basics to Advanced Technologies	12 Weeks
			3	EV - Vehicle Dynamics and Electric Motor Drives	8 Weeks + 4 Weeks (New)
			4	Design Of Power Electronic Converters	8 Weeks
			5	Renewable Energy Engineering: Solar, Wind And Biomass Energy Systems	12 Weeks
		*List of courses to be offered in online mode under Open Category (OC3)	1	State space Approach to Control System Analysis and Design	12 Weeks
			2	Smart Grid: Basics to Advanced Technologies	12 Weeks
			3	Industrial Automation and Control	12 Weeks
EE2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization	1	Linear Dynamical Systems	8 Weeks
			2	Fuzzy Sets, Logic and Systems & Applications	12 Weeks
			3	Sensors and Actuators	12 Weeks
			4	Operation and Planning Of Power Distribution Systems	12 Weeks
		*List of courses to be offered in online mode under Minor Specialization	1	Fundamental of Power Electronics	14 Weeks
			2	Power System Engineering	15 Weeks
			3	Principles of Signals and Systems	16 Weeks
			4	Sensors and Actuators	17 Weeks
			5	Control engineering	18 Weeks
EE3	VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	Electric Drives	
			2		
		*List of courses to be offered in online mode under Departmental Elective (DE1)	1	Renewable Energy Engineering: Solar, Wind And Biomass Energy Systems	12 Weeks
			2	Non-conventional energy Resources	12 Weeks
			3	Industrial Automation and Control	12 Weeks
			4	Design Of Power Electronic Converters	8 Weeks
			5	EV - Vehicle Dynamics and Electric Motor Drives	8 Weeks + 4 Weeks (New)
		Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	1	Energy Conservation & Management	
			2	Biomedical Instrumentation	
			3	*Industrial Automation*	
EE4	B. Tech. IV Semester (2023 admitted batch)	Departmental Core (DC) Courses (Theory & Lab)	1	Electrical Machine-II	
			2	Power System - II	
			3	Microprocessor & Embedded System	
			4	Cyber Security	
			5	Electrical Machine-II Lab	
			6	Power System - II Lab	
			7	Microprocessor & Embedded System Lab	
			8	Renewable Energy Lab	
EE5	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	1	Active and Reactive Power Control using MATLAB Simulink Environment	
			2	Numeric computation: Hands on Training with MATLAB	

Information Technology

IT

BoS Agenda Item	Semester	Details	S.no.	Course Name	*Duration of Course (NPTEL Platform)
IT1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)	1	Social Networks	12 Weeks
			2	Natural Language Processing	12 Weeks
			3	Edge Computing	8 Weeks
		*List of courses to be offered in online mode under Open Category (OC3)	1	Getting Started with Competitive Programming	12 Weeks
			2	Introduction To Soft Computing	8 Weeks
			3	Foundations of Cryptography	12 Weeks
IT2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization		VIII SEMESTER	
			1	Machine Learning for Engineering and science applications	12 Weeks
			2	Foundation of Cloud IoT Edge ML	8 Week
			3	AI in Marketing	12 Weeks
			1	Business analytics and data mining Modeling using R	12 Weeks
			2	Recommender Systems	8 Weeks
			3	Data Science for Engineers	8 Weeks
			1	Embedded System Design	12 Weeks
			2	Advanced Robotics Applications	8 Weeks
			3	Reinforcement Learning	12 Weeks
				VI SEMESTER	
			1	Applied Linear Algebra in AI and ML	12 Weeks
			2	Introduction to Machine Learning	12 Weeks
			3	Foundation of Cloud IoT Edge ML	8 Weeks
			4	Machine Learning for Engineering and Science Applications	12 Weeks
			1	Data Science for Engineers	8 Weeks
			2	Data Analytics with Python	12 Weeks
			3	Data Analysis and Decision Making - I	12 Weeks
			4	Business analytics and data mining Modeling using R	12 Weeks
			1	Quantum Algorithms and Cryptography	12 Weeks
			2	User-centric Computing For Human-Computer Interaction	8 Weeks
			3	Selected Topics in Algorithms	12 Weeks
			4	Optimization Algorithms: Theory and Software Implementation	12 Weeks
		*List of courses to be offered in online mode under Minor Specialization		VIII SEMESTER	
			1	Selected Topics in Algorithms	12 Weeks
			2	Computer Networks And Internet Protocol	12 Weeks
			3	Fuzzy Logic And Neural Networks	8 Weeks
			4	Programming in Java	12 Weeks
			5	Design and analysis of algorithms	8 Weeks
				VI SEMESTER	
			1	Programming in Java	12 Weeks
			2	Programming, Data Structures and Algorithms in Python	8 Weeks
			3	Design and analysis of algorithms	8 Weeks
			4	Introduction to Database Systems	12 Weeks
IT3	VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	Information Retrieval System	
			2	Data Warehousing & Data Mining	
			3	Artificial Intelligence & Machine Learning	
			1	Introduction To Internet Of Things	12 Weeks
			2	Foundation of Cloud IoT Edge ML	8 Weeks

		***List of courses to be offered in online mode under Departmental Elective (DE1)**	**3**	Cloud Computing and Distributed Systems	8 Weeks
		Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	**1**	Software Engineering	
			2	Cryptography & Network Security	
IT4	**B. Tech. IV Semester (2023 admitted batch)**	**Departmental Core (DC) Courses (Theory & Lab)**	**1**	Microprocessor & Interfacing	
			2	Software Engineering	
			3	Theory of Computation	
			4	Cryptography & Network Security	
			5	Design and Thinking Lab	
IT5	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	**1**	Scientific writing Tools	
			2	Python Programming	
			3	Google Services	
			4	SIP: Cloud based platform for Data organization and Manipulation (SIPIT2305)	
	Gaps and suggest corrective measures for the improvement in the CO attainment levels for the courses taught in Jan-June 2023 Session https://drive.google.com/file/d/1FRqrv2qP31ASMFkNayxVefAcI19_GzTO/view?usp=sharing				
	PO attainment, CO-PO mapping matrix and action to be taken to improve PO attainment level https://drive.google.com/file/d/1HXad6b0j3g9KuhXBYAtIrjUJKuBtiBfE/view?usp=sharing				
	Curricula feedback from various stakeholders, its analysis and impact https://drive.google.com/file/d/1E9bSGTE9XXhGCmjBjW2zG2WsLNkp1z-L/view?usp=sharing				

Applied Science

BoS Agenda Item	Semester	Details	S.no.	Course Name
AS1	B Tech VI semester	Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	1	Green Chemistry
			2	Analytical Instrumental Techniques
			3	Nano Technology and its applications
			4	'Superconductors and its Applications'
			5	Sensor and applications in Engineering'
AS2		Departmental Core (DC) Courses (Theory & Lab)	1	Engineering Chemistry Theory
			2	Engineering Chemistry Lab
			3	Engineering Physics Theory
			4	Engineering Physics lab

Centre for Artificial Intelligence

BoS Agenda Item	Semester	Details	S.no.	Course Name	*Duration of Course (NPTEL Platform)
CoAI1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)	1	Introduction to Large Language Models (LLMs)	12 Weeks
			2	Wheeled Mobile Robots	8 Weeks
			3	Collaborative Robots (COBOTS): Theory and Practice	8 Weeks
		*List of courses to be offered in online mode under Open Category (OC3)	1	Introduction to Large Language Models (LLMs)	12 Weeks
			2	Essentials of Data Science with R Software-1: Probability and Statistical Inference	12 Weeks
			3	Business Intelligence & Analytics	12 Weeks
			4	User-centric Computing For Human-Computer Interaction	8 Weeks
			1	Introduction to Large Language Models (LLMs)	12 Weeks
			2	Deep Learning for Natural Language Processing	12 Weeks
			3	User-centric Computing For Human-Computer Interaction	8 Weeks
			4	Fuzzy Logic and Neural Networks	8 Weeks
			1	Design and Engineering of Computer Systems	8 Weeks
			2	Social Networks	12 Weeks
			3	Fuzzy Logic and Neural Networks	8 Weeks
CoAI2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization	1	Systems and Usable Security	4 Weeks
			2	Quantum algorithm and Cryptography	12 Weeks
			3	Wireless Ad Hoc and Sensor Networks	8 Weeks
			4	Secure Computation: Part I	12 Weeks
			5	Information Security- 5 - Secure Systems Engineering	8 Weeks
			1	Edge Computing	8 Weeks
			2	Wireless Ad Hoc and Sensor Networks	8 Weeks
			3	Introduction to Internet of Things	12 Weeks
			4	Sensors and actuators	12 Weeks
			5	Microprocessors and Microcontrollers	12 Weeks
			1	High Performance Scientific Computing	12 Weeks
			2	Affective Computing	12 Weeks
			3	Edge Computing	8 Weeks
			4	Parallel Computer Architecture	12 Weeks
			5	GPU Architectures and Programming	12 Weeks
			1	Secure Computation: Part I	12 Weeks
			2	Information Security-5-Secure Systems Engineering	8 Weeks
			1	Sensors and Actuators	12 Weeks
			2	Microprocessors and Microcontrollers	12 Weeks
			3	Introduction to Internet of Things	12 Weeks
			1	Parallel Computer Architecture	12 Weeks
			2	GPU Architectures and Programming	12 Weeks
		*List of courses to be offered in online mode under Minor Specialization	1	Introduction To Soft Computing	8 Weeks
			2	Artificial Intelligence: Knowledge Representation And Reasoning	12 Weeks
CoAI3	VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	AI for Robotics (2240621)	-
			2	Image Processing (2240622)	-
			3	Artificial Intelligence & Machine Learning (2240623)	-
			1	Natural Language Processing (2270621/ 2280621)	-
			2	Image Processing (2270622/ 2280622)	-
			3	Deep Learning (2270623/ 2280623)	-
		*List of courses to be offered in online mode under Departmental Elective (DE1)	1	Wheeled Mobile Robots	8 Weeks
			2	Collaborative Robots (COBOTS): Theory and Practice	8 Weeks
			3	Compiler Design	12 Weeks
			1	Business Intelligence & Analytics	12 Weeks
			2	Data Analytics with Python	12 Weeks
			3	Compiler Design	12 Weeks
			1	Artificial Intelligence: Knowledge Representation and Reasoning	12 Weeks

			2	Blockchain and its Applications	12 Weeks
			3	Edge Computing	8 Weeks
			4	Compiler Design	12 Weeks
		Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	1	Information Security	-
			2	Data Mining & Warehousing	-
CoAI4	**B. Tech. IV Semester (2023 admitted batch)**	**Departmental Core (DC) Courses (Theory & Lab)**	1	Calculus and Optimization Techniques (3240421)	-
			2	Computer Networks (3240422)	-
			3	Control Systems (3240423)	-
			4	Database Management System (3240424)	-
			5	Sensor Technology (3240425)	-
			6	Java Programming Lab (3240426)	-
			1	Calculus and Optimization Techniques (3270421)	-
			2	Theory of Computation (3270422)	-
			3	Software Engineering (3270423)	-
			4	Cloud Computing and Virtualization (3270424)	-
			5	Information Security (3270425)	-
			6	Java Programming Lab (3270426)	-
			1	Calculus and Optimization Techniques (3280421)	-
			2	Theory of Computation (3280422)	-
			3	Software Engineering (3280423)	-
			4	Cloud Computing and Virtualization (3280424)	-
			5	Information Security (3280425)	-
			6	Java Programming Lab (3280426)	-
CoAI5	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	1	Data Handling and Visualization through MATLAB	-
			2	Artificial Intelligence in Marketing	-
			3	Data Analysis and Visualisation Using Python Libraries	-
			4	Imbalanced Learning for classification	-
			5	Malicious Network Packet Detection using IDS SNORT tool	-
			6	Time series analysis	-
	Gaps and suggest corrective measures for the improvement in the CO attainment levels for the courses taught in Jan-June 2024 Session https://drive.google.com/file/d/1_lgg2vbJftmPN4tdMBV4V2RnzJxZYY-O/view?usp=sharing				
	PO attainment, CO-PO mapping matrix and action to be taken to improve PO attainment level https://drive.google.com/file/d/1uOSMjykZc3JJNgt_9pTeEFUwsjSBVTqL/view?usp=sharing				
	Curricula feedback from various stakeholders, its analysis and impact https://drive.google.com/file/d/11wS43mqc5Mki_ZURZtfeURrdTwxil72v/view?usp=sharing				

Electronics Engineering

EC

BoS Agenda Item	Semester	Details	S.no.	Course Name	*Duration of Course (NPTEL Platform)
EE1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)	1	Fundamental of Power Electronics (140854)	12 week
			2	Biomedical Signal Processing (1400855)	12 week
			3	Photonic integrated circuit (140856)	12 week
		*List of courses to be offered in online mode under Open Category (OC3)	1	Linear Dynamical Systems (900601)	8 week
			2	Sensors and Actuators (900602)	12 week
EE2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization	1	Electromagnetic waves in guided and wireless media (H140601)	8 week
			2	Communication Networks (H140606)	12 week
			3	Analog IC design (H140607)	12 week
			4	Integrated Circuits, MOSFETs, OP-Amps and their Applications (H140609)	12 week
		*List of courses to be offered in online mode under Minor Specialization	1	Microprocessors and Microcontrollers (M1406066)	12 week
			2	Network Analysis (M140607)	12 week
			3	Communication Networks (M140604)	12 week
			4	Fundamentals Of MIMO Wireless Communication (M140605)	8 week
EE3	VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	Microcontroller Systems and Applications(2140616)	
		*List of courses to be offered in online mode under Departmental Elective (DE1)	1	Electromagnetic Waves in Guided and Wireless Media(140665)	8 week
			2	Digital IC Design(140662)	12 week
			3	Fuzzy sets, logic and System & Applications(140663)	12 week
		Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	1	Embedded Systems(900116)	
			2	Intelligent Control(900117)	
EE4	B. Tech. IV Semester (2023 admitted batch)	Departmental Core (DC) Courses (Theory & Lab)	1	Digital Communication(3140411)	
			2	Linear Control Theory(3140412)	
			3	Microprocessor & Interfacing(3140413)	
			4	Software Lab (Introduction to MATLAB)(3140414)	
			5	Cyber Security(3140415)	
	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	1	Analog Circuits Simulation using LT-Spice	
			2	Signal Processing using MATLAB	
			3	Transforms and its Applications	
			4	Basics of Microsoft Excel	
			5	Tinkercad tool for Circuit Design	
			6	Image processing by MATLAB Programming	
			7	MATLAB Programming and Application of Deep Learning	
			8	Scilab Programing and Simulation using Xcos	
			9	Python based Signal, Image and Video Processing	

Mechanical Engineering

ME

BoS Agenda Item	Semester	Details	S.no.	Course Name	*Duration of Course (NPTEL Platform)
ME1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)		**Mechanical Engineering**	
			1	Quality Design and Control	12 week
			2	Robotics: Basics and Selected Advanced Concepts	12 week
			3	Carbon Materials and Manufacturing	12 week
				Automobile Engineering	
			1	Fundamentals of Theoretical and Experimental Aerodynamics	12 week
			2	Experimental Stress Analysis	12 week
		*List of courses to be offered in online mode under Open Category (OC3)	1	Theory and Practice of Non-Destructive Testing	8 week
			2	Product Design and Manufacturing	12 week
			3	Automatic Control	8 week
ME2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization		**Design Track**	
			1	Design, Technology and Innovation	8 week
			2	Introduction to Reliability Engineering	8 week
			3	Design Practices for Intelligent Manufacturing	8 week
			4	Modeling and Simulation of Dynamic Systems	8 week
				Thermal Track	
			1	*Computational Fluid Dynamics for Incompressible* Flows	12 week
			2	Turbulent Combustion: Theory And Modeling	12 week
			3	Advanced Measurement Techniques in Fluid mechanics and Heat Transfer	12 week
			4	Heat Transfer and Combustion in Multiphase Systems	8 week
				Production Track	
			1	Introduction To Mechanical Micro Machining	8 week
			2	Product Design and Manufacturing	12 week
			3	Computer Integrated Manufacturing	12 week
			4	Welding Metallurgy	12 week
		*List of courses to be offered in online mode under Minor Specialization		**VIII Semester**	
			1	IC Engines and Gas Turbines	12 week
			2	Mechanics of Machining	8 week
				VI Semester	
			1	Fundamentals of Combustion	12 week
			2	Introduction to Mechanical Micro Machining	12 week
ME3	VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	Refrigeration and Air-Conditioning (Mechanical Engineering)	
			2	Automotive Transmission (Automobile Engineering)	
		*List of courses to be offered in online mode under Departmental Elective (DE1)		**Mechanical Engineering**	
			1	Fundamental of Welding Science and Technology	8 week
			2	Viscous Fluid Flow	12 week
			3	Properties of Materials (Nature and Properties of Material: III)	8 week
				Automobile Engineering	
			1	Fundamentals of Automotive Systems	12 week
			2	Viscous Fluid Flow	12 week
		Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	1	Concepts of Mechanical Systems	
			2	Digital Manufacturing	
			3	Process Planning and Cost Estimation	
ME4			1	Industrial Engineering	

	B. Tech. IV Semester (2023 admitted batch)	**Departmental Core (DC) Courses (Theory & Lab)**	**2**	Design of Machine Elements	
			3	Dynamics of Machines	
			4	Cyber Security	
			5	Design of Machine Elements Lab	
			6	Dynamics of Machines Lab	
			7	Production Lab	
	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	**1**	Hands on practice on conventional machining	
			2	Introduction to AUTO CAD for Engineering Applications	
			3	Hands on practice on Casting Technology	
			4	Hands on practice on Welding Technology	
			5	Precision Machining and Metrology Workshop	

Mathematics & Computing

MAC

BoS Agenda Item	Semester	Details	S. no.	Course Name	*Duration of Course (NPTEL Platform)
MC1	VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE5)	1	Reinforcement Learning	12 Weeks
			2	Edge Computing	12 Weeks
			3	Computer Aided Applied Single Objective Optimization	12 Weeks
		*List of courses to be offered in online mode under Open Category (OC3)	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
MC2	For VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization	1	Natural Language Processing	12 Weeks
			2	Algebraic Combinatorics	12 Weeks
			3	Getting Started with Competitive Programming	12 Weeks
			4	Advanced Graph Theory	8 Weeks
		*List of courses to be offered in online mode under Minor Specialization	1	Algebraic Number Theory	12 Weeks
			2	Optimization from Fundamentals	12 Weeks
			3	Advanced Linear Algebra	12 Weeks
			4	Advanced Probability Theory	12 Weeks
MC3	VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	Computer Graphics	
			2	Compiler Design	
		*List of courses to be offered in online mode under Departmental Elective (DE1)	1	Block chain and its Application	12 Weeks
			2	Cloud Computing	12 Weeks
			3	GPU Architectures and Programming	12 Weeks
		Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	1	Advanced Numerical Techniques	
			2	Transform Calculus	
			3	Computational Fluid Dynamics	
MC4	B. Tech. IV Semester (2023 admitted batch)	Departmental Core (DC) Courses (Theory & Lab)	1	Transforms and Vector Calculus	
			2	Data Base and Management System & SQL	
			3	Theory of Computation	
			4	Design & Analysis of Algorithm	
			5	Number Theory and Cryptography	
			6	Programming in Python	
	B. Tech. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	1	Application of Optimization Techniques	
			2	Finite Difference Method	
	Gaps and suggest corrective measures for the improvement in the CO attainment levels for the courses taught in Jan-June 2023 Session https://web.mitsgwalior.in/images/Departments/engineering_mathematics/CO%20Attainment%202020-%202021/CO-%20Attainment%20with%20ATR%20Jan.-%20June-%202023.pdf				
	PO attainment, CO-PO mapping matrix and action to be taken to improve PO attainment level https://web.mitsgwalior.in/images/Departments/engineering_mathematics/CO-PO/CO-%20PO%20Matrix%20%20MAC-%202020-2024.pdf				
	Curricula feedback from various stakeholders, its analysis and impact https://web.mitsgwalior.in/images/Departments/engineering_mathematics/Curriculum%20Feedback%20by%20F%20%20S/Syllabus%20FB%20by%20S%20Jan.%20-%20june-%202023/Curriculum%20feedback_Student%20Jan.%20-%20June-2023.pdf				

AR

BoS Agenda Item	Semester	Details	S.no.	Course Name	*Duration of Course (NPTEL Platform)
AR1	B.Arch. VIII Semester (2021 admitted batch)	Departmental Core Courses (DC)	1	Architectural Design VIII	-
			2	Urban Design	-
			3	Professional Practice & Ethics	-
			4	Dissertation	-
		Departmental Elective Courses (DE-6)	1	Environment & Architecture	-
			2	Sustainable Interventions in Historic Buildings	-
AR2	B.Arch. VIII Semester (2021 admitted batch)	*List of courses to be offered in online mode under Departmental Elective (DE-7)	1	Structure, Form, and Architecture: The Synergy	8 Weeks
			2	Bioclimatic Architecture: Future Proofing with Simple and Advanced Passive Strategies	12 Weeks
			3	Augmenting Design Thinking with Human-Computer Interaction	8 Weeks
		*List of courses to be offered in online mode under Open Category (OC3)	1	-NA-	-
AR3	For B.Arch. VI & VIII Semester	*List of courses to be offered in online mode under Honor Specialization	1	-NA-	-
		*List of courses to be offered in online mode under Minor Specialization	1	-NA-	-
AR4	B.Arch. VI Semester (2022 admitted batch)	Departmental Core Courses (DC)	1	Architectural Design VI	
			2	Building Services III (Acoustic & Fire Fighting)	
			3	Site Planning and Landscaping Architecture	
			4	Working Drawing	
		Departmental Elective Courses (DE-3)	1	Housing	-
			2	Design Thinking in Architecture	
AR5		*List of courses to be offered in online mode under Departmental Elective (DE-4)	1	Strategies for Sustainable Design	12 Weeks
			2	Interior Design	8 Weeks
			3	Augmenting Design Thinking with Human-Computer Interaction	8 Weeks
AR6		Open Category (OC 1) Courses to be offered in traditional mode for B Tech VI semester	1	-NA-	-
AR7	B. Arch. IV Semester (2023 admitted batch)	Departmental Core (DC) Courses (Theory & Lab)	1	Architectural Design IV	-
			2	Building Construction III	-
			3	Building Services I (Water Supply & Sanitation)	-
			4	History of Architecture IV	-
			5	Structure IV	-
		Departmental Elective Courses (DE-1)	1	Ecology & Environment	-
			2	Society, Culture And Architecture	-
AR8	B. Arch. IV Semester (2023 admitted batch)	Skill Internship Project (SIP) module to be offered in Dec 2024	1	Graphic Design	-
	Gaps and suggest corrective measures for the improvement in the CO attainment levels for the courses taught in Jan-June 2023 Session Annexure - 5 (CO attainment Report)				
	PO attainment, CO-PO mapping matrix and action to be taken to improve PO attainment level Annexure - 6 (PO attainment Report)				
	Curricula feedback from various stakeholders, its analysis and impact Feedback on curriculum received from stakeholders: Analysis & ATR				

माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर (म.प्र.), भारत
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR (M.P.), INDIA
Deemed University
(Declared under Distinct Category by Ministry of Education, Government of India)
NAAC ACCREDITED WITH A++ GRADE

LIST OF NEC COURSES
(JULY-DEC 2024)

S.No	Course ID	Course Name
1	2000001	3D Printing
2	2000004	Data Analysis Skills
3	2000007	Robotics
4	2000009	Animation
5	2000010	Digital Learning-I
6	2000013	Environment Protection - I
7	2000016	National Service Scheme (NSS) - I
8	2000020	National Cadet Corps (NCC) - I
9	2000022	National Cadet Corps (NCC) - III
10	2000032	Games & Sports - I
11	2000034	Games & Sports - III
12	2000042	Holistic Health - I
13	2000048	English Literary Skills
14	2000050	Preliminary Journalism Skills
15	2000052	Food and Nutrition
16	2000066	Software Development - I
17	2000068	Software Development - III
18	2000074	Basic and Advanced Excel
19	2000078	SPSS For Data Analysis
20	2000083	Cloud Computing: Techniques & Tools
21	2000089	IT Tools
22	2000090	Understanding Financial Markets
23	2000095	Imbalance Learning
24	2000099	Basics and Applications of Mathematica
25	2000100	Technical Report Writing for Engineers
26	2000110	LT Spice Tutorial for Circuit Simulation
27	2000115	MATLAB Simulink
28	2000119	Computational Methods for Engineers using MATLAB
29	2000124	Basics of Campus Recruitment Training
30	2000126	Professional Networking & CSR
31	2000127	Craft practices in India
32	2000130	Study of Historical Monuments of Gwalior
33	2000134	Practical Electronics for Inventors
34	2000136	Basics of Control Systems for Engineers
35	2000137	Computational Thinking for Problem Solving
36	2000139	Smart Home Technologies
37	2000141	Electrical Safety
38	2000142	Microsoft Office-Excel Skills
39	2000143	Know your Country: History, Culture & Traditions
40	2000144	Technical writing
41	2000147	Digital Image Enhancement Techniques
42	2000149	Software Model and Project Management Life Cycle

43	2000150	Statistical data analysis through programming
44	2000151	Innovation: From Creativity to Entrepreneurship-I
45	2000153	Innovation: From Creativity to Entrepreneurship-III
46	2000157	Bhagwad Gita- An Introduction
47	2000158	Arduino: Getting Started with IoT
48	2000159	Control System Design using MATLAB
49	2000162	Electrical Home Appliances
50	2000167	Internet as Social Media
51	2000168	JIRA Agile Project Management
52	2000169	Materials Characterization Techniques
53	2000170	Microsoft word and PowerPoint for Beginners
54	2000174	Scientific Research Writing
55	2000177	Solving Problems Using Modelling and Simulation
56	2000179	The Art of Technical Analysis: Decoding Market Patterns
57	2000180	Umpiring of Sports
58	2000181	Probability and Statistics
59	2000182	Mastering Report Design: A Comprehensive Guide to Microsoft Office Visio
60	2000183	Block Chain Technology
61	2000184	Internet of Things
62	2000185	Computer Vision AR/VR
63	2000187	Graphic Techniques
64	2000189	Competency in Microsoft Excel
65	2000190	An overview of Hadoop Ecosystem
66	2000192	Data Analytics for Renewable Energy
67	2000194	Basics of AutoCAD and Ansys Software
68	2000195	Capture & Create Digital Photography
69	2000196	Managerial Aspect in Engineering
70	2000197	Indian Knowledge System
71	2000198	The Art of Mandala Meditation
72	2000199	An Insight of Indian Thinker: Ancient to Modern
73	2000201	Basic Image Processing of Python using Google Colab
74	2000202	Global Democratic Systems
75	2000203	Programming Skills - I
76	2000205	Lessons of life and times from the Mahabharata