



Indian Institute of Technology Indore

Minutes of the 33rd meeting of the Senate held on 20 March 2023 (Monday), 3.00 p.m. at Virtual Classroom, 1D-105, IIT Indore.

Following members attended the meeting:

Chairperson

- 1 Professor Suhas S. Joshi Director, IIT Indore

External Experts

- 2 Mr. B Anil Baliga Ex Executive Vice President, VE Commercial Vehicles Ltd,
3 Shri Shankar V. Nakhe Director, RRCAT

Deans

- 4 Prof. Devendra Deshmukh Dean, Academic Affairs
5 Prof. Sandeep Chaudhary Dean, Administration
6 Prof. Abhishek Srivastava Dean, Faculty Affairs
7 Prof. Manish Kumar Goyal Dean, Infrastructure Development
8 Prof. Avinash Sonawane Dean, International Relation
9 Prof. I. A. Palani Dean, Research and Development

Head of Departments

- 10 Prof. Abhirup Datta HOD, Astronomy, Astrophysics and Space Engineering
11 Prof. Amit Kumar HOD, Biosciences and Biomedical Engineering
12 Dr. Tushar Kanti Mukherjee HOD, Chemistry
13 Dr. Abhishek Rajput HOD, Civil Engineering
14 Dr. Somnath Dey HOD, Computer Science and Engineering
15 Prof. Vivek Kanhangad HOD, Electrical Engineering
16 Dr. Niraj Kumar Shukla HOD, Mathematics
17 Prof. Santosh Kumar Sahu HOD, Mechanical Engineering
18 Dr. Pankaj R. Sagdeo HOD, Physics
19 Prof. Nirmala Menon HOS, Humanities and Social Science

Professors

- 20 Prof. Prashant Kodgire Biosciences and Biomedical Engineering
21 Prof. Apurba K. Das Chemistry
22 Prof. Sampak Samanta Chemistry
23 Prof. Sanjay Kumar Singh Chemistry



24	Prof. Neelima Devarakonda Satyam (present online)	Civil Engineering
25	Prof. Aruna Tiwari	Computer Science and Engineering
26	Prof. Kapil Ahuja (present online)	Computer Science and Engineering
27	Prof. Prabhat Kumar Upadhyay	Electrical Engineering
28	Prof. Santosh Kumar Vishvakarma	Electrical Engineering
29	Prof. Shaibal Mukherjee (present online)	Electrical Engineering
30	Prof. Trapti Jain (present online)	Electrical Engineering
31	Prof. Pritee Sharma	Humanities and Social Science
32	Prof. Ruchi Sharma	Humanities and Social Sciences
33	Prof. Sk. Safique Ahmad	Mathematics
34	Prof. Swadesh Kumar Sahoo	Mathematics
35	Prof. Dhinakaran Shanmugam	Mechanical Engineering
36	Prof. Neelesh Kumar Jain	Mechanical Engineering
37	Prof. Parasharam Maruti Shirage	Metallurgy Engineering and Materials Science
38	Prof. Krushna R. Mavani	Physics
39	Prof. Raghunath Sahoo	Physics
40	Prof. Rajesh Kumar	Physics
41	Prof. Sudeshna Chattopadhyay	Physics

Other Authorities

42	Dr. Jayaprakash Murugesan	Chief Warden
43	Dr. Sharad Gupta	Convener, Health Center Advisor Committee
44	Dr. Anand Petare	Workshop Superintendent, Central Workshop

Special Invitees

45	Dr. Indrasen Singh	Professor-In-Charge, Center of Futuristic Defense and Space Technology
46	Mr. NeeraJ Kumar	Assistant Registrar, Academic Affairs
47	Mr. Tapesb Parihar	Superintendent, Academic Office

Secretary

48	Mr. S. P. Hota	Registrar, IIT Indore
----	----------------	-----------------------

Leave of absence:

1	Prof. Himanshu Rai (present online)	Director, IIM Indore
2	Prof. Abhiram G. Ranade	Professor, Department of Computer Science and Engineering, IIT Bombay
3	Prof. Ajay Kumar Jain	Professor, Management Development Institute, Gurgaon
4	Prof. Anand Parey	Dean, Resources Generation
5	Prof. Srivathsan Vasudevan	Dean, Student Affairs
6	Dr. Vinod Kumar	HOD, Metallurgical Engineering and Materials Science



7	Prof. G. S. Murthy	Biosciences and Biomedical Engineering
8	Prof. Biswarup Pathak	Chemistry
9	Prof. Rajneesh Misra	Chemistry
10	Prof. Suman Mukhopadhyay	Chemistry
11	Prof. Narendra S. Choudhary	Computer Science and Engineering
12	Prof. Abhinav Kranti	Electrical Engineering
13	Prof. Amod Umarikar	Electrical Engineering
14	Prof. Mukesh Kumar	Electrical Engineering
15	Prof. Ram Bilas Pachori	Electrical Engineering
16	Prof. Vimal Bhatia	Electrical Engineering
17	Prof. Vipul Singh	Electrical Engineering
18	Prof. Bhupesh Kumar Lad	Mechanical Engineering
19	Prof. Dhinakaran Shanmugam	Mechanical Engineering
20	Prof. Ritunesh Kumar	Mechanical Engineering
21	Prof. Preeti Anand Bhobe	Physics
22	Prof. Sarika Jalan	Physics
23	Prof. Subhendu Rakshit	Physics



ITEM 33.1: Welcome and Opening remarks by the Chairman of the Senate.

The Chairman, Senate welcomed all the members and special invitees to the meeting.

The Chairman informed to the senate about the visit of IITI delegation to CERN and four Universities in Germany. He was accompanied by Dean of International Relations, Associate Dean of International Affairs and Outreach-I, Dean of Research and Development and Dean of Academic Affairs on this visit. He appreciated the arrangements made by the Dean of International Relations for this visit.

The delegation from IIT Indore visited research laboratories of German Universities and discussed on research collaborations. He appreciated the former Dean of International Relations who laid down a good foundation for the collaborations with University of Hannover. The Chairman Senate mentioned that, there is lots of scope for collaborative research with German Universities.

He also informed that the AIIMS Bhopal is interested in collaborating in the M.Tech. program in Biomedical Engineering that is going to start in the department of BSBE. IIT Indore is also looking forward to signing an MOU with them.

He informed that the review process of all the Departments of IIT Indore is in progress and requested all HODs to use this opportunity to prepare the plan for next 15 years for the department and discuss with external experts.

ITEM 33.2: Confirmation of the minutes of the 32nd Meeting of Senate held on 29 December 2022.

The Senate confirmed the Minutes of its 32nd Meeting of Senate held on 29 December 2022.

ITEM 33.3: Action Taken Report (ATR) on minutes of 32nd Meeting of Senate held on 29 December 2022.

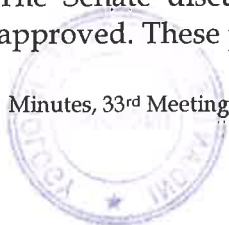
The Senate noted the actions taken on the decisions of the 32nd Meeting of Senate held on 29 December 2022

ITEM 33.4: Proposal of new PG programs:

- 33.4.1: M.Tech., M.Tech.+Ph.D. program in Computer Science and Engineering.
- 33.4.2: M.Tech. in Defence Technology.
- 33.4.3: M.Tech. in Water, Climate and Sustainability.

The Senate discussed the proposal and course structures for above programs and approved. These programs will start from the AY 2023-24:

Minutes, 33rd Meeting of the Senate



Page | 4

- **33.4.1: M.Tech., M.Tech.+Ph.D. program in Computer Science and Engineering:** Head, Computer Science and Engineering, presented the course structure of M.Tech., M.Tech.+Ph.D. program in Computer Science and Engineering. The Senate deliberated on the course structure and approved the same with following observations:

- Total credits of the 1st semester should be made 17 instead of 16.5.
- Senate recommended seat intake of 15 in TA category.
- Senate recommended the financial implications of the proposal to the FC and BOG for approval.

**Course Structure of M.Tech. Degree Program in
Computer Science and Engineering (from AY 2023-24)**

Minimum Educational Qualification: Four-year Bachelors degree in Computer Science and Engineering, Information Technology, Electronics and Communication Engineering or Electronics Engineering or Electrical Engineering (with first division/ first class/ as defined by the awarding Institute/ University or Equivalent grade for Indian applicants and equivalent to International applicants, as assessed by the Institute). Relaxation of 5% in qualifying degree is applicable for SC, ST and PwD category applicants.

Qualifying Examination:

- (a) **Indian Students:** Valid GATE qualification in CS.
(b) **International Students:** Valid score of GRE /TOEFL/IELTS or equivalent.

Categories of Admission:

(a) **Indian Students:** Teaching Assistantship (TA); (ii) Highly motivated sponsored candidate (SW) on full-time basis from highly reputed R & D organizations such as DRDO, ISRO, BHEL, C-DAC, ADE, ADA, etc. and highly reputed Industries; (iii) Defense Forces (DF): Candidates sponsored by the Defense Forces; (iv) Regular institute staff (IS) of IIT Indore on part-time basis only.

Candidates of SW, DF and IS categories will not be provided any scholarship.

(b) **International Students:** (i) International self-financed (ISF) students; (ii) International students sponsored by non-government organizations or by a reputed industry (ISW); (iii) International students sponsored by foreign government or its organizations or through mutual collaborative programs of India with other countries (GSW)

Duration of Program: 2 years on full-time basis.

Number of intakes: 15

Course Structure of 2-Year Full Time M. Tech. Program

1st Year: Semester-I

Course Code	Course Title	Contact hours (L-T-P)	Credit
CS 636	Mathematics-I: Linear Algebra and Probability	2-1-0	3
CS 639	Computing Foundations: Operating Systems	1-0-2	2
CS 641	Computing Foundations: Compiler Design	1-0-1	1.5
CS 643	Computing Foundations: Computer Architecture	1-0-1	1.5
CS 411/ CS 611	Advanced Algorithms	2-1-0	3
ZZ XXX	Elective-1	X-X-X	3
CS 653	Programming Lab	1-0-4	3
Total minimum credits earned during the semester			17



Additional course (as per the requirement basis)			
HS 641	English Communication Skills	2-0-2	PP/NP

1st Year: Semester-II

4 th Year: Semester-II				
Course Code	Course Title		Contact hours (L-T-P)	Credit
CS 637	Mathematics-II: Theory of Computation and Graph Theory		2-1-0	3
ZZ 6XX	Elective-2		X-X-X	3
	Bucket -1 (AI/ML)	Bucket -2 (Networking and Cyber Security)		
CS 4XX/ CS 6XX	Elective-3	Elective-3	X-X-X	3
CS 4XX/ CS 6XX	Elective-4	Elective-4	X-X-X	3
CS 4XX/ CS 6XX	Elective-5	Elective-5	X-X-X	3
CS 698	PG Seminar Course		0-2-0	2
Total minimum credits earned during the semester				17

2nd Year: Semester-III

Course code	Course Title	L-T-P	Credits
CS 799	M. Tech. Research Project (Stage-I)	0-0-36	18
Total minimum credits to be earned during the semester			18

2nd Year: Semester-IV

Course code	Course Title	L-T-P	Credits
CS 800	M. Tech. Research Project (Stage-II)	0-0-36	18
Total minimum credits to be earned during the semester			18
Total minimum credits to be earned during the program			70

The Senate approved the syllabus of following core courses:

S. No.	Course code	Title of the course	Contact Hours (L-T-P-C)
1	CS 636	Mathematics-I: Linear Algebra and Probability	2-1-0-3
2	CS 637	Mathematics-II: Theory of Computation and Graph Theory	2-1-0-3
3	CS 439/ CS 639	Computing Foundations: Operating Systems	1-0-2-2
4	CS 441/ CS 641	Computing Foundations: Compiler Design	1-0-1-1.5
5	CS 443/ CS 643	Computing Foundations: Computer Architecture	1-0-1-1.5



[Handwritten signature]

- **33.4.2: M.Tech. in Defence Technology:** Dr. Indrasen Singh, Professor-In-Charge, Center of Futuristic Defense and Space Technology (CFDST) presented the course structure of M.Tech. in Defence Technology. The Senate discussed and approved the program with following observations:

- Lecture component should be avoided in the laboratory courses.
- Title of the course “Applied Mathematics” is revised to “Engineering Mathematics”.
- Contact hours for elective courses should be mentioned as X-X-X-3 for offering a wider list of electives.
- Course HS 641: English Communication Skills will be an optional course.
- The course CS 603: Machine Learning is an specialised course for the students having background of Computer Science (CS). Hence, senate suggested that a new course on Machine Learning should be designed for Non-CS students.
- This program will be offerd for Sponsored Category (SW) and Defence Force (DF) Category only. Senate decided to start the program with seat intake of 15 for SW and DF.
- Syllabi of the new courses will be discussed in the next meeting of the Senate after the recommendations of the SPGC.

Course Structure of M.Tech. Program in Defense Technology (from AY 2023-24)

Minimum Educational Qualification: Four-year Bachelor’s degree in Engineering with first division/ first class as defined by the awarding Institute/ University for Indian applicants and equivalent to international applicants, as assessed by the Institute. Relaxation of 5% in qualifying degree is applicable for SC, ST and PwD applicants.

Qualifying Examination: Minimum 2 years of experience in Defense Laboratory / ISRO / Defense Industry / Equivalent limited associated industry

Categories of Admission:

Indian Students: Only for Highly motivated sponsored candidate (SW) from highly reputed defense R & D organizations such as DRDO, ISRO, BHEL, ADE, ADA, etc. and highly reputed defense Industries; (ii) Defense Forces (DF): Candidates sponsored by the Defense Forces.

Duration of Program: 2 years on full-time basis.

Intake: 15

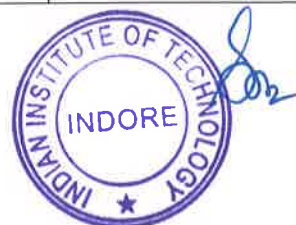
Course Structure of 2-Year Full Time M. Tech. Program in Defense Technology

1st Year: Semester-I

Course Code	Course Title	Contact hours (L-T-P)	Credit
DT 6XX	Engineering Mathematics	2-1-0	3
DT 6XX	Design of Experiments	2-1-0	3
DT 6XX	Systems Design Engineering Laboratory	0-1-4	3
ZZ 6XX	Elective-I	X-X-X	3
ZZ 6XX	Elective-II	X-X-X	3
ZZ 6XX/ 7XX	Elective-III	X-X-X	3
Total minimum credits earned during the semester			18
Additional course (as per the requirement basis)			
HS 641	English Communication Skills	2-0-2	PP/NP

Minutes, 33rd Meeting of the Senate

Page | 7



1st Year: Semester-II

Course Code	Course Title	Contact hours (L-T-P)	Credit
ZZ 6XX	Elective-IV	X-X-X	3
ZZ 6XX	Elective-V	X-X-X	3
ZZ 6XX	Elective-VI	X-X-X	3
ZZ 6XX/ 7XX	Elective-VII	X-X-X	3
DT 698	PG Seminar course	0-2-0	2
Total minimum credits earned during the semester			14

2nd Year: Semester-III

Course code	Course Title	L-T-P	Credits
DT 799	M. Tech. Research Project (Stage-I)	0-0-36	18
Total minimum credits to be earned during the semester			18

2nd Year: Semester-IV

Course code	Course Title	L-T-P	Credits
DT 800	M. Tech. Research Project (Stage-II)	0-0-36	18
Total minimum credits to be earned during the semester			18
Total minimum credits to be earned during the program			68

- **33.4.3: M.Tech. in Water, Climate and Sustainability:** The Prof. Manish Goyal, presented the course structure of M.Tech. in Water, Climate and Sustainability. The Senate considered the following course structure and approved the same with following observations:
 - Title of the program is approved as **M.Tech. in Water, Climate and Sustainability**.
 - UG course **CE 402: Water Resources Engineering** to be cross-listed as CE 602.
 - Senate decided to start the program with seat intake of 10 in TA category.
 - Syllabi of the new courses will be discussed in the next meeting of the Senate after the recommendations of the SPGC.
 - Senate recommended the financial implications of the proposal to the FC and BOG for approval.

Course Structure of M. Tech. Program in Water, Climate and Sustainability**Minimum Educational Qualification:**

Four-year Bachelor's degree or five-year integrated degree (with first division as defined by the awarding Institute/ University for Indian applicants and equivalent to International applicants, as assessed by the Institute) in Civil/Agricultural/ Infrastructure/Environmental/Geomatics Engineering. *Relaxation as per GoI norms in qualifying degree is applicable for SC and ST category applicants.*

Qualifying Examination:**Categories of Admission:**

- Indian Students:** Teaching Assistantship (TA); (ii) Highly motivated sponsored candidate (SW) on full-time basis from highly reputed R and D organizations, and highly reputed Industries; (iii) Defense Forces (DF): Candidates sponsored by the Defense Forces; (iv) Regular institute staff (IS) of IIT Indore on part-time basis only.



- b) **International Students:** (i) International self-financed (ISF) students; (ii) International students sponsored by non-government organizations or by a reputed industry (ISW); (iii) International students sponsored by foreign government or its organizations or through mutual collaborative programs of India with other countries (GSW)

Candidates of SW, DF and IS categories will not be provided any scholarship.

- **Duration of Program:** 2 years on full-time basis.
- **Selection criteria:** GATE Score and/or Interview (Valid GATE score compulsory for TA category)
- **Total Intake:** 10 (direct admission under TA category) + Sponsored candidate

Course Structure of 2-Year Full Time M. Tech. Program in M.Tech. in Water, Climate and Sustainability

1st Year: Semester-I

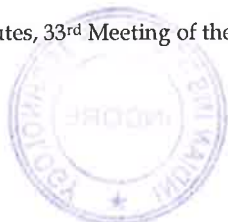
Course Code	Course Title	Contact hours (L-T-P)	Credits
CE 635*	Water and Climate, Sustainability and Policies	2-1-0	3
AA 4XX/ AA 6XX	Introduction to Climate and Climate Change	2-0-0	2
CE XXX	Water Quality and Treatment	2-0-2	3
HS 618*	Sustainability Studies	3-0-0	3
CE XXX	Program Elective -I	X-X-X	3
WC XXX	Institute Electives -I	X-X-X	3
CE XXX	Technical Site Visit (s)- Immersion Program	0-0-2	PP/NP
Total minimum credits earned during the semester			17
Additional course (as per the requirement basis)			
HS 641	English Communication Skills	2-0-2	PP/NP

1st Year: Semester-II

Course Code	Course Title	Contact hours (L-T-P)	Credits
CE 402	Water Resources Engineering	2-1-0	3
AA 410/610	Spatial Informatics (	2-1-0	3
CE XXX	Climate Applications Lab	2-0-2	3
CE XXX	PG Seminar Course	0-2-0	2
CE XXX	Technical Field Visit -Design Thinking	0-0-2	1
HSS XXX/ CE XXX	Program Elective II	X-X-X	2
WC XXX	Institute Elective II	X-X-X	3
Total minimum credits earned during the semester			17

2nd Year: Semester-III

Course Code	Course Name	Contact hours (L-T-P)	Credits
-------------	-------------	-----------------------	---------



[Handwritten signature]

WC 799	M. Tech. Research Project (Stage-I)	0-0-36	18
Total minimum credits earned during the semester			18

2nd Year: Semester-IV

Course Code	Course Name	Contact hours (L-T-P)	Credits
WC 800	M. Tech. Research Project (Stage-II)	0-0-36	18
Total minimum credits earned during the semester			18
Total minimum credits earned during the program			70

ITEM 33.5: Syllabi of the newly approved PG programs:

- 33.5.1 M.Tech. in Biomedical Engineering
 - 33.5.2 M.Tech. in Applied Optics and Laser Technology
 - 33.5.3 M.Tech. in Structural Engineering
 - 33.5.4 M. Tech. in Thermal Energy Systems
- **33.5.1 M.Tech. in Biomedical Engineering:** The Senate reviewed the course structure of M.Tech. in Biomedical Engineering which was approved by the Senate in its 26th meeting held on 22 March 2021, and undergone number of changes. The Senate deliberated on the course structure and approved the same with below mentioned observations.
 - Admission for GATE qualified students will be through Common Offer Acceptance Portal (COAP).
 - The fellowship will be based on the GATE/equivalent national level qualifying (NEET-PG/NEET-MDS) examination
 - Senate decided to start the program with seat intake of 10 students in TA category. The program will start from AY 2023-24.
 - Senate approved the syllabus of following new courses:

S. No.	Course code	Title of the course	Contact Hours (L-T-P-C)
1	BSE 635	Biomaterials and Bio-nanotechnology	2-1-0-3
2	BSE 636	Biomedical Instrumentation	2-1-0-3
3	BSE 637	Bioelectronics and Biomedical Sensors	2-1-0-3
4	BSE 638	Mechanobiology and Electrophysiology	2-1-0-3
5	BSE 639	Tissue Engineering and Regenerative Medicine	2-1-0-3
6	BSE 640	Biomedical Microsystems	2-1-0-3
7	BSE 653	Experimental Techniques Laboratory	0-0-4-2

- Following elective course was temporarily removed by the Department of BSBE for updation, therefore, it is not approved.

1	BSE 642	Biofabrication	2-1-0-3
---	---------	----------------	---------

**Course Structure for M.Tech. (2 year), M.Tech. + Ph.D. Dual Degree
in Biomedical Engineering (from AY 2023-2024)**



Minimum Educational Qualification (MEQ) (For Indian applicants):

i. B.E./B.Tech. /AMIE or equivalent in Biomedical Engineering (BM), Biotechnology (BT), Chemical Engineering (CH), Computer Science and Engineering/ Information Technology (CS), Electrical Engineering (EE), Electronics/Telecommunications Engineering (EC), Engineering Physics (EP), Instrumentation Engineering (IN), Mechanical Engineering (ME), Metallurgy & Materials Science (MT), Pharmaceutical Technology (PY), Other Engineering (ZE) (with the first division as defined by the awarding Institute/University)

OR

ii. M.Sc. or equivalent in Biochemistry (BY), Biophysics (BP), Biotechnology (BT), Ceramics (CG), Chemistry (CY), Electronics / Electronic Sciences (EC), Ergonomics (ER), Materials Science (MS), Mathematics (MA), Molecular Biology (MG), Physics (PH), Physiology (PS), Other Science (ZS) (with the first division as defined by the awarding Institute/University)

OR

iii. ** Health Sciences such as MBBS (Medicine) / BDS (Dental), B.Pharm/B.V.Sc., B.P.Th., B.O.Th., B.ASLP) (Duration 4 years or more) (with the first division as defined by the awarding Institute/University)

Minimum Educational Qualification (MEQ) (For International applicants):

Four-year Bachelor's degree or five-year integrated degree (with the first division as defined by the awarding Institute/University) in Biomedical Engineering/ Instrumentation Engineering/ Electrical Engineering/ Mechanical Engineering/ Engineering Sciences/ Biotechnology/ Life Sciences/ Physics/ Chemistry.

Qualifying Examination (QE):

(a) **Indian applicants:** Valid GATE score in any discipline for engineering and science (for i and ii above)

** All India level post graduate entrance examination for corresponding disciplines such as INI_CET/NEET-PG/NEET-MDS/JIPMER/PGI Chandigarh/AFMC-Pune/DNB Part-I for MBBS/BDS, GPAT/ All India level selection examination for B.Pharm., All India level post graduate entrance examination for M.V.Sc., M.P.Th., M.O.Th. and M.ASLP, or GATE examination for all such health science background. (for iii above) The candidate should have qualified the entrance exam (as per the qualification criterion of the respective exam for that exam year and category) and the score obtained should be valid (as per the duration of validity for the respective exam) at the time of application to the M.Tech. program.

The admission of students (under TA category) to M. Tech. in Biomedical Engineering program will be based on :

a) their qualifying discipline and the corresponding valid GATE score and written test or interview or both.

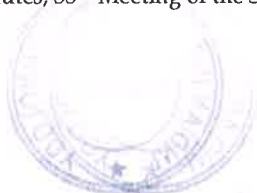
b) for, non-GATE candidates, admission will be based on valid score in respective qualifying exam and written test or interview or both.

(b) **International applicants:** Valid GRE or TOEFL or IELTS score

Categories of Admission:

(a) **Indian applicants:** Teaching Assistantship (TA); (ii) Highly motivated sponsored candidate (SW) on full-time basis from highly reputed R and D organizations such as DRDO, ISRO, BHEL, C-DAC, ADE, ADA, etc. and highly reputed Industries; (iii) Defense Forces (DF): Candidates sponsored by the Defense Forces; (iv) Regular Institute Staff (IS) of IIT Indore on part-time basis only.

(b) **International applicants:** (i) International self-financed (ISF) students; (ii) International students sponsored by non-government organizations or by a reputed industry (ISW); (iii) International students sponsored by foreign government or its organizations or through mutual collaborative programs of India with other countries (GSW)



Candidates of SW, DF and IS categories will not be provided any scholarship.

Selection Criteria: Admission would be based on GATE score, personal interview and/ or the written examination.

Duration of the Program: Two years full-time.

Total Intake: 10 (TA)

Scholarship (only for TA category Indian students): As per MoE norms.

Course Structure for two-year Full-time M.Tech. in Biomedical Engineering

1st Year: Semester-I

Course code	Course Title	Contact Hours (L-T-P)	Credits
BSE 614*	General Physiology	2-1-0	3
BSE 635	Biomaterials and Nano-biotechnology	2-1-0	3
BSE 637	Bioelectronics and Biomedical Sensors	2-1-0	3
BSE 639	Tissue Engineering and Regenerative Medicine	2-1-0	3
BSE 653	Experimental Techniques Laboratory-1	0-0-4	2
ZZ XXX	Elective-I	X-X-X	3
Total minimum credits earned during the semester			17
Additional course (as per the requirement basis)			
HS 641*	English Communication Skills	2-0-2	PP/NP

1st Year: Semester-II

Course code	Course Title	Contact Hours (L-T-P)	Credits
BSE 636	Biomedical Instrumentation	2-1-0	3
BSE 638	Mechanobiology and Electrophysiology	2-1-0	3
BSE 624*	Bioprocess Engineering and Technology	2-0-4	4
BSE 698	PG Seminar Course	0-2-0	2
ZZ XXX	Elective-II	X-X-X	3
ZZ XXX	Elective-III	X-X-X	3
Total minimum credits earned during the semester			18

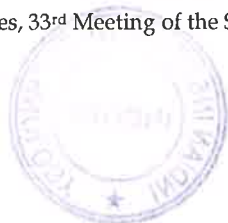
2nd Year: Semester-III

Course code	Course Title	Contact Hours (L-T-P)	Credits
BSE 799	M.Tech. Research Project (Stage-I)	0-0-36	18
Total minimum credits to be earned during the semester			18

2nd Year: Semester-IV

Course code	Course Title	Contact Hours (L-T-P)	Credits
BSE 800	M.Tech. Research Project (Stage-II)	0-0-36	18
Total minimum credits to be earned during the semester			18
Total minimum credits to be earned during the program			71

- **33.5.2 M.Tech. in Applied Optics and Laser Technology:** The Program Coordinator presented the syllabus of the following core courses.



S. No.	Course code	Title of the course	Contact Hours (L-T-P-C)
1	AA 411/ AA 611	Advanced Optics	2-0-2-3
2	ME 480/ ME 680	Laser Material Processing and systems	2-0-2-3
3	PH 616	Principles and applications of optical spectroscopy	2-0-2-3
4	BSE 630	Biophotonics and Optical Imaging Techniques	2-1-0-3

The Senate discussed the above courses and approved its syllabus.

- 33.5.3 M.Tech. in Structural Engineering:** The Head, Civil Engineering, presented the syllabus of the following courses pertaining to the M.Tech. in Structural Engineering. The Senate discussed and approved the syllabus with the following remarks:
 - Senate decided to start the program with seat intake of 10 students in TA category.
 - The title of the course **CE 616: Finite Element Applications in Structural Engineering** should be **Finite Element Methods for Structural Engineering**.
 - Existing UG course **CE 462: Structural Dynamics** should be cross-listed as **CE 662** instead of new course **CE 620/ CE 420: Structural Dynamics and Earthquake Engineering**.
 - Course **CE 628: Theory of Plates and Shells** should be cross-listed as **CE 428**.
 - New course code should be given for the course **Prestressed Concrete Design**.

S. No.	Course code	Title of the course	Contact Hours (L-T-P-C)
1	CE 601	Mechanics of Advanced Composite Materials and Structures	2-1-0-3
2	CE 603	Design of Steel-Concrete Composite Structures	2-1-0-3
3	CE 605	Condition monitoring and reliability assessment	3-0-0-3
4	CE 607	Analysis and Design of Tall Buildings	2-1-0-3
5	CE 616	Finite Element Methods for Structural Engineering	2-1-0-3
6	CE 662/ CE 462	Structural Dynamics	2-1-0-3
7	CE 628/ CE 428	Theory of Plates and Shells	2-1-0-3
8	CE 630/ CE 430	Elastic Stability	2-1-0-3
9	CE 648/ CE 448	Prestressed Concrete Design	2-1-0-3
10	CE 651	Structural Engineering Lab	0-0-6-3



- **33.5.4 M. Tech. in Thermal Energy Systems:** The Head, Mechanical Engineering presented the syllabus of the following elective courses for M. Tech. in Thermal Energy Systems.

S. No.	Proposed Course code	Title of the course	Contact Hours (L-T-P-C)
1	ME 604	Microfluidics	2-1-0-3
2	ME 610	Compressible Flow	2-1-0-3

The Senate discussed the above courses and approved its syllabus.

ITEM 33.6: Proposal for meritorious UG (BE/ B.Tech.) Student Exchange Program for students from Government Colleges of Madhya Pradesh for project work.

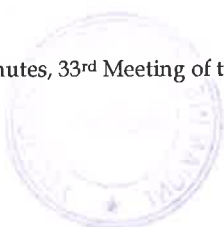
Dean, Academic Affairs informed to the committee the proposal was discussed in the meeting Deans and Head and SUGC, SPGC. Based on their recommendations Senate discussed the proposal and approved in principle with following remarks:

- Since students from Government Colleges of Madhya Pradesh will be visiting IIT Indore, and there is no out-bound activity is involved, it should be called as **In-Bound Program** instead of **Student Exchange Program**.
- A selection process comprising Written Examination and Personal Interview must be conducted for selecting In-Bound students.
- Maximum 10 students per branch and overall maximum 50 will be selected under the scheme in the Department of Computer Science and Engineering, Electrical Engineering, Mechanical Engineering, Civil Engineering and Metallurgical Engineering and Materials Science.
- The selected students will be exempted from payment of tuition fees at IIT Indore but they will pay the tuition fees at their parent institute.
- Living expenses at IIT Indore (hostel fees) and dining expenses will be as per actual and will be paid by the selected students.
- The students completing the program with excellence (about top 25% of students) may be considered for MS (Research) program admission subject to fulfilling prescribed criteria for admission.

ITEM 33.7: Proposal for inclusion of Part Time category for Ph.D. admission in category of College Teacher (CT).

Dean, Academic Affairs informed to the committee that the proposal was discussed in the Deans and Heads meeting, SPGC and SUGC. Based on their recommendations, the Senate discussed the proposal and approved in-principle with following remarks:

- At initial stage, it will be available for the Government Engineering College of Madhya Pradesh only.
- Students will have to do the required course work on full-time residential basis.
- Students should be able to visit IIT Indore campus during holidays and vacation of their parent Institute for research purpose.



- Maximum duration of the Ph.D. program will be 7 Years from date of joining the program as per the Institute norms applicable for Part-Time Ph.D. students.

ITEM 33.8: Proposal for increasing the seats in some of the existing PG programs.

The Senate discussed and approved the proposal of seat increase in the following M.Tech. programs from AY 2023-24 as mentioned against each program in the given below table:

Program	Department	Old intake	New intake
M. Tech. in Space Engineering	AASE	5	10
M. Tech. in Thermal Energy Systems	ME	5	10
M. Tech. in Structural Engineering	CE	5	10
M. Tech. in Biomedical Engineering	BSBE	5	10
M. Tech. in Electric Vehicle Technology (EVT)	CEVITS	5	10

Senate recommended the financial implications of the proposal to the FC and BOG for approval.

ITEM 33.9: Proposed changes in the existing rules of Branch Change for B.Tech. program.

The Senate deliberated on the agenda item and considered the input from various members on the item. The senate recommended that after branch change of top 1% student (as per rule), the vacancies created in the parent branches should be considered in branch change as per merit cum preference basis. However, any movement vacancy created later due to movement of student from one branch to another branch will not be considered. However The merit criteria for Branch Change will be stand same i.e. CPI 6.5 for General/OBC/ EWS category and 6.00 CPI for SC/ST/PwD category.

ITEM 33.10: Proposal of new courses.

The Senate deferred the agenda item for its next meeting.

ITEM 33.11: Items of information:

33.11.1: Syllabi of elective courses of Master of Science in Data Science and Management (MSDSM) program.

The Senate noted the same.

33.11.2: Renaming of the course from EE 650/ EE 450: IoT Networks to EE 650N/ EE 450N: IoT Communication Networks

The Senate noted the same.

Minutes, 33rd Meeting of the Senate



33.11.3: Inclusion of QIP admission category for M. Tech. Programs.

The Senate noted the same.

33.11.4: Degree format for Master of Science in Data Science and Management (MSDSM) program.

The Senate noted the same.

33.11.5: Change of student's name in one degree of B.Tech. program.

The Senate noted the same with remark that in future such requests should be considered within the first year of the admission.

ITEM 33.12: Any other item with the permission of the Chair.

33.12.1: Grammatical correction in the name of Department Metallurgy Engineering and Materials Science.

Based on the request received from the Head, Department Metallurgy Engineering and Materials Science. Senate approved grammatical correction in the name of the department. The revised name of the department will be "Department of Metallurgical Engineering and Materials Science (MEMS)".

Meeting ended with the thanks to the chair.



(Professor Suhas S. Joshi)
Director and Chairperson, Senate



(Mr. S. P Hota)
Registrar and Secretary, Senate

