

S.no	Discipline	Course Names	Coordinators	Institute	Duration (in hours)
1	Aerospace Engineering	Engineering Thermodynamics	Prof.D.P.Mishra	IIT Kanpur	30
2	Aerospace Engineering	Aircraft Dynamic Stability & Design Stability Augmentation System	Prof. A.K.Ghosh	IIT Kanpur	20
3	Biosciences and Bio-Engineering	Interactomics: Protein Arrays & Label-free Biosensors	Prof. Sanjeeva Srivastava	IIT Bombay	20
4	Biosciences and Bio-Engineering	Introduction to proteomics	Prof. Sanjeeva Srivastava	IIT Bombay	20
5	Chemical Engineering	Introduction to Time-Frequency Analysis and Wavelet Transforms	Prof. Arun Tangirala	IIT Madras	30
6	Chemical Engineering	Soft Nano Technology	Prof. Rabibrata Mukherjee	IIT Kharagpur	20
7	Chemistry	Pericyclic Reactions and Organic Photochemistry	Prof. Sankararaman	IIT Madras	20
8	Chemistry	Principles and Applications of NMR Spectroscopy	Prof. Hanudatta S. Atreya	IISc Bangalore	20
9	Chemistry	Organo Metallic Chemistry	Prof.Debabrata Maiti	IIT Bombay	10
10	Chemistry	Chemical Applications of Symmetry and Group Theory	Prof. Manabendra Chandra	IIT Kanpur	20
11	Civil Engineering	Modern Construction materials	Prof. Ravindra Gettu	IIT Madras	30
12	Civil Engineering	Project Planning and Control	Prof. Koshy Varghese	IIT Madras	20
13	Civil Engineering	Applications of Geotechnical Engineering	Prof. Neelima Satyam	IIITH	10
14	Civil Engineering	Structural Dynamics	Prof. Ramancharala Pradeep Kumar	IIITH	30
15	Computer Science	Algorithms for Big Data	Prof. John Augustine	IIT Madras	20
16	Computer Science	Artificial Intelligence: Search Methods for Problem Solving	Prof.Deepak Khemani	IIT Madras	30
17	Computer Science	Reinforcement Learning	Prof. Ravindran	IIT Madras	30
18	Computer Science	Introduction to Operating Systems	Prof. Chester Rebeiro	IIT Madras	20
19	Computer Science	Programming, Data Structures and	Prof. Madhavan Mukund	Chennai	20

S.no	Discipline	Course Names	Coordinators	Institute	Duration (in hours)
		Algorithms in Python		Mathematica I Institute	
20	Computer Science	Privacy and Security in Online Social Networks	Prof. Ponnurangam Kumaraguru	IITD	20
21	Computer Science	Mobile Computing	Prof. Pushpendra Singh	IITD	30
22	Computer Science	Theory of Computation	Prof. Raghunath Tewari	IIT Kanpur	20
23	Computer Science	Modern Algebra	Prof. Manindra Agrawal	IIT Kanpur	20
24	Computer Science	Software Testing	Prof. Rajib Mall	IIT Kharagpur	10
25	Computer Science	Programming in C++	Prof. Partha Pratim Das	IIT Kharagpur	20
26	Computer Science	Introduction to Machine Learning	Prof. Sudeshna Sarkar	IIT Kharagpur	20
27	Computer Science	Object-Oriented Analysis and Design	Prof. Partha Pratim Das	IIT Kharagpur	20
28	Computer Science	Complex Network : Theory and Application	Prof. Animesh Mukherjee	IIT Kharagpur	10
29	Computer Science	Introduction to Cryptology	Prof. Sugata Gangopdhyaya	IIT Roorkee	10
30	Computer Science	Design and analysis of algorithms	Prof. Madhavan Mukund	Chennai Mathematica I Institute	20
31	Design	Understanding Design Thinking & People Centred Design	Prof. Jhumkee Iyengar	IIT Kanpur	10
32	Earth Science	Earth Sciences for Civil Engineering	Prof. Javed Mallik	IIT Kanpur	10
33	Electrical Engineering	VLSI Design Verification and test	Prof. Santhosh Biswas, Prof. Jatindra Kumar Deka, Prof. Arnab Sarkar	IIT Guwahati	30
34	Electrical Engineering	Bayesian/ MMSE Estimation for Wireless Communications – MIMO/ OFDM Cellular and Sensor Networks	Prof. Aditya Jagannatham	IIT Kanpur	20
35	Electrical Engineering	Optical communications	Prof. Pradeep Kumar K	IIT Kanpur	30
36	Electrical Engineering	Digital Switching - I	Prof. Y.N. Singh	IIT Kanpur	20
37	Electrical Engineering	An Introduction to Information Theory	Prof. Adrish Banerjee	IIT Kanpur	20
38	Electrical Engineering	Principles of Modern	Prof. Aditya	IIT Kanpur	20

S.no	Discipline	Course Names	Coordinators	Institute	Duration (in hours)
		CDMA/ MIMO/ OFDM Wireless Communications	Jagannatham		
39	Electrical Engineering	Basic Electrical Circuits	Prof. Aniruddhan	IIT Madras	20
40	Electrical Engineering	Computational Electromagnetics & Applications Into Video	Prof. Krish Sankaran	IIT Bombay	30
41	Electrical Engineering	Basic Building Blocks of Microwave Engineering	Prof. Amitabha Bhattacharya	IIT Kharagpur	10
42	Electrical Engineering	Satellite Communication Systems	Prof. Kalyankumar Bandyopadhyay	IIT Kharagpur	20
43	Electrical Engineering	Fundamentals of MIMO Wireless Communication	Prof. Suvra Sekhar Das	IIT Kharagpur	20
44	Electrical Engineering	Audio System Engineering	Prof. Shyamal Kumar Das Mandal	IIT Kharagpur	10
45	Electrical Engineering	Discrete Time Signal Processing	Prof. Arijit De	IIT Kharagpur	20
46	Engineering and Design	Digital Human Modeling and Simulation for Virtual Ergonomics Evaluation	Prof. Sougata Karmakar	IIT Guwahati	20
47	Electrical Engineering	Digital Image Processing	Prof. Prabir Kumar Biswas	IIT Kharagpur	30
48	Humanities and Social Science	How the Brain Creates Mind	Prof. Alok Bajpai	IIT Kanpur	10
49	Humanities and Social Science	Economics of IPR	Prof. Nalin Bharti	IIT Patna	20
50	Humanities and Social Science	Introduction to Indian Art - An appreciation	Prof. Soumik Nandi Majumdar	IIT Kanpur	10
51	Humanities and Social Science	Basic Concepts of Modal Logic	Prof. AVR Sarma	IIT Kanpur	10
52	Humanities and Social Science	Probability and Stochastics for Finance II	Prof. Joydeep Dutta	IIT Kanpur	20
53	Humanities and Social Science	Introduction to Psychology	Prof. Braj Bhushan	IIT Kanpur	20
54	Humanities and Social Science	Folk and Minor Art in India	Prof. Shatarupa Thakurta Roy	IIT Kanpur	20
55	Humanities and Social Science	Developing Soft Skills and Personality	Prof. T Ravichandran	IIT Kanpur	20
56	Humanities and Social Science	Soft Skill Development	Prof. Priyadarshi Patnaik, Prof. V.N. Giri & Prof. D. Suar	IIT Kharagpur	20
57	Humanities and Social	Symbolic Logic	Prof. Chhanda	IIT Kharagpur	20

S.no	Discipline	Course Names	Coordinators	Institute	Duration (in hours)
	Science		Chakraborti		
58	Humanities and Social Science	Introduction on Intellectual Property to Engineers and Technologists	Prof. Tapas Kumar Bandyopadhyay	IIT Kharagpur	20
59	Humanities and Social Science	Globalization and Culture	Prof. Anjali Gera Roy	IIT Kharagpur	20
60	Humanities and Social Science	American Literature & Culture	Prof. Aysha Iqbal Viswamohan	IIT Madras	40
61	Management	Marketing Management - II	Prof. Jayanta Chatterjee & Prof. Shashi Shekhar Mishra	IIT Kanpur	20
62	Management	Commodity Derivatives and Risk Management	Prof. Prabina Rajib	IIT Kharagpur	20
63	Mathematics	Curves and Surfaces	Prof. Sudipta Dutta	IIT Kanpur	10
64	Mechanical Engineering	Variational Methods in Mechanics and Design	Prof. G.K. Ananthasuresh	IISc Bangalore	20
65	Mechanical Engineering	Basics of Finite Element Analysis - II	Prof. Nachiketa Tiwari	IIT Kanpur	20
66	Mechanical Engineering	Basics of Finite Element Analysis - I	Prof. Nachiketa Tiwari	IIT Kanpur	20
67	Mechanical Engineering	Two phase flow and heat transfer	Prof. Arup Kumar Das	IIT Roorkee	10
68	Mechanical Engineering	Refrigeration and air-conditioning	Prof. Ravi Kumar	IIT Roorkee	20
69	Mechanical Engineering	Engineering Economic Analysis	Prof. Pradeep K. Jha	IIT Roorkee	20
70	Mechanical Engineering	Fluid Dynamics and Turbomachines	Prof. Dhiman Chatterjee & Prof. Shamit Bakshi	IIT Madras	20
71	Mechanical Engineering	Advanced Machining Processes	Prof. Manas Das	IIT Guwahati	20
72	Mechanical Engineering	Nature and Property of Materials	Prof. Bishakh Bhattacharya	IIT Kanpur	20
73	Mechanical Engineering	Manufacturing Process Technology - II	Prof. Shantanu Bhattacharya	IIT Kanpur	20
74	Mechanical Engineering	Manufacturing System Technology Part 1 & 2	Prof. Shantanu Bhattacharya	IIT Kanpur	30
75	Mechanical Engineering	Fluid Machines	Prof. Sankar Kumar Som	IIT Kharagpur	20
76	Metallurgical Engineering and Materials Sciences	Fundamentals of X-ray diffraction and Transmission electron microscopy	Prof. Sankaran	IIT Madras	20
77	Metallurgical Engineering and Materials Sciences	Theory and Practice of Non Destructive	Prof. Ranjit Bauri	IIT Madras	20

S.no	Discipline	Course Names	Coordinators	Institute	Duration (in hours)
		Testing			
78	Metallurgical Engineering and Materials Sciences	Physics of Materials	Prof. Prathap Haridoss	IIT Madras	30
79	Metallurgical Engineering and Materials Sciences	Biomaterials for bone tissue engineering applications	Prof. Bikramjit Basu	IISc Bangalore	20
80	Metallurgical Engineering and Materials Sciences	Phase field modelling: the materials science, mathematics and computational aspects	Prof. M.P Gururajan	IIT Bombay	30
81	Metallurgical Engineering and Materials Sciences	Introduction to crystal elasticity and crystal plasticity	Prof. Swarup bag	IIT Guwahati	20
82	Metallurgical Engineering and Materials Sciences	Fundamentals of Material Processing - I	Prof. Shashank Shekhar	IIT Kanpur	20
83	Metallurgical Engineering and Materials Sciences	Heat Treatment and Surface Hardening - I	Prof. Kallol Mondal & Prof. Sandeep Sangal	IIT Kanpur	20
84	Multidisciplinary	Biology for engineers and other non-biologists	Prof. Suraishkumar & Prof. Madhulika Dixit	IIT Madras	10
85	Multidisciplinary	Introduction to reasearch	Prof. Prathap Haridoss	IIT Madras	20
86	NIE	Health Research Fundamentals	Prof. Sanjay Mehendale Prof. Manoj V Murhekar Prof. R Ramakrishnan Prof. Tarun Bhatnagar Prof. Prabhdeep Kaur Prof. P. Manickam Prof. P GaneshKumar	National Institute of Epidemiology	20
87	Physics	Quantum Information and Computing	Prof.Dipan Ghosh	IIT Bombay	20
88	Physics	Engineering Mechanics	Prof. Manoj Harbola	IIT Kanpur	30
89	Physics	Introduction to Electromagnetic Theory	Prof. Manoj Harbola	IIT Kanpur	20
90	Physics/electrical/electronic s	Fundamentals of Optical Fiber Technology	Prof. Sunil Khijwania	IIT Guwahati	30