List of Open/Program Elective Subjects to be offered in Autumn 2023-24

Sr. No.	Sem	Name of the elective offered	Type of Elective (Open/Program)	Subject code	Name of the faculty and designation	Prerequisites (if any)	Exclusion criteria*
				Architecture			
1	5	Site Planning	Professional Elective- II	ARPE3111-1	Kabita Biswas , Assistant Professor	NIL	NIL
2	5	Geometry in Architecture	Professional Elective- II	ARPE3111-2	Dr. Abir Bandyopadhyay,Professor	NIL	NIL
3	7	Intelligent Building	Open Elective-II	AROE4111-1	Dr. Debashis Sanyal ,Associate Professor	NIL	NIL
4	7	Modular Coordination	Open Elective -II	AROE4111-2	Kabita Biswas , Assistant Professor	NIL	NIL
5	7	Alternate Building Materials and Techniques	Open Elective -II	AROE4111-3	Shruti Nagdeve, Assistant Professor	NIL	NIL
6	9	Environmental Planning	Professional Elective -III	ARPE5111-1	Shailoneil Sahu, Assistant Professor	NIL	NIL
7	9	Architectural Conservation	Professional Elective -III	ARPE5111-2	Devanshi Gaur, Assistant Professor	NIL	NIL
8	9	Landscape Architecture	Professional Elective -III	ARPE5111-3	Sayon Pramanik, Assistant Professor	NIL	NIL
				Biotechnology			
1	5	Environmental Biotechnology	Open	BT105301BT	Temporary Faculty	Microbial metabolism, Ecology and Ecosystem	CPI more than 8.5 till 4th Sem
2	5	Food Biotechnology	Program	BT105201BT	Dr. Sharda Bhari	_	_
3	7	Genomics and Proteomics	Program	BT107205BT	Dr. Sharda Bhari	_	_
4	7	Unit Operations	Program	BT107207BT	Dr. Satya Eswari	_	_
5	7	Nano Biotechnology	Open	BT107303BT	Dr Chinmay Mahapatra, Assistant Professor	Chemistry, Physics	CPI more than 8.5 till 6th Sem
				Biomedical Engineering			
1	5	Analytical and Diagnostic Medical Equipment	Open Elective	BM105311BM	Dr.Arindam Bit	Nil	-
2	5	Artificial Intelligence	Program Elective	BM105212BM	Dr. Saurabh Gupta	Nil	
3	7	Biophotonics	Open Elective	BM107332BM	Dr.M. Marieswaran	Nil	-
4	7	Medical Image Processing	Program Elective	BM107232BM	Dr. Bikesh Kumar Singh	Nil	
5	7	Basic Clinical Sciences	Program Elective	BM107242BM	Dr. Nishant Kumar Singh	Nil	
				Chemical Engineering			
1	5	Industrial Economics and Management	Open Elective	CH105301CH	Dr. B. Mazumdar	-	
2	5	Material Technology	Program Elective	CH105201CH			
3	7	Computational Fluid Dynamics	Open Elective	CH107301CH	Dr. Amit Keshav		
4	7	Plant Design and costing	Program Elective	CH107201CH			
5	7	Petroleum Refining Engineering	Program Elective	CH107251CH			
				Computer Science & Engineering			
1	5	Data Science	Open Elective - I	CS105302CS	Dr. Deepak Singh		8.5 CGPA in case of non cse students
2	5	Advance Computer architecture	Program Elective	CS105202CS			
3	7	Deep Learning	Program Elective	CS107201CS			
4	7	BlockChain Technology	Program Elective	CS107204CS			
				Civil Engineering			
1	5	Project Planning and Management	Open Elective	CV105301CV	Dr. Sunny Deol G	-	NA
2	5	Geotechnical Engineering-II	Program Elective-I	CV105201CV	Dr. L. K. Yadu	Geotechnical Engineering-I	NA
3	5	Modern Surveying Techniques	Program Elective-I	CV105202CV	Dr. A. D. Prasad	-	NA
4	7	Finite Element Methods	Open Elective	CV107302CV	Dr. Alfia Bano	-	NA
5	7	Urban Hydrology	Open Elective	CV107301CV	Dr. Chandan K Singh	-	NA
6	7	Irrigation and Hydrolic Structures	Open Elective	CV107201CV	Dr. I. Ahmad	-	NA
7	7	Seismic Design of Buildings	Program Elective	CV107202CV	Dr. Govardhan Bhat	-	NA
8	7	Probablistic Approach in Civil Engineering	Program Elective	CV107203CV	Dr. Vikas Vidyarthi	-	NA
9	7	Advanced Reinforced Concerete Structures	Program Elective	CV107251CV	Dr. Meena Murmu	Reinforced Concrete Structures	NA
10	7	Intelligent Transaportation Systems	Program Elective	CV107252CV	Dr. Sunny Deol G	Highway and Railway Engineering	NA
				Electronics & Communication Engineering			
1	5	Optimization techniques (Program)	Program Elective	EC105203Ec	-	-	-

2	5	Digital Image Processing (OE-1)	Open Elective-I	EC10501EC	-	-	-
3	7	Low Power Circuit Design (Program)	Program Elective	EC107201EC	-	-	-
4	7	Wireless Sensor Network (Program)	Program Elective	EC107203EC	-	-	-
5	7	Real Time Embedded Systems (OE-1)	Open Elective - 1	EC107302EC	-	-	-
Electrical Engineering							
1	5	Digital Electronics & Embedded Systems (Program)	Program Elective	EL105202EL	-	-	-
2	5	Introduction to AI and ML (Program)	Program Elective	EL105203EL	-	-	-
3	5	Digital System Design (Open)	Open Elective	EL105303EL	-	-	-
4	5	Advanced Semiconductor Devices (Open)	Open Elective	EL105304EL	-	-	-
1	7	Smart Grid Technology (Program)	Program Elective	EL107203EL	-	-	-
2	7	Flexible AC Transmission Systems (Program)	Program Elective	EL107204EL	-	-	-
3	7	Policy and Planning of power systems (Program)	Program Elective	EL107208EL	-	-	-
4	7	Renewable and Distributed Energy Systems (Open)	Open Elective	EL107304EL	-	-	-
Information Technology							
1	5	Information Theory and Coding	Program	IT105201IT	Dr. Tirath Prasad Sahu	-	-
2	5	Digital Image Processing	Open Elective	IT105301IT	Dr. Rekh Ram Janghel	Computational Mathematics, Digital and Logic Design	>=8.5 CPI for other branch
3	7	Text Mining	Program	IT107202IT	Dr. Tirath Prasad Sahu		
4	7	Adhoc & Sensor Network	Program	IT107250IT	Dr. Pavan Kumar Mishra		
5	7	Neural Network and Fuzzy Logic	Open Elective	IT107301IT	Dr. Satya Prakash Sahu	Mathematics, Discrete Structures, Fundamental of Computing	>=8.5 CPI for other branch
6	7	Computer Vision	Open Elective	IT107303IT	Dr. Suvendu Rup	Image Processing, Data Structure, Fundamental of Computing	>=8.5 CPI for other branch
Master of computer Applications							
1	5	Pattern Recognition	Open Elective	CA405302CA	Dr. Dibakar Saha	Data Science and Al & Machine Learning	None
2	5	Cloud Computing	Program Elective	CA405203CA	Dr. Mithilesh Atulkar, Associate Professor	None	None
3	5	Mobile Computing	Program Elective	CA405206CA	Dr. Manju Pandey, Associate Professor	None	None
4	5	Swarm Intelligence & Evolutionary Algorithms	Program Elective	CA405204CA	Dr. Naeem Ahmad, Assistant Professor	Knowledge of complexity classes of P, NP, NP-Hard, NP-Complete, C language	None
Metallurgical Engineering							
1	5	Powder Metallurgy	Open Elective	MM105302MM	Temporary Faculty		-
2	5	Special steels and Alloys	Program Elective	MM105201MM	Temporary Faculty		

3	5	Light Metals and Alloy	Program Elective	MM105202MM	Temporary Faculty		
4	7	Introduction to Electrical, Magnetic and Optical Materials	Program Elective	MM107201MM	Temporary Faculty		
5	7	Additive Manufacturing of Materials	Program Elective	MM107203MM	Dr. Neha Gupta		
6	7	X-Ray Diffraction and Electron Microscopy	Open Elective	MM107301MM	Dr. Neha Gupta/ Temporary Faculty		
Humanities & Social Sciences							
1	5	Inclusive Leadership and Effective Communication	Open Elective	HS105301HS	Dr. Anoop Kumar Tiwari, Associate Professor	-	-
2	5	Introduction to Linguistics	Open Elective	HS105302HS	Dr. Shashikanta Tarai, Assistant Professor	-	-
3	5	Introduction to Sociology	Open Elective	HS105304HS	Dr. Moksha Singh, Assistant Professor	-	-
4	5	An Introduction to Business Management	Open Elective	HS105306HS	Dr. Chetna Sharma Rajput, Assistant Professor	-	-
5	5	Wellness through Yoga	Open Elective	HS106308HS	Dr. Manju Shukla,Temporary Faculty & Mr. Suraj Nishad, Teaching Assistant	-	-
6	5	Oral & Written Communication Skills (Includes a Minor Project)	Open Elective	HS105314HS	Dr. Y. Vijaya Babu, Assistant Professor	-	-
7	7th	Human Rights & Human Values	Open Elective	HS107311HS	Dr. Moksha Singh, Assistant Professor	-	-
8	7th	Advanced Entrepreneurship for Engineers	Open Elective	HS117313HS	Dr. Subhas Ganguly	-	-
9	7th	Effective Communication and Soft Skills (Includes a Minor Project)	Open Elective	HS107319HS	Dr. Y. Vijaya Babu, Assistant Professor	-	-
10	7th	Professional Communication	Open Elective	HS107320HS	Dr. Shashikanta Tarai, Assistant Professor	-	-
Mechanical Engineering							
1	5	Composite Materials & Mechanics (OE-1)	Open Elective - I	ME105302ME	-	-	-
2	5	Design Thinking & Product Innovation (**Newly offered**) (OE-1)	Open Elective - I	ME105304ME	-	-	-
3	5	Smart Manufacturing (Newly Offered) (OE-III)	Open Elective - I	ME105305ME	-	-	-
4	5	Industrial Engineering & Management (PE-1)	Program Elective-I	ME105202ME	-	-	-
5	5	Fluid Machanics II - Fluid Machinery (**Newly Offered**) (PE-1)	Program Elective-I	ME105204ME	-	-	-
6	5	Measurement and Control (PE-II)	Program Elective - II	ME105212ME	-	-	-
7	5	Dynamics & Vibration (PE-II)	Program Elective -III	ME105213ME	-	-	-
8	7	Industry 5.0 for Engineers (**Newly Offered**) (OE-1)	Open Elective - III	ME107304ME	-	-	-
9	7	Air Pollution Control (OE-III)	Open Elective - III	ME107301ME	-	-	-
10	7	Computational Fluid Dynamics : Techniques & Applications (**Newly offered**) (PE-IV)	Program Elective -IV	ME107203ME	-	-	-
11	7	Finite Element Method (**Newly Offered**) (PE-IV)	Program Elective -IV	ME107204ME	-	-	-
12	7	Power Plant Engineering (PE-V)	Program Elective -V	ME107304ME	-	-	-
13	7	Tribology (PE-V)	Program Elective - V	ME107212ME			
Mining Engineering							
1	5	Mine Hazards and Rescue	Program Elective	MI105201MI	Dr. M. D. Patel / Dr. A. K. Dash		
2	5	Novel Methods of Mining	Program Elective	MI105202MI	Prof. B. R. Parate		
3	7	Mine Legislation & Safety-II	Program Elective	MI107201MI	Dr. A. K. Dash		
4	7	Mine Closure Planning	Program Elective	MI107202MI	Dr. M. Pradhan		
5	7	Mine Economics	Program Elective	MI107251MI	Dr. R. K. Jade		
6	7	Mine Systems Engineering	Program Elective	MI107252MI	Dr. P. Y. Dhekne		