

List of Open and Program Electives for Autumn 2025 Semester

Sr. No.	Branch	Sem	Name of the elective offered	Type of Elective (Open/Program)	Subject code	Name of the faculty and designation	Prerequisites (if any)	Max Number of Students	Exclusion criteria* (If more than maximum number of students opt the course)
Architecture and Planning									
1	Architecture and Planning	5th	Site Planning	Program	AR205201AR	Kabita Biswas Sharma	None	50	First Come First Serve
2		5th	Geometry in Architecture	Program	AR205202AR	Dr. Abir Bandyopadhyay	None	50	First Come First Serve
3		7th	Intelligent Building	Open	AR207301AR	Dr. Debashis Sanyal	None	50	First Come First Serve
4		7th	Modular Coordination	Open	AR207302AR	Kabita Biswas Sharma	None	50	First Come First Serve
5		7th	Alternate Bldg. Mat. and Techniques	Open	AR207303AR	Dr. Shruti Sharad Nagdeve	None	50	First Come First Serve
6		9th	Environmental Planning	Program	AR209201AR	Shailoneil Sahu	None	50	First Come First Serve
7		9th	Architectural Conservation	Program	AR209202AR	Devanshi Gaur	None	50	First Come First Serve
8		9th	Landscape Architecture	Program	AR209203AR	Dr. Himanshu Poptani	None	50	First Come First Serve
Bio-Medical Engineering									
1	Biomedical Engineering	5th	Physiological Control System	Program	BM105201BM	New Faculty	Physiology	40	CPI
2		5th	Artificial Intelligence	Program	BM105202BM	Dr. Saurabh Gupta	Mathematics	40	CPI
3		5th	Analytical and Diagnostic Medical Equipment	Open	BM105301BM	Dr. Arindam Bit / New Faculty	Mathematics	40	CPI
4		5th	Computational Biomechanics	Open	BM105302BM	Dr. Shivangi Giri	Biomechanics / Solid mechanics	40	CPI
5		7th	Rehabilitation Engineering	Program	BM107201BM	Dr. Shivangi Giri / New Faculty	Mathematics	40	CPI
6		7th	Medical Image Processing	Program	BM107202BM	Dr. Bikesh Kumar Singh	Signal Processing	40	CPI
7		7th	Basic Clinical Science	Program	BM107221BM	Dr. Nishant Kumar Singh	Physiology	40	CPI
8		7th	Lab on Chip Devices	Open	BM107301BM	Dr. Mainak Basu	Mathematics	40	CPI
9		7th	Biostatistics	Open	BM107302BM	Dr. M. Marieswaran	Mathematics	40	CPI
Bio Technology									
1	Biotechnology	5th	Food Biotechnology (PE1)	Program	BT105201BT	Dr. Sharda Bharti	Open to all Biotech Students and Maximum 15 Students from other Department	61	CPI of external student should not be <8.5
2		5th	Environmental Biotechnology (OE1)	Open	BT105301BT	Dr. J. Satya Eswari	Open to all Biotech Students and Maximum 15 Students from other Department	61	CPI of external student should not be <8.5
3		7th	Industrial Biotechnology (PE4)	Program	BT107207BT	Dr. Pratima Gupta	Open to all Biotech Students and Maximum 30 Students from other Department	45	CPI of external student should not be <8.5
4		7th	Unit Operations(PE5)	Program	BT107208BT	Dr. D. Vasanth	Open to all Biotech Students and Maximum 30 Students from other Department	45	CPI of external student should not be <8.5
5		7th	Nano Biotechnology (OE3)	Open	BT107303BT	Dr. Chinmaya Mahapatra	Open to all Biotech Students and Maximum 30 Students from other Department	45	CPI of external student should not be <8.5
Chemical Engineering									
1	Chemical Engineering	5th	Material Technology	Program Elective -I	CH105201CH	Dr. M.S. Gaikwad, Assistant Professor	Nil	79 / (Branch Intake)	
2		5th	Industrial Economics and Management	Open Elective -I	CH105301CH	Dr. B. Mazumdar, Professor / New Faculty	Nil	94	Based on CPI for other Depts
3		7th	Plant Design and Costing	Program Elective -I	CH107201CH	Dr. Chandradhwaj Nayak, Assistant Professor	Nil	79 / (Branch Intake)	
4		7th	Petroleum Refining Engineering	Program Elective -II	CH107251CH	Dr. A.K. Poonia, Professor	Chemical Technology	79 / (Branch Intake)	
5		7th	Process Safety and Hazard Management	Open Elective -I	CH107303CH	Dr. Prabir Ghosh, Associate Professor / New Faculty	Nil	94	Based on CPI for other Depts
Civil Engineering									
1	Engineering	5th	Project Planning and Management	Open Elective-I	CV105301CV	Dr. L.K. Yadu, Professor / Dr. Ritesh Ingale, Assistant Prof.	No	-	No
2		5th	Geotechnical Engineering-II	Program Elective-I	CV105201CV	Dr. L.K. Yadu, Professor	Geotechnical Engineering-I	-	No
3		5th	Modern Surveying Techniques	Program Elective-I	CV105202CV	Dr. A.D. Prasad, Assistant Professor	Surveying	-	No
4		7th	Finite Element Methods	Open Elective-I	CV107302CV	Dr. Alfia Bano, Assistant Professor	Mechanics of solids	40	No
5		7th	Urban Hydrology	Open Elective-I	CV107301CV	Dr.Chandan K Singh, Assistant Professor	No	-	No
6		7th	Irrigation & Hydraulic Structures	Program Elective-I	CV107201CV	Dr.Ishtiyag Ahmad, Assistant Professor	Fluid Mechnaics	-	No

7	Civil	7th	Seismic Design of Buildings	Program Elective-I	CV107202CV	Dr.Govardhan Bhat, Assistant Professor	No	-	No
8		7th	AIRPORT, TUNNEL & HARBOUR ENGINEERING	Program Elective-I	CV107203CV	Dr. Sunny Deol G, Assistant professor	No	-	No
9		7th	Probabilistic approaches in Civil engineering	Program Elective-II	CV107251CV	Dr.Vikas Kumar Vidyarthi, Assistant professor	No	-	No
10		7th	Advanced Design of steel structures	Program Elective-II	CV107252CV	Dr.Alfia Bano, Assistant Professor	No	-	No
11		7th	Intelligent Transportation Systems	Program Elective-II	CV107253CV	Dr. Sunny Deol G, Assistant professor	Highway and Railway Engg.	-	No
Computer Science and Engineering									
1	CS & E	5th	Natural Langauge Proessing	Program Elective - I	CS105201CS	Dr. Jitendra Kumar Rout, Assistant Professor	Basics of Probability and Statistics, Basics of AI and ML		
2		5th	Computing Algorithms and Indian Knowledge Systems	Open Elective-I	CS105304CS	Dr. Madhukrishna Priyadarsini, Assistant Professor	NA	100	CSE, IT students
3		5th	Data Science	Open Elective-I	CS105302CS	Dr. Deepak Singh, Assistant Professor		120	CPI
4		7th	Block Chain Technology	Program Elective - IV	CS107202CS	Dr. Preeti Chandrakar, Assistant Professor	Cryptography & Network Security		
5		7th	Graph Theory	Program Elective - V	CS107206CS	Dr. K. Jairam Naik, Assistant Professor	Discrete Mathematics		
6		7th	Reinforcement Learning	Program Elective - V	CS107207CS	Dr. Pradeep Singh, Associate Professor			
7		7th	Advanced Machine Learning	Open Elective - III	CS107305CS	Dr. Karnati Mohan, Assistant Professor	AI and Machine Learning	100	CSE, IT students
8		7th	Graph Mining	Open Elective - III	CS107306CS	Dr. N. K. Nagwani, Professor	Machine Learning/Data Science	100	CPI
Computer Applications									
1	Computer Application	5th	Cloud Computing	Program Elective	CA405203CA	Dr. Mithilesh Atulkar, Professor	NIL	110	NIL
2		5th	Mobile Computing	Program Elective	CA405206CA	Dr. Manju Pandey, Associate Professor	NIL	110	NIL
3		5th	Swarm Intelligence & Evolutionary Algorithms	Program Elective	CA405204CA	Dr. Naeem Ahmad, Assistant Professor	Knowledge of complexity classes and C Programming	110	NIL
4		5th	Pattern Recognition	Open Elective	CA405302CA	Dr. Dibakar Saha, Assistant Professor	AI & Machine Learning	125	Merit basis
Humanities and Social Sciences									
1	HSS	5th	Inclusive Leadership and Effective Communication	Open Elective	HS105301HS	Dr. Anoop Kumar Tiwari, AssociateProfessor	Under graduation	50	
2		5th	Introduction to Linguistics	Open Elective	HS105302HS	Dr. Shashikanta Tarai, Assistant Professor	Under graduation	25	
3		5th	Introduction to Sociology	Open Elective	HS105304HS	Dr. Moksha Singh, Assistant Professor	Under graduation	50	
4		5th	An Introduction to Business Management	Open Elective	HS105306HS	Dr. Chetna Sharma Rajput,Assistant Professor	Under graduation	50	
5		5th	Basic Entrepreneurship for Engineers	Open Elective		Dr. Saurabh Gupta Assistant Professor	Under graduation	50	
6		7th	Human Rights & Human Values	Open Elective	HS107311HS	Dr. Moksha Singh Assistant Professor	Under graduation	50	
Electrical Engineering									
1	Electrical Engineering	5th	Digital Electronics & Embedded Systems	Program Elective	EL105202EL	Dr. Varsha Singh , Assistant Professor	NIL	120	CPI
2		5th	Introduction to AI and ML	Program Elective	EL105203EL	Dr. Narendra D. Lonthe , Professor	NIL	120	CPI
3		5th	Digital System Design	Open Elective	EL105303EL	Dr. Sachin Jain, Professor	NIL	120	CPI
4		5th	Advanced Semiconductor Devices	Open Elective	EL105304EL	Dr. S. Pattnaik, Associate Professor	NIL	120	CPI
5		7th	Smart Grid Technology	Program Elective	EL107203EL	Dr. Varsha Singh , Assistant Professor	Power System Analysis, Power System Protection & Switchgear	120	CPI
6		7th	Policy and Planning of Power System	Program Elective	EL107208EL	Dr. Baidyanath Bag , Assistant Professor	Generation of Electrical Energy, Electrical Power System	120	CPI
7		7th	Renewable and Distributed Energy Systems	Open Elective	EL107303EL	Dr. Ebha Koley , Associate Professor	Basic Electrical Engineering	120	CPI
8		7th	Power Apparatus System	Program Elective	EL107202EL	Dr. Saurabh Raj	Power System Analysis, Machine-1 & 2, Power System Protection & Switchgear		CPI
Electronics and Communication Engineering									
1	ECE	5th	Optimization Techniques	Program	EC105202EC	Dr. Suman Kumar Saha, Assistant Professor			
2		5th	Optoelectronics Components and Devices	Open	EC105205EC	Dr. Deboraj Muchahary, Assistant Professor			
3		7th	Digital Image Processing	Program	EC107203EC	Dr. Toshnail Meenpal, Associate Professor			
4		7th	Wireless Sensor Network	Program	EC107205EC	Mr. Sujay Chakraborty, Assistant professor	EC106203EC and EC106101EC	NA	NA
5		7th	Real-time Embedded Systems	Open	EC107301EC	Dr. B. Acharya, Associate Professor	EC105102EC	NA	NA
Information Technology									
1	Information Technology	5th	Information Theory and Coding	Program	IT105201IT	Dr. Deepika Agrawal, Assistant Professor	Computational Mathematics, Communication Systems	120	
2		5th	Digital Image Processing	Open	IT105301IT	Dr. Rekh Ram Janghel, Assistant Professor	Computational Mathematics, Digital and Logic Design	120	
3		7th	Text Mining	Program	IT107201IT	Dr. Tirath Prasad Sahu, Assistant Professor	Data Mining & Analysis	120	
4		7th	Adhoc and Sensor Network	Program	IT107202IT	Dr. Pavan Kumar Mishra, Assistant Professor	Computer Networks	120	
5		7th	Quantum Machine Learning	Program	IT107205IT	Dr. Kapil Kumar Soni, Assistant Professor	Data Structures, Discrete Structures, Data Mining	120	

6	Inform	7th	Neural Network and Fuzzy logic	Open	IT107301IT	Dr. Satya Prakash Sahu, Associate Professor	Mathematics, Discrete Structures, Fundamental of Computing	120	
7		7th	Computer Vision	Open	IT107303IT	Dr. Suwendu Rup, Associate Professor	Mathematics,Data Mining, Digital Image Processing	120	
Mechanical Engineering									
1	Mechanical Engineering	5th	Fluid Machanics II-Fluid Machinery	PE-I	ME105204ME	Dr. G K Sahu(Associate Prof.)	Nil	60	CPI
2		5th	Industrial Engineering & Management	PE-I	ME105202ME	Dr. Mridul Singh Rajput(Assistant Prof.)	Nil	60	CPI
3		5th	Intorduction to Aerospace Engineering	PE-I	ME105203ME	Dr. N V Swamy Naidu(Professor)	Nil	60	CPI
4		5th	Dynamics and Vibration	PE-II	ME105213ME	Dr. Rajana Suresh Kumar(Assistant Prof.)	Physics, Engineering Mechanics and Kinematics of Machines	60	CPI
5		5th	Measurement and Control	PE-II	Me105212ME	Dr. Raj Kumar Sahu(Assistant Prof.)	Basic Electrical and Mechanical Engineering, Engineering Mechanics, Engineering Drawing	60	CPI
6		5th	Composite Materials and Mechanics	OE-I	Me105302ME	Dr. G Srinivasu(Assistant Prof.)	Nil	80	CPI
7		5th	Smart Manufacturing	OE-I	ME105305ME	Dr. Mohan Kumar Pradhan(Associate Prof.)	Manufacturing Science	80	CPI
		5th	Carbon Capture and Utilization	OE-I		Dr. Satish Kumar Dewangan (Associate Prof.)	Basic of Carbon and Energy	50	CPI
8		7th	Finite Element Method	PE-V	ME107204ME	Dr. S Bhowmick(Prof.)	Nil	120	CPI
9		7th	Air Pollution Control	OE-III	ME107301ME	Dr. S L Sinha(Prof.)	Fluid Mechanics	80	CPI
10		7th	Industry 5.0 for Engineers	OE-III	ME107304ME	Dr. Sanjeev Kumar(Assistant Prof.)	Nil	80	CPI
11		7th	Power Plant Engineering	PE-VI	ME107212ME	Dr. R K Yadav(Prof.)	Thermodynamics, IC Engines, Fluid Mechanics	60	CPI
12		7th	Energy Conversion System	PE-VI	ME107211ME	Dr. Nisha Netam(Assistant Prof.)	Applied Thermodynamics , Fluid Mechanics	60	CPI
13		7th	Alternative Fuels and emmision control in internal combustion engines	PE-VI	ME107214ME	Dr. S L Sinha (Prof.)	IC Engines	60	CPI
14	7th	Computational Fluid Dynamics	PE-V	ME107203ME	Dr. Shashi Kant Varma	Basic course in Fluid Mechanics	60	CPI	
Mining Engineering									
1	Mining Engineering	5th	Mine Hazards and Rescue	Prgoram Elective I	MI105201MI	Dr. M D Patel, Associate Professor			
2		5th	Novel Methods of Mining	Prgoram Elective I	MI105202MI	Prof B R Parate, Associate Professor			
3		5th	Remote Sensiing & Geographic Information Systems	Open Elective I	MI105301MI	Dr. R K Jade, Associate Professor	NIL	100	Mining & Mechanical
4		7th	Mine Legislation & Safety II	Program Elective III	MI107201MI	Dr. A K Dash Assistant Professor			
5		7th	Mine Closure Planning	Program Elective III	MI107202MI	Dr. B R Parate, Associate Professor			
6		7th	Mine Economics	Program Elective IV	MI107251MI	Dr. R K Jade, Associate Professor			
7		7th	Mine Systems Engineering	Program Elective IV	MI107252MI	Dr. P Y Dhekne, Professor			
8		7th	Bulk Material Handling	Open Elective III	MI107301MI	Dr. R K Jade, Associate Professor	NIL	100	Mining, Mechanical & Chemical
Metallurgical & Material Engineering									
1	Metallurgical and Materials Engg.	5th	Special Steels and Alloys	Program Elective	MM105201MM	Dr. Deependra Singh; Asst Prof.			
2		5th	Light Metals and Alloys	Program Elective	MM105201MM	Dr. Amit Yadav/Dr. Bhargavi Anne, Asst Prof.			
3		5th	Non-Destructive testing	Open Elective	MM105301MM	Dr. R. Bheekya Naik; Asst Prof			
4		5th	Powder Metallurgy	Open Elective	MM105302MM	Dr. Naga Sruthi Neelam; Asst Prof			
5		7th	Introduction to Electrical, Magnetic and Optical Materials	Program Elective	MM107201MM	Dr. Abhishek Sharma/Dr. Sudip Sinha, Asst Prof			
6		7th	Additive Manufacturing of Materials	Program Elective	MM107203MM	Dr. Neha Gupta; Asst Prof			
7		7th	X-ray Diffraction and Electron Microscopy	Open Elective	MM107301MM	Dr. Deependra Singh; Asst Prof			