Indian Institute of Technology Indore

Minutes of the 45th meeting of the Senate held on August 7, 2024 (Wednesday) 15:00 hrs. p.m. at Maitreyi Seminar Hall, IIT Indore.

Following members attended the meeting:

	Chairperson	
1	Prof. Suhas S. Joshi	Director, IIT Indore
	Deans	
2	Prof. Vipul Singh	Dean, Academic Affairs
3	Prof. Sandeep Chaudhary (present online)	Dean, Administration
4	Prof. Manish Kumar Goyal	Dean, Infrastructure Development
5	Prof. I. A. Palani	Dean, Research and Development
6	Prof. Suman Mukhopadhyay (present online)	Dean, Alumni and Corporate Relations
7	Prof. Abhishek Srivastava	Dean, Faculty Affairs
8	Prof. Devendra L. Deshmukh	Dean, Educational Outreach
	Head of Departments	
9	Dr. Ranveer Singh	HoD, Computer Science and Engineering
10	Prof. Shanmugam Dhinakaran	HoD, Mechanical Engineering
11	Dr. Ajay Kumar Kushwaha	HoD, Metallurgical Engineering and Materials Science
12	Dr. Manoneeta Chakraborty	Acting HoD, Astronomy, Astrophysics and Space Engineering
13	Prof. Preeti A. Bhobe	HoD, Physics
14	Prof. Ruchi Sharma	HoD, Humanities and Social Sciences
	Professors	
15	Prof. Narendra S. Choudhary (present online)	Computer Science and Engineering
16	Prof. Neelesh Kumar Jain (present online)	Mechanical Engineering
17	Prof. Anand Parey	Mechanical Engineering
18	Prof. Ram Bilas Pachori	Electrical Engineering
19	Prof. Vimal Bhatia (present online)	Electrical Engineering
20	Prof. Rajneesh Misra (present online)	Chemistry

21	Prof. Suman Mukhopadhyay (present online)	Chemistry
22	Prof. Sandeep Chaudhary (present online)	Civil Engineering
23	Prof. Vipul Singh	Electrical Engineering
24	Prof. Prabhat Kumar Upadhyay (present online)	Electrical Engineering
25	Prof. Manish Kumar Goyal (present online)	Civil Engineering
26	Prof. I. A. Palani	Mechanical Engineering
27	Prof. Bhupesh Kumar Lad (present online)	Mechanical Engineering
28	Prof. Ritunesh Kumar	Mechanical Engineering
29	Prof. Dhinakaran Shanmugam	Mechanical Engineering
30	Prof. Aruna Tiwari	Computer Science and Engineering
31	Prof. Abhishek Srivastava	Computer Science and Engineering
32	Prof. Sk. Safique Ahmad	Mathematics
33	Prof. Pritee Sharma	Humanities and Social Sciences
34	Prof. Ruchi Sharma	Humanities and Social Sciences
35	Prof. Preeti Anand Bhobe	Physics
36	Prof. Parasharam M. Shirage	Metallurgical Engineering and Materials Science
37	Prof. Swadesh Kumar Sahoo	Mathematics
38	Prof. Raghunath Sahoo	Physics
39	Prof. Devendra L. Deshmukh	Mechanical Engineering
40	Prof. Pankaj Ramesh Sagdeo	Physics
41	Prof. Ankhi Roy	Physics
42	Prof. Somaditya Sen	Physics
43	Prof. Chelvam Venkatesh (present online)	Chemistry
44	Prof. Neminath Hubballi	Computer Science and Engineering
45	Prof. Rupesh Shivaji Devan (present online)	Metallurgical Engineering and Materials Science
46	Prof. Santosh Sattappa Hosmani (present online)	Metallurgical Engineering and Materials Science
47	Prof. Antony Vijesh Villavarayan	Mathematics
48	Prof. Kazi Sabiruddin (present online)	Mechanical Engineering
Other Authorities		
49	Dr. Jayaprakash Murugesan (present online)	Chief Warden

50	Dr. Anand Petare	Workshop Superintendent, Central Workshop

Special Invitees

51	Dr. Indrasen Singh	Mechanical Engineering
52	Dr. Neminath Hubballi	Computer Science and Engineering
53	Mr. Neeraj Kumar	Assistant Registrar, Academic Affairs
54	Mr. Tapesh Parihar	Section Officer, Academic Office

Secretary

55	Mr. S. P. Hota	Registrar, IIT Indore

Leave of absence

56	Prof. Himanshu Rai	Director, IIM Indore
57	Dr. Unmesh D. Malshe	Director, RRCAT
58	Prof. Abhiram G. Ranade	Professor, Department of Computer Science and Engineering, IIT Bombay
59	Prof. Avinash Sonawane	Dean, International Relation
60	Prof. Srivathsan Vasudevan	Dean, Student Affairs
61	Dr. Abhishek Rajput	HoD, Civil Engineering
62	Prof. Vivek Kanhangad	HoD, Electrical Engineering
63	Prof. Amit Kumar	HoD, Biosciences and Biomedical Engineering
64	Prof. Niraj Kumar Shukla	HoD, Mathematics
65	Prof. Tushar Kanti Mukherjee	HoD, Chemistry
66	Prof. Abhinav Kranti	Electrical Engineering
67	Prof. Subhendu Rakshit	Physics
68	Prof. Krushna R. Mavani	Physics
69	Prof. Sarika Jalan	Physics
70	Prof. Avinash Sonawane	Biosciences and Biomedical Engineering
71	Prof. G. S. Murthy	Biosciences and Biomedical Engineering
72	Prof. Santosh Kumar Vishvakarma	Electrical Engineering
73	Prof. Shaibal Mukherjee	Electrical Engineering
74	Prof. Trapti Jain	Electrical Engineering
75	Prof. Mukesh Kumar	Electrical Engineering
76	Prof. Neelima Devarakonda Satyam	Civil Engineering
77	Prof. Santosh Kumar Sahu	Mechanical Engineering
78	Prof. Kapil Ahuja	Computer Science and Engineering
79	Prof. Abhirup Datta	Astronomy, Astrophysics and Space Engineering
80	Prof. Amit Kumar	Biosciences and Biomedical Engineering
81	Prof. Prashant Kodgire	Biosciences and Biomedical Engineering

82	Prof. Apurba Kumar Das	Chemistry
83	Prof. Sampak Samanta	Chemistry
84	Prof. Sanjay Kumar Singh	Chemistry
85	Prof. Biswarup Pathak	Chemistry
86	Prof. Nirmala Menon	Humanities and Social Sciences
87	Prof. Rajesh Kumar	Physics
88	Prof. Sudeshna Chattopadhyay	Physics
89	Prof. Amod C. Umarikar	Electrical Engineering
90	Prof. Vivek Kanhangad	Electrical Engineering
91	Prof. Srivathsan Vasudevan	Electrical Engineering
92	Prof. Mobin Shaikh	Chemistry
93	Prof. Tushar Kanti Mukherjee	Chemistry
94	Prof. Anjan Chakrabory	Chemistry
95	Prof. Satya Silendra Bulusu	Chemistry
96	Prof. Kiran Bala	Biosciences and Biomedical Engineering
97	Prof. Mirza Saqib Baig	Biosciences and Biomedical Engineering
98	Prof. Anirban Sengupta	Computer Science and Engineering
99	Prof. Niraj Kumar Shukla	Mathematics
100	Prof. Satyajit Chatterjee	Mechanical Engineering
101	Prof. Pavan Kumar Kankar	Mechanical Engineering
102	Dr. Sharad Gupta	Convener, Health Center Advisor Committee
103	Dr. Mohanasundari Thangavel (DUGC Convener, HSS)	Humanities and Social Sciences
104	General Secretary, Student Gymkhana	Ex-officio
105	Academic Secretary, Student Gymkhana	Ex-officio

ITEM 45.1: **Welcome and Opening remarks by the Chairperson, Senate.**

The Chairperson, Senate welcomed all the members to the meeting. He announced that IIT Indore has inaugurated Narmada Basin Project and informed about a proposal to open a Petro-Chemical Research Centre at IIT Indore. It was also informed that a request has been received from the Department of Pharmaceutical, Ministry of Chemicals and Fertilizers, Govt. of India to initiate a M.Tech. Program in Design and Development of Medical Devices for the health services. He also shared that Institute is nominated as a nodal institute among all IITs by the Ministry of Education to find out the possibilities and opportunities to enhance the Gross Enrollment Ratio of India in Higher education among 18-23 years of students age group to 39% in 2029.

ITEM 45.2: Confirmation of the minutes of the 44th meeting of Senate held on 09 July 2024.

The Senate confirmed the Minutes of its 44th meeting of Senate held on 09 July 2024.

ITEM 45.3: Action Taken Report (ATR) on minutes of 44th meeting of Senate held on 09 July 2024.

The Senate noted the actions taken on the decisions of the 44th meeting of Senate held on 09 July 2024.

ITEM 45.4: Proposed course structures of following M.Tech. Programs under CFDST:
   i) Computer Science and Engineering
   ii) Communications and Signal Processing
   iii) VLSI Design and Nano-electronics

The proposal is received to offer the following M.Tech. programs in Communication and Information Systems (CIS) in the following specialization under Centre for Futuristic Defense and Space Technology (CFDST) for working defense personnel of Military College of Telecommunication Engineering (MCTE) Mhow:

- VLSI Design & Nano-electronics
- AI-ML
- Cyber Security
- Communication and Signal Processing

The course structure and syllabus of these M.Tech. programs are discussed in the Senate meeting and the same was approved. The details are as follows:

A. Course Structure of M.Tech. Degree Program in Communication and Information Systems with specialization in VLSI Design & Nano-electronics

Objective: This program is specially designed considering the requirement for defense personnel from MCTE. The officers are sponsored by MCTE for M.Tech. Degree program at IITI. MCTE is a premier technical training institute of Indian Army. MCTE is predominantly a Corps of Signals training Institute mandated for operational tasks related to Communications, Networking, Electronic Warfare and Cyber Operations. Hence skillset in communication and computer field is mandatory for Signals Officers.

The program will cover academic course module delivered as per structure given below as a part of   M. Tech. program, whereas MCTE will impart hands-on training and application to the students through various laboratories for courses in the structure at MCTE campus and jointly evaluated by IITI and MCTE faculties.

Minimum Educational Qualification: Four-year Bachelor's degree in Telecommunication & Information Technology (SODE/TES/GEEO) or Computer Technology or Computer Science Engineering or Information Technology or AI/ ML OR Data Sciences or Cyber Security od Digital Forensics Electronics or equivalent from MCTE/ MCEME/ CME / any civil recognized institution/ university
(SODE: Signals Officers Degree Engineering, TES: Technical Entry Scheme, GEEO: Graduate Entry Equipment Orientation)

<div align="center">AND</div>

He/ She must be Serving Defense (Army) Officer who meets the essential service and other requirements of SOATE (Signal Officers Advanced Technology Engineering) course.

Qualifying Examination: The selection will be based on interview for the candidates recommended by the MCTE Mhow/ Indian Army

Intake: Up to 10 students as sponsored by MCTE in each specialization

Duration of Program: 2 years (3 Months Non-Credit for Problem Definition Statement (PDS) Research course at MCTE starting in March/ April every year, course work at IIT Indore for semester I and II and MTech thesis work at parent organization.) Registration / Enrollment and one week Orientation at IIT Indore and MCTE Mhow in April.

1st year, semester at MCTE Mhow (03 Months) from April to June duration for Problem Definition Statements (PDS) Research

1st year Contact Semester-I at IIT Indore (04 Months)

Course Code	Course Title	Contact hours (L-T-P)	Credit
EE 621 / EE 421	MOS Devices & Modeling	2-1-0	3
EE 622 / EE 422	Digital Circuit Design	2-1-0	3
EE 635 / EE 435	VLSI Technology	2-1-0	3
EE 651	Digital Circuit Design Laboratory	0-0-4	2
EE 653	Discrete Device Fabrication and Characterization Lab	0-1-4	3
ZZ XXX	Elective-I	2-1-0	3
Additional Learning jointly by IITI and MCTE Mhow			
CIS 601	Defence Strategic Communication Networks	0-2-2	3
CIS 603	Military Tactical Communication Networks	0-1-2	2
Total minimum credits earned during the semester			**22**

1st year Contact Semester-II at IIT Indore (04 Months)

Course Code	Course Title	Contact hours (L-T-P)	Credit
EE 629 / EE 429	Nanotechnology and Nanoelectronics	2-1-0	3
EE 638/ EE 438	System on Programmable Chip Design	2-1-0	3
EE 640 / EE 440	Analog and Mixed Signal IC Design	2-1-0	3
EE 652	System on Programmable Chip Design Lab	0-0-4	2
EE 654	Analog and Mixed Signal IC design Lab	0-0-4	2
EE 698	PG Seminar course	0-2-0	2
ZZ XXX	Elective-II	2-1-0	3
Additional Learning jointly by IITI and MCTE Mhow			
ZZ XXX	Military Data Networks: Management, Analysis, Security	0-2-2	3
ZZ XXX	Electro-Magnetic Spectrum Operations	0-1-2	2
Total minimum credits earned during the semester			23

Contact Semester at MCTE for Military specific subjects /courses and PDS /Project work (04 Months) under control of MCTE Mhow and IIT Indore for Project work (04 Months Contact)

Course Code	Course Title	Contact hours (L-T-P)	Credits
CIS 798	M. Tech. Research Project (Stage-I) jointly by IITI and MCTE at both locations	0-0-20	10

2nd Year 1st Non-Contact Semester for PDS/Project work (04 Months Non-Contact)

Course Code	Course Title	Contact hours (L-T-P)	Credits
CIS 799	M. Tech. Research Project (Stage-II)	0-0-26	13

2nd Year 2nd Non-Contact Semester for PDS/Project work (04 Months non-Contact)

Course Code	Course Title	Contact hours (L-T-P)	Credits
CIS 800	M. Tech. Research Project (Stage-III)	0-0-26	13
Total minimum credits to be earned during the program			81

Suggested Electronics Engineering courses for Elective-I @

Course Code	Name of the course	Contact hours (L-T-P)	Credits
EE 605	Nanotechnology	2-1-0	3
EE 625	VLSI Signal Processing	2-1-0	3
EE 631/ EE 431	Organic Electronics	2-1-0	3
EE 641/ EE 441	Advanced Signal Processing	2-1-0	3
EE 648/ EE 448	Antennas and Propagation	2-1-0	3
EE 701	Time Frequency Analysis	2-1-0	3
EE 721	Embedded Systems and Computing	2-1-0	3
EE 725	RF-IC Design	2-1-0	3
EE 726	Testing and Verification of VLSI Circuits	2-1-0	3

Suggested Electronics Engineering courses for Elective-II @

Course Code	Name of the course	Contact hours (L-T-P)	Credits
EE 610/ EE 410	Power Electronics Application to Power Transmission	2-1-0	3
EE 624	Interface Effects in Electronic Devices	2-1-0	3
EE 626/ EE 426	MOSFET Reliability Issues	2-1-0	3
EE 628/ EE 428	Advanced Memory Technology	2-1-0	3
EE 634/ EE 434	Semiconductor Based Sensors	2-1-0	3
EE 722	IC Design for IoT System	2-1-0	3
EE 724/ EE 424	Advanced Micro-processes and Nanotechnology	2-1-0	3
EE 728	Architectural Design of ICs	2-1-0	3

@ In addition to this course list, a student can also opt from the PG courses being offered by the other disciplines.

B. Course Structure of M.Tech. Degree Program in Communication and Information Systems with specialization in AI-ML/Cybersecurity

Objective: This program is specially designed considering the requirement for defense personnel from MCTE. The officers are sponsored by MCTE for MTech Degree program at IITI. MCTE is a premier technical training institute of Indian Army. MCTE is predominantly a Corps of Signals training Institute mandated for operational tasks related

to Communications, Networking, Electronic Warfare and Cyber Operations. Hence skillset in communication and computer field is mandatory for Signals Officers.

The program will cover academic course module delivered as per structure given below as a part of M.Tech. Program, whereas MCTE will impart hands-on training and application to the students through various laboratories for courses in the structure at MCTE campus and jointly evaluated by IITI and MCTE faculties.

Minimum Educational Qualification: Four-year Bachelor's degree in Telecommunication & Information Technology (SODE/TES/GEEO) or Computer Technology or Computer Science Engineering or Information Technology or AI/ML OR Data Sciences or Cyber Security od Digital Forensics Electronics or equivalent from MCTE/ MCEME/ CME/ any civil recognized institution/ university
(SODE: Signals Officers Degree Engineering, TES: Technical Entry Scheme, GEEO: Graduate Entry Equipment Orientation)
AND
He/ She must be Serving Defense (Army) Officer who meets the essential service and other requirements of SOATE (Signal Officers Advanced Technology Engineering) course.

Qualifying Examination: The selection will be based on interview for the candidates recommended by the MCTE Mhow/ Indian Army.

Intake: Up to 10 students as sponsored by MCTE in each specialization.

Duration of Program: 2 years (3 Months Non-Credit for Problem Definition Statement (PDS) Research course at MCTE starting in March/April every year, course work at IIT Indore for semester I and II and MTech thesis work at parent organization.)

Registration/ Enrollment and one week Orientation at IIT Indore and MCTE Mhow in April.

1st year Semester at MCTE Mhow (03 Months) from April to June Duration for Problem Definition Statements (PDS) Research

1st year Contact Semester-I (Aug-Nov) at IIT Indore (04 Months)

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

Course Code	Course Title	Contact hours (L-T-P)	Credit
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
Additional Learning jointly by IITI and MCTE Mhow			
CIS 601	Defence Strategic Communication Networks	0-2-2	3
CIS 603	Military Tactical Communication Networks	0-1-2	2
Total minimum credits earned during the semester			**17+5=22**

Term Break of 01 Month

1st year Contact Semester-II (Jan-April) at IIT Indore (04 Months)

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
Additional Learning jointly by IITI and MCTE Mhow				
ZZ XXX	Military Data Networks: Management, Analysis, Security		0-2-2	3
ZZ XXX	Electro-Magnetic Spectrum Operations		0-1-2	2
Total minimum credits earned during the semester				**17+5=22**

Contact Semester at MCTE for Military specific subjects /courses and PDS /Project work (04 Months) under control of MCTE Mhow and IIT Indore for Project work (04 Months Contact)

Course Code	Course Title	Contact hours (L-T-P)	Credits
CIS 798	M. Tech. Research Project (Stage-I) Jointly by IITI and MCTE at MCTE and/or IITI	0-0-20	10

2nd Year 1st Non-Contact Semester for PDS/Project work (04 Months Non-Contact)

Course Code	Course Title	Contact hours (L-T-P)	Credits
CIS 799	M. Tech. Research Project (Stage-II)	0-0-26	13

2nd Year 2nd Non-Contact Semester for PDS/Project work (04 Months non-Contact)

Course Code	Course Title	Contact hours (L-T-P)	Credits
CIS 800	M. Tech. Research Project (Stage-III)	0-0-26	13
Total minimum credits to be earned during the program			80

Courses for Sem I Elective-I @			
Course Code	Course Title	Contact hours (L-T-P)	Credits
CS 634/ CS 434/ CS 334	Wireless Networks & Applications	2-1-0	3
CS 619/ CS 419	Computer Vision	2-1-0	3
ME 644/ ME 444	Robotics	2-1-0	3

Courses for Sem II Elective-II@			
Course Code	Course Title	Contact hours (L-T-P)	Credits
CS 617/ CS 417	Cryptography & Network Security	2-1-0	3
CS 603/ CS 403	Machine Learning	2-1-0	3
CS 620/ CS 420	Embedded Systems	2-1-0	3
CS 446/ CS 646	Distributed Network Algorithms	2-1-0	3

Courses for Elective-III, IV and V from AI / ML Basket			
Course Code	Course Title	Contact hours (L-T-P)	Credits
CS 601 / CS 401	Soft Computing	2-1-0	3
Cs 614 / CS 414	Cloud Computing Applications	2-1-0	3
CS 606 / CS 406	Data Mining and Warehousing	2-1-0	3
CS 609 / CS 409	Advanced Topics in DBMS	2-1-0	3
CS 635 / CS 435	Deep Learning	2-1-0	3
CS 625/ CS 425	Natural Language Processing	2-0-2	3
CS 632 / CS 432	Reinforcement Learning	2-0-2	3
CS 701	Selected Topics in Advanced Algorithms	2-1-0	3

Courses for Elective-III, IV and V from Network & Cyber Security Basket			
Course Code	Course Title	Contact hours (L-T-P)	Credits
CS 616 / CS 416	Service Oriented Systems	2-1-0	3
CS 618 / CS 418	System and Usable Security	2-1-0	3
CS 627 / CS 427	Advanced Computer Networks	2-1-0	3
CS 626 / CS 426	Foundations of Cyber Physical System	2-1-0	3
CS 628 / CS 428	Algorithmic Graph Theory	2-1-0	3
CS 622 / CS 422	Numerical Simulation	2-0-2	3
CS 630 / CS 430	Data Center Networking	2-0-2	3
CS 701	Selected Topics in Advanced Algorithms	2-1-0	3
CS 440/640	Distributed Network Algorithms	2-1-0	3

@ In addition to this course list, a student can also opt from the PG courses being offered by the other depts.

C. Course Structure of M.Tech. Degree Program in Communication and Information Systems with specialization in Communication and Signal Processing

Objective: This program is specially designed considering the requirement for defense personnel from MCTE. The officers are sponsored by MCTE for MTech Degree program at IITI. MCTE is a premier technical training institute of Indian Army. MCTE is predominantly a Corps of Signals training Institute mandated for operational tasks related to Communications, Networking, Electronic Warfare and Cyber Operations. Hence skillset in communication and computer field is mandatory for Signals Officers.

The program will cover academic course module delivered as per structure given below as a part of M. Tech. program, whereas MCTE will impart hands-on training and application to the students through various laboratories for courses in the structure at MCTE campus and jointly evaluated by IITI and MCTE faculties.

Minimum Educational Qualification: Four year Bachelor's degree in Telecommunication & Information Technology (SODE/TES/GEEO) or Computer Technology or Computer Science Engineering or Information Technology or AI/ML OR Data Sciences or Cyber Security od Digital Forensics Electronics or equivalent from MCTE/MCEME/ CME / any civil recognized institution/university

(SODE : Signals Officers Degree Engineering TES : Technical Entry Scheme GEEO : Graduate Entry Equipment Orientation)
AND
He /She must be Serving Defense (Army) Officer who meets the essential service and other requirements of SOATE (Signal Officers Advanced Technology Engineering) course

Qualifying Examination: The selection will be based on interview for the candidates recommended by the MCTE Mhow/ Indian Army

Intake: Up to 10 students as sponsored by MCTE in each specialization

Duration of Program: 2 years (3 Months Non-Credit for Problem Definition Statement (PDS) Research course at MCTE starting in March/April every year, course work at IIT Indore for semester I and II and MTech thesis work at parent organization.)

Registration /Enrollment and one week Orientation at IIT Indore and MCTE Mhow in April

1st year Semester at MCTE Mhow (03 Months) from April to June Duration for Problem Definition Statements (PDS) Research

1st year Contact Semester-I at IIT Indore (04 Months)

Course Code	Course Title	Contact hours (L-T-P)	Credits
EE 603	Optimization Techniques	2-1-0	3
EE 641/ EE 441	Advanced Signal Processing	2-1-0	3
EE 643	Detection and Estimation Theory	2-1-0	3
EE 701	Time-Frequency Analysis	2-1-0	3
ZZ XXX	Elective-I	X-X-X	3
Additional Learning jointly by IITI and MCTE Mhow			

Course Code	Course Title	Contact hours (L-T-P)	Credits
CIS 601	Defence Strategic Communication Networks	0-2-2	3
CIS 603	Military Tactical Communication Networks	0-1-2	2
Total minimum credits earned during the semester			15 + 5= 20

Term Break of 01 Month

1st year Contact Semester-II at IIT Indore (04 Months)

Course Code	Course Title	Contact hours (L-T-P)	Credits
EE 642	Wireless Communication	2-1-0	3
EE 644	Image Processing	2-1-0	3
EE 646/ EE 446	Information and Coding Theory	2-1-0	3
EE 740	Speech Signal Processing	2-1-0	3
ZZ XXX	Elective-II	X-X-X	3
EE 698	PG seminar course	0-2-0	2
Additional Learning jointly by IITI and MCTE Mhow			
CIS 602	Military Data Networks: Management, Analysis, Security	0-2-2	3
CIS 604	Electro-Magnetic Spectrum Operations	0-1-2	2
Total minimum credits earned during the semester			17+5 = 22

Contact Semester at MCTE for Military specific subjects /courses and PDS /Project work (04 Months) under control of MCTE Mhow and IIT Indore for Project work (04 Months Contact)

Course Code	Course Title	Contact hours (L-T-P)	Credits
EE 799 A	M. Tech. Research Project (Stage-I) jointly by IITI and MCTE at both locations	0-0-20	10

2nd Year 1st Non-Contact Semester for PDS/Project work (04 Months Non-Contact)

Course Code	Course Title	Contact hours (L-T-P)	Credits
EE 799	M. Tech. Research Project (Stage-II)	0-0-26	13

2ⁿᵈ Year 2ⁿᵈ Non-Contact Semester for PDS/Project work (04 Months non-Contact)

Course Code	Course Title	Contact hours (L-T-P)	Credits
EE 800	M. Tech. Research Project (Stage-III)	0-0-26	13
Total minimum credits to be earned during the program			78

Courses for Elective-I @			
Course Code	Course Title	Contact hours (L-T-P)	Credits
EE 625	VLSI Signal Processing	2-1-0	3
EE 645	Mathematical Methods for Signal Processing	2-1-0	3
CS 617/ CS 417	Cryptography & Network Security	2-1-0	3

Courses for Elective-II @			
Course Code	Course Title	Contact hours (L-T-P)	Credits
EE 622/ EE 422	Digital Circuit Design	2-1-0	3
EE 628/ EE 428	Advanced Memory Technology	2-1-0	3
EE 648/ EE 448	Antennas and Propagation	2-1-0	3
EE 742	MIMO Wireless Communications	2-1-0	3
ME 644/ ME 444	Robotics	2-1-0	3
CS 601/ CS 401	Soft Computing	2-0-2	3
CS 606/ CS 406	Data Mining and Data Warehousing	2-0-2	3
CS 618/ CS 418	Systems and Usable Security	2-1-0	3

@ In addition to this course list, a student can also opt from the PG courses being offered by the other Depts.

Subject which are opted from other departments: HS 641 , ME 644 , CS 601, CS 606, CS 617, CS 618

The Syllabus of the following four additional learning courses jointly taken by IITI and MCTE Mhow were also resolved and approved by the Senate.

SI No.	Course Code	Course Title	Contact hours (L-T-P)	Credit
1.	CIS 601	Defence Strategic Communication Network	0-2-2	3
2.	CIS 603	Military Tactical Communication Network	0-1-2	2
3.	CIS 602	Military Data Networks (Management, Analytics and Security Policies)	0-2-2	3
4.	CIS 604	Electro Magnetic Spectrum Operations (EMSO)	0-1-2	2

ITEM 45.5: Proposal of joint master degree program by IIT Indore and NLIU Bhopal on "Cyber Security and Cyber Law".

The Program Coordinator Prof. Neminath Hubballi, presented the proposal to start a joint master degree program by IIT Indore and NLIU Bhopal on "Cyber Security and Cyber Law". The proposed course structure and syllabus of the courses of Master of Science in "Cyber Security and Cyber Law" Joint Degree program with NLIU Bhopal were discussed and approved the same with following remarks:

- It will be an executive masters program for professionals.
- The duration of the program will be two years (six trimesters).
- Relative grading system of IIT Indore will be applicable for the award of grades to the candidates enrolled in this program.
- Admissions and convocations will be taken by each institute alternatively.
- Course sharing will be divided equally between both institutions.

Course Structure of Master degree program by IIT Indore and NLIU Bhopal on "Cyber Security and Cyber Law"

Scope of the program: As cyber threats continue to evolve and become more sophisticated, there is a growing need for professionals who can understand both the technical and legal dimensions of protecting digital assets and responding to cyber incidents. The Master of Science in Cyber Security and Cyber Law program is designed to equip students with advanced knowledge and skills in cyber security and the legal aspects of cybersecurity.

Program Objectives:
1. Technical Expertise: Gain a deep understanding of cybersecurity principles, technologies, and best practices.
2. Legal Framework: Develop knowledge of cyber laws, regulations, and compliance issues relevant to cybersecurity.

3. Risk Management: Learn to assess cyber risks and implement strategies to mitigate them effectively.
4. Incident Response: Acquire skills in investigating cyber incidents and managing crisis situations.
5. Ethical Considerations: Explore ethical issues and considerations in cybersecurity practices and policies.

Participating institutes: Jointly offered by Indian Institute of Technology Indore (IITI) and National Law Institute University (NLIU) Bhopal.

Mode of Teaching: Online with two week in-person immersion (one week each at IITI and NLIU-Bhopal)

Targeted Audience: Working professionals with at least one year of experience.

Program duration: 2 years (6 trimesters)

Minimum Education Qualification (MEQ):
First class degree (as defined by the awarding Institute/ University with 5% relaxation for the SC/ ST/ PwD category) in.
1. B.Tech./ B.E. (any branch)
   Or
2. Four years BS/ B.Sc. (Honours)/ BCA (Honours) Or M.Sc. in Computer Science/ Statistics/ MCA/ MBA or an equivalent degree with at least two courses in Mathematics and one in Computer Programming at qualifying degree level.
   Or
3. Bachelor's degree and 3 years LLB/ Integrated Program in LLB/ Integrated Program in Management.

Qualifying Examination: Entrance test followed by an Interview conducted jointly by IITI and NLIU Bhopal. Please refer to Appendix -A for the syllabus of entrance test.
*Students who have qualified in GATE/JAM/CAT/GRE/PG level entrance test (of national level) related to law program in the last three years are exempted from written test. However, they are required to attend the interview.

Entrance/ Application Fee: INR 1770 or INR 2360 (including GST)

APPLICATION FEE		
For Indian Applicants	For International Applicants (Including OCI/PIO/NRI)	Remarks

₹1770/- (Including GST)	₹2300/- (Including GST)	GATE/JAM/CAT/GRE/PG level entrance test related to law program test score obtained anytime in the last three years.
₹2360/- (Including GST)	₹2890/- (Including GST)	Those who intend to appear in Entrance Test.

Intake: 100 per batch with reservation as per government of India norms

Fee Structure: INR 12 Lakhs for the entire program.

Total program credits: 70

After thorough deliberations, the Senate approved the following course structure and approved the syllabi of the courses with remarks as mentioned against each course:

Trimester-I

Course Code	Course Title	Teaching Plan (LTP)	Credits	Senate Remarks:
CSL 601A	Introduction to Computing	2-0-0	2	Approved
	Or/and	2-0-0	2	Course offered by NLIU for reference.
CSL 601B	Introduction to Law and Legal System			
CSL 603	Computer Networks	3-0-0	3	Approved
CSL 605	Programming with Python	0-1-2	2	Approved
CSL 607	Introduction to Cyber Law	2-0-0	2	Course offered by NLIU for reference.
CSL 609	E-Commerce Security: Law and Technology	2-0-0	2	Course offered by NLIU for reference.
	Trimester Credits		11	

Trimester-II

Course Code	Course Title	Teaching Plan (LTP)	Credits	Senate Remarks:
CSL 602	Introduction to Cryptography and Applications	2-0-0	2	Approved
CSL 604	Network Security in Practice	2-0-2	3	Approved
CSL 606	Cybercrimes: Law and Technology	2-0-2	3	Course offered by NLIU for reference.

Course Code	Course Title	Teaching Plan (LTP)	Credits	Senate Remarks:
CSL 608	Information Security Risk Management	2-0-2	3	Course offered by NLIU for reference.
CSL 698	Mini Project-1 (Technical/System Design/Programming) - Group Project	0-0-4	2	Approved
Trimester Credits			**13**	

Trimester-III

Course Code	Course Title	Teaching Plan (LTP)	Credits	Senate Remarks:
CSL 611	Blockchain Technology and Applications	2-0-2	3	Approved
CSL 613	Incident Response and Digital Forensics	1-0-2	2	Approved
CSL 615	Intellectual Property in Cyberspace	3-0-0	3	The course is offered by NLIU for reference.
CSL 617	Information Security Compliances	3-0-0	3	The course is offered by NLIU for reference.
Trimester Credits			**11**	

Trimester-IV

Course Code	Course Title	Teaching Plan (LTP)	Credits	Senate Remarks:
CSL 610	Information Technology Applications	2-1-0	3	Approved
CSL 612	Multimedia and Social Network Security	2-0-0	2	Approved
CSL 614	Field Work/Case Study	0-0-2	1	Approved
CSL 616	Digital Forensic Laws	2-0-0	2	The course is offered by NLIU for reference.
CSL 618	Business Continuity Planning and Disaster Recovery Planning	2-0-0	2	The course is offered by NLIU for reference.
CSL 700	Mini Project-2 (Technical/System Design/Programming) - Group Project	0-0-4	2	The course is offered by NLIU for reference.
Trimester Credits			**12**	

Trimester-V

Course Code	Course Title	Teaching Plan (LTP)	Credits	Senate Remarks:
CSL 619	Systems and Usable Security	2-1-0	3	Approved
CSL 621	Mobile and Wireless Network Security	2-0-0	2	Approved
CSL 623	IT Auditing	3-0-0	3	The course is offered by NLIU for reference.
CSL 625	Computer Operations Security	3-0-0	3	The course is offered by NLIU for reference.
Trimester Credits			11	

Trimester-VI

CSL 800	Project Work	0-0-24	12	IITI/NLIU
Trimester Credits			12	28+28 + 2+12 =70

Course Load Distribution and Preliminary Courses:

1. Students with technical background will register for the "Introduction to Law and Legal System" course offered by NLIU and students with legal and business background will register for the "Introduction to Computing" course offered by IIT Indore. Depending on the need, a student can register for both the courses, one will be a credit course, and the other one will be audited.
2. Total Teaching Credit hours IIT Indore: 2 (foundation course) + 28 (core courses) + 2 (Mini Project) + 12 (Main Project common with IITI and NLIU).
3. Total Teaching Credit hours NLIU Bhopal: 2 (foundation course) + 28 (core courses) + 2 (Mini Project) + 12 (Main Project common with IITI and NLIU).

ITEM 45.6: Introduction of 'FF' grade and change in policy of FR Grade.

The Dean, Academic Affairs presented the introduction of 'FF' grade and change in policy of 'FR' Grade in the Senate meeting. The details of the proposal are as follows:

Preamble: It is for students missing the DD grade cut off by a narrow margin, especially in cases students have underperformed in ESE component thereby leading to their missing the cut off, as stated above.

- Such students can be awarded 'FF' grade which will be eventually converted into either 'FR' or 'DD' by providing one more opportunity to them to appear for the ESE component only, within fifteen days of conduct of end semester examination.

- The student should have maintained > 75% attendance throughout the semester for

this grade (FF) to be awarded.

- It will be completely at the discretion of the course instructor to award 'FR' or 'FF' grade to the underperforming students in his/ her course.

- Grade authentication meeting of SUGC and SPGC will happen only after grade submissions are completed (including re-exam for 'FF' grade students).

- Examinations against the ESE component for those getting 'FF' grades will be coordinated by the Academic Office.

- A maximum of **'BC' grade** can be awarded for a student clearing a particular course in **second or subsequent attempt** in regular or summer semester, **w.e.f. 7 August 2024.**

After thorough deliberations, the Senate approved the same.

ITEM: 45.7: Guidelines for Summer Semester Courses.

The Dean, Academic Affairs, presented the 'guidelines for summer semester courses' in the Senate meeting. The details of the proposal are as follows:

- Summer semester course is essentially meant for clearing backlog courses only.

- However, relaxation to the above rule will be given to final year UG/ PG students against their final year elective courses.

- A minimum of 5 students for UG/ 3 students for PG course/ a total of 5 students including UG and PG students (whichever is applicable) must be there for running course in the summer semester.

- To facilitate final year students an exemption to the above rule of minimum required number of students for running a course can be considered.

- The faculty member of the concerned department/center/ school should be willing to float the course in the summer semester.

- The students are expected to maintain > 75% attendance throughout the summer semester course, and the summer semester course cannot be offered online.

- If the student passes the summer semester course or any course in **second or more attempts**, then the maximum grade that can be awarded will be limited to **'BC'.**

- A student can at most register for 12 credits in a summer semester, and for registering in summer semester academic standing restrictions will be relaxed.

After thorough deliberations, the Senate approved the same.

ITEM: 45.8: Reporting Items:

45.8.1: Approval of the list of additional students who have completed all the prescribed requirements for award of degree during 12th Convocation of the Institute.

The Senate approved the same.

ITEM: 45.9: Any other item with the permission of the Chair.
Nil.

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

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