

List of Open/Program Elective Subjects for UG 6th and 8th Semesters and MCA 4th Semester for the Academic Session Spring 2022-23

Sr. No.	Branch	Sem	Name of the elective offered	Type of Elective (Open/Program)	Open Elective No.	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)
1	Biotechnology	6	Biopharmaceutical Technology	Program	Program Elective - 2	BT106203BT	Dr Awanaiah Kumar, Associate Professor	Industrial Biotech	46	NA
2	Biotechnology	6	Intellectual Property Rights	Open	Open Elective - 2	BT106302BT	Dr Chinmay Mahapatra, Assistant Professor	Nil	75	CPI more than 8.5 for students from other Departments
3	Biotechnology	8	Membrane Technology	Program	Program Elective - 5	BT108209BT	Dr D Vasanth, Assistant Professor	Knowledge of membrane synthesis, characterisation and application	49	NA
4	Biotechnology	8	Industrial Biotechnology	Program	Program Elective - 6	BT108211BT	Dr Pratima Gupta, Associate Professor	Microbial and Enzyme technology	49	NA
5	Biotechnology	8	Bioreactor Design and Analysis	Open	Open Elective - 4	BT108304BT	Dr J Satyaeswari, Assistant Professor	Knowledge of medelling aspect, material and energy balance and biological rate process	75	CPI more than 8.5 for students from other Departments
6	Biotechnology	8	Interactomics	Open	Open Elective - 5	BT108305BT	Dr D N Roy, Assistant Professor	Nil	75	CPI more than 8.5 for students from other Departments
7	Chemical Engg.	6	Process Equipment Design -II	Program	Programe Elective - I	CH106201CH	Dr. M .S. Gaikwad	NIL	All student of Chemical Engg.	NIL
8	Chemical Engg.	6	Non -Conventional Energy sources	Open	Open Elective - I	CH106301CH	Dr. Vijendra Kumar	NIL	80	CPI criterion except for Chem Engg students
9	Chemical Engg.	8	Process safety and Hazards Management	Program	Programe Elective - I	CH108201CH	Dr. R. Manivannan	NIL	All student of Chemical Engg.	NIL
10	Chemical Engg.	8	Fluidization Engg.	Program	Programe Elective - II	CH108251CH	Dr. P K .Chaudhari	NIL	All student of Chemical Engg.	NIL
11	Chemical Engg.	8	Project Planning Evaluation and Management	Open	Open Elective - I	CH108301CH	Dr. B . Mazumdar	NIL	80	CPI criterion except for Chem Engg students
12	Chemical Engg.	8	Solid Waste Management	Open	Open Elective - II	CH108351CH	Dr. J. Anandkumar	NIL	80	CPI criterion except for Chem Engg students
13	Chemical Engg.	8	Online courses	Open	Open Elective - I	CH108326CH				
14	Chemical Engg.	8	Online courses	Open	Open Elective - 4	CH108376CH				
15	CS&E	6	Computer Vision	Program	NA	CS106203CS	Dr. Sonal Yadav (Assistant Professor)	Discrete Maths, Probability	100	NA
16	CS&E	6	Soft Computing	Program	NA	CS106204CS	Dr. D.S. Sisodia (Associate Professor) Dr. Deepak Singh (Assistant Professor)	ADA, Discrete Maths	100	NA
17	CS&E	6	Applied Machine Learning	Open	Open Elective - 2	CS106302CS	Dr. D.S. Sisodia (Associate Professor)	Data Science	100	CPI
18	CS&E	6	Information Retrieval	Open	Open Elective - 2	CS106304CS	Dr. Jitendra Kumar Rout (Assistant Professor)	Discrete Maths, Probability, Basics of NLP	100	CPI
19	CS&E	8	Software Project Management	Program	NA	CS108201CS	Mr. Abhishek Shrivastava (Temporary Faculty)	-----	100	NA
20	CS&E	8	Reinforcement Learning	Program	NA	CS108205CS	Dr. Pradeep Singh (Associate Professor)	Machine Learning	100	NA
21	CS&E	8	Evolutionary Computing	Open	Open Elective - 4	CS108302CS	Dr. Deepak Singh (Assistant Professor)		100	CPI

22	CS&E	8	Advance AI and Edge Computing	Open	Open Elective - 5	CS108306CS	Dr. Pradeep Singh (Associate Professor) Dr. Veena Anand (Assistant Professor) Dr. K. Jairam Naik (Assistant Professor)	Artificial Intelligence	100	CPI
23	HSS	VI	Basic Entrepreneurship for Engineers	Open Elective	2	HS106303HS	Dr. Sourabh Gupta, Asst. Prof., Bio-Med Deptt.	None		CPI/SPI
24	HSS	VI	Basic of Human Resource Management	Open Elective	2	HS106305HS	Dr. Anoop Kumar Tiwari, Associate Professor	None		CPI/SPI
25	HSS	VI	Cognitive Neuroscience of Language and Emotion	Open Elective	2	HS106317HS	Dr. Shashikanta Tarai, Assistant Professor	None		CPI/SPI
26	HSS	VI	Documentation and Communication Contexts (Includes a Minor Project)	Open Elective	2	HS106318HS	Dr. Y. V. Babu, Assistant Professor	None		CPI/SPI
27	HSS	VI	Happiness based on co-existential Living	Open Elective	2	HS106307HS	Dr. Heena Chawda, Temporary Faculty	None		CPI/SPI
28	HSS	VI	Industrial Sociology and Social Change	Open Elective	2	HS106310HS	Dr. Moksha Singh Assistant Professor	None		CPI/SPI
29	HSS	VI	A Course on Organizational Behaviour	Open Elective	2	HS106309HS	Dr. Chetna Sharma Rajput Assistant Professor	None		CPI/SPI
30	HSS	VIII	Coexistence based Universal Human Values and Ethics	Open Elective	4	HS108312HS	Dr. Heena Chawda (Temporary Faculty)	None		CPI/SPI
31	Information Technology	6	Cryptography and Network Security	Program	Program Elective - II	IT106201IT	Dr. Rajesh Doriya (Assistant Professor)			
32	Information Technology	6	Machine Learning	Open	Open Elective - II	IT106301IT	Dr. Mridu Sahu (Assistant Professor)	Data Structure		>=8.5 CPI for other branches
33	Information Technology	8	Blockchain	Program	Program Elective - V	IT108201IT	Dr. Govind Prasad Gupta (Assistant Professor)			
34	Information Technology	8	Cellular Mobile Computing	Program	Program Elective - VI	IT108250IT	Dr. Pavan Kumar Mishra (Assistant Professor)			
35	Information Technology	8	Cloud Computing	Open	Open Elective - IV	IT108302IT	Dr. Jatoth Chandrashekar (Assistant Professor)	DBMS, Computer Network		>=8.5 CPI for other branches
36	Information Technology	8	Deep Learning	Open	Open Elective - V	IT108350IT	Dr. Suvendu Rup (Associate Professor)	Machine Learning		>=8.5 CPI for other branches
37	Computer Applications	4	Advance Data Mining	Open	Open Elective - I	CA404302CA	Dr. Naeem Ahmad and Assistant Professor	NIL	110	None
38	MME	6	Artificial Intelligence in Materials Engineering	Program	NA	MM106201MM	Dr. S Ganguly			
39	MME	6	Liquid Metal Engineering	Program	NA	MM106202MM	Dr. S Das			
40	MME	6	Fracture Mechanics and Failure Analysis	Open	Open Elective - 6.1.1	MM106301MM	Dr. Naga Shruti Neelam	Physical Metallurgy, Mechanical Behaviour of Materials (May be relaxed for other departments)		
41	MME	6	Tribology of Materials	Open	Open Elective - 6.1.2	MM106302MM	Dr. M K Manoj	None		
42	MME	8	Materials Modeling and Simulation	Program	NA	MM108201MM	Dr. S Ganguly			
43	MME	8	Nuclear Materials	Program	NA	MM108202MM	Dr. Saurabh Kumar			
44	MME	8	High Temperature Materials	Program	NA	MM108204MM	Dr. Mehar Sanket Anil			
45	MME	8	Metallurgical Waste Management	Program	NA	MM108205MM	Dr. Pragyandandan Banjare			
46	MME	8	Advanced Materials	Open	Open Elective - 8.3.1	MM108301MM	Dr. Abhishek Sharma	Mechanical Behaviour of Materials, Physics of Materials (May be relaxed for other departments)		
47	MME	8	Science and Technology of Nano Materials	Open	Open Elective - 8.3.22	MM108302MM	Dr. Naga Shruti Neelam	None		
48	MME	8	Automotive Material	Open	Open Elective - 8.4.1	MM108303MM	Dr. Saurabh Kumar / Dr. Pragyandandan Banjare	None		
49	MME	8	Engineering Economics	Open	Open Elective - 8.4.2	MM108304MM	Dr. M K Tripathi	None		
50	Mining Engineering	6	Mineral Processing	Open	Open Elective -II	MI106301MI	Prof. B. R. Parate, Associate Professor	NA	100	Mining & Allied Engineering Department

51	Mining Engineering	6	Advanced Coal Mine Planning	Program	NA	MI106201MI	Dr. P. Y. Dhenke, Associate Professor	NA	84	Mining Engineering
52	Mining Engineering	6	Mine Acquisition and Operationalization	Program	NA	MI106202MI	Dr. M. Pradhan, Professor	NA	84	Mining Engineering
53	Mining Engineering	8	Occupational Health and Safety	Open	Open Elective - IV	MI108301MI	Dr. A. K. Dash, Assistant Professor	NA	100	Core Engineering Branches only (Mining, Civil, Mechanical & Electrical)
54	Mining Engineering	8	Mine Management	Program	NA	MI108201MI	Dr. R. K. Jade, Associate Professor	NA	90	Mining Engineering
55	Mining Engineering	8	Computer Applications in Mining	Program	NA	MI108202MI	Dr. R. K. Jade, Associate Professor	NA	90	Mining Engineering
56	Mining Engineering	8	Advanced Surface Mining	Program	NA	MI108251MI	Dr. P. K. Dewangan, Associate Professor	NA	90	Mining Engineering
57	Mining Engineering	8	Numerical Methods in Mining Engineering	Program	NA	MI108252MI	Dr. R. K. Jade, Associate Professor	NA	90	Mining Engineering
58	Mechanical Engineering	6	Air Conditioning Techniques & System Design	Program	NA	ME106201ME	Dr AK Tiwari, Professor	-	-	-
59	Mechanical Engineering	6	Operations Research	Program	NA	ME106202ME	Dr AR Singh, Associate Professor	-	-	-
60	Mechanical Engineering	6	Design Thinking & Product Innovation	Open	Open Elective - 2	ME106301ME	Dr NVS Naidu, Associate Professor	Nil	60	SPI/CPI
61	Mechanical Engineering	6	Robotics	Open	Open Elective - 2	ME106303ME	Dr S Sanyal, Professor	Nil	60	1. Preferably Mechanical Students 2. SPI/CPI
62	Mechanical Engineering	6	Smart Materials & Systems	Open	Open Elective - 2	ME106304ME	Dr RK Sahu, Assistant Professor	Nil	60	1. Preferably Mechanical Students 2. SPI/CPI
63	Mechanical Engineering	8	Additive Manufacturing	Program	NA	ME108201ME	Dr Jagadish, Assistant Professor	-	-	-
64	Mechanical Engineering	8	Computer Aided Design & Manufacturing	Program	NA	ME108202ME	Dr S Bhattacharya, Associate Professor	-	-	-
65	Mechanical Engineering	8	Alternative Fuels & Emission Control in Internal Combustion Engines	Program	NA	ME108212ME	Dr RK Yadav, Associate Professor	-	-	-
66	Mechanical Engineering	8	Automobile Engineering	Program	NA	Me108213ME	Dr, SPS Matharu, Professor	-	-	-
67	Mechanical Engineering	8	Welding Technology	Open	Open Elective - 4	ME108302ME	Dr HK Narang, Assistant Professor	Nil	60	SPI/CPI
68	Mechanical Engineering	8	Non-Conventional Energy Resources	Open	Open Elective - 5	ME108311ME	Dr N Netam, Assistant Professor	Nil	60	1. Preferably Mechanical Students 2. SPI/CPI
69	Electronics & communication	6	Computer Communication Network	Program	NA	EC106203EC	A. S. Raghuvanshi, Associate Professor			
70	Electronics & communication	6	Machine Learning and Pattern Recognition	Open	Open Elective - 1	EC106301EC	S. Majumder, Assistant Professor		130	Min 7.5 CPI for non-ECE students.
71	Electronics & communication	8	Semiconductor Device Modelling	Program	NA	EC108202EC	Ashish Kumar, Assistant Professor			
72	Electronics & communication	8	Advanced Antenna Design	Program	NA	EC108205EC	Sujay Chakraborty, Assistant Professor			
73	Electronics & communication	8	Cryptography & Network Security	Open	Open Elective - 1	EC108302EC	B. Acharya, Associate Professor		120	Min 8.0 CPI for non-ECE students.
74	Electronics & communication	8	Introduction to Deep Learning Remote Sensing, GIS, and its Applications	Open	Open Elective - 2	EC108303EC	T. Meenpal, Associate Professor		120	Min 8.0 CPI for non-ECE students.
75	Civil Engineering	8	Advanced Hydrology	Program Elective I	NA	CV108301CV	Dr A D Prasad, Asst Prof	NA	100	CPI based
76	Civil Engineering	6	Construction Management	Open	Open Elective - 1	CV106302CV	S V Deo, Assoc Professor	None	40	Civil students preferred
77	Civil Engineering	6	Air Noise pollution and control	Open	Open Elective - 2	CV106301CV	Ajay Vikram Ahirwar	none	105	CGPA
78	Civil Engineering	6	Advanced Hydrology	Program Elective I	NA	CV106202CV	Dr. Vikas Kumar Vidyarthi	Engineering Hydrology	NA	NA
79	Civil Engineering	6	Advanced Pavement Engineering	Program Elective I	NA	CV106204CV	Dr. Sunny Deol G	NA	NA	NA
80	Civil Engineering	8	Advanced Design of steel structures	Program Elective I	NA	CV108201CV	Dr. Alfia Bano	Design of Steel Structures	50	NA
81	Civil Engineering	8	Airport, Tunnel and Harbour Engineering	Program Elective I	NA	CV108202CV	Dr. Sunny Deol G	NA	NA	NA
82	Civil Engineering	8	Transportation planning and management	Program Elective II	NA	CV108253CV	Dr. Sunny Deol G	Transportation Engineering	NA	NA
83	Civil Engineering	8	Prestressed Concrete	Program Elective II	NA	CV108251CV	Dr. Meena Murmu	NA	NA	NA
84	Electrical Engineering	6	Simulation and Modelling of Electrical Systems	Program	NA	EL106202EL	Dr. Venu Sonti, Assistant Professor Grade-II		120	

85	Electrical Engineering	6	Design of Photovoltaic Systems	Open	Open Elective - 2	EL106301EL	Dr. S. Gupta, Professor	NIL		
86	Electrical Engineering	8	Power Converter Design	Program	NA	EL108208EL	Dr. S. Jain, Associate Professor		120	
87	Electrical Engineering	8	Installation, Maintenance and Testing of Electrical Apparatus	Program	NA	EL108204EL	Dr. A. yadav, Associate Professor		120	
88	Electrical Engineering	8	Introduction to Hybrid and Electrical Vehicles	Open	Open Elective - 4	EL108304EL	Dr. L. K. Sahu	BEE	120	
89	Electrical Engineering	8	PLC and SCADA	Open	Open Elective - 5	EL108306EL	Temporary Faculty	NIL	120	
90	Biomedical Engineering	6	DBMS	Programme	NA	BM106223BM	Dr. Saurabh Gupta (Assist. Prof.)	Nil		
91	Biomedical Engineering	6	Biomicrofluidics	Open	Open Elective - 2	BM106322BM	Dr. M. Marieswaran (Assist. Prof.)	Fluid Machenics/ Biomechanics	80	
92	Biomedical Engineering	8	Artificial Organs	Programme	NA	BM 108251BM	Dr. Nishant Kumar Singh (Assist. Prof.)			
93	Biomedical Engineering	8	Optical Fiber and Laser in Medicine	Programme	NA	BM108263BM	Dr. Rajkumar Sahu (Temporary Faculty)			
94	Biomedical Engineering	8	Biofluid Dynamics	Open	Open Elective - 4	BM108341BM	Dr. Arindam Bit (Assist. Prof.)	Nil	80	
95	Biomedical Engineering	8	3D Printing Technology	Open	Open Elective - 5	BM108351BM	Dr. M. Marieswaran (Assist. Prof.)	Nil	80	