

**NIT Raipur**

**List of Open and Program Electives for Upcoming Spring 2024-25 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)
<b>Architecture and Planning</b>									
1	Architecture and Planning	IV	Theory of Design	Professional Elective	AR204201AR	Mr. Sayon Pramanik, Assistant Professor	Nil	23	CPI >8.0
2		IV	Art in Architecture	Professional Elective	AR204202AR	Dr. Abir Bandyopadhyay, Professor	Nil	23	CPI >8.0
3		VI	Earthquake Resistant Architecture	Open Elective	AR206301AR	Dr. Debashis Sanyal, Professor	Nil	45	CPI >8.0
4		VI	Universal Design	Open Elective	AR206302AR	Dr. Shruti Sharad Nagdeve, Assistant Professor	Nil	45	CPI >8.0
5		VI	Disaster Management and Mitigation Systems	Open Elective	AR206303AR	Mrs. Kabita Biswas Sharma, Assistant Professor	Nil	45	CPI >8.0
6		X	Physical Planning, Theory and Techniques	Professional Elective	AR210201AR	Dr. Vivek Agnihotri, Assistant Professor	Nil	35	CPI >8.0
7		X	Human Settlement and Spatial Organization	Professional Elective	AR210203AR	Mr. Sayon Pramanik, Assistant Professor	Nil	35	CPI >8.0
8		X	Remote Sensing and Basic of GIS	Professional Elective	AR210204AR	Dr. Vivek Agnihotri, Assistant Professor	Nil	35	CPI >8.0
9		X	Building Certification and Rating Systems	Professional Elective	AR210205AR	Mrs. Devanshi Gaur, Assistant Professor	Nil	35	CPI >8.0
10		X	Building Economics and Sociology	Professional Elective	AR210206AR	Mr. Sachin Sahu, Assistant Professor	Nil	35	CPI >8.0
<b>Bio-Medical Engineering</b>									
1	Biomedical Engineering	VI	Biomicrofluidics	Program Elective	BM106202BM	Dr. Arindam Bit	Nil	60	1st cum 1st serve
2		VI	Data Base Management System	Program Elective	BM106203BM	Dr. Saurabh Gupta	Nil	60	1st cum 1st serve
3		VI	Machine Learning & Deep Learning in Healthcare & Lifescienc	Open elective	BM106302BM	Dr. Bikesh Kumar Singh	Nil	60	1st cum 1st serve
4		VIII	Biofluid Dynamics	Open elective	BM108301BM	Dr. Arindam Bit	Nil	60	1st cum 1st serve
5		VIII	Drug Delivery Systems	Open elective	BM108302BM	Dr. Mainak Basu	Nil	60	1st cum 1st serve
6		VIII	3 D Printing Technology	Open elective	BM108303BM	Dr. M. Marieswaran	Nil	60	1st cum 1st serve
<b>Bio Technology</b>									
1	Biotechnology	6th	Biopharmaceutical Technology	Program Elective 2	BT106203BT	Dr. J. Satya Eswari	Industrial Biotech	As per Branch Intake	Not Applicable
2		6th	Membrane Technolgy	Program Elective 3	BT1062035	D. D. Vasnth	Membrane synthesis & Charaterization, application in medical and biotech industry	As per Branch Intake	Not Applicable
3		6th	Intellectual Property Rights	Open Elective 2	BT106302BT	Dr. Chinmaya Mahapatra	Microbiology, Plant & animal cell culture, molecular biology, Recombinant DNA Tech	Branch intake + 20 students from the other departments	CPI of external student should not be <8.5
4		8th	Bioreactor Design and Analysis	Open Elective 4	BT108304BT	Dr. Pratima Gupta	Modelling, Material and enegy balances, Biological rate processes	Branch intake + 20 students from the other departments	CPI of external student should not be <8.5
5		8th	Interatomics	Open Elective 5	BT108305BT	Dr. Dijendra Nath Roy	Nil	Branch intake + 20 students from the other departments	CPI of external student should not be <8.5
<b>Chemical Engineering</b>									
1	Chemical Engineering	VI	Process Equipment Design-II	Program elective-I	CH106201CH	Dr. M.S. Gaikwad	NIL	80	Preference will be given to chemical engineering student and further screening will be based on CPI
2			Biochemical Engineering	Program elective-I	CH106202CH	Dr. B. Mazumdar	NIL	80	
3		VI	Fluidization Engineering	Program elective-II	CH106251CH	Dr. P.K. Chaudhari	NIL	80	
4			Process Intensification	Program elective-II	CH106252CH	Dr. Ayush Agarwal	NIL	80	
5		VI	Non-conventional energy sources	Open elective	CH106301CH	Dr. Dharmpal	NIL	85	
6			Nanotechnology	Open elective	CH106302CH	Dr. R. Manivannan	NIL	85	
7		VIII	Project Planning Evaluation and Management	Open elective	CH108301CH	Dr. B. Mazumdar	NIL	85	
8			Solid Waste Management	Open elective	CH108302CH	Dr. Prabir Ghosh	NIL	85	
9		VIII	Environmental Impact Assessment	Open elective	CH108351CH	Dr. J. Anandkumar	NIL	85	
10			Disaster Management in Chemical Industries	Open elective	CH108352CH	Dr. V.K. Singh	NIL	85	
<b>Civil Engineering</b>									
1	Civil	6	Advanced Pavement Engineering	Program Elective-I	CV106203CV	Dr. Sunny Deol G & Assistant Professor	Highway and Railway Engineering	-	Not Applicable
2		6	Advanced hydrology	Program Elective-I	CV106202CV	Dr. Vikas Vidhyarthi & Assistant Professor	Fluid Mechanics	-	Not Applicable
3		6	Advanced Structural Analysis	Program Elective-I	CV106201CV	Dr. Alfia Bano & Assistant Professor	Structural Analysis-I & II	-	Not Applicable
4		6	Prestressed Concrete	Program Elective-II	CV106251CV	Dr. G.D. Ramtekkar (Professor) / Dr. Meena Murmu (Assistant Professor)	Mechanics of Solids & Design of Reinforced Concrete Structures	-	Not Applicable
5		6	Transportation Planning and Management	Program Elective-II	CV106252CV	Dr. Sunny Deol G & Assistant Professor	Highway and Railway Engineering	-	Not Applicable
6		6	Air & Noise Pollution and Control	Open Elective-I	CV106301CV	Dr. A.V. Ahirwar & Associate Professor	Nil	100	CGPA 8.00
7		6	Construction Management	Open Elective-I	CV106302CV	Dr. S.V. Deo & Professor	Project Planning and Management	40	Not Applicable
8		8	Remote Sensing, GIS & its applications	Open Elective-I	CV108301CV	Dr. A.D. Prasad & Assistant Professor	Nil	100	CGPA 8.00
9		8	Stability of Slopes and ground improvements	Open Elective-II	CV108351CV	Dr. Sandeep K Chouksey & Assistant Professor	Geotechnical Engineering-III	100	Not Applicable
<b>Computer Science and Engineering</b>									
1		6th	Deep Learning	Program Elective	(CS106205CS)	Dr. Pradeep Singh		CSE	

2	CS & E	6th	Applied Machine Learning	Open Elective	(CS106302CS)	Dr. D S Sisodia		100	CPI 8 and above
3		6th	Cloud Computing	Open Elective	(CS106301CS)	Dr. Madhukrishna Priyadarshini	Computer Network, Operating System, Computer Architecture	100	Only for CSE and IT
4		6th	Advanced Algorithms	Program Elective	CS106202CS	Dr. Nilesh K Bharadwaj	Algorithms Design and Analysis	100	Only for CSE and IT
5		8th	Quantum Computing	Open Elective	CS108304CS	Prof. (Dr.) Naresh Kumar Nagwani	Mathematical Structures, Data Mining, Computing	100	Only for CSE and IT
6		8th	Evolutionary Computing	Open Elective	CS108302CS	Dr. Deepak Singh		100	Open for all
<b>Computer Applications</b>									
1	MCA	4	Cryptography & Network Security	Program (Elective- I)	CA404202CA	Dr. Mou Dasgupta , Associate Professor	Elementary Number Theory, Computer networks	110	None
2		4	Advance OS	Program (Elective- I)	CA404204CA	Prof. Harendra Bikrol ,Associate Professor	NIL	110	None
3		4	Web Technology- Advance Java	Program (Elective- II)	CA404206CA	Dr. Shyam Sundar ,Associate Professor	NIL	110	None
4		4	Unix N/W Programming	Program (Elective- II)	CA404207CA	Dr. Tripti Swarnkar , Professor	Computer network and Unix	110	None
5		4	Advance Data Mining	Open (Elective- I)	CA404302CA	Dr. Naem Ahmad , Assistant Professor	NIL	110	None
6		4	Computer Graphics & Multimedia	Open (Elective- I)	CA404301CA	Dr. Sharbani Purkayastha , Assistant Professor	NIL	110	None
<b>Humanities and Social Sciences</b>									
1	HSS	6th Sem	Cognitive Neuroscience of Language and Emotion	Open	HS106317HS	Dr. Shshikanta Tarai, Assistant Professor	NIL	30	
2		6th Sem	Industrial Sociology and Social Change	Open	HS106310HS	Dr. Moksha Singh Assistant Professor		50	
3		6th Sem	A Course on Organizational Behaviour	Open	HS106309HS	Dr. Chetna Sharma Rajput, Assistant Professor		50	
4		8th Sem	Coexistence based Human Values and Ethics	Open	HS108312HS	Dr. Heena Chawda		80	
<b>Electrical Engineering</b>									
1	Electrical Engineering	VI	Design of Photovoltaic Systems	Open Elective	EL106301EL	Dr. S. Gupta , Professor	Basic Electrical Engineering (EL101022EL), Power Electronics (EL104103EL)]	125	CPI
2		VI	Design and integration of Optical sensors in mechatronics systems	Open Elective	EL106305EL	Dr. Ramya Selvaraj, (Assistant Professor)	NIL	125	CPI
3		VI	Advanced Electric Drives	Program Elective	EL106210EL	Dr. Rajan Kumar, (Assistant Professor)	Power Electronics (EL104103EL), Electrical Machines-III (EL106103EL)]	115	CPI
4		VI	Power Converter Design	Program Elective	EL106211EL	Dr. Sachin Jain (Professor)	Power Electronics	115	CPI
5		VI	Simulation and Modelling of Electrical Systems	Program Elective	EL106202EL	Dr. Venu soni , (Assistant Professor)	Basic Electrical Engineering (EL101022EL), Power Electronics (EL104103EL)]	115	CPI
6		VIII	Illumination Engineering	Open Elective	EL108302EL	Dr. Hira Singh (Tem faculty)	Basic Electrical Engineering (EL101022EL)	125	CPI
7		VIII	Mechatronics	Open Elective	EL108306EL	Dr. S. Ghosh, Professor	Basic Electrical Engineering (EL101022EL), Physics II(PH101006PH)]	125	CPI
<b>Electronics and Communication Engineering</b>									
1	ECE	6th	Computer Communication Network (CCN)	Program	EC106202EC	Dr. A. S. Raghuvanshi (Associate Professor)			
2		6th	Soft Computing (SC)	Program	EC106205EC	Mr. Sujay Chakraborty (Assistant Professor)		110	
3		6th	Machine Learning and Pattern Recognition (MLPR)	Open	EC106301EC	Dr. S. Majumder (Assistant Professor)	Mathematics-II	120	Min. CPI of 8.0 for non-ECE
4		8th	Computer Vision (CV)	Open	EC108301EC	Dr. Toshlanal Meenpal (Associate Professor)	Image Processing	120	Min. CPI of 8.0 for non-ECE
5		8th	Cryptography and Network Security (CNS)	Open	EC108305EC	Dr. B. Acharya (Associate Professor)		120	
<b>Information Technology</b>									
1	Information Technology	6	Cryptography and Network Security	Program	EXX21	Dr. Rajesh Doriya, Assistant Professor		114	NA
2		6	Cloud and IoT Security	Program	EXX24	Dr. G.P.Gupta, Assistant Professor		114	NA
3		6	Cellular Mobile Computing	Program	EXX31	Dr. P.K. Mishra, Assistant Professor		114	NA
4		6	Quantum Computing	Program	EXX32	Dr. K.K. Soni, Assistant Professor		114	NA
5		6	Machine Learning	Open	OXX21	Dr. Mridu Sahu, Assistant Professor		134	CPI>=8.5 for Other Branches
6		6	Data Science and Analytics	Open	OXX24	Dr. G.K. Verma, Assistant Professor		134	CPI>=8.5 for Other Branches
7		8	Blockchain	Open	OXX41	Dr. G.P.Gupta, Assistant Professor		131	CPI>=8.5 for Other Branches
8		8	Cloud Computing	Open	OXX42	Dr. C. Jatoh, Assistant Professor		131	CPI>=8.5 for Other Branches
9		8	5G Network	Open	OXX51	Dr. P.K. Mishra, Assistant Professor		131	CPI>=8.5 for Other Branches
10		8	Deep Learning	Open	OXX52	Dr. Suvendu Rup, Associate Professor		131	CPI>=8.5 for Other Branches
<b>Mechanical Engineering</b>									
1	Mechanical Engineering	6	Air Conditioning Techniques and system Design	Program Elective-III	ME106201ME	Dr. A.K.Tiwari Professor (HAG)	As per the syllabus	70	Merit or CPI
2		6	Operation Research		ME106203ME	Dr. A.R. Singh, Associate Professor	As per the syllabus	70	Merit or CPI
3		6	Additive Manufacturing	Program Elective -IV	ME106401ME	Dr. M.K.Pradhan, Associate Professor	As per the syllabus	50	Merit or CPI
4		6	Artificial Intelligence and Machine Learning for Mechanical Engineers		ME106404ME	Dr. Srinivasu G, Asst. Prof. G-1	As per the syllabus	50	Merit or CPI
5		6	Automobile Engineering		Me106405ME	Dr.S.P.S. Matharu, Prof.	As per the syllabus	50	Merit or CPI
6		6	Robotics	Open Elective- II	ME106303ME	Dr. S.Sanyal, Prof. ( HAG)	As per the syllabus	100	Merit or CPI
7		6	Smart Materials and systems		ME106304ME	Dr. R.K. Sahu, Asst. Prof. G-1	As per the syllabus	100	Merit or CPI
8		8	Welding Technology	Open Elective- IV	ME108302ME	Dr. H.K.Narang, Asst. Prof. G-1	As per the syllabus	120	Merit or CPI
9		8	Non- Conventional Energy Resources	Open Elective- V	ME108311ME	Dr. N.Netam, Asst. Prof. G-1	As per the syllabus	120	Merit or CPI
<b>Mining Engineering</b>									
1		6 th	Advanced Coal Mine Planning	Program Elective-II	MI106201MI	Dr. P. Y. Dhejne, Professor	No		
2		6 th	Mine Acquisition & Operationalization	Program Elective-II	MI106202MI	Dr. M. Pradhan, Professor	No		
3		6 th	Computer application in Mining	Program Elective-III	MI106221MI	Dr. R. K. Jade, Associate Professor	No		
4		6 th	Advanced Surface Mining	Program Elective-III	MI106222MI	Dr. P. K. Dewangan, Professor	No		

5	Mining Engineering	6 th	Mineral Processing	Open Elective-II	MI106301MI	Prof. B. R. Parate, Associate Professor	No	100	1. First 100 enrollment will be selected for the courses. 2. Mining Engg., Metallurgical and Materials Engg. & Mechanical Engg. Department students can only opted this course. 3. Students of Mining Engg. will be given preference.
6		8 th	Sustainable Engineering	Open Elective-IV	MI108301MI	Dr. R. K. Jade, Associate Professor	No	90	1. First 90 enrollment will be selected for the courses. 2. Mining Engg., Metallurgical and Materials Engg. & Mechanical Engg. Department students can only opted this courses. 3. Students of Mining Engg. will be given preference.
7		8 th	Occupational health and safety	Open Elective-V	MI108302MI	Dr. A. K. Dash, Assistant Professor	No	90	
<b>Metallurgical &amp; Material Engineering</b>									
1	Metallurgical and Materials Engg	VI	Tribology of materials	Open Elective (OE1)	MM106302MM	Dr Amit Kumar Yadav	NONE	80	>7.5
2		VI	Liquid Metal Engineering	Program Elective (PE 1)	MM106202MM	Dr Sanjeev Das	Physical Metallurgy		
3		VI	Materials Modeling and Simulation	Program Elective (PE2)	MM106203MM	Dr S. Ganguly	Engineering Maths I,II and III, Physical Metallurgy, Heat Treatment and Phase Transformation.		No backlogs in previous semesters
4		VI	Nuclear Materials	Program Elective (PE2)	MM106204MM	Dr. Abhishek Pandey	None		
5		VIII	Advanced Materials	Open Elective (OE1)	MM108301MM	Dr. Naga Sruthi Neelam	Mechanical Behaviour of Materials,	80	>7.5
6		VIII	Science and Technology of Nano Materials	Open Elective (OE1)	MM108302MM	Dr. Abhishek Sharma	Physics of materials		
7		VIII	Automotive Materials	Open Elective (OE2)	MM108303MM	Dr Manoranjan Kumar Manoj	Physical metallurgy		
8		VIII	Engineering Economics	Open Elective (OE2)	MM108304MM	Dr M K Tripathi	None	50	>9.0