

Section 1: Policy And Institutionalization Of I&E Activities In HEIs (Academic Calendar Year 2020-21 & 2021-22)

1.1) Adoption Level of Innovation and Entrepreneurship (I&E) Policy in HEIs: Registration; Policy Formulation; Policy Implementation

Completion of Action Items (status as on 7th November 2022)	Status
Registered in the NISP portal for I&E Policy Adoption	Yes
Institute has Formulated an Innovation and Entrepreneurship (I&E) Policy	No
Institute has Action Plans for Implementation of the I&E Policy	Yes

Contact:

Faculty Name:	Prof. B. Gurumoorthy.
Designation:	Chief Executive

1.2) Performance Level of Institution's Innovation Councils (IICs) Established in HEIs: Scores and Stars Obtained

Annual Performances of IIC Institute	Stars Secured
IIC 1.0 (2018-19)	
IIC 2.0 (2019-20)	
IIC 3.0 (2020-21)	
IIC 4.0 (2021-22)	1

Contact:

IIC President of the Institute:	Prof B. Gurumoorthy
Designation:	Professor

1.3) Activeness of Trained Innovation Ambassadors in Driving Campus I&E Ecosystems in HEIs: Trained IA/HEI and Nos of Prescribed Activities undertaken by IA

Sr. No.	Name of the Faculty IA	Level of Training	No of I&E Expert Talks/Sessions Conducted
1	Dinesh Kumar S	Basic	0
2	Raj Waghray	Basic	0

1.4) Participation in KAPILA/SIH Program

HEI Registered in the KAPILA Portal	U-0220	Yes
HEI Participated in the Smart India Hackathon (2022)	U-0220	Yes

Section 2: Teaching and Learning: Academic Programs related to Innovation and Entrepreneurship (I&E) Offered by the HEI

2.1) Academic Courses in Innovation, Entrepreneurship and IPR

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1	Functional Properties of Materials II	UMT 401	2020-21	Core Course	Bachelor	Undergraduate	3	01-08-2020 00:00:00
2	Research in Computer Science	E0 399	2020-21	Elective Course	PhD	Computer Science and Automation	1	01-01-2021 00:00:00
3	Quantum Field Theory II	HE 396	2020-21	Elective Course	PhD	High Energy Physics	3	01-01-2021 00:00:00
4	Commutative Algebra	MA 312	2020-21	Elective Course	PhD	Mathematics	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
5	Commutative Algebra	MA 312	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
6	Solar Energy Advanced Materials and Devices	SS 304	2020-21	Elective Course	PhD	Solid State and Structural Chemistry	3	01-08-2020 00:00:00
7	Introduction to Fluid Mechanics and Plasma Physics	PH 363	2020-21	Elective Course	PhD	Physics	2	01-08-2020 00:00:00
8	Radiative Processes in Astrophysics	PH 362	2020-21	Elective Course	PhD	Physics	2	01-08-2020 00:00:00
9	Crystal Growth Thin films and Characterization	PH 351	2020-21	Elective Course	PhD	physics	3	01-08-2020 00:00:00
10	Advanced Statistical Physics	PH 325	2020-21	Elective Course	PhD	Physics	3	01-08-2020 00:00:00
11	Molecular Simulation	PH 322	2020-21	Elective Course	PhD	Physics	3	01-08-2020 00:00:00
12	Condensed Matter Physics II	PH 320	2020-21	Elective Course	PhD	Physics	3	01-08-2020 00:00:00
13	Carbohydrate Chemistry	OC 303	2020-21	Elective Course	PhD	Organic Chemistry	3	01-08-2020 00:00:00
14	Asymmetric Catalysis From Fundamentals to Frontiers	OC 302	2020-21	Elective Course	PhD	Organic Chemistry	3	01-08-2020 00:00:00
15	Organic Synthesis II	OC 301	2020-21	Elective Course	PhD	Organic Chemistry	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
16	Advanced Electron Microscopy in Materials Characterization	NE 316	2020-21	Elective Course	PhD	Nanoscience and Engineering	3	01-08-2020 00:00:00
17	Introduction to Supramolecular Chemistry	MR 309	2020-21	Elective Course	PhD	Material Research Centre	3	01-08-2020 00:00:00
18	Probability theory	MA 361	2020-21	Elective Course	PhD	Mathematics	3	01-08-2020 00:00:00
19	Elliptic Curves	MA 353	2020-21	Elective Course	PhD	Mathematics	3	01-08-2020 00:00:00
20	Riemannian Geometry	MA 333	2020-21	Elective Course	PhD	Mathematics	3	01-08-2020 00:00:00
21	Introduction to Several Complex Variables	MA 328	2020-21	Elective Course	PhD	Mathematics	3	01-08-2020 00:00:00
22	Fourier Analysis	MA 326	2020-21	Elective Course	PhD	Mathematics	3	01-08-2020 00:00:00
23	Lie Algebra and Their Representation	MA 315	2020-21	Elective Course	PhD	Mathematics	3	01-08-2020 00:00:00
24	Advanced Organometallic Chemistry	IP 312	2020-21	Elective Course	PhD	Inorganic and Physical Chemistry	3	01-08-2020 00:00:00
25	Advanced Organometallic Chemistry	IP 312	2020-21	Elective Course	PhD	Inorganic and Physical Chemistry	3	01-08-2020 00:00:00
26	Bio and Medicinal Inorganic Chemistry	IP 311	2020-21	Elective Course	PhD	Inorganic and Physical Chemistry	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
27	Classical and Quantum Optics	IN 302	2020-21	Elective Course	PhD	Instrumentation and Applied Physics	3	01-08-2020 00:00:00
28	Quantum Field Theory - I	HE 395	2020-21	Elective Course	PhD	High Energy Physics	3	01-08-2020 00:00:00
29	Cosmology for Theorists	HE 394	2020-21	Elective Course	PhD	High Energy Physics	3	01-08-2020 00:00:00
30	Quantum Mechanics III	HE 391	2020-21	Elective Course	PhD	High Energy Physics	3	01-08-2020 00:00:00
31	Quantitative Ecology Research Design and Inference	EC 305	2020-21	Elective Course	PhD	Ecological Sciences	2	01-08-2020 00:00:00
32	Stochastic and Spatial Dynamics in Biology	EC 303	2020-21	Elective Course	PhD	Ecological Sciences	2	01-08-2020 00:00:00
33	Plant-Animal Interactions Ecology Behaviour and Evolution	EC 302	2020-21	Elective Course	PhD	Ecological Sciences	2	01-08-2020 00:00:00
34	Animal Behaviour Mechanisms and Evolution	EC 301	2020-21	Elective Course	PhD	Ecological Sciences	2	01-08-2020 00:00:00
35	Molecular Spectroscopy Dynamics and Photochemistry	CD 402	2020-21	Elective Course	PhD	Chemistry	3	01-08-2020 00:00:00
36	Astronomical Techniques	PH 377	2020-21	Elective Course	PhD	Physics	2	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
37	Non-Linear Model in Climate Sciences	AS 313	2020-21	Elective Course	,PhD	Atmospheric Sciences	3	01-08-2020 00:00:00
38	Topics in Stochastic Approximation Algorithms	E1 396	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-08-2020 00:00:00
39	Topics in Database Systems	E0 361	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-08-2020 00:00:00
40	Topics in Advanced Cryptography	E0 337	2020-21	Elective Course	PhD	Computer Science and Automation	1	01-08-2020 00:00:00
41	Deep Learning for Natural Language Processing	E0 334	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-08-2020 00:00:00
42	Topics in Combinatorics	E0 311	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-08-2020 00:00:00
43	Topics in Software Engineering	E0 302	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-08-2020 00:00:00
44	Advanced Topics in Coding Theory	E2 331	2020-21	Elective Course	PhD	Electrical Communication Engineering	2	01-08-2020 00:00:00
45	Advanced Deep Learning	E9 309	2020-21	Elective Course	PhD	Electrical Engineering	3	01-08-2020 00:00:00
46	Nonlinear Mechanics of Composites Structures	AE 352	2020-21	Elective Course	PhD	Aerospace Engineering	3	01-01-2021 00:00:00
47	Topics in Computer Architecture	E0 343	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
48	Topics in Graph Theory	E0 320	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-01-2021 00:00:00
49	Proof Systems in Cryptography	E0 314	2020-21	Elective Course	,PhD	Computer Science and Automation	3	01-01-2021 00:00:00
50	Theory of convex optimization and sampling	E0 313	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-01-2021 00:00:00
51	Topics in complexity theory	E0 309	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-01-2021 00:00:00
52	Robot Learning and Control	CP 314	2020-21	Elective Course	PhD	Cyber Physical Systems	3	01-01-2021 00:00:00
53	Foundations of Machine Learning	E2 336	2020-21	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2021 00:00:00
54	Topics in Artificial Intelligence	E2 335	2020-21	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2021 00:00:00
55	Ecosystems and Global Change	EC 309	2020-21	Elective Course	PhD	Ecological Sciences	2	01-01-2021 00:00:00
56	Machine Learning in Neuroscience	E9 306	2020-21	Elective Course	PhD	Electrical Engineering	1	01-01-2021 00:00:00
57	General Relativity	HE 398	2020-21	Elective Course	,PhD	High Energy Physics	3	01-01-2021 00:00:00
58	Standard Model of Particle Physics	HE 392	2020-21	Elective Course	PhD	High Energy Physics	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
59	Advanced Mathematical Physics	HE 315	2020-21	Elective Course	,PhD	High Energy Physics	3	01-01-2021 00:00:00
60	Topics in Basic and Applied Electrochemistry	IP 323	2020-21	Elective Course	PhD	Inorganic and Physical Chemistry	3	01-01-2021 00:00:00
61	Polymer Chemistry	IP 322	2020-21	Elective Course	PhD	Inorganic and Physical Chemistry	3	01-01-2021 00:00:00
62	Electron Microscopy in Materials Characterization	MR 306	2020-21	Elective Course	PhD	Material Research Centre	3	01-01-2021 00:00:00
63	Seminar in Topics in Mathematics	MA 399	2020-21	Elective Course	PhD	Mathematics	2	01-01-2021 00:00:00
64	Representation theory of affine Lie algebras	MA 387	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
65	Introduction to Complex Dynamics	MA 380	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
66	Introduction to the Calculus of Variations	MA 374	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
67	Stochastic Finance II	MA 366	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
68	Probability in higher dimensions	MA 363	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
69	Stochastic Dynamic Optimization	MA 359	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00

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70	Differentiable Manifolds and Lie Groups	MA 338	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
71	Analysis III	MA 321	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
72	Algebraic Combinatorics	MA 319	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
73	Elements of Structural Biology	MB 303	2020-21	Elective Course	PhD	Molecular Biophysics	3	01-01-2021 00:00:00
74	Physics and Mathematics of Molecular Sensing	NE 332	2020-21	Elective Course	PhD	Nanoscience and Engineering	3	01-01-2021 00:00:00
75	Lasers Principles and Systems	NE 313	2020-21	Elective Course	PhD	Nanoscience and Engineering	3	01-01-2021 00:00:00
76	Photonics technology Materials and Devices	NE 310	2020-21	Elective Course	PhD	Nanoscience and Engineering	3	01-01-2021 00:00:00
77	Topics in Molecular and Cellular Neuroscience	NS 302	2020-21	Elective Course	PhD	Neuroscience	2	01-01-2021 00:00:00
78	Topics in Systems and Cognitive Neuroscience	NS 301	2020-21	Elective Course	PhD	Neuroscience	2	01-01-2021 00:00:00
79	General Relativity and Cosmology	PH 371	2020-21	Elective Course	PhD	Physics	3	01-01-2021 00:00:00
80	Physics of Advanced Optical Materials	PH 366	2020-21	Elective Course	PhD	Physics	3	01-01-2021 00:00:00

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81	Galaxies and Interstellar Medium	PH 365	2020-21	Elective Course	PhD	Physics	3	01-01-2021 00:00:00
82	Computational physics	PH 354	2020-21	Elective Course	PhD	Physics	3	01-01-2021 00:00:00
83	Semiconductor Physics	PH 352	2020-21	Elective Course	PhD	Physics	3	01-01-2021 00:00:00
84	Quantum Statistical Field Theory	PH 340	2020-21	Elective Course	PhD	Physics	3	01-01-2021 00:00:00
85	Solar Energy Advanced Materials and Devices	SS 304	2021-22	Elective Course	PhD	Solid State and Structural Chemistry	3	01-08-2021 00:00:00
86	Introduction to Fluid Mechanics and Plasma Physics	PH 363	2021-22	Elective Course	PhD	Physics	2	01-08-2021 00:00:00
87	Radiative Processes in Astrophysics	PH 362	2021-22	Elective Course	PhD	Physics	2	01-08-2021 00:00:00
88	Crystal Growth Thin films and Characterization	PH 351	2021-22	Elective Course	PhD	Physics	3	01-08-2021 00:00:00
89	Advanced Statistical Physics	PH 325	2021-22	Elective Course	PhD	Physics	3	01-08-2021 00:00:00
90	Molecular Simulation	PH 322	2021-22	Elective Course	PhD	Physics	3	01-08-2021 00:00:00
91	Condensed Matter Physics II	PH 320	2021-22	Elective Course	PhD	Physics	3	01-08-2021 00:00:00

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92	Carbohydrate Chemistry	OC 303	2021-22	Elective Course	PhD	Organic Chemistry	3	01-08-2021 00:00:00
93	Asymmetric Catalysis From Fundamentals to Frontiers	OC 302	2021-22	Elective Course	PhD	Organic Chemistry	3	01-08-2021 00:00:00
94	Organic Synthesis II	OC 301	2021-22	Elective Course	PhD	Organic Chemistry	3	01-08-2021 00:00:00
95	Advanced Electron Microscopy in Materials Characterization	NE 316	2021-22	Elective Course	PhD	Nano Science and Engineering	3	01-08-2021 00:00:00
96	Introduction to Supramolecular Chemistry	MR 309	2021-22	Elective Course	PhD	Nano Science and Engineering	3	01-08-2021 00:00:00
97	Introduction to Supramolecular Chemistry	MR 309	2021-22	Elective Course	PhD	Material Research Centre	3	01-08-2021 00:00:00
98	Probability theory	MA 361	2021-22	Elective Course	PhD	Mathematics	3	01-08-2021 00:00:00
99	Elliptic Curves	MA 353	2021-22	Elective Course	PhD	Mathematics	3	01-08-2021 00:00:00
100	Riemannian Geometry	MA 333	2021-22	Elective Course	PhD	Mathematics	3	01-08-2021 00:00:00
101	Introduction to Several Complex Variables	MA 328	2021-22	Elective Course	PhD	Mathematics	3	01-08-2021 00:00:00
102	Fourier Analysis	MA 326	2021-22	Elective Course	PhD	Mathematics	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
103	Lie Algebra and Their Representation	MA 315	2021-22	Elective Course	PhD	Mathematics	3	01-08-2021 00:00:00
104	Commutative Algebra	MA 312	2021-22	Elective Course	PhD	Mathematics	3	01-08-2021 00:00:00
105	Advanced Organometallic Chemistry	IP 312	2021-22	Elective Course	PhD	Inorganic and Physical Chemistry	3	01-08-2021 00:00:00
106	Bio and Medicinal Inorganic Chemistry	IP 311	2021-22	Elective Course	PhD	Inorganic and Physical Chemistry	3	01-08-2021 00:00:00
107	Classical and Quantum Optics	IN 302	2021-22	Elective Course	PhD	Instrumentation and Applied Physics	3	01-08-2021 00:00:00
108	Quantum Field Theory - I	HE 395	2021-22	Elective Course	PhD	High Energy Physics	3	01-08-2021 00:00:00
109	Cosmology for Theorists	HE 394	2021-22	Elective Course	PhD	High Energy Physics	3	01-08-2021 00:00:00
110	Quantum Mechanics III	HE 391	2021-22	Elective Course	PhD	High Energy Physics	3	01-08-2021 00:00:00
111	Quantitative Ecology Research Design and Inference	EC 305	2021-22	Elective Course	PhD	Ecological Sciences	2	01-08-2021 00:00:00
112	Stochastic and Spatial Dynamics in Biology	EC 303	2021-22	Elective Course	PhD	Ecological Sciences	2	01-08-2021 00:00:00
113	Plant-Animal Interactions (Ecology Behaviour and Evolution)	EC 302	2021-22	Elective Course	PhD	Ecological Sciences	2	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
114	Animal Behaviour Mechanisms and Evolution	EC 301	2021-22	Elective Course	PhD	Ecological Sciences	2	01-08-2021 00:00:00
115	Advanced Deep Learning	E9 309	2021-22	Elective Course	PhD	Electrical Engineering	3	01-08-2021 00:00:00
116	Electromagnetic Metamaterials Concepts and Applications	E8 304	2021-22	Elective Course	PhD	Electrical Communication Engineering	3	01-08-2021 00:00:00
117	Advanced Topics in Coding Theory	E2 331	2021-22	Elective Course	PhD	Electrical Communication Engineering	3	01-08-2021 00:00:00
118	Next Generation Wireless Systems Design and Analysis	E2 302	2021-22	Elective Course	PhD	Electrical Communication Engineering	3	01-08-2021 00:00:00
119	Topics in Stochastic Approximation Algorithms	E1 396	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-08-2021 00:00:00
120	Topics in AI for Social Good	E0 388	2021-22	Elective Course	PhD	Computer Science and Automation	2	01-08-2021 00:00:00
121	Topics in Database Systems	v	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-08-2021 00:00:00
122	Hypergraphs and Set systems	E0 360	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-08-2021 00:00:00
123	Topics in Computer Systems Security	E0 359	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-08-2021 00:00:00
124	Deep Learning for Natural Language Processing	E0 334	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
125	Topics in Program Analysis	E0 327	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-08-2021 00:00:00
126	Topics in Software Engineering	E0 302	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-08-2021 00:00:00
127	Non-Linear Model in Climate Sciences	AS 313	2021-22	Elective Course	PhD	Atmospheric and Ocean Sciences	3	01-08-2021 00:00:00
128	Applied optimal Control and State Estimation	AE 372	2021-22	Elective Course	PhD	Aerospace Engineering	3	01-01-2022 00:00:00
129	High-performance computing for Quantum Modeling of	DS 393	2021-22	Elective Course	PhD	Computational and Data Sciences	3	01-01-2022 00:00:00
130	Environmental Data Analytics	DS 392	2021-22	Elective Course	PhD	Computational and Data Sciences	3	01-01-2022 00:00:00
131	Topics in Advanced Cryptography	E0 337	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-01-2022 00:00:00
132	Measure Theoretic Probability	E0 315	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-01-2022 00:00:00
133	Proof Systems in Cryptography	E0 314	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-01-2022 00:00:00
134	Topics in complexity theory	E0 309	2021-22	Elective Course	PhD	Computer Science and Automation	3	01-01-2022 00:00:00
135	Robot Learning and Control	CP 315	2021-22	Elective Course	PhD	Cyber Physical Systems	2	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
136	Ecosystems and Global Change	EC 309	2021-22	Elective Course	PhD	Ecological Sciences	2	01-01-2022 00:00:00
137	Stochastic Dynamics and Stochastic Control with applications to Machine Learning	E3 303	2021-22	Elective Course	PhD	Electrical Communications Engineering	3	01-01-2022 00:00:00
138	Topics in Artificial Intelligence	E2 335	2021-22	Elective Course	PhD	Electrical Communications Engineering	3	01-01-2022 00:00:00
139	Machine Learning in Neuroscience	E9 306	2021-22	Elective Course	PhD	Electrical Engineering	1	01-01-2022 00:00:00
140	Advanced Convex Optimization	E0 350	2021-22	Elective Course	PhD	Electrical Engineering	3	01-01-2022 00:00:00
141	Special Topics in Nanoelectronics	E3 301	2021-22	Elective Course	PhD	Electronic Systems Engineering	3	01-01-2022 00:00:00
142	General Relativity	HE 398	2021-22	Elective Course	,PhD	High Energy Physics	3	01-01-2022 00:00:00
143	Quantum Field Theory II	HE 396	2021-22	Elective Course	PhD	High Energy Physics	3	01-01-2022 00:00:00
144	Standard Model of Particle Physics	HE 392	2021-22	Core Course	PhD	High Energy Physics	3	01-01-2022 00:00:00
145	Experimental High Energy Physics	HE 386	2021-22	Elective Course	PhD	High Energy Physics	3	01-01-2022 00:00:00
146	Topics in Basic and Applied Electrochemistry	IP 323	2021-22	Elective Course	PhD	Inorganic and physical Chemistry	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
147	Polymer Chemistry	IP 322	2021-22	Elective Course	PhD	Inorganic and physical Chemistry	3	01-01-2022 00:00:00
148	Time Dependent Quantum Chemistry	IP 315	2021-22	Elective Course	PhD	Inorganic and physical Chemistry	3	01-01-2022 00:00:00
149	Computational Modeling of Materials	MR 308	2021-22	Elective Course	PhD	Material Research Centre	2	01-01-2022 00:00:00
150	Electron Microscopy in Materials Characterization	MR 306	2021-22	Elective Course	PhD	Material Research Centre	3	01-01-2022 00:00:00
151	Seminar on topics in Mathematics	MA 399	2021-22	Elective Course	PhD	Mathematics	2	01-01-2022 00:00:00
152	Percolation and Random Graphs	MA 390	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
153	Coxeter Groups	MA 386	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
154	Stochastic Finance II	MA 366	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
155	Class field theory a course in arithmetic geometry	MA 356	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
156	Topics in Geometric Topology Geometric structures	MA 355	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00

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157	Algebraic Topology	MA 332	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
158	Topics in Complex Analysis	MA 324	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
159	Analysis III	MA 321	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
160	Algebraic Number Theory	MA 313	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
161	Basic Algebraic Geometry	MA 308	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
162	Relaxation Theory and Applications to Solution State Biomolecular NMR Spectrosc	MB 316	2021-22	Elective Course	PhD	Molecular BioPhysics	3	01-01-2022 00:00:00
163	Elements of Structural Biology	MB 303	2021-22	Elective Course	PhD	Molecular BioPhysics	3	01-01-2022 00:00:00
164	Physics and Mathematics of Molecular Sensing	NE 332	2021-22	Elective Course	PhD	Nanoscience and Engineering	3	01-01-2022 00:00:00
165	Semiconductor devices for RF and microwave electronics	NE 315	2021-22	Elective Course	PhD	Nanoscience and Engineering	3	01-01-2022 00:00:00
166	Semiconductor Opto-electronics and Photovoltaics	NE 314	2021-22	Elective Course	PhD	Nanoscience and Engineering	3	01-01-2022 00:00:00
167	Nonlinear Photonics and Lasers	NE 312	2021-22	Elective Course	PhD	Nanoscience and Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
168	Integrated photonics Lab	NE 311	2021-22	Elective Course	PhD	Nanoscience and Engineering	1	01-01-2022 00:00:00
169	Photonics technolog Materials and Devices	NE 310	2021-22	Elective Course	PhD	Nanoscience and Engineering	3	01-01-2022 00:00:00
170	Topics in Molecular and Cellular Neuroscience	NS 302	2021-22	Elective Course	PhD	NeuroScience	2	01-01-2022 00:00:00
171	Topics in Systems and Cognitive Neuroscience	NS 301	2021-22	Elective Course	PhD	NeuroScience	2	01-01-2022 00:00:00
172	Astronomical Techniques	PH 377	2021-22	Elective Course	PhD	Physics	2	01-01-2022 00:00:00
173	General Relativity and Cosmology	PH 371	2021-22	Elective Course	PhD	Physics	3	01-01-2022 00:00:00
174	Galaxies and Interstellar Medium	PH 365	2021-22	Elective Course	PhD	Physics	3	01-01-2022 00:00:00
175	Physics at the Nanoscale	PH 359	2021-22	Elective Course	PhD	Physics	3	01-01-2022 00:00:00
176	Computational physics	PH 354	2021-22	Elective Course	PhD	Physics	3	01-01-2022 00:00:00
177	Semiconductor Physics	PH 352	2021-22	Elective Course	PhD	Physics	3	01-01-2022 00:00:00
178	Physics of Soft Condensed Matter	PH 350	2021-22	Elective Course	PhD	Physics	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
179	Research in Computer Science	E0 399	2021-22	Elective Course	PhD	Computer Science and Automation	1	01-01-2022 00:00:00
180	Introductory Biology I	UB 101L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
181	Introductory Biology I	UB 101T	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
182	Introductory Biology III	UB 201L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
183	Introductory Biology - III	UB 201T	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
184	Experiments in Microbiology	UB 301L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
185	Experiments in Ecology and Evolution	UB 307L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
186	Experiments in Genetics	UB 309L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
187	Genetics	UB 309T	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
188	Project BIOLOGY	UB 500	2021-22	Core Course	Bachelor	Undergraduate	6	01-08-2021 00:00:00
189	Physical Principles of Chemistry (Lab)	UC 101L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
190	Physical Principles Of Chemistry	UC 101T	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
191	Basic Organic Chemistry (Lab)	UC 206L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
192	Basic Organic Chemistry	UC 206T	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
193	Organic and Inorganic Chemistry Laboratory	UC 301	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
194	Molecular Spectroscopy Dynamics and Photochemistry	UC 402	2021-22	Core Course	Bachelor	Undergraduate	3	01-08-2021 00:00:00
195	Algorithms And Programming (Lab)	UE 101L	2021-22	Core Course	,Bachelor	Undergraduate	1	01-08-2021 00:00:00
196	Algorithms And Programming	UE 101T	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
197	Introduction to Earth and its Environment	UE 200	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
198	Introduction to Scientific Computing	UE 201	2021-22	Core Course	Bachelor	Undergraduate	3	01-08-2021 00:00:00
199	Introduction to Materials Science	UE 202	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
200	Design Principles in Environmental Engineering	UES 302	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
201	Surface and Ground Water Quality	UES 306	2021-22	Core Course	Bachelor	Undergraduate	3	01-08-2021 00:00:00
202	Experimental Methods in Solid Waste Management (Lab)	UES 310L	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
203	Ways of Knowing	UH 101	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
204	Ways of Doing Mapping Science - Society Relationship	UH 201	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
205	In-semester Project	UI 301	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
206	Analysis and Linear Algebra I	UM 101	2021-22	Core Course	Bachelor	Undergraduate	3	01-08-2021 00:00:00
207	Probability and Statistics	UM 201	2021-22	Core Course	Master	Undergraduate	3	01-08-2021 00:00:00
208	Masters Project A	UM 501	2021-22	Core Course	Bachelor	Undergraduate	6	01-08-2021 00:00:00
209	Materials Kinetics	UMT 301	2021-22	Core Course	Bachelor	Undergraduate	3	01-08-2021 00:00:00
210	Materials Processing Lab	UMT 302L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
211	Introduction To Materials Processing	UMT 302T	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
212	Mechanical Testing Lab	UMT 312L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
213	Mechanical Testing And Failure Of Materials	UMT 312T	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
214	Functional Properties of Materials II	UMT 401	2021-22	Core Course	Bachelor	Undergraduate	3	01-08-2021 00:00:00
215	Introductory Physics I (Lab)	UP 101L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
216	Introductory Physics I	UP 101T	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
217	Introductory Physics III (Lab)	UP 201L	2021-22	Core Course	Bachelor	Undergraduate	1	01-08-2021 00:00:00
218	Introductory Physics III	UP 201T	2021-22	Core Course	Bachelor	Undergraduate	2	01-08-2021 00:00:00
219	Project PHYSICS	UP 400	2021-22	Core Course	Bachelor	Undergraduate	6	01-08-2021 00:00:00
220	Introductory Biology -II (Lab)	UB 102L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
221	Introductory Biology -II	UB 102T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
222	Introductory Physiology	UB 205	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
223	Experiments in Biochemistry and Physiology	UB 206	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
224	Experiments in Biochemistry and Physiology	UB 206L	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
225	General Biochemistry	UB 207	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
226	Basic Molecular Biology	UB 208	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
227	Developmental Biology	UB 302	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
228	Experiments in Molecular Biophysics	UB 303	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
229	Experiments in Neurobiology	UB 304	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
230	Project BIOLOGY	UB 400	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
231	Project BIOLOGY	UB 500	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
232	Basic Inorganic Chemistry (Lab)	UC 103L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
233	Basic Inorganic Chemistry (Lab)	UC 103L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
234	Basic Inorganic Chemistry	UC 103T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
235	Thermodynamics and Electrochemistry	UC 202	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
236	Inorganic Chemistry Chemistry of Elements	UC 204	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
237	Basic Organic Reactions	UC 205	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
238	Instrumental Methods of Chemical Analysis Laboratory	UC 207L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
239	Instrumental Methods of Chemical Analysis	UC 207T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
240	Physical and Analytical Chemistry Laboratory	UC 302	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
241	Physical and Analytical Chemistry Laboratory	UC 302	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
242	Basic Organometallic Chemistry	UC 303	2021-22	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
243	Project CHEMISTRY	UC 400	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
244	Project CHEMISTRY	UC 500	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
245	Introduction to Electrical and Electronics Engineering (Lab)	UE 102L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
246	Introduction To Electrical And Electronics Engineering	UE 102T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
247	Elements of Solid Mechanics	UE 204	2021-22	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
248	Introduction to Earth System Laboratory	UES 202L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
249	Introduction to Earth System	UES 202T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
250	Experimental Methods in Environmental Chemistry Laboratory	UES 206L	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
251	Experimental Methods in Environmental Chemistry Laboratory	UES 206L	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
252	Introduction to Basic Geology (Lab)	UES 304L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
253	Introduction to Basic Geology	UES 304T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
254	Project EARTH and ENVIRONMENTAL SCIENCE	UES 400	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
255	Ways of Seeing	UH 102	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
256	In-Semester Project	UI 202	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
257	In-Semester Project	UI 302	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
258	Analysis and Linear Algebra II	UM 102	2021-22	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
259	Introduction to Basic Analysis	UM 204	2021-22	Core Course	Bachelor	Undergraduate	4	01-01-2021 00:00:00
260	Introduction To Algebraic Structures	UM 205	2021-22	Core Course	Bachelor	Undergraduate	4	01-01-2021 00:00:00
261	Project MATHEMATICS	UM 400	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
262	Masters Project B	UM 502	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
263	Structure of Materials Laboratory	UMT 202L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
264	Structure of Materials	UMT 202T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
265	Materials Thermodynamics	UMT 203	2021-22	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
266	Mechanical Properties of Materials	UMT 205	2021-22	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
267	Functional Properties of Materials	UMT 309	2021-22	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
268	Introduction to Materials Manufacturing Laboratory	UMT 310L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
269	Functional Property Characterization Laboratory	UMT 311	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
270	Project MATERIALS	UMT 400	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
271	Project MATERIALS	UMT 500	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
272	Introductory Physics-II (Laboratory)	UP 102L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
273	Introductory Physics-II	UP 102T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
274	Intermediate Mechanics Oscillations and Waves Laboratory	UP 202L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
275	Intermediate Mechanics Oscillations and Waves	UP 202T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
276	Intermediate Electromagnetism and the Quantum Physics of Radiation Laboratory	UP 203L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
277	Intermediate Electromagnetism and the Quantum Physics of Radiation	UP 203T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
278	Intermediate Thermal Physics and the Physics of Materials Laboratory	UP 204L	2021-22	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
279	Intermediate Thermal Physics and the Physics of Materials	UP 204T	2021-22	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
280	Project PHYSICS	UP 400	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
281	Project PHYSICS	UP 500	2021-22	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
282	Introductory Biology I	UB 101L	2020-21	Core Course	Bachelor	Undergraduate	1	01-08-2020 00:00:00
283	Introductory Biology I	UB 101T	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
284	Introductory Biology III	UB 201L	2020-21	Core Course	Bachelor	Undergraduate	1	01-08-2020 00:00:00
285	Introductory Biology - III	UB 201T	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
286	Experiments in Microbiology	UB 301L	2020-21	Core Course	Bachelor	Undergraduate	1	01-08-2020 00:00:00
287	Experiments in Ecology	UB 305L	2020-21	Core Course	Bachelor	Undergraduate	1	01-08-2020 00:00:00
288	Physical Principles of Chemistry (Lab)	UC 101L	2020-21	Core Course	Bachelor	Undergraduate	1	01-08-2020 00:00:00
289	Physical Principles Of Chemistry	UC 101T	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
290	Basic Organic Chemistry (Lab)	UC 206L	2020-21	Core Course	Bachelor	Undergraduate	1	01-08-2020 00:00:00
291	Basic Organic Chemistry	UC 206T	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
292	Molecular Spectroscopy Dynamics and Photochemistry	UC 402	2020-21	Core Course	Bachelor	Undergraduate	3	01-08-2020 00:00:00
293	Algorithms And Programming (Lab)	UE 101L	2020-21	Core Course	Bachelor	Undergraduate	1	01-08-2020 00:00:00
294	Algorithms And Programming	UE 101T	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
295	Introduction to Earth and its Environment	UE 200	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
296	Introduction to Scientific Computing	UE 201	2020-21	Core Course	Bachelor	Undergraduate	3	01-08-2020 00:00:00
297	Introduction to Materials Science	UE 202	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
298	Design Principles in Environmental Engineering	UE 203	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
299	Introduction to Geochemistry	UE 204	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
300	Surface and Ground Water Quality	UE 205	2020-21	Core Course	Bachelor	Undergraduate	3	01-08-2020 00:00:00
301	Ways of Knowing	UE 207	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
302	Ways of Doing Mapping Science - Society Relationship	UE 208	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
303	Analysis and Linear Algebra I	UE 210	2020-21	Core Course	Bachelor	Undergraduate	3	01-08-2020 00:00:00
304	Probability and Statistics	UE 211	2020-21	Core Course	Bachelor	Undergraduate	3	01-08-2020 00:00:00
305	Masters Project A	UE 212	2020-21	Core Course	Bachelor	Undergraduate	6	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
306	Materials Kinetics	UE 213	2020-21	Core Course	Bachelor	Undergraduate	3	01-08-2020 00:00:00
307	Introduction To Materials Processing	UE 214	2020-21	Core Course	Bachelor	Undergraduate	2	01-08-2020 00:00:00
308	Mechanical Testing And Failure Of Materials	UE 215	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
309	Functional Properties of Materials II	UE 216	2020-21	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
310	Introductory Physics I (Lab)	UE 217	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
311	Introductory Physics I	UE 218	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
312	Introductory Physics III (Lab)	UE 219	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
313	Introductory Physics III (Lab)	UE 219	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
314	Introductory Physics III	UE 220	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
315	Introductory Biology -II (Lab)	UE 221	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
316	Introductory Biology -II	UE 222	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
317	Introductory Physiology	UE 223	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
318	Experiments in Biochemistry and Physiology	UE 224	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
319	General Biochemistry	UE 225	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
320	Basic Molecular Biology	UE 226	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
321	Developmental Biology	UE 227	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
322	Experiments in Molecular Biophysics	UE 228	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
323	Experiments in Neurobiology	UE 229	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
324	Project BIOLOGY	UE 230	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
325	Project BIOLOGY	UE 231	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
326	Basic Inorganic Chemistry (Lab)	UE 232	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
327	Basic Inorganic Chemistry	UE 233	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
328	Thermodynamics and Electrochemistry	UE 234	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
329	Inorganic Chemistry Chemistry of Elements	UE 235	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
330	Basic Organic Reactions	UE 236	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
331	Instrumental Methods of Chemical Analysis Laboratory	UE 237	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
332	Instrumental Methods of Chemical Analysis	UE 238	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
333	Organic and Inorganic Chemistry Laboratory	UE 239	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
334	Physical and Analytical Chemistry Laboratory	UE 240	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
335	Basic Organometallic Chemistry	UE 241	2020-21	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
336	Project CHEMISTRY	UE 242	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
337	Project CHEMISTRY	UE 243	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
338	Project CHEMISTRY	UE 243	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
339	Introduction to Electrical and Electronics Engineering (Lab)	UE 244	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
340	Introduction To Electrical And Electronics Engineering	UE 245	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
341	Elements of Solid Mechanics	UE 246	2020-21	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
342	Introduction to Earth System Laboratory	UE 247	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
343	Introduction to Earth System	UE 248	2020-21	Elective Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
344	Fundamentals of Climate Science	UE 249	2020-21	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
345	Experimental Methods in Environmental Chemistry Laboratory	UE 250	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
346	Introduction to Geochemistry (Lab)	UE 252	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
347	Experimental Methods in Solid Waste Management (Lab)	UE 253	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
348	Project EARTH and ENVIRONMENTAL SCIENCE	UE 254	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
349	Project EARTH and ENVIRONMENTAL SCIENCE	UE 255	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
350	Ways of Seeing	UE 256	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
351	Analysis and Linear Algebra II	UE 259	2020-21	Core Course	Bachelor	Undergraduate	4	01-01-2021 00:00:00
352	Introduction to Basic Analysis	UE 260	2020-21	Core Course	Bachelor	Undergraduate	4	01-01-2021 00:00:00
353	Introduction To Algebraic Structures	UE 261	2020-21	Core Course	Bachelor	Undergraduate	4	01-01-2021 00:00:00
354	Project MATHEMATICS	UE 262	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
355	Masters Project B	UE 263	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
356	Structure of Materials Laboratory	UE 264	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
357	Structure of Materials	UE 265	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
358	Materials Thermodynamics	UE 266	2020-21	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
359	Mechanical Properties of Materials	UE 267	2020-21	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
360	Functional Properties of Materials	UE 268	2020-21	Core Course	Bachelor	Undergraduate	3	01-01-2021 00:00:00
361	Introduction to Materials Manufacturing Laboratory	UE 269	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
362	Introduction to Materials Manufacturing	UE 270	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
363	Functional Property Characterization Laboratory	UE 271	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
364	Project MATERIALS	UE 272	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
365	Project MATERIALS	UE 273	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
366	Introductory Physics-II (Laboratory)	UE 274	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
367	Introductory Physics-II	UE 275	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
368	Intermediate Mechanics Oscillations and Waves Laboratory	UE 276	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
369	Intermediate Mechanics Oscillations and Waves	UE 277	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
370	Intermediate Electromagnetism and the Quantum Physics of Radiation Laboratory	UE 278	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
371	Intermediate Electromagnetism and the Quantum Physics of Radiation	UE 279	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
372	Intermediate Thermal Physics and the Physics of Materials Laboratory	UE 280	2020-21	Core Course	Bachelor	Undergraduate	1	01-01-2021 00:00:00
373	Intermediate Thermal Physics and the Physics of Materials	UE 281	2020-21	Core Course	Bachelor	Undergraduate	2	01-01-2021 00:00:00
374	Project PHYSICS	UE 282	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
375	Project PHYSICS	UE 283	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
376	Project PHYSICS	UP 500	2020-21	Core Course	Bachelor	Undergraduate	6	01-01-2021 00:00:00
377	Bioengineering Practicum 1	BE 203	2020-21	Elective Course	Master	Biosystems Science and Engineering	1	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
378	Bioengineering Practicum 1	BE 203	2020-21	Elective Course	Master	Biosystems Science and Engineering	1	01-01-2021 00:00:00
379	Bioengineering Practicum 2	BE 204	2020-21	Elective Course	Master	Biosystems Science and Engineering	1	01-08-2020 00:00:00
380	Bioengineering Practicum 2	BE 204	2020-21	Elective Course	Master	Biosystems Science and Engineering	1	01-01-2021 00:00:00
381	Project	CN 299	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
382	Project M Tech Communication and Networks	CN 299	2020-21	Elective Course	Master	Electrical Communication Engineering	6	01-01-2021 00:00:00
383	Ecology Pattern and Process	EC 202	2020-21	Elective Course	Master	Ecological Sciences	2	01-08-2020 00:00:00
384	Ecology Pattern and Process	EC 202	2020-21	Elective Course	Master	Ecological Sciences	2	01-01-2021 00:00:00
385	Makers Project	MN 205	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
386	Makers Project	MN 205	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00
387	Separation Technologies for Sustainable Industrial Processes	ST 219	2020-21	Elective Course	Master	Sustainable Technologies	3	01-08-2020 00:00:00
388	Sustainable Wastewater Management	ST 218	2020-21	Elective Course	Master	Sustainable Technologies	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
389	Field hydrology river engineering and basin studies	ST 217	2020-21	Elective Course	Master	Sustainable Technologies	4	01-08-2020 00:00:00
390	Physics in Experiments with Classical Statistics	ST 216	2020-21	Elective Course	PhD	Sustainable Technologies	3	01-08-2020 00:00:00
391	Principles and Applications of GIS and Remote Sensing	ST 210	2020-21	Elective Course	Master	Sustainable Technologies	4	01-08-2020 00:00:00
392	Electrochemical Systems	SS 209	2020-21	Elective Course	Master	Solid State and Structural Chemistry	3	01-08-2020 00:00:00
393	Symmetry and Structure in the Solid State	SS 205	2020-21	Elective Course	Master	Solid State and Structural Chemistry	3	01-08-2020 00:00:00
394	Introductory Quantum Chemistry	SS 202	2020-21	Elective Course	Master	Solid State and Structural Chemistry	3	01-08-2020 00:00:00
395	Thermodynamics and Statistical Mechanics	SS 201	2020-21	Elective Course	PhD	Solid State and Structural Chemistry	3	01-08-2020 00:00:00
396	Project - II	PH 250B	2020-21	Elective Course	Master	Physics	6	01-08-2020 00:00:00
397	Fundamentals of Astrophysics	PH 217	2020-21	Elective Course	PhD	Physics	3	01-08-2020 00:00:00
398	Nuclear and Particle Physics	PH 215	2020-21	Elective Course	PhD	Physics	3	01-08-2020 00:00:00
399	Advanced Experiments in Condensed Matter Physics	PH 213	2020-21	Elective Course	Master	Physics	4	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
400	General Physics Laboratory	PH 211	2020-21	Elective Course	Master	Physics	3	01-08-2020 00:00:00
401	Math Methods of Physics	PH 205	2020-21	Elective Course	Master	Physics	3	01-08-2020 00:00:00
402	Quantum Mechanics-I	PH 203	2020-21	Elective Course	PhD	Physics	3	01-08-2020 00:00:00
403	Classical Mechanics	PH 201	2020-21	Elective Course	Master	Physics	3	01-08-2020 00:00:00
404	Design and Society	PD 239	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
405	Design of Biomedical Devices and Systems	PD 233	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
406	Human Computer Interaction	PD 232	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
407	Applied Ergonomics	PD 231	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
408	Computer Aided Product Design	PD 229	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
409	CAE in Product Design	PD 217	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
410	New Product Development Concepts and Tools	PD 209	2020-21	Elective Course	PhD	Product Design and Manufacturing	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
411	Product Visualization Communication and Presentation	PD 207	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
412	Basics of Computing AI and Data Science for Desig	PD 206	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
413	Basics of Electronics for Product Design and Manufacturing	PD 204	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
414	Creative Engineering Design	PD 203	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
415	Neuronal Physiology and Plasticity	MB 214	2020-21	Elective Course	PhD	Molecular Biophysics	3	01-08-2020 00:00:00
416	Elements of Solid and Fluid Mechanics	PD 202	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
417	Elements of Design	PD 201	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2020 00:00:00
418	Introduction to X-ray Crystallography	MB 205	2020-21	Elective Course	PhD	Molecular Biophysics	2	01-08-2020 00:00:00
419	Chemistry of Proteins and Peptides	OC 231	2020-21	Elective Course	Master	Organic Chemistry	3	01-08-2020 00:00:00
420	Molecular Spectroscopy and its Biological Applications	MB 204	2020-21	Elective Course	,Master	Molecular Biophysics	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
421	Organic Chemistry I	OC 203	2020-21	Elective Course	Master	Organic Chemistry	3	01-08-2020 00:00:00
422	Introduction to Biophysical Chemistry	MB 201	2020-21	Elective Course	Master	Molecular Biophysics	2	01-08-2020 00:00:00
423	Developmental Neuroscience	NS 204	2020-21	Elective Course	Master	Neuroscience	2	01-08-2020 00:00:00
424	Computer Aided Design	PD 212	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-05-2021 00:00:00
425	Probability Models	MA 261	2020-21	Elective Course	Master	Mathematics	3	01-08-2020 00:00:00
426	Cognitive Neuroscience	NS 203	2020-21	Elective Course	Master	Neuroscience	2	01-08-2020 00:00:00
427	Partial Differential Equations	MA 242	2020-21	Elective Course	Master	Mathematics	3	01-08-2020 00:00:00
428	Molecular and Cellular Basis of Behaviour	NS 202	2020-21	Elective Course	Master	Neuroscience	2	01-08-2020 00:00:00
429	Systems Neuroscience	NS 201	2020-21	Elective Course	Master	Neuroscience	2	01-08-2020 00:00:00
430	Introduction to Algebraic Topology	MA 232	2020-21	Elective Course	Master	Mathematics	3	01-08-2020 00:00:00
431	Material Synthesis Quantum Dots to Bulk Crystals	NE 241	2020-21	Elective Course	PhD	Nanoscience and Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
432	Topology	MA 231	2020-21	Elective Course	Master	Mathematics	4	01-08-2020 00:00:00
433	Microfluidics	NE 231	2020-21	Elective Course	Master	Nanoscience and Engineering	3	01-08-2020 00:00:00
434	Functional Analysis	MA 223	2020-21	Elective Course	Master	Mathematics	3	01-08-2020 00:00:00
435	MEMS Modeling Design and Implementation	NE 222	2020-21	Elective Course	Master	Nanoscience and Engineering	3	01-08-2020 00:00:00
436	Analysis I	MA 221	2020-21	Elective Course	Master	Mathematics	3	01-08-2020 00:00:00
437	Applied Solid State Physics	NE 215	2020-21	Elective Course	PhD	Nanoscience and Engineering	3	01-08-2020 00:00:00
438	Representation theory of Finite groups	MA 220	2020-21	Elective Course	Master	Mathematics	3	01-08-2020 00:00:00
439	Introduction to Photonics	NE 213	2020-21	Elective Course	Master	Nanoscience and Engineering	3	01-08-2020 00:00:00
440	Linear Algebra	MA 219	2020-21	Elective Course	Master	Mathematics	4	01-08-2020 00:00:00
441	Algebra I	MA 212	2020-21	Elective Course	Master	Mathematics	3	01-08-2020 00:00:00
442	Multivariable Calculus	MA 200	2020-21	Elective Course	PhD	Mathematics	4	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
443	Crystallography for Chemists	IP 214	2020-21	Elective Course	Master	Inorganic and Physical Chemistry	3	01-08-2020 00:00:00
444	Semiconductor Device Physics Basic Devices	NE 206	2020-21	Elective Course	Master	Nanoscience and Engineering	3	01-08-2020 00:00:00
445	Group Theory and Molecular Spectroscopy	IP 203	2020-21	Elective Course	Master	Inorganic and Physical Chemistry	3	01-08-2020 00:00:00
446	Advanced micro and nanofabrication technology and process	NE 203	2020-21	Elective Course	Master	Nanoscience and Engineering	3	01-08-2020 00:00:00
447	Digital Signal Processing	IN 270	2020-21	Elective Course	PhD	Instrumentation and Applied Physics	3	01-08-2020 00:00:00
448	Micro and Nano Characterization Methods	NE 201	2020-21	Elective Course	Master	Nanoscience and Engineering	3	01-08-2020 00:00:00
449	Organic Electronics	MT 261	2020-21	Elective Course	PhD	Materials Engineering	3	01-08-2020 00:00:00
450	Polymer Science and Engineering	MT 260	2020-21	Elective Course	PhD	Materials Engineering	3	01-08-2020 00:00:00
451	Mechanical Behaviour of Materials	MT 253	2020-21	Elective Course	PhD	Materials Engineering	3	01-08-2020 00:00:00
452	Transpoert processes in Process Metallurgy	MT 245	2020-21	Elective Course	PhD	Materials Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
453	Laboratory Experiments in Materials Engineering	MT 243	2020-21	Elective Course	Master	Materials Engineering	2	01-08-2020 00:00:00
454	Advanced Instrumentation Electronics	IN 229	2020-21	Elective Course	PhD	Instrumentation and Applied Physics	3	01-08-2020 00:00:00
455	Sensors and Transducers	IN 221	2020-21	Elective Course	Master	Instrumentation and Applied Physics	3	01-08-2020 00:00:00
456	Structure and Characterization	MT 241	2020-21	Elective Course	Master	Materials Engineering	3	01-08-2020 00:00:00
457	Micro to Quantum Supercapacitor Devices	IN 203	2020-21	Elective Course	PhD	Instrumentation and Applied Physics	3	01-08-2020 00:00:00
458	Modeling and Simulation in Materials Engineering	MT 218	2020-21	Elective Course	Master	Materials Engineering	3	01-08-2020 00:00:00
459	Defects in Materials	MT 209	2020-21	Elective Course	Master	Materials Engineering	3	01-08-2020 00:00:00
460	Analytical Instrumentation	IN 201	2020-21	Elective Course	Master	Instrumentation and Applied Physics	3	01-08-2020 00:00:00
461	Texture and Grain Boundary Engineering	MT 206	2020-21	Elective Course	Master	Materials Engineering	3	01-08-2020 00:00:00
462	Thermodynamics and Kinetics	MT 202	2020-21	Elective Course	Master	Materials Engineering	3	01-08-2020 00:00:00
463	Nuclear and Particle Physics	HE 215	2020-21	Elective Course	Master	High Energy Physics	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
464	Intelligent Mobile Robots Perception Action and Control	MN 207	2020-21	Elective Course	PhD	Product Design and Manufacturing	3	01-08-2020 00:00:00
465	Fundamentals of Geophysics	ES 217	2020-21	Elective Course	,Master	Earth Sciences	3	01-08-2020 00:00:00
466	Introduction to Chemical Oceanography	ES 215	2020-21	Elective Course	Master	Earth Sciences	3	01-08-2020 00:00:00
467	Computer Aided Design	PD 212	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00
468	Solid Earth Geophysics	ES 206	2020-21	Elective Course	Master	Earth Sciences	3	01-08-2020 00:00:00
469	Digital Manufacturing	MN 202	2020-21	Elective Course	PhD	Product Design and Manufacturing	3	01-08-2020 00:00:00
470	Mathematics for Geophysicists	ES 205	2020-21	Elective Course	Master	Earth Sciences	3	01-08-2020 00:00:00
471	Origin and Evolution of the Earth	ES 204	2020-21	Elective Course	Master	Earth Sciences	3	01-08-2020 00:00:00
472	Materials and Processes	MN 201	2020-21	Elective Course	PhD	Product Design and Manufacturing	3	01-08-2020 00:00:00
473	Data Mining	MG 265	2020-21	Elective Course	PhD	Management Studies	3	01-08-2020 00:00:00
474	Renewable Energy Technologies	ER 201	2020-21	Elective Course	Master	Energy Research	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
475	Modelling and Simulation	DS 290	2020-21	Elective Course	PhD	Computational and Data Science	3	01-08-2020 00:00:00
476	Numerical Methods	DS 288	2020-21	Elective Course	PhD	Computational and Data Science	3	01-08-2020 00:00:00
477	Numerical Linear Algebra	DS 284	2020-21	Elective Course	Master	Computational and Data Science	3	01-08-2020 00:00:00
478	Video Analytics	DS 263	2020-21	Elective Course	PhD	Computational and Data Science	4	01-08-2020 00:00:00
479	Introduction to Computing for AI and Machine Learning	DS 226	2020-21	Elective Course	Master	Computational and Data Science	3	01-08-2020 00:00:00
480	Introduction to Scalable Systems	DS 221	2020-21	Elective Course	Master	Computational and Data Science	4	01-08-2020 00:00:00
481	Numerical Optimization	DS 211	2020-21	Elective Course	Master	Computational and Data Science	3	01-08-2020 00:00:00
482	Bioinformatics	DS 201	2020-21	Elective Course	Master	Computational and Data Science	2	01-08-2020 00:00:00
483	Research Methods	DS 200	2020-21	Elective Course	Master	Computational and Data Science	1	01-08-2020 00:00:00
484	Mathematical Techniques for Robotics Systems	CP 220	2020-21	Elective Course	PhD	Cyber Physical Systems	3	01-08-2020 00:00:00
485	Foundations of Robotics	CP 214	2020-21	Elective Course	Master	Cyber Physical Systems	4	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
486	Design of Cyber-Physical Systems	CP 212	2020-21	Elective Course	Master	Cyber Physical Systems	3	01-08-2020 00:00:00
487	Modeling in Chemical Engineering	CH 235	2020-21	Elective Course	PhD	Chemical Engineering	3	01-08-2020 00:00:00
488	Thermodynamics	CH 204	2020-21	Elective Course	,PhD	Chemical Engineering	3	01-08-2020 00:00:00
489	Transport Processes	CH 203	2020-21	Elective Course	Master	Chemical Engineering	3	01-08-2020 00:00:00
490	Numerical Methods	CH 202	2020-21	Elective Course	PhD	Chemical Engineering	3	01-08-2020 00:00:00
491	Engineering Mathematics	CH 201	2020-21	Elective Course	Master	Chemical Engineering	3	01-08-2020 00:00:00
492	Structural System Identification	CE 290	2020-21	Elective Course	PhD	Civil Engineering	3	01-08-2020 00:00:00
493	Transportation Systems Modelling	CE 275	2020-21	Elective Course	PhD	Civil Engineering	3	01-08-2020 00:00:00
494	Sustainable Urban Transportation Planning	CE 274	2020-21	Elective Course	PhD	Civil Engineering	3	01-08-2020 00:00:00
495	Traffic Engineering	CE 269	2020-21	Elective Course	PhD	Civil Engineering	3	01-08-2020 00:00:00
496	Water Quality Modeling	CE 249	2020-21	Elective Course	PhD	Civil Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
497	Remote Sensing and GIS for Water Resources Engineering	CE 247	2020-21	Elective Course	PhD	Civil Engineering	3	01-08-2020 00:00:00
498	Bridge Engineering	CE 243	2020-21	Elective Course	PhD	Civil Engineering	3	01-08-2020 00:00:00
499	Uncertainty Modeling and Analysis	CE 240	2020-21	Elective Course	PhD	Civil Engineering	3	01-08-2020 00:00:00
500	Fracture Mechanics	CE 236	2020-21	Elective Course	PhD	Civil Engineering	3	01-08-2020 00:00:00
501	Open-channel Flow	CE 226	2020-21	Elective Course	Master	Civil Engineering	3	01-08-2020 00:00:00
502	Earthquake Geotechnical Engineering	CE 221	2020-21	Elective Course	Master	Civil Engineering	3	01-08-2020 00:00:00
503	Design of Substructures	CE 220	2020-21	Elective Course	Master	Civil Engineering	3	01-08-2020 00:00:00
504	Fluid Mechanics	CE 217	2020-21	Elective Course	Master	Civil Engineering	3	01-08-2020 00:00:00
505	Mathematics for Engineers	CE 211	2020-21	Elective Course	Master	Civil Engineering	3	01-08-2020 00:00:00
506	Solid Mechanics	CE 204	2020-21	Elective Course	Master	Civil Engineering	3	01-08-2020 00:00:00
507	Basic Geo-mechanics	CE 201	2020-21	Elective Course	Master	Civil Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
508	Operations Management	MG 261	2020-21	Elective Course	PhD	Management Studies	3	01-08-2020 00:00:00
509	Organic and Inorganic Chemistry Laboratory	CD 215	2020-21	Elective Course	Master	Chemistry	4	01-08-2020 00:00:00
510	Financial instruments and risk management strategies	MG 258	2020-21	Elective Course	PhD	Management Studies	3	01-08-2020 00:00:00
511	Basic Mathematics	CD 214	2020-21	Elective Course	Master	Chemistry	3	01-08-2020 00:00:00
512	Strategic Management	MG 242	2020-21	Elective Course	Master	Management Studies	3	01-08-2020 00:00:00
513	Organic Chemistry Structure and Reactivity	CD 213	2020-21	Elective Course	Master	Chemistry	3	01-08-2020 00:00:00
514	Marketing Management	MG 241	2020-21	Elective Course	Master	Management Studies	3	01-08-2020 00:00:00
515	Inorganic Chemistry Main group and coordination chemistry	CD 212	2020-21	Elective Course	Master	Chemistry	3	01-08-2020 00:00:00
516	Principles of Management	MG 232	2020-21	Elective Course	Master	Management Studies	3	01-08-2020 00:00:00
517	Introduction to Disease Modeling	BE 217	2020-21	Elective Course	Master	Biosystems Science and Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
518	Decision Models	MG 225	2020-21	Elective Course	Master	Management Studies	3	01-08-2020 00:00:00
519	Fundamentals of Bioengineering 2	BE 214	2020-21	Elective Course	Master	Biosystems Science and Engineering	2	01-08-2020 00:00:00
520	Applied Probability and Statistics	MG 221	2020-21	Elective Course	Master	Management Studies	3	01-08-2020 00:00:00
521	Drug Delivery Principles and Applications	BE 210	2020-21	Elective Course	Master	Biosystems Science and Engineering	3	01-08-2020 00:00:00
522	Behavioral Science	MG 212	2020-21	Elective Course	Master	Management Studies	3	01-08-2020 00:00:00
523	Biology for Engineers	BE 206	2020-21	Elective Course	PhD	Biosystems Science and Engineering	3	01-08-2020 00:00:00
524	Macroeconomics	MG 202	2020-21	Elective Course	Master	Management Studies	3	01-08-2020 00:00:00
525	Essentials in Immunology	BC 306	2020-21	Elective Course	PhD	Biochemistry	3	01-08-2020 00:00:00
526	General Biochemistry	BC 203	2020-21	Elective Course	Master	Biochemistry	3	01-08-2020 00:00:00
527	Managerial Economics	MG 201	2020-21	Elective Course	Master	Management Studies	3	01-08-2020 00:00:00
528	Mechanics of slender elastic structures	ME 290	2020-21	Elective Course	PhD	Mechanical Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
529	Principles of Solar Thermal Engineering	ME 289	2020-21	Elective Course	PhD	Mechanical Engineering	3	01-08-2020 00:00:00
530	Proteins Structure and Function	BC 202	2020-21	Elective Course	Master	Biochemistry	2	01-08-2020 00:00:00
531	Cell Biology	BC 201	2020-21	Elective Course	Master	Biochemistry	2	01-08-2020 00:00:00
532	Turbomachine Theory	ME 285	2020-21	Elective Course	PhD	Mechanical Engineering	3	01-08-2020 00:00:00
533	Environmental Fluid Dynamics	AS 215	2020-21	Elective Course	Master	Atmospheric Sciences	3	01-08-2020 00:00:00
534	Thermodynamics	ME 271	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00
535	Introduction to Atmospheric Dynamics	AS 207	2020-21	Elective Course	Master	Atmospheric Sciences	3	01-08-2020 00:00:00
536	Atmospheric Radiation and Climate	AS 204	2020-21	Elective Course	Master	Atmospheric Sciences	3	01-08-2020 00:00:00
537	Engineering Mathematics	ME 261	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00
538	Atmospheric Thermodynamics	AS 203	2020-21	Elective Course	PhD	Atmospheric Sciences	3	01-08-2020 00:00:00
539	Structural Optimization Size Shape and Topology	ME 260	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
540	Experimental Techniques in Aerospace Engineering	AE 296	2020-21	Elective Course	Master	Aerospace Engineering	1	01-08-2020 00:00:00
541	Nonlinear Finite Element Methods	ME 259	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00
542	Structural Vibration Control	AE 261	2020-21	Elective Course	Master	Aerospace Engineering	3	01-08-2020 00:00:00
543	Principles of Tribology	ME 255	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00
544	Aeroelasticity	AE 255	2020-21	Elective Course	Master	Aerospace Engineering	3	01-08-2020 00:00:00
545	Continuum Mechanics	ME 243	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00
546	Advanced Combustion	AE 245	2020-21	Elective Course	Master	Aerospace Engineering	3	01-08-2020 00:00:00
547	Boundary Layer Theory	AE 225	2020-21	Elective Course	Master	Aerospace Engineering	3	01-08-2020 00:00:00
548	Solid Mechanics	ME 242	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00
549	Navigation Guidance and Control	AE 205	2020-21	Elective Course	Master	Aerospace Engineering	3	01-08-2020 00:00:00
550	Dynamics and Control of Mechanical Systems	ME 240	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
551	Flight Vehicle Structures	AE 204	2020-21	Elective Course	Master	Aerospace Engineering	3	01-08-2020 00:00:00
552	Materials and Structure Property Correlations	ME 228	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00
553	Mechanics and Thermodynamics of Propulsion	AE 203	2020-21	Elective Course	Master	Aerospace Engineering	3	01-08-2020 00:00:00
554	Fluid Mechanics	ME 201	2020-21	Elective Course	Master	Mechanical Engineering	3	01-08-2020 00:00:00
555	Fluid Dynamics	AE 202	2020-21	Elective Course	Master	Aerospace Engineering	3	01-08-2020 00:00:00
556	Flight and Space Mechanics	AE 201	2020-21	Elective Course	Master	Aerospace Engineering	3	01-08-2020 00:00:00
557	Advances in Cell Biology	MC 212	2020-21	Elective Course	Master	Microbiology and Cell Biology	2	01-08-2020 00:00:00
558	Graphics and Visualization	E0 271	2020-21	Elective Course	Master	Computer Science and Automation	4	01-08-2020 00:00:00
559	Principles of Genetic Engineering	MC 208	2020-21	Elective Course	Master	Microbiology and Cell Biology	2	01-08-2020 00:00:00
560	Soft Computing	E0 267	2020-21	Elective Course	Master	Computer Science and Automation	4	01-08-2020 00:00:00
561	Molecular Biology	MC 207	2020-21	Elective Course	PhD	Microbiology and Cell Biology	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
562	Theory and Practice of Computer Systems Security	E0 256	2020-21	Elective Course	PhD	Computer Science and Automation	4	01-08-2020 00:00:00
563	RNA Biology	MC 206	2020-21	Elective Course	Master	Microbiology and Cell Biology	2	01-08-2020 00:00:00
564	Network and Distributed Systems Security	E0 254	2020-21	Elective Course	PhD	Computer Science and Automation	4	01-08-2020 00:00:00
565	Pathogen - Host interactions and immune evasion mechanisms	MC 205	2020-21	Elective Course	Master	Microbiology and Cell Biology	2	01-08-2020 00:00:00
566	Computer architecture	E0 243	2020-21	Elective Course	Master	Computer Science and Automation	4	01-08-2020 00:00:00
567	Cryptography	E0 235	2020-21	Elective Course	PhD	Computer Science and Automation	3	01-08-2020 00:00:00
568	Essentials in Microbiology	MC 203	2020-21	Elective Course	Master	Microbiology and Cell Biology	3	01-08-2020 00:00:00
569	Computational Methods of Optimization	E0 230	2020-21	Elective Course	Master	Computer Science and Automation	4	01-08-2020 00:00:00
570	Linear Algebra and Probability	E0 226	2020-21	Elective Course	Master	Computer Science and Automation	4	01-08-2020 00:00:00
571	Design and Analysis of Algorithms	E0 225	2020-21	Elective Course	Master	Computer Science and Automation	4	01-08-2020 00:00:00
572	Computational Complexity Theory	E0 224	2020-21	Elective Course	PhD	Computer Science and Automation	4	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
573	Theorists Toolkit	E0 206	2020-21	Elective Course	,Master	Computer Science and Automation	4	01-08-2020 00:00:00
574	Adaptive Signal Processing	E9 211	2020-21	Elective Course	Master	Electrical Communication Engineering	6	01-08-2020 00:00:00
575	Digital Video Perception and Algorithms	E9 208	2020-21	Elective Course	,Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
576	Computational Electromagnetics	E8 202	2020-21	Elective Course	Master	Electrical Communication Engineering	4	01-08-2020 00:00:00
577	Gas Dynamics	AE 222	2020-21	Elective Course	PhD	Aerospace Engineering	3	01-01-2021 00:00:00
578	Analog VLSI Circuits	E3 238	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
579	Foundations of Nanoelectronic Devices	E3 220	2020-21	Elective Course	,Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
580	Aerodynamics	AE 221	2020-21	Elective Course	PhD	Aerospace Engineering	3	01-01-2021 00:00:00
581	Communications Systems Design	E2 251	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
582	Mathematical Methods of Aerospace Engineers	AE 211	2020-21	Elective Course	PhD	Aerospace Engineering	3	01-01-2021 00:00:00
583	Communication Networks	E2 221	2020-21	Elective Course	,Master	Electrical Communication Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
584	Project	AS 299	2020-21	Elective Course	Master	Atmospherical Sciences	6	01-01-2021 00:00:00
585	Matrix Theory	E2 212	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
586	Numerical methods in atmospheric modeling	AS 210	2020-21	Elective Course	Master	Atmospherical Sciences	3	01-01-2021 00:00:00
587	Digital Communication	E2 211	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
588	Mathematical Methods in Climate Science	AS 209	2020-21	Elective Course	Master	Atmospherical Sciences	3	01-01-2021 00:00:00
589	Concentration Inequalities	E2 207	2020-21	Elective Course	PhD	Electrical Communication Engineering	3	01-08-2020 00:00:00
590	Quantum Information Theory	E2 206	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
591	Geophysical Fluid Dynamics	AS 202	2020-21	Elective Course	PhD	Atmospheric Sciences	3	01-01-2021 00:00:00
592	Error-Control Coding	E2 205	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
593	Fundamentals of Bioengineering 1	BE 213	2020-21	Elective Course	Master	Biosystems Science and Engineering	2	01-01-2021 00:00:00
594	Random Processes	E2 202	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
595	Mathematical Methods for Bioengineers	BE 207	2020-21	Elective Course	PhD	Biosystems Science and Engineering	3	01-01-2021 00:00:00
596	Information Theory	E2 201	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-08-2020 00:00:00
597	Molecular Basis of Ageing and Regeneration	BC 210	2020-21	Elective Course	PhD	Biochemistry	3	01-01-2021 00:00:00
598	Online Prediction and Learning	E1 245	2020-21	Elective Course	PhD	Electrical Communication Engineering	3	01-08-2020 00:00:00
599	DSP System Design	E9 291	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00
600	Proteomics in Practice	BC 207	2020-21	Elective Course	Master	Biochemistry	2	01-01-2021 00:00:00
601	Selected Topics in Computer Vision	E9 245	2020-21	Elective Course	PhD	Electrical Engineering	4	01-08-2020 00:00:00
602	Fundamentals of Physiology and Medicine	BC 205	2020-21	Elective Course	Master	Biochemistry	2	01-01-2021 00:00:00
603	Selected Topics in Computer Vision	E9 245	2020-21	Elective Course	PhD	Electrical Engineering	4	01-08-2020 00:00:00
604	Dissertation Project	CH 299	2020-21	Elective Course	Master	Chemical Engineering	6	01-01-2021 00:00:00
605	Digital Image Processing	E9 241	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
606	Digital Signal Processing	E9 201	2020-21	Elective Course	PhD	Electrical Engineering	3	01-08-2020 00:00:00
607	Laminar flows	CH 250	2020-21	Elective Course	Master	Chemical Engineering	3	01-01-2021 00:00:00
608	Electromagnetism	E8 201	2020-21	Elective Course	PhD	Electrical Engineering	3	01-08-2020 00:00:00
609	Molecular Systems Biology	CH 248	2020-21	Elective Course	Master	Chemical Engineering	3	01-01-2021 00:00:00
610	Switched Reluctance Machines and Drives	E6 226	2020-21	Elective Course	PhD	Electrical Engineering	3	01-08-2020 00:00:00
611	Introduction to Molecular Simulation	CH 247	2020-21	Elective Course	Master	Chemical Engineering	3	01-01-2021 00:00:00
612	Topics in Power Electronics and Distributed Generation	E6 224	2020-21	Elective Course	,PhD	Electrical Engineering	3	01-08-2020 00:00:00
613	Statistical Thermodynamics	CH 236	2020-21	Elective Course	Master	Chemical Engineering	3	01-01-2021 00:00:00
614	Electric Drives	E6 211	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00
615	Rheology of Complex Fluids and Particulate Materials	CH 234	2020-21	Elective Course	Master	Chemical Engineering	3	01-01-2021 00:00:00
616	HV Power Apparatus	E5 206	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
617	Chemical Reaction Engineering	CH 205	2020-21	Elective Course	Master	Chemical Engineering	3	01-01-2021 00:00:00
618	Advanced Power Systems Analysis	E4 234	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00
619	Project	CE 299	2020-21	Elective Course	Master	Civil Engineering	6	01-01-2021 00:00:00
620	Power System Dynamics and Control	E4 231	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00
621	Parallel computing in mechanics problems	CE 298	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
622	Linear and Nonlinear Optimization	E1 251	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00
623	Problems in the Mathematical Theory of Elasticity	CE 297	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
624	Topics in Networked and Distributed Control	E1 246	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00
625	Computational Geotechnics	CE 279	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
626	Dynamics of Linear Systems	E1 241	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00
627	Remote Sensing in Ecohydrology	CE 277	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
628	Stochastic Models and Applications	E1 222	2020-21	Elective Course	Master	Electrical Engineering	3	01-08-2020 00:00:00
629	Traffic Network Equilibrium	CE 272	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
630	Computational Linear Algebra	E0 299	2020-21	Elective Course	Master	Electrical Engineering	4	01-08-2020 00:00:00
631	Sensor Networks	E0 247	2020-21	Elective Course	Master	Electrical Engineering	4	01-08-2020 00:00:00
632	Neural Networks and Learning Systems	E9 253	2020-21	Elective Course	PhD	Electronic Systems Engineering	4	01-08-2020 00:00:00
633	Electronic Systems Packaging	E3 262	2020-21	Elective Course	PhD	Electronic Systems Engineering	3	01-08-2020 00:00:00
634	Optimization Methods	CE 235	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
635	Embedded System Design II	E3 260	2020-21	Elective Course	PhD	Electronic Systems Engineering	3	01-08-2020 00:00:00
636	Non Destructive Evaluation Methods for Concrete Structures	CE 229	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
637	Processor System Design	E3 245	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-08-2020 00:00:00
638	Design for Analog Circuits	E3 235	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-08-2020 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
639	Mathematics for Electrical Engineers	E2 243	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-08-2020 00:00:00
640	Stochastic Hydrology	CE 215	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
641	TCP IP Networking	E2 232	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-08-2020 00:00:00
642	Digital VLSI Circuits	E0 284	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-08-2020 00:00:00
643	Dissertation Project	AE 299	2020-21	Elective Course	Master	Aerospace Engineering	6	01-08-2020 00:00:00
644	Aerospace Seminar	AE 297	2020-21	Elective Course	Master	Aerospace Engineering	1	01-08-2020 00:00:00
645	Special topics in Aerospace Engineering 2	AE 292	2020-21	Elective Course	Master	Aerospace Engineering	3	01-01-2021 00:00:00
646	Topics in Neural Computation	AE 274	2020-21	Elective Course	Master	Aerospace Engineering	3	01-01-2021 00:00:00
647	Guidance Theory and Applications	AE 271	2020-21	Elective Course	Master	Aerospace Engineering	3	01-01-2021 00:00:00
648	Geo-environmental Engineering	CE 207	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
649	Vibrations	AE 264	2020-21	Elective Course	Master	Aerospace Engineering	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
650	Earth and Earth Retaining Structures	CE 206	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
651	Finite Element Method	CE 205	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
652	Modal Analysis Theory and Applications	AE 260	2020-21	Elective Course	Master	Aerospace Engineering	3	01-01-2021 00:00:00
653	Surface Water Hydrology	CE 203	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
654	Non - Destructive Testing and Evaluation	AE 258	2020-21	Elective Course	Master	Aerospace Engineering	3	01-01-2021 00:00:00
655	Foundation Engineering	CE 202	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
656	Analysis and Design of Composite Structures	AE 252	2020-21	Elective Course	Master	Aerospace Engineering	3	01-01-2021 00:00:00
657	Dissertation Project	DS 299	2020-21	Elective Course	Master	Computational and Data Science	6	01-01-2021 00:00:00
658	Parallel Programming	DS 295	2020-21	Elective Course	Master	Computational and Data Science	4	01-01-2021 00:00:00
659	Data Analysis and Visualization	DS 294	2020-21	Elective Course	PhD	Computational and Data Science	3	01-01-2021 00:00:00
660	Numerical Solution of Differential Equations	DS 289	2020-21	Elective Course	Master	Computational and Data Science	4	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
661	Deep Learning for Computer Vision	DS 265	2020-21	Elective Course	Master	Computational and Data Science	4	01-01-2021 00:00:00
662	Scalable Systems for Data Science	DS 256	2020-21	Elective Course	Master	Computational and Data Science	4	01-01-2021 00:00:00
663	Aircraft Engines	AE 242	2020-21	Elective Course	Master	Aerospace Engineering	3	01-01-2021 00:00:00
664	System Virtualization	DS 255	2020-21	Elective Course	Master	Computational and Data Science	4	01-01-2021 00:00:00
665	Combustion	AE 241	2020-21	Elective Course	PhD	Aerospace Engineering	3	01-01-2021 00:00:00
666	Algorithmic Foundations of Big Data Biology	DS 202	2020-21	Elective Course	Master	Computational and Data Science	3	01-01-2021 00:00:00
667	Reinforcement Learning	E1 277	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
668	Computational Gas Dynamics	AE 229	2020-21	Elective Course	PhD	Aerospace Engineering	3	01-01-2021 00:00:00
669	Game Theory	E1 254	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
670	Choice Modeling	CE 271	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
671	Machine Learning	E0 270	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
672	Public Transportation Systems Planning	CE 262	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
673	Distributed Computing Systems	E0 264	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
674	Stochastic Structural Dynamics	CE 239	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
675	Database Management Systems	E0 261	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
676	Compiler Design	E0 255	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
677	Operating Systems	E0 253	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
678	Non-Destructive Evaluation Methods for Concrete Structures	CE 229	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
679	Data Structures and Algorithms	E0 251	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
680	Continuum Plasticity	CE 228	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
681	Intelligent Agents	E0 238	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
682	Engineering Seismology	CE 227	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
683	Introduction to Randomized Algorithms	E0 234	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
684	Hydroclimatology	CE 223	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
685	Principles of Distributed Software	E0 209	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2020 00:00:00
686	Computational Geometry	E0 208	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
687	Ground Water Hydrology	CE 214	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
688	Systems Techniques in Water Resources Engineering	CE 213	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
689	Computational Topology Theory and Applications	E0 207	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
690	Mathematical Logic and Theorem Proving	E0 205	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
691	Structural Dynamics	CE 210	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
692	Automated Software Engineering with Machine Learning	E0 202	2020-21	Elective Course	Master	Computer Science and Automation	4	01-01-2021 00:00:00
693	Mechanics of Structural Concrete	CE 209	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
694	M Tech Project CSA	CS 299	2020-21	Elective Course	Master	Computer Science and Automation	6	01-01-2021 00:00:00
695	Ground Improvement and Geosynthetics	CE 208	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
696	Dissertation Project	ES 299	2020-21	Elective Course	Master	Earth Sciences	6	01-01-2021 00:00:00
697	Earth and Earth Retaining Structures	CE 206	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
698	Finite Element Method	CE 205	2020-21	Elective Course	Master	Civil Engineering	3	01-01-2021 00:00:00
699	Isotope Geochemistry	ES 213	2020-21	Elective Course	Master	Earth Sciences	3	01-01-2021 00:00:00
700	Applied Petrology	ES 211	2020-21	Elective Course	PhD	Earth Sciences	3	01-01-2021 00:00:00
701	Mantle Convection	ES 208	2020-21	Elective Course	PhD	Earth Sciences	3	01-01-2021 00:00:00
702	Introduction to Earth System Science	ES 201	2020-21	Elective Course	Master	Earth Sciences	3	01-01-2021 00:00:00
703	MTech Micro and VLSI Dissertation Project	MV 299	2020-21	Elective Course	Master	Electrical Communication Engineering	6	01-01-2021 00:00:00
704	Space-Time Signal Processing and Coding	E9 271	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
705	MIMO Signal Processing	E9 231	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-01-2021 00:00:00
706	Compressed Sensing and Sparse Signal Processing	E9 203	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-01-2021 00:00:00
707	CAD for High Speed Chip-Package-Systems	E8 262	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-01-2021 00:00:00
708	Radio Frequency Integrated Circuits and Systems	E8 242	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-01-2021 00:00:00
709	Antenna Theory and Practice	E8 204	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-01-2021 00:00:00
710	Fiber-Optic Communication	E7 221	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-01-2021 00:00:00
711	Optoelectronics Devices	E7 214	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-01-2021 00:00:00
712	Multuser Detection	E2 242	2020-21	Elective Course	Master	Electrical Communication Engineering	3	01-01-2021 00:00:00
713	Wireless Networks	E2 241	2020-21	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2021 00:00:00
714	Foundations of Machine Learning	E2 236	2020-21	Elective Course	Master	Electrical Communication Engineering	4	01-01-2021 00:00:00
715	Information - Theoretic Security	E2 213	2020-21	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
716	Topics in Information Theory and Coding	E2 208	2020-21	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2021 00:00:00
717	Wireless Communication	E2 203	2020-21	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2021 00:00:00
718	Detection and Estimation Theory	E1 244	2020-21	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2021 00:00:00
719	Evolutionary Biology	EC 204	2020-21	Elective Course	PhD	Ecological Sciences	3	01-01-2021 00:00:00
720	Theoretical and Mathematical Ecology	EC 201	2020-21	Elective Course	Master	Electrical Engineering	3	01-01-2021 00:00:00
721	Dissertation Project	SP 299	2020-21	Elective Course	Master	Electrical Engineering	6	01-01-2021 00:00:00
722	Project	EE 299	2020-21	Elective Course	Master	Electrical Engineering	6	01-01-2021 00:00:00
723	Speech Information Processing	E9 261	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00
724	Advanced Image Processing	E9 246	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00
725	Time-Frequency Analysis	E9 213	2020-21	Elective Course	Master	Electrical Engineering	3	01-01-2021 00:00:00
726	Machine Learning for Signal Processing	E9 205	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
727	Switched Mode Power Conversion	E6 221	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00
728	Power Electronics	E6 201	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00
729	Computational Methods for Electrostatics	E5 212	2020-21	Elective Course	PhD	Electrical Engineering	3	01-01-2021 00:00:00
730	Over voltages in Power Systems	E5 209	2020-21	Elective Course	Master	Electrical Engineering	3	01-01-2021 00:00:00
731	Production Measurement and Application of High Voltage	E5 201	2020-21	Elective Course	PhD	Electrical Engineering	3	01-01-2021 00:00:00
732	Advanced Power System Protection	E4 238	2020-21	Elective Course	Master	Electrical Engineering	3	01-01-2021 00:00:00
733	Computer Control of Power Systems	E4 233	2020-21	Elective Course	Master	Electrical Engineering	3	01-01-2021 00:00:00
734	Embedded System Design for Power Application	E3 252	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00
735	Nonlinear systems and control	E1 242	2020-21	Elective Course	Master	Electrical Engineering	3	01-01-2021 00:00:00
736	Computer Vision	E1 216	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00
737	Pattern Recognition and Neural Networks	E1 213	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
738	Convex Optimization and Applications	E0 265	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00
739	Real-Time Systems	E0 246	2020-21	Elective Course	Master	Electrical Engineering	4	01-01-2021 00:00:00
740	MTech ESE Dissertation Project	ED 299	2020-21	Elective Course	Master	Electronic Systems Engineering	6	01-01-2021 00:00:00
741	Mathematical methods and techniques in signal processing	E9 252	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00
742	Design and Control of Power Converters and Drives	E6 212	2020-21	Elective Course	PhD	Electronic Systems Engineering	3	01-01-2021 00:00:00
743	Design of Power Converters	E6 202	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00
744	Basics of Semiconductor Devices and Technology	E3 282	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00
745	Process Technology and System Engineering for Advanced Microsensors and Devices	E3 276	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00
746	Design for Internet of Things	E3 258	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00
747	Embedded System Design	E3 257	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
748	Digital Systems Design with FPGAs	E3 231	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00
749	Art of Compact Modeling	E3 225	2020-21	Elective Course	PhD	Electronic Systems Engineering	3	01-01-2021 00:00:00
750	Fundamentals of MOS Analog Integrated Circuits	E3 204	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00
751	Microelectronics Lab	E3 200	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00
752	Introduction to Optimization	E2 244	2020-21	Elective Course	Master	Electronic Systems Engineering	3	01-01-2021 00:00:00
753	MTech AI Dissertation Project	AI 299	2020-21	Elective Course	Master	Electronic Systems Engineering	6	01-01-2021 00:00:00
754	Thermal Systems Design and Analysis plus B465	ER 205	2020-21	Elective Course	PhD	Energy Research	3	01-01-2021 00:00:00
755	Introduction to Quantum Measurement and Control	IN 266	2020-21	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2021 00:00:00
756	Optical materials and devices	IN 252	2020-21	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2021 00:00:00
757	Optical Metrology	IN 244	2020-21	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2021 00:00:00
758	Control Systems Design	IN 227	2020-21	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
759	Nanoscience and Device fabrication	IN 224	2020-21	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2021 00:00:00
760	Semiconductor Devices and Circuits	IN 214	2020-21	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2021 00:00:00
761	Dissertation Project	MT 299	2020-21	Elective Course	Master	Materials Engineering	6	01-01-2021 00:00:00
762	Introduction to Biomaterials Science and Engineering	MT 271	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00
763	Concepts in Polymer Blends and Nanocomposites	MT 262	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00
764	Fracture	MT 256	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00
765	Solidification Processing	MT 255	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00
766	Introduction to Materials Science and Engineering	MT 250	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00
767	Modelling and Computational Methods in Metallurgy	MT 248	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00
768	Interfacial Phenomena in Materials Processing	MT 231	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
769	Microstructural Engineering of Structural Materials	MT 220	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00
770	Electronic Properties of Materials	MT 213	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00
771	Phase Transformations	MT 201	2020-21	Elective Course	Master	Materials Engineering	3	01-01-2021 00:00:00
772	Introduction to Dynamical Systems Theory	MA 278	2020-21	Elective Course	Master	Mathematics	3	01-01-2021 00:00:00
773	Ordinary Differential Equations	MA 241	2020-21	Elective Course	Master	Mathematics	4	01-01-2021 00:00:00
774	Calculus on Manifolds	MA 229	2020-21	Elective Course	PhD	Mathematics	3	01-01-2021 00:00:00
775	Complex Analysis	MA 224	2020-21	Elective Course	PhD	Mathematics	4	01-01-2021 00:00:00
776	Analysis - II	MA 222	2020-21	Elective Course	Master	Mathematics	4	01-01-2021 00:00:00
777	Introduction to Modular Forms	MA 215	2020-21	Elective Course	Master	Mathematics	3	01-01-2021 00:00:00
778	Algebra - II	MA 213	2020-21	Elective Course	Master	Mathematics	4	01-01-2021 00:00:00
779	Project	MA 201	2020-21	Elective Course	Master	Mathematics	6	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
780	Dissertation Project	ME 299	2020-21	Elective Course	Master	Mechanical Engineering	6	01-01-2021 00:00:00
781	Fluid Turbulence	ME 298	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
782	Fracture Mechanics	ME 293	2020-21	Elective Course	PhD	Mechanical Engineering	3	01-01-2021 00:00:00
783	Air Conditioning Engineering	ME 288	2020-21	Elective Course	PhD	Mechanical Engineering	3	01-01-2021 00:00:00
784	Refrigeration Engineering	ME 287	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
785	Two Phase Flows and Boiling Heat Transfer	ME 283	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
786	Computational Heat Transfer and Fluid Flow	ME 282	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
787	Radiative transport	ME 279	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
788	Convective Heat Transfer	ME 274	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
789	Solid and Fluid Phenomena at Small Scales	ME 273	2020-21	Elective Course	,Master	Mechanical Engineering	3	01-01-2021 00:00:00
790	Finite Element Methods	ME 257	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
791	Compliant Mechanisms	ME 254	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
792	Vibrations of Plates and Shells	ME 253	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
793	Biomechanics	ME 251	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
794	Fundamentals of Acoustics	ME 249	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
795	Introduction to Robotics	ME 246	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
796	Mechanical Vibrations	ME 224	2020-21	Elective Course	Master	Mechanical Engineering	3	01-01-2021 00:00:00
797	Dissertation Project	MG 299	2020-21	Elective Course	Master	Management Studies	3	01-01-2021 00:00:00
798	Management of Technology for Sustainability	MG 281	2020-21	Elective Course	Master	Management Studies	3	01-01-2021 00:00:00
799	Public Policy Theory and Process	MG 277	2020-21	Elective Course	Master	Management Studies	3	01-01-2021 00:00:00
800	Finance and Accounts	MG 251	2020-21	Elective Course	Master	Management Studies	3	01-01-2021 00:00:00
801	Advanced Analytics	MG 226	2020-21	Elective Course	Master	Management Studies	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
802	Applied Operations Research	MG 223	2020-21	Elective Course	Master	Management Studies	3	01-01-2021 00:00:00
803	Regression and Time Series Analysis	MG 222	2020-21	Elective Course	Master	Management Studies	3	01-01-2021 00:00:00
804	Human Resource Management	MG 211	2020-21	Elective Course	Master	Management Studies	3	01-01-2021 00:00:00
805	Basic and Applied Virology	MC 214	2020-21	Elective Course	Master	Microbiology and Cell Biology	2	01-01-2021 00:00:00
806	Molecular basis of Ageing and Regeneration	MC 211	2020-21	Elective Course	PhD	Microbiology and Cell Biology	3	01-01-2021 00:00:00
807	Molecular Oncology	MC 210	2020-21	Elective Course	Master	Microbiology and Cell Biology	2	01-01-2021 00:00:00
808	Developmental Genetics	MC 202	2020-21	Elective Course	Master	Microbiology and Cell Biology	2	01-01-2021 00:00:00
809	Biological Science	DB 212	2020-21	Elective Course	Master	Microbiology and Cell Biology	6	01-01-2021 00:00:00
810	Electron microscopy and 3D image processing for Life sciences	MB 212	2020-21	Elective Course	Master	Molecular Biophysics	2	01-01-2021 00:00:00
811	Advanced Methods in Molecular Simulations	MB 211	2020-21	Elective Course	Master	Molecular Biophysics	4	01-01-2021 00:00:00
812	Theoretical and Computational Neuroscience	MB 208	2020-21	Elective Course	Master	Molecular Biophysics	4	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
813	Dissertation Project	NE 299	2020-21	Elective Course	Master	Nanoscience and Engineering	6	01-01-2021 00:00:00
814	Neural Signal Processing	NS 212	2020-21	Elective Course	Master	Neuroscience	3	01-01-2021 00:00:00
815	Optical Spectroscopy and Microscopy	NS 211	2020-21	Elective Course	PhD	Neuroscience	3	01-01-2021 00:00:00
816	Organic synthesis	OC 234	2020-21	Elective Course	Master	Organic Chemistry	3	01-01-2021 00:00:00
817	Graduate Colloquium	OC 232	2020-21	Elective Course	Master	Organic Chemistry	2	01-01-2021 00:00:00
818	Graduate Colloquium	OC 232	2020-21	Elective Course	Master	Organic Chemistry	2	01-01-2021 00:00:00
819	Project I	PH 250A	2020-21	Elective Course	Master	Physics	6	01-01-2021 00:00:00
820	Experiments in Condensed Matter Physics	PH 212	2020-21	Elective Course	Master	Physics	3	01-01-2021 00:00:00
821	Condensed Matter Physics-I	PH 208	2020-21	Elective Course	Master	Physics	3	01-01-2021 00:00:00
822	Electronics I	PH 207	2020-21	Elective Course	Master	3	3	01-01-2021 00:00:00
823	Electromagnetic Theory	PH 206	2020-21	Elective Course	Master	Physics	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
824	Quantum Mechanics II	PH 204	2020-21	Elective Course	Master	Physics	3	01-01-2021 00:00:00
825	Statistical Mechanics	PH 202	2020-21	Elective Course	Master	Physics	3	01-01-2021 00:00:00
826	Dissertation Project	PD 299	2020-21	Elective Course	Master	Product Design and Manufacturing	6	01-01-2021 00:00:00
827	Embodiment Design	PD 236	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00
828	Mechanism Design	PD 235	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00
829	Haptic Systems Design	PD 230	2020-21	Elective Course	PhD	Product Design and Manufacturing	3	01-01-2021 00:00:00
830	Methodology for Design Research	PD 221	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00
831	New Product Development Strategy and Practice	PD 218	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00
832	Design of Automotive Systems	PD 216	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00
833	Mechatronics	PD 215	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00
834	Product Design	PD 211	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
835	Materials Manufacturing and Design	PD 205	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-01-2021 00:00:00
836	Final Project	MN 206	2020-21	Elective Course	Master	Product Design and Manufacturing	6	01-01-2021 00:00:00
837	Human Machine Interaction for Manufacturing	MN 204	2020-21	Elective Course	PhD	Product Design and Manufacturing	3	01-01-2021 00:00:00
838	Design for Additive Manufacturing	MN 203	2020-21	Elective Course	PhD	Product Design and Manufacturing	3	01-01-2021 00:00:00
839	Turbo machines in Renewable Energy	ST 213	2020-21	Elective Course	Master	Sustainable Technologies	3	01-01-2021 00:00:00
840	Separation Technologies for Sustainable Industrial Processes	ST 219	2021-22	Elective Course	Master	Sustainable Technologies	3	01-08-2021 00:00:00
841	Sustainable Wastewater Management	ST 218	2021-22	Elective Course	Master	Sustainable Technologies	3	01-08-2021 00:00:00
842	Field hydrology river engineering and basin studies	ST 217	2021-22	Elective Course	Master	Sustainable Technologies	4	01-08-2021 00:00:00
843	Physics in Experiments with Classical Statistics	ST 216	2021-22	Elective Course	PhD	Sustainable Technologies	3	01-08-2021 00:00:00
844	Principles and Applications of GIS and Remote Sensing	ST 210	2021-22	Elective Course	Master	Sustainable Technologies	4	01-08-2021 00:00:00
845	Electrochemical Systems	SS 209	2021-22	Elective Course	Master	Solid State and Structural Chemistry	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
846	Symmetry and Structure in the Solid State	SS 205	2021-22	Elective Course	Master	Solid State and Structural Chemistry	3	01-08-2021 00:00:00
847	Introductory Quantum Chemistry	SS 202	2020-21	Elective Course	Master	Solid State and Structural Chemistry	3	01-08-2021 00:00:00
848	Thermodynamics and Statistical Mechanics	SS 201	2021-22	Elective Course	PhD	Solid State and Structural Chemistry	3	01-08-2021 00:00:00
849	Project - II	PH 250B	2021-22	Elective Course	Master	Physics	6	01-08-2021 00:00:00
850	Fundamentals of Astrophysics	PH 217	2021-22	Elective Course	PhD	Physics	3	01-08-2021 00:00:00
851	Nuclear and Particle Physics	PH 215	2021-22	Elective Course	PhD	Physics	3	01-08-2021 00:00:00
852	Advanced Experiments in Condensed Matter Physics	PH 213	2021-22	Elective Course	Master	Physics	4	01-08-2021 00:00:00
853	General Physics Laboratory	PH 211	2021-22	Elective Course	Master	Physics	3	01-08-2021 00:00:00
854	Math Methods of Physics	PH 205	2021-22	Elective Course	Master	Physics	3	01-08-2021 00:00:00
855	Quantum Mechanics-I	PH 203	2021-22	Elective Course	PhD	Physics	3	01-08-2021 00:00:00
856	Classical Mechanics	PH 201	2021-22	Elective Course	Master	Physics	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
857	Design and Society	PD 239	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
858	Design of Biomedical Devices and Systems	PD 233	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
859	Human Computer Interaction	PD 232	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
860	Applied Ergonomics	PD 231	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
861	Computer Aided Product Design	PD 229	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
862	CAE in Product Design	PD 217	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
863	New Product Development Concepts and Tools	PD 209	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
864	Product Visualization Communication and Presentation	PD 207	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
865	Basics of Computing AI and Data Science for Design	PD 206	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
866	Basics of Electronics for Product Design and Manufacturing	PD 204	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
867	Creative Engineering Design	PD 203	2021-22	Elective Course	,Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
868	Elements of Solid and Fluid Mechanics	PD 202	2020-21	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
869	Elements of Design	PD 201	2021-22	Elective Course	,Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
870	Chemistry of Proteins and Peptides	OC 231	2020-21	Elective Course	PhD	Organic Chemistry	3	01-08-2021 00:00:00
871	Developmental Neuroscience	NS 204	2021-22	Elective Course	Master	Neuroscience	2	01-08-2021 00:00:00
872	Cognitive Neuroscience	NS 203	2021-22	Elective Course	Master	Neuroscience	2	01-08-2021 00:00:00
873	Molecular and Cellular Basis of Behaviour	NS 202	2021-22	Elective Course	Master	Neuroscience	2	01-08-2021 00:00:00
874	Systems Neuroscience	NS 201	2021-22	Elective Course	Master	Neuroscience	2	01-08-2021 00:00:00
875	Material Synthesis Quantum Dots to Bulk Crystals	NE 241	2021-22	Elective Course	PhD	Nano Science and Engineering	3	01-08-2021 00:00:00
876	Microfluidics	NE 231	2021-22	Elective Course	Master	Nano Science and Engineering	3	01-08-2021 00:00:00
877	MEMS Modeling Design and Implementation	NE 222	2021-22	Elective Course	Master	Nano Science and Engineering	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
878	Applied Solid State Physics	NE 215	2021-22	Elective Course	PhD	Nano Science and Engineering	3	01-08-2021 00:00:00
879	Introduction to Photonics	NE 213	2021-22	Elective Course	Master	Nano Science and Engineering	3	01-08-2021 00:00:00
880	Semiconductor Device Physics Basic Devices	NE 206	2020-21	Elective Course	Master	Nano Science and Engineering	3	01-08-2021 00:00:00
881	Advanced micro and nanofabrication technology and process	NE 203	2021-22	Elective Course	Master	Nano Science and Engineering	3	01-08-2021 00:00:00
882	Micro and Nano Characterization Methods	NE 201	2021-22	Elective Course	Master	Nano Science and Engineering	3	01-08-2021 00:00:00
883	Organic Electronics	MT 261	2021-22	Elective Course	PhD	Materials Engineering	3	01-08-2021 00:00:00
884	Principles of Electrochemistry and Corrosion	MT 240	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
885	Interfacial Phenomena in Materials Processing	MT 231	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
886	Microstructural Engineering of Structural Materials	MT 220	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
887	Electronic Properties of Materials	MT 213	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
888	Diffusion in Solids	MT 208	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
889	Phase Transformations	MT 201	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
890	Ordinary Differential Equations	MA 241	2021-22	Elective Course	Master	Mathematics	4	01-01-2022 00:00:00
891	Introduction to differentiable manifolds	MA 235	2021-22	Elective Course	Master	Mathematics	3	01-01-2022 00:00:00
892	Calculus on Manifolds	MA 229	2021-22	Elective Course	PhD	Mathematics	3	01-01-2022 00:00:00
893	Complex Analysis	MA 224	2021-22	Elective Course	PhD	Mathematics	4	01-01-2022 00:00:00
894	Analysis - II	MA 222	2021-22	Elective Course	Master	Mathematics	4	01-01-2022 00:00:00
895	Algebra II	MA 213	2021-22	Elective Course	Master	Mathematics	4	01-01-2022 00:00:00
896	Project	MA 201	2021-22	Elective Course	Master	Mathematics	6	01-01-2022 00:00:00
897	Dissertation Project	ME 299	2021-22	Elective Course	Master	Mechanical Engineering	6	01-01-2022 00:00:00
898	Computational Methods for Reacting Flows	DS 269	2021-22	Elective Course	Master	Computational and Data Sciences	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
899	Deep Learning for Computer Vision	DS 265	2021-22	Elective Course	Master	Computational and Data Sciences	4	01-01-2022 00:00:00
900	Medical Imaging	DS 260	2021-22	Elective Course	Master	Computational and Data Sciences	3	01-01-2022 00:00:00
901	Scalable Systems for Data Science	DS 256	2021-22	Elective Course	Master	Computational and Data Sciences	4	01-01-2022 00:00:00
902	System Virtualization	DS 255	2021-22	Elective Course	Master	Computational and Data Sciences	4	01-01-2022 00:00:00
903	Algorithmic Foundations of Big Data Biology	DS 202	2021-22	Elective Course	Master	Computational and Data Sciences	3	01-01-2022 00:00:00
904	Reinforcement Learning	E1 277	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
905	Uncertainty Modeling and Analysis	CE 240	2021-22	Elective Course	PhD	Civil Engineering	3	01-08-2021 00:00:00
906	Fracture Mechanics	CE 236	2021-22	Elective Course	PhD	Civil Engineering	3	01-08-2021 00:00:00
907	Open-channel Flow	CE 226	2021-22	Elective Course	Master	Civil Engineering	3	01-08-2021 00:00:00
908	Game Theory	E1 254	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
909	Earthquake Geotechnical Engineering	CE 221	2021-22	Elective Course	Master	Civil Engineering	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
910	Design of Substructures	CE 220	2021-22	Elective Course	Master	Civil Engineering	3	01-08-2021 00:00:00
911	Formal Methods in Software Engineering	E0 272	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
912	Fluid Mechanics	CE 217	2021-22	Elective Course	Master	Civil Engineering	3	01-08-2021 00:00:00
913	Machine Learning	E0 270	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
914	Mathematics for Engineers	CE 211	2021-22	Elective Course	Master	Civil Engineering	3	01-08-2021 00:00:00
915	Distributed Computing Systems	E0 264	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
916	Solid Mechanics	CE 204	2021-22	Elective Course	Master	Civil Engineering	3	01-08-2021 00:00:00
917	Basic Geo-mechanics	CE 201	2021-22	Elective Course	Master	Civil Engineering	3	01-08-2021 00:00:00
918	Introduction to Disease Modeling	BE 217	2021-22	Elective Course	Master	Biosystems Science and Engineering	3	01-08-2021 00:00:00
919	Fundamentals of Bioengineering 2	BE 214	2021-22	Elective Course	Master	Biosystems Science and Engineering	2	01-08-2021 00:00:00
920	Database Management Systems	E0 261	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
921	Drug Delivery Principles and Applications	BE 210	2021-22	Elective Course	PhD	Biosystems Science and Engineering	3	01-08-2021 00:00:00
922	Compiler Design	E0 255	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
923	Biology for Engineers	BE 206	2021-22	Elective Course	PhD	Biosystems Science and Engineering	3	01-08-2021 00:00:00
924	Operating Systems	E0 253	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
925	Bioengineering Practicum 2	BE 204	2021-22	Elective Course	Master	Biosystems Science and Engineering	1	01-08-2021 00:00:00
926	Data Structures and Algorithms	E0 251	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
927	Approximation Algorithms	E0 249	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
928	Bioengineering Practicum 1	BE 203	2021-22	Elective Course	Master	Biosystems Science and Engineering	1	01-08-2021 00:00:00
929	Intelligent Agents	E0 238	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
930	Essentials in Immunology	BC 306	2021-22	Elective Course	PhD	Biochemistry	3	01-08-2021 00:00:00
931	Quantum Safe Cryptography	E0 213	2021-22	Elective Course	Master	Computer Science and Automation	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
932	General Biochemistry	BC 203	2021-22	Elective Course	Master	Biochemistry	3	01-08-2021 00:00:00
933	Graph Algorithms	E0 212	2021-22	Elective Course	Master	Computer Science and Automation	3	01-01-2022 00:00:00
934	Principles of Distributed Software	E0 209	2021-22	Elective Course	Master	Computer Science and Automation	4	29-01-2022 00:00:00
935	Fluid Turbulence	ME 298	2021-22	Elective Course	PhD	Mechanical Engineering	3	01-01-2022 00:00:00
936	Proteins Structure and Function	BC 202	2021-22	Elective Course	Master	Biochemistry	2	01-08-2021 00:00:00
937	Cell Biology	BC 201	2021-22	Elective Course	Master	Biochemistry	2	01-08-2021 00:00:00
938	Fracture Mechanics	ME 293	2021-22	Elective Course	PhD	Mechanical Engineering	3	01-01-2022 00:00:00
939	Air Conditioning Engineering	ME 288	2021-22	Elective Course	PhD	Mechanical Engineering	3	01-01-2022 00:00:00
940	Environmental Fluid Dynamics	AS 215	2021-22	Elective Course	Master	Atmospheric and Ocean Sciences	3	01-08-2021 00:00:00
941	Refrigeration Engineering	ME 287	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
942	Introduction to Atmospheric Dynamics	AS 207	2021-22	Elective Course	Master	Atmospheric and Ocean Sciences	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
943	Computational Heat Transfer and Fluid Flow	ME 282	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
944	Atmospheric Radiation and Climate	AS 204	2021-22	Elective Course	Master	Atmospheric and Ocean Sciences	3	01-08-2021 00:00:00
945	Computational Geometry	E0 208	2021-22	Elective Course	Master	Computer Science and Automation	4	01-01-2022 00:00:00
946	Thermodynamics of crystalline solids	ME 281	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
947	Convective Heat Transfer	ME 274	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
948	Computational Topology Theory and Applications	E0 207	2021-22	Elective Course	PhD	Computer Science and Automation	4	01-01-2022 00:00:00
949	Atmospheric Thermodynamics	AS 203	2021-22	Elective Course	PhD	Atmospheric and Ocean Sciences	3	01-08-2021 00:00:00
950	Solid and Fluid Phenomena at Small Scales	ME 273	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
951	M Tech Project CSA	CS 299	2021-22	Elective Course	,Master	Computer Science and Automation	6	01-01-2022 00:00:00
952	Experimental Techniques in Aerospace Engineering	AE 296	2021-22	Elective Course	Master	Aerospace Engineering	1	01-08-2021 00:00:00
953	Thermal Management of Electronics	ME 272	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
954	Experimental Techniques for Robotics and Automation	CP 280	2021-22	Elective Course	Master	Cyber Physical Systems	3	01-01-2022 00:00:00
955	Finite Element Methods	ME 257	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
956	Structural Vibration Control	AE 261	2021-22	Elective Course	Master	3	3	01-08-2021 00:00:00
957	Compliant Mechanisms	ME 254	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
958	Aeroelasticity	AE 255	2021-22	Elective Course	Master	Aerospace Engineering	3	01-08-2021 00:00:00
959	Formal Analysis and Control of Autonomous Systems	CP 274	2021-22	Elective Course	Master	Cyber Physical Systems	3	01-01-2022 00:00:00
960	Vibrations of Plates and Shells	ME 253	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
961	Advanced Combustion	AE 245	2021-22	Elective Course	Master	Aerospace Engineering	3	01-08-2021 00:00:00
962	Robotic Perception	CP 260	2021-22	Elective Course	Master	Cyber Physical Systems	3	01-01-2022 00:00:00
963	Biomechanics	ME 251	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
964	Human Robot Interaction	CP 242	2021-22	Elective Course	Master	Cyber Physical Systems	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
965	Fundamentals of Acoustics	ME 249	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
966	Boundary Layer Theory	AE 225	2021-22	Elective Course	PhD	Aerospace Engineering	3	01-08-2021 00:00:00
967	Motion Planning for Autonomous Systems	CP 230	2021-22	Elective Course	Master	Cyber Physical Systems	3	01-01-2022 00:00:00
968	Introduction to Robotics	ME 246	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
969	Theory and Applications of Bayesian Learning	CP 218	2021-22	Elective Course	Master	Cyber Physical Systems	3	01-01-2022 00:00:00
970	Navigation Guidance and Control	AE 205	2021-22	Elective Course	PhD	Aerospace Engineering	3	01-08-2021 00:00:00
971	Introduction to satellite Geodesy	ES 220	2021-22	Elective Course	Master	Earth Sciences	3	01-01-2022 00:00:00
972	Mechanical Vibrations	ME 224	2021-22	Elective Course	Master	Mechanical Engineering	3	01-01-2022 00:00:00
973	Inverse Problems in Geophysics	ES 219	2021-22	Elective Course	Master	Earth Sciences	3	01-01-2022 00:00:00
974	Flight Vehicle Structures	AE 204	2021-22	Elective Course	Master	Aerospace Engineering	3	01-08-2021 00:00:00
975	Advanced Chemical Oceanography	ES 216	2021-22	Elective Course	Master	Earth Sciences	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
976	Mechanics and Thermodynamics of Propulsion	AE 203	2021-22	Elective Course	Master	Aerospace Engineering	3	01-08-2021 00:00:00
977	Isotope Geochemistry	ES 213	2021-22	Elective Course	Master	Earth Sciences	3	01-01-2022 00:00:00
978	Fluid Dynamics	AE 202	2021-22	Elective Course	Master	Aerospace Engineering	3	01-08-2021 00:00:00
979	Earth Science Laboratory	ES 207	2021-22	Elective Course	Master	Earth Sciences	3	01-01-2022 00:00:00
980	Dissertation Project	MG 299	2021-22	Elective Course	Master	Management Studies	6	01-01-2022 00:00:00
981	Introduction to Petrology	ES 203	2021-22	Elective Course	Master	Earth Sciences	3	01-01-2022 00:00:00
982	Flight and Space Mechanics	AE 201	2021-22	Elective Course	Master	Aerospace Engineering	3	01-08-2021 00:00:00
983	Entrepreneurship for Technology Start-ups	MG 298	2021-22	Elective Course	Master	Management Studies	3	01-01-2022 00:00:00
984	Introduction to Earth System Science	ES 201	2021-22	Elective Course	Master	Earth Sciences	3	29-01-2022 00:00:00
985	Management of Technology for Sustainability	MG 281	2021-22	Elective Course	Master	Management Studies	3	01-01-2022 00:00:00
986	Finance and Accounts	MG 251	2021-22	Elective Course	Master	Management Studies	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
987	Evolutionary Biology	EC 204	2021-22	Elective Course	PhD	Ecological Sciences	3	01-01-2022 00:00:00
988	Applied Operations Research	MG 223	2021-22	Elective Course	Master	Management Studies	3	01-01-2022 00:00:00
989	MTech Micro and VLSI Dissertation Project	MV 299	2021-22	Elective Course	Master	Electrical Communication Engineering	6	01-01-2022 00:00:00
990	Regression and Time Series Analysis	MG 222	2021-22	Elective Course	Master	Management Studies	3	01-01-2022 00:00:00
991	Human Resource Management	MG 211	2021-22	Elective Course	Master	Management Studies	3	01-01-2022 00:00:00
992	Basic and Applied Virology	MC 214	2021-22	Elective Course	Master	Microbiology and Cell Biology	2	01-01-2022 00:00:00
993	Molecular basis of Ageing and Regeneration	MC 211	2021-22	Elective Course	PhD	Microbiology and Cell Biology	3	01-01-2022 00:00:00
994	Molecular Oncology	MC 210	2021-22	Elective Course	Master	Microbiology and Cell Biology	2	01-01-2022 00:00:00
995	Developmental Genetics	MC 202	2021-22	Elective Course	Master	Microbiology and Cell Biology	2	01-01-2022 00:00:00
996	Biological Science	DB 212	2021-22	Elective Course	Master	Microbiology and Cell Biology	6	01-01-2022 00:00:00
997	Electron microscopy and 3D image processing for Life sciences	MB 212	2021-22	Elective Course	Master	Molecular BioPhysics	2	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
998	Theoretical and Computational Neuroscience	MB 208	2021-22	Elective Course	Master	Molecular BioPhysics	4	01-01-2022 00:00:00
999	Space-Time Signal Processing and Coding	E9 271	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1000	MIMO Signal Processing	E9 231	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1001	CAD for High Speed Chip-Package-Systems	E8 262	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1002	Dissertation Project	NE 299	2021-22	Elective Course	Master	Nano Science and Engineering	6	01-01-2022 00:00:00
1003	Analog Circuits and Embedded System for Sensors	NE 223	2021-22	Elective Course	Master	Nano Science and Engineering	3	01-01-2022 00:00:00
1004	Radio Frequency Integrated Circuits and Systems	E8 242	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1005	Micro AND Nano Fabrication	NE 202	2021-22	Elective Course	Master	Nano Science and Engineering	2	01-01-2022 00:00:00
1006	Antenna Theory and Practice	E8 204	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1007	Micro and Nano Characterization Methods	NE 201	2021-22	Elective Course	Master	Nano Science and Engineering	3	01-01-2022 00:00:00
1008	Fiber-Optic Communication	E7 221	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1009	Neural Signal Processing	NS 212	2021-22	Elective Course	Master	NeuroScience	3	01-01-2022 00:00:00
1010	Introduction to Integrated Circuit (IC) Design	E3 277	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1011	Optical Spectroscopy and Microscopy	NS 211	2021-22	Elective Course	PhD	NeuroScience	3	01-01-2022 00:00:00
1012	MTech ECE Laboratory Course	E2 285	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1013	Multuser Detection	E2 242	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1014	Organic synthesis	OC 234	2021-22	Elective Course	Master	Organic Chemistry	3	01-01-2022 00:00:00
1015	Wireless Networks	E2 241	2021-22	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2022 00:00:00
1016	Project I	PH 250A	2021-22	Elective Course	Master	Physics	6	01-01-2022 00:00:00
1017	Foundations of Machine Learning	E2 236	2021-22	Elective Course	Master	Electrical Communication Engineering	4	01-01-2022 00:00:00
1018	Aerospace Seminar	AE 297	2021-22	Elective Course	Master	Aerospace Engineering	1	01-01-2022 00:00:00
1019	Experiments in Condensed Matter Physics	PH 212	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1020	Advanced Topics in Networking	E2 224	2021-22	Elective Course	Master	Electrical Communication Engineering	4	01-01-2022 00:00:00
1021	Dissertation Project	AE 299	2021-22	Elective Course	Master	Aerospace Engineering	6	01-01-2022 00:00:00
1022	Condensed Matter Physics-I	PH 208	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00
1023	Topics in Information Theory and Coding	E2 208	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1024	Electronics I	PH 207	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00
1025	Special topics in Aerospace Engineering 2	AE 292	2021-22	Elective Course	Master	Aerospace Engineering	3	01-01-2022 00:00:00
1026	Stochastic Processes and Queueing Theory	E2 204	2021-22	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2022 00:00:00
1027	Electromagnetic Theory	PH 206	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00
1028	Topics in Neural Computation	AE 274	2021-22	Elective Course	Master	Aerospace Engineering	3	01-01-2022 00:00:00
1029	Quantum Mechanics II	PH 204	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00
1030	Guidance Theory and Applications	AE 271	2021-22	Elective Course	Master	Aerospace Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1031	Modal Analysis Theory and Applications	AE 260	2021-22	Elective Course	Master	Aerospace Engineering	3	01-01-2022 00:00:00
1032	Non - Destructive Testing and Evaluation	AE 258	2021-22	Elective Course	Master	Aerospace Engineering	3	01-01-2022 00:00:00
1033	Analysis and Design of Composite Structures	AE 252	2021-22	Elective Course	Master	Aerospace Engineering	3	01-01-2022 00:00:00
1034	Rocket Propulsion	AE 243	2021-22	Elective Course	Master	Aerospace Engineering	3	01-01-2022 00:00:00
1035	Aircraft Engines	AE 242	2021-22	Elective Course	Master	Aerospace Engineering	3	01-01-2022 00:00:00
1036	Gas Dynamics	AE 222	2021-22	Elective Course	PhD	Aerospace Engineering	3	01-01-2022 00:00:00
1037	Aerodynamics	AE 221	2021-22	Elective Course	PhD	Aerospace Engineering	3	01-01-2022 00:00:00
1038	Mathematical Methods of Aerospace Engineers	AE 211	2021-22	Elective Course	PhD	Aerospace Engineering	3	01-01-2022 00:00:00
1039	Observational Techniques	AS 211	2021-22	Elective Course	Master	Atmospheric and Ocean Sciences	3	01-01-2022 00:00:00
1040	Numerical methods in atmospheric modeling	AS 210	2021-22	Elective Course	Master	Atmospheric and Ocean Sciences	3	01-01-2022 00:00:00
1041	Mathematical Methods in Climate Science	AS 209	2021-22	Elective Course	Master	Atmospheric and Ocean Sciences	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1042	Satellite Meteorology	AS 208	2021-22	Elective Course	Master	Atmospheric and Ocean Sciences	3	01-01-2022 00:00:00
1043	Geophysical Fluid Dynamics	AS 202	2021-22	Elective Course	PhD	Atmospheric and Ocean Sciences	3	01-01-2022 00:00:00
1044	Current Trends in Drug Discovery	BC 302	2021-22	Elective Course	Master	Biochemistry	3	01-01-2022 00:00:00
1045	Molecular Basis of Ageing and Regeneration	BC 210	2021-22	Elective Course	PhD	Biochemistry	3	01-01-2022 00:00:00
1046	Proteomics in Practice	BC 207	2021-22	Elective Course	Master	Biochemistry	2	01-01-2022 00:00:00
1047	Fundamentals of Physiology and Medicine	BC 205	2021-22	Elective Course	Master	Biochemistry	2	01-01-2022 00:00:00
1048	Computational Epidemiology	BE 218	2021-22	Elective Course	Master	Biosystems Science and Engineering	4	01-01-2022 00:00:00
1049	Dynamical Systems Biology	BE 216	2021-22	Elective Course	Master	Biosystems Science and Engineering	3	01-01-2022 00:00:00
1050	Wireless Communication	E2 203	2021-22	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2022 00:00:00
1051	Detection and Estimation Theory	E1 244	2021-22	Elective Course	PhD	Electrical Communication Engineering	3	01-01-2022 00:00:00
1052	Chemistry for Bioengineers	BE 215	2021-22	Elective Course	Master	Biosystems Science and Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1053	Project MTech Communication and Networks	CN 299	2021-22	Elective Course	Master	Electrical Communication Engineering	6	01-01-2022 00:00:00
1054	Fundamentals of Bioengineering 1	BE 213	2021-22	Elective Course	Master	Biosystems Science and Engineering	2	01-01-2022 00:00:00
1055	Statistical Mechanics	PH 202	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00
1056	Dissertation Project	PD 299	2021-22	Elective Course	Master	Product Design and Manufacturing	6	01-01-2022 00:00:00
1057	Project	SP 299	2021-22	Elective Course	Master	Electrical Engineering	3	01-01-2022 00:00:00
1058	Cell Mechanics	BE 211	2021-22	Elective Course	Master	Biosystems Science and Engineering	3	01-01-2022 00:00:00
1059	Project	EE 299	2021-22	Elective Course	Master	Electrical Engineering	6	01-01-2022 00:00:00
1060	Embodiment Design	PD 236	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-01-2022 00:00:00
1061	Mathematical Methods for Bioengineers	BE 207	2021-22	Elective Course	PhD	Biosystems Science and Engineering	3	01-01-2022 00:00:00
1062	Mechanism Design	PD 235	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-01-2022 00:00:00
1063	Speech Information Processing	E9 261	2021-22	Elective Course	Master	Electrical Engineering	4	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1064	Bioengineering Practicum 2	BE 204	2021-22	Elective Course	Master	Biosystems Science and Engineering	1	01-01-2022 00:00:00
1065	Haptic Systems Design	PD 230	2021-22	Elective Course	PhD	Product Design and Manufacturing	3	01-01-2022 00:00:00
1066	Advanced Image Processing	E9 246	2021-22	Elective Course	Master	Electrical Engineering	4	01-01-2022 00:00:00
1067	Bioengineering Practicum 1	BE 203	2021-22	Elective Course	Master	Biosystems Science and Engineering	1	01-01-2022 00:00:00
1068	New Product Development Strategy and Practice	PD 218	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-01-2022 00:00:00
1069	Time-Frequency Analysis	E9 213	2021-22	Elective Course	Master	Electrical Engineering	3	01-01-2022 00:00:00
1070	Dissertation Project	CH 299	2021-22	Elective Course	Master	Chemical Engineering	6	01-01-2022 00:00:00
1071	Design of Automotive Systems	PD 216	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-01-2022 00:00:00
1072	Molecular Systems Biology	CH 248	2021-22	Elective Course	Master	Chemical Engineering	3	01-01-2022 00:00:00
1073	Machine Learning for Signal Processing	E9 205	2021-22	Elective Course	Master	Electrical Engineering	4	01-01-2022 00:00:00
1074	Mechatronics	PD 215	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1075	Switched Mode Power Conversion	E6 221	2021-22	Elective Course	Master	Electrical Engineering	4	01-01-2022 00:00:00
1076	Introduction to Molecular Simulation	CH 247	2021-22	Elective Course	Master	Chemical Engineering	3	01-01-2022 00:00:00
1077	Electric Drives	E6 211	2021-22	Elective Course	Master	Electrical Engineering	3	01-01-2022 00:00:00
1078	Interfacial and Colloidal Phenomena	CH 245	2021-22	Elective Course	Master	Chemical Engineering	3	01-01-2022 00:00:00
1079	Computer Aided Design	PD 212	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-01-2022 00:00:00
1080	Computational Methods for Electrostatics	E5 212	2021-22	Elective Course	PhD	Electrical Engineering	3	01-01-2022 00:00:00
1081	Rheology of Complex Fluids and Particulate Materials	CH 234	2021-22	Elective Course	Master	Chemical Engineering	3	01-01-2022 00:00:00
1082	Product Design	PD 211	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-01-2022 00:00:00
1083	Over voltages in Power Systems	E5 209	2021-22	Elective Course	Master	Electrical Engineering	3	01-01-2022 00:00:00
1084	Materials Manufacturing and Design	PD 205	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-01-2022 00:00:00
1085	Chemical Reaction Engineering	CH 205	2021-22	Elective Course	PhD	Chemical Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1086	Production Measurement and Application of High Voltage	E5 201	2021-22	Elective Course	PhD	Electrical Engineering	3	01-01-2022 00:00:00
1087	Final Project	MN 206	2021-22	Elective Course	Master	Product Design and Manufacturing	6	01-01-2022 00:00:00
1088	Project	CE 299	2021-22	Elective Course	Master	Civil Engineering	6	01-01-2022 00:00:00
1089	Advanced Power System Protection	E4 238	2021-22	Elective Course	Master	Electrical Engineering	3	01-01-2022 00:00:00
1090	Human Machine Interaction for Manufacturing	MN 204	2021-22	Elective Course	PhD	Product Design and Manufacturing	3	01-01-2022 00:00:00
1091	Earth Retaining Structures and Earthen Dams	CE 295	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1092	Design for Additive Manufacturing	MN 203	2021-22	Elective Course	PhD	Product Design and Manufacturing	3	01-01-2022 00:00:00
1093	Computer Control of Power Systems	E4 233	2021-22	Elective Course	Master	Electrical Engineering	3	01-01-2022 00:00:00
1094	Sediment Management in Reservoirs	CE 286	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1095	Basic Concepts of Planning and Design of Hydro-Mechanical Components in Dam	ST 222	2021-22	Elective Course	Master	Sustainable Technologies	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1096	Embedded System Design for Power Application	E3 252	2021-22	Elective Course	Master	Electrical Engineering	4	01-01-2022 00:00:00
1097	Nonlinear systems and control	E1 242	2021-22	Elective Course	Master	Electrical Engineering	3	01-01-2022 00:00:00
1098	Disaster Management for Dams	CE 285	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1099	Computer Vision	E1 216	2021-22	Elective Course	Master	Electrical Engineering	4	01-01-2022 00:00:00
1100	Concrete Technology fundamentals and sustainable practices	ST 221	2021-22	Elective Course	Master	Sustainable Technologies	3	01-01-2022 00:00:00
1101	Plates Shells and Geometric Elasticity	CE 284	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1102	Turbo machines in Renewable Energy	ST 213	2021-22	Elective Course	Master	Sustainable Technologies	3	01-01-2022 00:00:00
1103	Computational Geotechnics	CE 279	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1104	Environmental and Natural Resources Management	ST 206	2021-22	Elective Course	Master	Sustainable Technologies	3	01-01-2022 00:00:00
1105	Remote Sensing in Ecohydrology	CE 277	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1106	Pattern Recognition and Neural Networks	E1 213	2021-22	Elective Course	Master	Electrical Engineering	4	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1107	Project - II	PH 250B	2021-22	Elective Course	Master	Physics	6	01-01-2022 00:00:00
1108	General Physics Laboratory	PH 211	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00
1109	Traffic Network Equilibrium	CE 272	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1110	MTech ESE Dissertation Project	ED 299	2021-22	Elective Course	Master	Electronic Systems Engineering	6	01-01-2022 00:00:00
1111	Math Methods of Physics	PH 205	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00
1112	Quantum Mechanics-I	PH 203	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00
1113	Mathematical methods and techniques in signal processing	E9 252	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-01-2022 00:00:00
1114	Choice Modeling	CE 271	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1115	Classical Mechanics	PH 201	2021-22	Elective Course	Master	Physics	3	01-01-2022 00:00:00
1116	Design of Power Converters	E6 202	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-01-2022 00:00:00
1117	DNA Protein interaction Regulation of gene expression Nanobiology	MB 207	2021-22	Elective Course	Master	Molecular BioPhysics	2	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1118	Public Transportation Systems Planning	CE 262	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1119	Process Technology and System Engineering for Advanced Microsensors and Devices	E3 276	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-01-2022 00:00:00
1120	Stability and Design of Steel Structures	CE 250	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1121	Reliability of Nanoscale Circuits and Systems	E3 271	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-01-2022 00:00:00
1122	Optimization Methods	CE 235	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1123	Non-Destructive Evaluation Methods for Concrete Structures	CE 229	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1124	Continuum Plasticity	CE 228	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1125	Embedded System Design	E3 257	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-01-2022 00:00:00
1126	Engineering Seismology	CE 227	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1127	Hydroclimatology	CE 223	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1128	Digital Systems Design with FPGAs	E3 231	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-01-2022 00:00:00
1129	Polymer Science and Engineering	MT 260	2021-22	Elective Course	PhD	Materials Engineering	3	01-08-2021 00:00:00
1130	Stochastic Hydrology	CE 215	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1131	Ground Water Hydrology	CE 214	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1132	Mechanical Behaviour of Materials	MT 253	2021-22	Elective Course	PhD	Materials Engineering	3	01-08-2021 00:00:00
1133	Systems Techniques in Water Resources and Environmental Engineering	CE 213	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1134	Transport processes in Process Metallurgy	MT 245	2021-22	Elective Course	PhD	Materials Engineering	3	01-08-2021 00:00:00
1135	Art of Compact Modeling	E3 225	2020-21	Elective Course	PhD	Electronic Systems Engineering	3	01-01-2022 00:00:00
1136	Structural Dynamics	CE 210	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1137	Laboratory Experiments in Materials Engineering	MT 243	2021-22	Elective Course	Master	Materials Engineering	2	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1138	Fundamentals of MOS Analog Integrated Circuits	E3 204	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-01-2022 00:00:00
1139	Mechanics of Structural Concrete	CE 209	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1140	Ground Improvement and Geosynthetics	CE 208	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1141	Structure and Characterization	MT 241	2020-21	Elective Course	Master	Materials Engineering	3	01-08-2021 00:00:00
1142	Geo-environmental Engineering	CE 207	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1143	Design of Analog Electronics and Industrial Instru	E3 203	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-01-2022 00:00:00
1144	Finite Element Method	CE 205	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1145	Neuromorphic Analog VLSI design	E0 204	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-01-2022 00:00:00
1146	MTech AI Dissertation Project	AI 299	2021-22	Elective Course	Master	Electronic Systems Engineering	6	01-01-2022 00:00:00
1147	Thermal Systems Design and Analysis	ER 205	2021-22	Elective Course	PhD	Energy Research	3	01-01-2022 00:00:00
1148	Surface Water Hydrology	CE 203	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1149	Optical materials and devices	IN 252	2021-22	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2022 00:00:00
1150	Structure and Characterization	MT 241	2021-22	Elective Course	Master	Materials Engineering	3	01-08-2021 00:00:00
1151	Foundation Engineering	CE 202	2021-22	Elective Course	Master	Civil Engineering	3	01-01-2022 00:00:00
1152	Optical Metrology	IN 244	2021-22	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2022 00:00:00
1153	Biomedical Optics and Spectroscopy	IN 234	2021-22	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2022 00:00:00
1154	Control Systems Design	IN 227	2021-22	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2022 00:00:00
1155	Modeling and Simulation in Materials Engineering	MT 218	2021-22	Elective Course	Master	Materials Engineering	3	01-08-2021 00:00:00
1156	Dissertation Project	DS 299	2021-22	Elective Course	Master	Computational and Data Sciences	6	01-01-2022 00:00:00
1157	Nanoscience and Device fabrication	IN 224	2021-22	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2022 00:00:00
1158	Defects in Materials	MT 209	2021-22	Elective Course	Master	Materials Engineering	3	01-08-2021 00:00:00
1159	Sensors and Transducers Laboratory	IN 222	2021-22	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1160	Parallel Programming	DS 295	2021-22	Elective Course	Master	Computational and Data Sciences	4	01-01-2022 00:00:00
1161	Semiconductor Devices and Circuits	IN 214	2021-22	Elective Course	Master	Instrumentation and Applied Physics	3	01-01-2022 00:00:00
1162	Data Analysis and Visualization	DS 294	2021-22	Elective Course	PhD	Computational and Data Sciences	3	01-01-2022 00:00:00
1163	Chemistry of Materials	MR 222	2021-22	Elective Course	Master	Material Research Centre	3	01-01-2022 00:00:00
1164	Texture and Grain Boundary Engineering	MT 206	2021-22	Elective Course	Master	Materials Engineering	3	01-08-2021 00:00:00
1165	Numerical Solution of Differential Equations	DS 289	2021-22	Elective Course	Master	Computational and Data Sciences	4	01-01-2022 00:00:00
1166	Thermodynamics and Kinetics	MT 202	2021-22	Elective Course	Master	Materials Engineering	3	01-08-2021 00:00:00
1167	Dissertation Project	MT 299	2021-22	Elective Course	Master	Materials Engineering	6	01-01-2022 00:00:00
1168	Introduction to Biomaterials Science and Engineering	MT 271	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
1169	Algebra I	MA 212	2021-22	Elective Course	Master	Mathematics	3	01-08-2021 00:00:00
1170	Concepts in Polymer Blends and Nanocomposites	MT 262	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1171	Intelligent Mobile Robots Perception Action and Control	MN 207	2021-22	Elective Course	PhD	Product Design and Manufacturing	3	01-08-2021 00:00:00
1172	Multivariable Calculus	MA 200	2021-22	Elective Course	PhD	Mathematics	4	01-08-2021 00:00:00
1173	Makers Project	MN 205	2021-22	Elective Course	PhD	Product Design and Manufacturing	3	01-08-2021 00:00:00
1174	Fracture	MT 256	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
1175	Crystallography for Chemists	IP 214	2021-22	Elective Course	Master	Inorganic and Physical Chemistry	3	01-08-2021 00:00:00
1176	Solidification Processing	MT 255	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
1177	Digital Manufacturing	MN 202	2021-22	Elective Course	Master	Product Design and Manufacturing	3	01-08-2021 00:00:00
1178	Introduction to Materials Science and Engineering	MT 250	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
1179	Materials and Processes	MN 201	2021-22	Elective Course	PhD	Product Design and Manufacturing	3	01-08-2021 00:00:00
1180	Modelling and Computational Methods in Metallurgy	MT 248	2021-22	Elective Course	Master	Materials Engineering	3	01-01-2022 00:00:00
1181	Data Mining	MG 265	2021-22	Elective Course	PhD	Management Studies	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1182	Group Theory and Molecular Spectroscopy	IP 203	2021-22	Elective Course	Master	Inorganic and Physical Chemistry	3	01-08-2021 00:00:00
1183	Operations Management	MG 261	2021-22	Elective Course	PhD	Management Studies	3	01-08-2021 00:00:00
1184	Error-Control Coding	E2 205	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-01-2022 00:00:00
1185	Financial instruments and risk management strategies	MG 258	2021-22	Elective Course	PhD	Management Studies	3	01-08-2021 00:00:00
1186	Digital Signal Processing	IN 270	2021-22	Elective Course	PhD	Instrumentation and Applied Physics	3	01-08-2021 00:00:00
1187	Strategic Management	MG 242	2021-22	Elective Course	Master	Management Studies	3	01-08-2021 00:00:00
1188	Random Processes	E2 202	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1189	Advanced Instrumentation Electronics	IN 229	2021-22	Elective Course	PhD	Instrumentation and Applied Physics	3	01-08-2021 00:00:00
1190	Information Theory	E2 201	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1191	Sensors and Transducers	IN 221	2021-22	Elective Course	Master	Instrumentation and Applied Physics	3	01-08-2021 00:00:00
1192	Marketing Management	MG 241	2021-22	Elective Course	Master	Management Studies	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1193	Micro to Quantum Supercapacitor Devices	IN 203	2021-22	Elective Course	PhD	Instrumentation and Applied Physics	3	01-08-2021 00:00:00
1194	Optimization for Machine Learning and Data Science	E1 260	2021-22	Elective Course	Master	Electrical Communication Engineering	4	01-08-2021 00:00:00
1195	Analytical Instrumentation	IN 201	2021-22	Elective Course	Master	Instrumentation and Applied Physics	3	01-08-2021 00:00:00
1196	Principles of Management	MG 232	2021-22	Elective Course	Master	Management Studies	3	01-08-2021 00:00:00
1197	Linear and Nonlinear Optimization	E1 251	2021-22	Elective Course	PhD	Electrical Engineering	3	01-08-2021 00:00:00
1198	Nuclear and Particle Physics	HE 215	2021-22	Elective Course	Master	High Energy Physics	3	01-08-2021 00:00:00
1199	Decision Models	MG 225	2021-22	Elective Course	Master	Management Studies	3	01-08-2021 00:00:00
1200	Fundamentals of Geophysics	ES 217	2021-22	Elective Course	PhD	Earth Sciences	3	01-08-2021 00:00:00
1201	Applied Probability and Statistics	MG 221	2021-22	Elective Course	Master	Management Studies	3	01-08-2021 00:00:00
1202	Topics in Networked and Distributed Control	E1 246	2021-22	Elective Course	Master	Electrical Engineering	3	01-08-2021 00:00:00
1203	Behavioral Science	MG 212	2021-22	Elective Course	Master	Management Studies	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1204	Introduction to Chemical Oceanography	ES 215	2021-22	Elective Course	PhD	Earth Sciences	3	01-08-2021 00:00:00
1205	Online Prediction and Learning	E1 245	2021-22	Elective Course	PhD	Electrical Communication Engineering	3	01-08-2021 00:00:00
1206	Macroeconomics	MG 202	2021-22	Elective Course	Master	Management Studies	3	01-08-2021 00:00:00
1207	Solid Earth Geophysics	ES 206	2021-22	Elective Course	Master	Earth Sciences	3	01-08-2021 00:00:00
1208	Dynamics of Linear Systems	E1 241	2021-22	Elective Course	Master	Electrical Engineering	3	01-08-2021 00:00:00
1209	Mathematics for Geophysicists	ES 205	2021-22	Elective Course	Master	Earth Sciences	3	01-08-2021 00:00:00
1210	Stochastic Models and Applications	E1 222	2021-22	Elective Course	Master	Electrical Engineering	3	01-08-2021 00:00:00
1211	Managerial Economics	MG 201	2021-22	Elective Course	Master	Management Studies	3	01-08-2021 00:00:00
1212	Mechanics of slender elastic structures	ME 290	2021-22	Elective Course	PhD	Mechanical Engineering	3	01-08-2021 00:00:00
1213	Principles of Solar Thermal Engineering	ME 289	2021-22	Elective Course	PhD	Mechanical Engineering	3	01-08-2021 00:00:00
1214	Computational Linear Algebra	E0 299	2021-22	Elective Course	Master	Electrical Engineering	4	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1215	Origin and Evolution of the Earth	ES 204	2021-22	Elective Course	Master	Earth Sciences	3	01-08-2021 00:00:00
1216	Turbomachine Theory	ME 285	2021-22	Elective Course	PhD	Mechanical Engineering	3	01-08-2021 00:00:00
1217	Thermodynamics	ME 271	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00
1218	Renewable Energy Technologies	ER 201	2021-22	Elective Course	Master	Energy Research	3	01-08-2021 00:00:00
1219	Digital VLSI Circuits	E0 284c	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-08-2021 00:00:00
1220	Engineering Mathematics	ME 261	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00
1221	Ecology Pattern and Process	EC 202	2021-22	Elective Course	Master	Ecological Sciences	2	01-08-2021 00:00:00
1222	Structural Optimization Size Shape and Topology	ME 260	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00
1223	DSP System Design	E9 291	2021-22	Elective Course	Master	Electrical Engineering	3	01-08-2021 00:00:00
1224	Nonlinear Finite Element Methods	ME 259	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00
1225	Principles of Tribology	ME 255	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1226	Neural Networks and Learning Systems	E9 253	2021-22	Elective Course	PhD	Electronic Systems Engineering	4	01-08-2021 00:00:00
1227	Continuum Mechanics	ME 243	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00
1228	Digital Image Processing	E9 241	2021-22	Elective Course	Master	Electrical Engineering	3	01-08-2021 00:00:00
1229	Solid Mechanics	ME 242	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00
1230	Adaptive Signal Processing	E9 211	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1231	Graphics and Visualization	E0 271	2021-22	Elective Course	Master	Computer Science and Automation	4	01-08-2021 00:00:00
1232	Dynamics and Control of Mechanical Systems	ME 240	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00
1233	Soft Computing	E0 267	2021-22	Elective Course	Master	Computer Science and Automation	4	01-08-2021 00:00:00
1234	Digital Video Perception and Algorithms	E9 208	2021-22	Elective Course	PhD	Electrical Communication Engineering	4	01-08-2021 00:00:00
1235	Materials and Structure Property Correlations	ME 228	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00
1236	Fluid Mechanics	ME 201	2021-22	Elective Course	Master	Mechanical Engineering	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1237	Data Analytics	E0 259	2021-22	Elective Course	Master	Electrical Communication Engineering	4	01-08-2021 00:00:00
1238	Digital Signal Processing	E9 201	2021-22	Elective Course	PhD	Electrical Engineering	3	01-08-2021 00:00:00
1239	Advances in Cell Biology	MC 212	2021-22	Elective Course	Master	Microbiology and Cell Biology	2	01-08-2021 00:00:00
1240	Computational Electromagnetics	E8 202	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1241	Network and Distributed Systems Security	E0 254	2021-22	Elective Course	PhD	Computer Science and Automation	4	01-08-2021 00:00:00
1242	Principles of Genetic Engineering	MC 208	2021-22	Elective Course	Master	Microbiology and Cell Biology	2	01-08-2021 00:00:00
1243	Electromagnetism	E8 201	2021-22	Elective Course	PhD	Electrical Engineering	3	01-08-2021 00:00:00
1244	Sensor Networks	E0 247	2021-22	Elective Course	Master	Electrical Engineering	4	01-08-2021 00:00:00
1245	Molecular Biology	MC 207	2021-22	Elective Course	PhD	Microbiology and Cell Biology	3	01-08-2021 00:00:00
1246	Computer architecture	E0 243	2021-22	Elective Course	Master	Computer Science and Automation	4	01-08-2021 00:00:00
1247	Photonics Integrated Circuits	E7 211	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1248	RNA Biology	MC 206	2021-22	Elective Course	Master	Microbiology and Cell Biology	2	01-08-2021 00:00:00
1249	Advanced Power Electronics	E6 225	2021-22	Elective Course	PhD	Electrical Engineering	3	01-08-2021 00:00:00
1250	Cryptography	E0 235	2021-22	Elective Course	PhD	Computer Science and Automation	4	01-08-2021 00:00:00
1251	Pathogen - Host interactions and immune evasion mechanisms	MC 205	2021-22	Elective Course	Master	Microbiology and Cell Biology	2	01-08-2021 00:00:00
1252	PWM Converters and Applications	E6 223	2021-22	Elective Course	PhD	Electrical Engineering	3	01-08-2021 00:00:00
1253	Computational Methods of Optimization	E0 230	2021-22	Elective Course	PhD	Computer Science and Automation	4	01-08-2021 00:00:00
1254	Essentials in Microbiology	MC 203	2021-22	Elective Course	Master	Microbiology and Cell Biology	3	01-08-2021 00:00:00
1255	Foundations of Data Science	E0 229	2021-22	Elective Course	Master	Computer Science and Automation	4	01-08-2021 00:00:00
1256	Switched Mode Power Conversion	E6 221	2021-22	Elective Course	Master	Electrical Engineering	4	01-08-2021 00:00:00
1257	Neuronal Physiology and Plasticity	MB 214	2021-22	Elective Course	PhD	Molecular Biophysics	3	01-08-2021 00:00:00
1258	Program Analysis and Verification	E0 227	2021-22	Elective Course	Master	Computer Science and Automation	4	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1259	Introduction to X-ray Crystallography	MB 205	2021-22	Elective Course	PhD	Molecular Biophysics	2	01-08-2021 00:00:00
1260	Mechatronics System Design	E6 203	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-08-2021 00:00:00
1261	Linear Algebra and Probability	E0 226	2021-22	Elective Course	Master	Computer Science and Automation	4	01-08-2021 00:00:00
1262	Molecular Spectroscopy and its Biological Applications	MB 204	2021-22	Elective Course	Master	Molecular Biophysics	3	01-08-2021 00:00:00
1263	Design and Analysis of Algorithms	E0 225	2021-22	Elective Course	Master	Computer Science and Automation	4	01-08-2021 00:00:00
1264	Introduction to Biophysical Chemistry	MB 201	2021-22	Elective Course	Master	Molecular Biophysics	2	01-08-2021 00:00:00
1265	Probability Models	MA 261	2021-22	Elective Course	Master	Mathematics	3	01-08-2021 00:00:00
1266	Computational Complexity Theory	E0 224	2021-22	Elective Course	PhD	Computer Science and Automation	4	01-08-2021 00:00:00
1267	Partial Differential Equations	MA 242	2021-22	Elective Course	Master	Mathematics	3	01-08-2021 00:00:00
1268	Introduction to Algebraic Topology	MA 232	2021-22	Elective Course	Master	Mathematics	3	01-08-2021 00:00:00
1269	Topology	MA 231	2021-22	Elective Course	Master	Mathematics	4	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1270	Functional Analysis	MA 223	2021-22	Elective Course	Master	Mathematics	3	01-08-2021 00:00:00
1271	Analysis I	MA 221	2021-22	Elective Course	Master	Mathematics	3	01-08-2021 00:00:00
1272	Representation theory of Finite groups	MA 220	2021-22	Elective Course	Master	Mathematics	3	01-08-2021 00:00:00
1273	Linear Algebra	MA 219	2021-22	Elective Course	Master	Mathematics	4	01-08-2021 00:00:00
1274	Automata Theory and Computability	E0 222	2021-22	Elective Course	Master	Computer Science and Automation	4	01-08-2021 00:00:00
1275	Theorists Toolkit	E0 206	2021-22	Elective Course	PhD	Computer Science and Automation	4	01-08-2021 00:00:00
1276	Power Electronics	E6 201	2021-22	Elective Course	Master	Electrical Engineering	4	01-08-2021 00:00:00
1277	Modelling and Simulation	DS 290	2021-22	Elective Course	PhD	Computational and Data Sciences	3	01-08-2021 00:00:00
1278	HV Power Apparatus	E5 206	2021-22	Elective Course	Master	Electrical Engineering	3	01-08-2021 00:00:00
1279	Advanced Power Systems Analysis	E4 234	2021-22	Elective Course	Master	Electrical Engineering	3	01-08-2021 00:00:00
1280	Numerical Methods	DS 288	2021-22	Elective Course	PhD	Computational and Data Sciences	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1281	Power System Dynamics and Control	E4 231	2021-22	Elective Course	Master	Electrical Engineering	3	01-08-2021 00:00:00
1282	Basics of Semiconductor Devices and Technology	E3 282	2021-22	Elective Course	PhD	Electronic Systems Engineering	3	01-08-2021 00:00:00
1283	Reliability of Nanoscale Circuits and Systems	E3 271	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-08-2021 00:00:00
1284	Numerical Linear Algebra	DS 284	2021-22	Elective Course	Master	Computational and Data Sciences	3	01-08-2021 00:00:00
1285	Embedded System Design II	E3 260	2021-22	Elective Course	PhD	Electronic Systems Engineering	3	01-08-2021 00:00:00
1286	Video Analytics	DS 263	2021-22	Elective Course	PhD	Computational and Data Sciences	4	01-08-2021 00:00:00
1287	Design for Internet of Things	E3 258	2021-22	Elective Course	PhD	Electronic Systems Engineering	3	01-08-2021 00:00:00
1288	Processor System Design	E3 245	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-08-2021 00:00:00
1289	Introduction to Computing for AI and Machine Learning	DS 226	2021-22	Elective Course	Master	Computational and Data Sciences	3	01-08-2021 00:00:00
1290	Analog VLSI Circuits	E3 238	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1291	Introduction to Scalable Systems	DS 221	2021-22	Elective Course	Master	Computational and Data Sciences	4	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1292	Integrated Circuits for Wireless Communication	E3 237	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1293	Numerical Optimization	DS 211	2021-22	Elective Course	Master	Computational and Data Sciences	3	01-08-2021 00:00:00
1294	Design for Analog Circuits	E3 235	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-08-2021 00:00:00
1295	Bioinformatics	DS 201	2021-22	Elective Course	Master	Computational and Data Sciences	2	01-08-2021 00:00:00
1296	Research Methods	DS 200	2021-22	Elective Course	Master	Computational and Data Sciences	1	01-08-2021 00:00:00
1297	Mathematical Techniques for Robotics Systems	CP 220	2021-22	Elective Course	PhD	Cyber Physical Systems	3	01-08-2021 00:00:00
1298	Foundations of Robotics	CP 214	2021-22	Elective Course	PhD	Cyber Physical Systems	4	01-08-2021 00:00:00
1299	Microelectronics Lab	E3 200	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-08-2021 00:00:00
1300	Communications Systems Design	E2 251	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1301	Design of Cyber-Physical Systems	CP 212	2021-22	Elective Course	Master	Cyber Physical Systems	3	01-08-2021 00:00:00
1302	Modeling in Chemical Engineering	CH 235	2021-22	Elective Course	Master	Cyber Physical Systems	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1303	Thermodynamics	CH 204	2021-22	Elective Course	PhD	Chemical Engineering	3	01-08-2021 00:00:00
1304	Transport Processes	CH 203	2021-22	Elective Course	Master	Chemical Engineering	3	01-08-2021 00:00:00
1305	Numerical Methods	CH 202	2021-22	Elective Course	PhD	Chemical Engineering	3	01-08-2021 00:00:00
1306	Mathematics for Electrical Engineers	E2 243	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-08-2021 00:00:00
1307	Engineering Mathematics	CH 201	2021-22	Elective Course	Master	Chemical Engineering	3	01-08-2021 00:00:00
1308	TCP IP Networking	E2 232	2021-22	Elective Course	Master	Electronic Systems Engineering	3	01-08-2021 00:00:00
1309	Structural System Identification	CE 290	2021-22	Elective Course	PhD	Civil Engineering	3	01-08-2021 00:00:00
1310	Communication Networks	E2 221	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1311	Matrix Theory	E2 212	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1312	Transportation Systems Modelling	CE 275	2021-22	Elective Course	PhD	Civil Engineering	3	01-08-2021 00:00:00
1313	Sustainable Urban Transportation Planning	CE 274	2021-22	Elective Course	PhD	Civil Engineering	3	01-08-2021 00:00:00

Srno	Title of Course	Course Code	Academic Year	Type of Course	Level of Course	Course Offering Department/ Centre/ Unit Name	Total Credit Score	Course Start Date
1314	Traffic Engineering	CE 269	2021-22	Elective Course	PhD	Civil Engineering	3	01-08-2021 00:00:00
1315	Water Quality Modeling	CE 249	2021-22	Elective Course	PhD	Civil Engineering	3	01-08-2021 00:00:00
1316	Remote Sensing and GIS for Water Resources Engineering	CE 247	2021-22	Elective Course	PhD	Civil Engineering	3	01-08-2021 00:00:00
1317	Bridge Engineering	CE 243	2021-22	Elective Course	PhD	Civil Engineering	3	01-08-2021 00:00:00
1318	Quantum Information Theory	E2 206	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00
1319	Digital Communication	E2 211	2021-22	Elective Course	Master	Electrical Communication Engineering	3	01-08-2021 00:00:00

2.2) Non-Academic Courses in Innovation, Entrepreneurship and IPR

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Program Start Date	Pr Er D:
1	Principles and advances in genetic engg	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	10-08-2020 00:00:00	14 20 00
2	Digital Health and Imaging Cohort 1	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Program Start Date	Pr Er Da
3	Methods in Cell and Molecular Biology Cohort 1	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	16-11-2020 00:00:00	202000
4	Internet based course on Environment Management	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-10-2020 00:00:00	012000
5	Computational Data Science Cohort 1	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	012000
6	Methods in Cell and Molecular Biology Cohort 2	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	22-02-2021 00:00:00	262000
7	Innovative Product Development and Design Methods (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	012000
8	Introduction to Data Structures and Algorithms (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	012000
9	Vibration and Noise Theory and Practice (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	012000
10	AI for UI UX Design (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	012000

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Program Start Date	Pr Er D:
11	Basics of Data Analytics (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00
12	Computational Thinking in India Insights from the Indic Tradition (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00
13	Reinforcement Learning (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00
14	Engineering Optimization (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00
15	Structural Analysis and Design Optimization Theory and Practice (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00
16	Machine Learning (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00
17	Business Analytics with Management Science Models and Methods (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00
18	Deep Reinforcement Learning (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Program Start Date	Pr Er D:
19	Mathematical Foundations for Machine Learning (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00
20	Basics of Machine Learning (Aug-Dec 2020)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2020 00:00:00	01 20 00
21	Innovative Product Development and Design Methods (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
22	Service Design Thinking (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
23	Laboratory Animal Management (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
24	Data Driven Modelling and Optimization (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
25	High Performance Computing and Data Science (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
26	Preclinical Drug Research Regulatory Perspectives (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Program Start Date	Pr Er D:
27	Probability Foundations for Machine Learning (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
28	Basics of Data Analytics (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
29	Reinforcement Learning (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
30	Machine Learning Theory and Practice (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
31	Structural Analysis and Design Optimization Theory and Practice (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
32	Business Analytics with Management Science Models and Methods (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
33	Basics of Machine Learning (Jan May 2021)	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Program Start Date	Pr Er D:
34	Methods in Cell and Molecular Biology Cohort -1	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	04-10-2021 00:00:00	08 20 00
35	Digital Health and Imaging Cohort 2	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
36	Digital Health and Imaging for Wipro GE	2021-22	Short-term Certificate Program	Industry/Non-Govt.	Centre for Continuing Education	01-02-2021 00:00:00	01 20 00
37	Methods in Cell and Molecular Biology Cohort -2	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	24-05-2021 00:00:00	28 20 00
38	Internet based course on Environment Management	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-09-2021 00:00:00	01 20 00
39	Computational Data Science Cohort 2	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-05-2021 00:00:00	01 20 00
40	Digital Health and Imaging Cohort 3	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-09-2021 00:00:00	01 20 00
41	Thermoelectric Material and its applications	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	15-11-2021 00:00:00	19 20 00
42	Innovation and Design (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
43	Service Design Thinking (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for continuing Education	01-08-2021 00:00:00	01 20 00

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Program Start Date	Pr Er Da
44	Vibration and Noise - Theory and Practice (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
45	Probability Foundations for Machine Learning (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
46	Data Structures and Graph Analytics (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
47	Project Management (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
48	Introduction to Computing for AI and Machine Learning (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
49	Deep Learning (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
50	Structural Analysis and Design Optimization - Theory and Practice (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Program Start Date	Pr Er D:
51	Foundations of Data Science and Machine Learning (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
52	Business Analytics with Management Science Models and Methods (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
53	Reinforcement and Deep Reinforcement Learning (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
54	Mathematics for Machine Learning (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
55	Fundamentals of Machine Learning (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
56	Embedded Systems and IoT Sensors Applications (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
57	Machine Learning (Aug Dec 2021)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-08-2021 00:00:00	01 20 00
58	Digital Image Processing (Jan May 2022)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2022 00:00:00	01 20 00

Srno	Title of Course	Academic Year	Type of Certificate Program	Certificate Program/MDP/FDP/EDP Sponsored/Supported by	Certificate Program Offering Department/ Centre/ Unit Name	Program Start Date	Pr Er D:
59	Design Thinking and Innovation (Jan May 2022)	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-01-2022 00:00:00	01 20 00
60	Deep Learning - Foundations and Applications Cohort 1	2020-21	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-04-2021 00:00:00	01 20 00
61	Advanced Flight Mechanics - Guidance and Control of Flight Vehicles	2021-22	Short-term Certificate Program	Central Govt. Agency	Centre for Continuing Education	01-01-2021 00:00:00	01 20 00
62	Digital Manufacturing and Smart Factories Cohort 1	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre For Continuing Education	01-10-2021 00:00:00	01 20 00
63	VLSI Chip Design	2021-22	Short-term Certificate Program	Self Sponsored/Supported	Centre for Continuing Education	01-09-2021 00:00:00	01 20 00
64	Advanced Technology for Water resource Management	2021-22	Short-term Certificate Program	Central Govt. Agency	Centre for Continuing Education	18-04-2022 00:00:00	22 20 00
65	Pedestrian Flow and Risk Modelling	2021-22	Short-term Certificate Program	Central Govt. Agency	Centre for Continuing Education	25-04-2022 00:00:00	01 20 00

Section 3: Pre-Incubation and Incubation Infrastructure & Facilities are Currently in Operation to Promote I&E Agenda (AY 2020-21 & 2021-22)

3.1) Existence of Pre-Incubation Facility (Tinkering Lab/Makers' Space/Design Centre/New Gen IEDC/IEDC/EDC/Innovation Cell/Startup Cell) (>= 600 Sq. Ft. Floor Area)

Sr. No.	Type of the Unit	Name of Unit	In-charge Name	Govt. Schemes
1	NIDHI Center	TIME(Sqaure) under SID	Yatish Dravid	Seed Grant Support,Pre-Incubation Facility Support (Idea to Prototype and Innovative Business Plan Development)
2	Start-Up Cell	EntIISc	Nobin Paul	Pre-Incubation Facility Support (Idea to Prototype and Innovative Business Plan Development)

3.2) Existence of Incubation Facility (>= 1500 Sq. Ft. Floor Area)

Sr. No.	Name of Unit	In-charge Name	Govt. Schemes
1	Society for Innovation and Development	Prof B Gurumoorthy	DST/NSTEDB/NIDHI,AIM/NITI Ayog,MeitY,CSR/Private,Own Resource,Other Central/State Government
2	InCeNSE-TBI	Dr. Tulasi Gandikota	Own Resource,Other Central/State Government
3	CPDMed TBI	Dr. Srinivas	Own Resource,Other Central/State Government
4	GEECI	Srinivasan Raghavan	MeitY
5	I-HUB FOR ROBOTICS AND AUTONOMOUS SYSTEMS INNOVATION FOUNDATION	Amruthur Bharadwaj	DST/NSTEDB/NIDHI,Other Central/State Government

3.3) Existence of IPR Cell / Patent Facilitation Unit / Technology Transfer Centre at the institute

Sr. No.	Type of the Unit	Name of Unit	In-charge Name	Govt. Schemes
1	IPR Cell	Intellectual Property and Tech Licensing [IPTeL], IISc	Prof Suryasarathi Bose	Mentoring Support

Section 4: Generation and Support of Prototypes / Innovations at HEI and Recognition received (AY 2020-21 & 2021-22)

4) Total no. of Innovations (Verified and Recommended) in Different TRLs (4-9) are Recorded in the YUKTI National Innovation Repository of the IIC Institute (Status as on 7th November 2022)

Sr. No.	Innovation Name	Developed as part of	FY of Development (FY. 2020-21,2021-22)	TRL Stage	Team Lead/Innovator Name	Current Engage of Team Lead in Institut
1	4 Automation Medical Devices for labour intensive Ayurveda Panchakarma for 16 routinely practiced panchakarma	Independent Assignment/Non-academic Study Project	2021-22	TRL 4 : Small scale prototype built in a laboratory environment ("ugly" prototype)	Hirehal Neha	Entrepr
2	Superconducting Single Photon Detector	Independent Assignment/Non-academic Study Project	2021-22	TRL 4 : Small scale prototype built in a laboratory environment ("ugly" prototype)	Dr. Purnima Sethi Josan	Entrepr
3	Design Methodology for a Soft-switched Power Electronic Converter for High Voltage X-ray Applications	Academic Research Assignment/Industry Sponsored Project	2021-22	TRL 4 : Small scale prototype built in a laboratory environment ("ugly" prototype)	Vinod John	Faculty
4	Room temperature single photon detector at 1550 nm	Academic Requirement/Study Project	2021-22	TRL 4 : Small scale prototype built in a laboratory environment ("ugly" prototype)	Kausik Majumdar	Faculty

Sr. No.	Innovation Name	Developed as part of	FY of Development (FY. 2020-21,2021-22)	TRL Stage	Team Lead/Innovator Name	Current Engage of Team Lead in Institut
5	An all-electronic true random number generator	Academic Requirement/Study Project	2021-22	TRL 4 : Small scale prototype built in a laboratory environment ("ugly" prototype)	Kausik Majumdar	Faculty
6	Device to Measure Airway Patency	Academic Research Assignment/Industry Sponsored Project	2021-22	TRL 5 : Large scale prototype tested in intended environment	Alekya B	Student
7	MULTIMODAL DETECTION DEVICE AND METHOD FOR CANCER MARGIN ASSESSMENT	Academic Research Assignment/Industry Sponsored Project	2021-22	TRL 4 : Small scale prototype built in a laboratory environment ("ugly" prototype)	ARIF MOHD KAMAL	Student
8	Reconfigurable Analog AI Accelerator Chip for Machine Learning and Edge Computing: ARYABHAT-1	Academic Requirement/Study Project	2021-22	TRL 4 : Small scale prototype built in a laboratory environment ("ugly" prototype)	Pratik Kumar	Student
9	A high frequency magnetic induction device for the treatment of oral cancer	Academic Research Assignment/Industry Sponsored Project	2021-22	TRL 4 : Small scale prototype built in a laboratory environment ("ugly" prototype)	Shilpee Jain	Entrepreneur

Sr. No.	Innovation Name	Developed as part of	FY of Development (FY. 2020-21,2021-22)	TRL Stage	Team Lead/Innovator Name	Current Engage of Team Lead in Institut
10	India's first indigenously developed consumer robot vacuum cleaner. Worlds first 2-in-1 autonomous to manual robot vac.	Independent Assignment/Non-academic Study Project	2021-22	TRL 5 : Large scale prototype tested in intended environment	Pooja Ravishankar	Entrepr
11	A DIAGNOSTIC TOOL FOR GRADING STENOSIS IN UPPER AIRWAY	Academic Research Assignment/Industry Sponsored Project	2020-21	TRL 5 : Large scale prototype tested in intended environment	Alekya B	Student
12	Fibre bragg Sensing Technology based Wheel Impact Load Detector	Academic Research Assignment/Industry Sponsored Project	2020-21	TRL 8 : First of a kind commercial system. Manufacturing issues solved	Dhanya V J	Entrepr
13	TRANSLEAD MEDTECH PVT LTD	Independent Assignment/Non-academic Study Project	2020-21	TRL 7 : Demonstration system operating in operational environment at pre-commercial scale	Manoj Kumar R	Entrepr

Section 5: Start-ups/Ventures Established and Supported at HEI and & Recognitions Received (AY 2020-21 & 2021-22)

5) Total no of Ventures/Startups (Verified and Recommended) are Recorded in the YUKTI National Innovation Repository of the IIC Institute (Status as on 7th November 2022)

Sr. No.	Startup/Venture Name	Startup/Venture Registered as	CIN No/LLP/OPC/RC No
1	Botloka Private Limited	Private Limited Firm (Pvt. Ltd.)	U31909KA2021PTC149627 View Document (https://api.mic.gov.in//uploads/institutes/in
2	MagHeals Private Limited	Private Limited Firm (Pvt. Ltd.)	U33119KA2021PTC154153 View Document (https://api.mic.gov.in//uploads/institutes/in
3	Dfine Bio-Innovations Pvt Ltd	Private Limited Firm (Pvt. Ltd.)	U33110KA2020PTC142097. View Document (https://api.mic.gov.in//uploads/institutes/in
4	Quan2D Technologies Private Limited	Private Limited Firm (Pvt. Ltd.)	U74999KA2021PTC153949 View Document (https://api.mic.gov.in//uploads/institutes/in
5	INFAB Semiconductor Pvt Ltd	Private Limited Firm (Pvt. Ltd.)	U29249KA2021PTC155413 View Document (https://api.mic.gov.in//uploads/institutes/innovationcontest
6	Papyrus Diagnostics	Private Limited Firm (Pvt. Ltd.)	U33119KA2021PTC149168. View Document (https://api.mic.gov.in//uploads/institutes/in
7	Kalash MedTech Pvt Ltd Bangalore	Private Limited Firm (Pvt. Ltd.)	U85110KA2021PTC145394 View Document (https://api.mic.gov.in//uploads/institutes/innovationcontest Innovation1314533.PDF)
8	Switchkase Technologies Pvt Ltd	Private Limited Firm (Pvt. Ltd.)	U31900KA2020PTC138750 View Document (https://api.mic.gov.in//uploads/institutes/innovationcontest
9	Gyroid Photonics Innovations and Technologies Limited	Private Limited Firm (Pvt. Ltd.)	U29299KA2021PTC147179. View Document (https://api.mic.gov.in//uploads/institutes/in

Sr. No.	Startup/Venture Name	Startup/Venture Registered as	CIN No/LLP/OPC/RC No
10	Vertisolve Medtech Pvt. Ltd.	Private Limited Firm (Pvt. Ltd.)	U33127KA2020PTC137856 View Document (https://api.mic.gov.in/uploads/institutes/innovationcontest)
11	TIEA CONNECTORS PVT LTD	Private Limited Firm (Pvt. Ltd.)	U31909KA2020PTC132426 View Document (https://api.mic.gov.in/uploads/institutes/in)

Section 6: Collaboration with Other Incubation Units, HEIs and Industry Associations to Strengthen Better Services and Support to Innovation & Startups at HEI (AY 2020-21 & 2021-22)

6) Collaboration with Other Incubation Units, HEIs and Industry Associations to Strengthen Better Services and Support to Innovation & Startups at HEI (AY 2020-21 & 2021-22)

Sr. No.	Collaborated Agency Name	Collaborated Agency Type	Period of Collaboration (No. of Years)	Current Status of Collaboration	Date of MOU / Agreement Signed on
1	National Tsing Hua University, Hsinchu, Taiwan	Educational Institute	05	Active	17-08-2020
2	Washington University in St. Louis, Missouri, USA	Educational Institute	05	Active	25-08-2020
3	Perm National Research Polytechnic University, Russia	Educational Institute	03	Active	23-09-2020
4	Georgia Institute of Technology, USA	Educational Institute	03	Active	09-10-2020
5	University of Manchester, UK	Educational Institute	05	Active	19-10-2020

Sr. No.	Collaborated Agency Name	Collaborated Agency Type	Period of Collaboration (No. of Years)	Current Status of Collaboration	Date of MOU / Agreement Signed on
6	Saint-Petersburg University, Russian Federation, Russia	Educational Institute	05	Active	21-10-2020
7	Tohoku University, Japan	Educational Institute	05	Active	30-11-2020
8	University of Melbourne, Australia	Educational Institute	05	Active	14-01-2021
9	University of Wollongong, Australia	Educational Institute	05	Active	25-11-2020
10	Japan Advanced Institute of Science & Technology, Japan	Educational Institute	05	Active	21-10-2020
11	University of California, San Francisco	Educational Institute	01	Inactive	27-09-2021
12	EdCIL India Ltd	Govt. Agency (Central)	01	Inactive	05-08-2021
13	Emory University, USA	Educational Institute	05	Active	04-08-2021
14	University of Bordeaux	Educational Institute	05	Active	28-07-2021
15	University of New South Wales, Australia	Educational Institute	05	Active	13-07-2021
16	CNRS and 20 universities in France	Educational Institute	05	Active	08-07-2021
17	University of Cambridge, UK	Educational Institute	03	Active	24-06-2021
18	Brunel University London, UK	Educational Institute	05	Active	14-05-2021
19	University of Pennsylvania, USA	Educational Institute	01	Inactive	26-04-2021
20	University of Stuttgart, Germany and Universidade Federal De Santa Catarina, Brazil (UFSC):	Educational Institute	05	Active	15-02-2021

Sr. No.	Collaborated Agency Name	Collaborated Agency Type	Period of Collaboration (No. of Years)	Current Status of Collaboration	Date of MOU / Agreement Signed on
21	University of Bristol, UK	Educational Institute	05	Active	14-04-2022
22	Sun Pharma Advanced Research Company Ltd	Non Govt. Agency	03	Active	04-04-2022
23	Yokohama National University	Educational Institute	05	Active	24-03-2022
24	University of Cologne	Educational Institute	03	Active	08-03-2022
25	Vytautas Magnus University, Lithuania	Educational Institute	03	Active	04-02-2022
26	Delft University of Technology	Educational Institute	03	Active	24-01-2022
27	Federal University Wukari, Nigeria	Educational Institute	05	Active	29-12-2021
28	University of Cologne	Educational Institute	03	Active	30-11-2021
29	General Electric, Bangalore	Non Govt. Agency	02	Active	14-10-2021
30	Temple University	Educational Institute	05	Active	27-09-2021
31	Neyveli Lignite Corporation	Non Govt. Agency	01	Active	01-02-2021
32	University College Cork-National University of Ireland	Educational Institute	03	Active	12-07-2022
33	Bahir Dar University	Educational Institute	05	Active	12-07-2022
34	University of Nebraska	Educational Institute	05	Active	12-07-2022
35	University of Exeter	Educational Institute	03	Active	29-06-2022
36	Griffith University, Australia	Educational Institute	03	Active	17-06-2022
37	Imperial College, London	Educational Institute	05	Active	17-06-2022

Sr. No.	Collaborated Agency Name	Collaborated Agency Type	Period of Collaboration (No. of Years)	Current Status of Collaboration	Date of MOU / Agreement Signed on
38	University of Paris-Saclay	Educational Institute	03	Active	06-06-2022
39	Nanyang Technological University (JSP)	Educational Institute	05	Active	30-05-2022
40	Australian National University (JDP)	Educational Institute	03	Active	13-05-2022
41	Tata Consulting Engineers Limited	Non Govt. Agency	04	Active	01-01-2021
42	Fujitsu Limited	International Agency	01	Active	31-03-2021
43	Kerala Rail Development Corporation Limited	Non Govt. Agency	02	Active	24-09-2021
44	Texas Instruments Incorporated	Non Govt. Agency	03	Active	01-10-2020
45	L&T Technology Services Limited	Non Govt. Agency	01	Active	05-11-2020
46	Indian Oil Corporation Limited	Non Govt. Agency	05	Active	29-10-2020
47	Hitachi India Limited	Non Govt. Agency	01	Active	01-11-2020
48	IUDX Programme Unit	Non Govt. Agency	02	Active	01-04-2021
49	Novartis Healthcare Private Limited	Non Govt. Agency	03	Active	15-10-2020
50	Danfoss Industries Pvt. Ltd	Non Govt. Agency	04	Active	01-01-2021
51	Marico innovation Foundation	Non Govt. Agency	01	Active	10-12-2021
52	MEDDIFF TECHNOLOGIES PVT. LTD	Non Govt. Agency	01	Active	21-09-2021
53	Minor Irrigation & Ground Water Development Division, Haliyal	Govt. Agency (State)	01	Active	24-03-2022
54	Novartis Healthcare Private Limited	Non Govt. Agency	03	Active	15-10-2020

Sr. No.	Collaborated Agency Name	Collaborated Agency Type	Period of Collaboration (No. of Years)	Current Status of Collaboration	Date of MOU / Agreement Signed on
55	Morphing Machines	Non Govt. Agency	02	Active	25-02-2022
56	Navana Tech	Non Govt. Agency	02	Active	25-02-2021
57	Fujitsu Limited	International Agency	01	Active	01-09-2021
58	Toyota Research Institute-North America	International Agency	05	Active	17-02-2020
59	HMT Machine Tools limited	Non Govt. Agency	03	Active	14-07-2021
60	GE India Private Limited	Non Govt. Agency	03	Active	01-12-2020
61	Bosch Limited	Non Govt. Agency	02	Active	28-09-2021
62	Accenture Solutions Private Limited	Non Govt. Agency	02	Active	30-09-2021
63	Human Spaceflight Centre (HSFC), Indian Space Research Organization	Govt. Agency (Central)	02	Active	02-11-2021
64	Hindustan Petroleum Corporation Limited	Non Govt. Agency	01	Active	20-10-2021
65	Altair Engineering India Pvt ltd	Non Govt. Agency	01	Active	23-06-2022
66	Remi Elektrotechnik Limited (Instruments Division)	Non Govt. Agency	01	Active	20-05-2022
67	I-HUB for Robotics and Autonomous Systems Innovation Foundation	Non Govt. Agency	02	Active	07-04-2020
68	Minor Irrigation & Ground Water Development Division, Kolar	Govt. Agency (State)	03	Active	02-03-2020
69	Alicon Castalloy Limited	Non Govt. Agency	05	Active	22-04-2021

Sr. No.	Collaborated Agency Name	Collaborated Agency Type	Period of Collaboration (No. of Years)	Current Status of Collaboration	Date of MOU / Agreement Signed on
70	Faurecia Services Groupe	International Agency	03	Active	29-07-2021
71	IIT Hyderabad	Educational Institute	05	Active	15-02-2021
72	Madras Diabetic Research Foundation	Research Park	05	Active	06-09-2021
73	MANIPAL ACADEMY OF HIGHER EDUCATION	Educational Institute	05	Active	07-04-2021
74	Manipal School of Life Sciences	Educational Institute	05	Active	10-02-2021
75	CMTI	Govt. Agency (Central)	05	Active	20-05-2022
76	IIT Kanpur	Educational Institute	05	Active	30-03-2021
77	IIT Madras	Educational Institute	03	Active	14-08-2020
78	Dedicated Freight Corridor Corporation of India Limited	Non Govt. Agency	02	Active	22-03-2022

Section 7: Intellectually Property (IP) Generated and Commercialization

7.1) IPR Filed and Published (Copyrights & Design only)

Sr. No.	Title/Name of IP (Copyright/Design Only)	Type of IP	IP Registration Number of Copyright/Design	Date of Filed/Published	Has this IP(Copyright & Designs Only) been Commercialized/Transferred to Industry/Startup/Society?
1	Fehydro software library for hydrodynamic stability	Copy Right	5761/2020-CO/	04-07-2020	Yes

7.2) Patents Filed by HEI

Sr. No.	Title/Name of Patent	IP Registration Number	Date of Filed/Published
1	Nanocrystalline Spinel-Type Compounds with Local Non-Cubic Spinel Structures and Process Thereof	202041000806	01-01-2020
2	NON-INVASIVE TEST KIT FOR RAPID DETECTION AND SCREENING INFECTIOUS DISEASE IN INDIVIDUALS	202041022006	26-05-2020
3	POLYPEPTIDE FRAGMENTS, IMPLEMENTATIONS THEREOF, AND VACCINE PREPARATIONS AGAINST SARS-CoV-2	202041028428	01-07-2020
4	CHEMIREISTIVE GAS SENSOR AND METHOD OF FABRICATION	202041034329	01-08-2020
5	A SEMICONDUCTOR DEVICE FOR AUDIO PLAYBACK AND SOUND GENERATION	202041038277	04-09-2020
6	LIQUID DOVE-PRISM BASED OPTOFLUIDIC LOW PRESSURE SENSOR	202041039038	10-09-2020
7	SYSTEM FOR TRAPPING AND MANIPULATION OF MAGNETIC PARTICLES	202041041503	24-08-2020
8	A LIPID BASED INDICATOR FOR CARDIOVASCULAR DISORDER	202041045171	01-10-2020
9	BIOMARKER FOR BLOOD ANOMALY	202041045902	01-10-2020
10	SIMULTANEOUS DETECTION OF MULTIPLE ORDER DIFFRACTION	202041045177	01-10-2020
11	HOMOGENIZED COHERENT EXCITATION OF A SAMPLE FOR DETERMINING MOLECULAR STRUCTURE	202041056361	01-12-2022
12	NUCLEOTIDE SEQUENCE, EXPRESSION VECTORS, RECOMBINANT YEAST CELLS AND APPLICATIONS THEREOF	202041054332	01-12-2020
13	THREE DIMENSIONAL MOLECULAR IMAGING THROUGH HOMOGENIZED COHERENT EXCITATION	202041056364	01-12-2020
14	Cost effective soluble redox flow battery with prophylactic electrolyte additives	202141001976	01-01-2021
15	Low temperature curable silver ink for inkjet printing and process of its manufacture	202141003193	01-01-2021
16	Metal foam heat exchanger	202141001973	01-01-2021
17	A framework for privacy complaint delivery systems	202141006477	01-02-2021
18	Edible Electronic Pill	202141007011	01-02-2021

Sr. No.	Title/Name of Patent	IP Registration Number	Date of Filed/Published
19	LEAD-BASED PEROVSKITE-TYPE ANODES FOR ELECTRICAL ENERGY STORAGE DEVICES	202141004920	01-02-2021
20	A Portable System for Self-Administration of Treatment and Care for Women with Urinary Incontinence	202141012868	01-03-2021
21	A SYSTEM AND A METHOD FOR GENERATING MECHANICAL POWER USING SUPER CRITICAL CARBON DIOXIDE	202141016852	01-03-2021
22	MICROFLUIDIC DEVICE FOR FLUID DENSITY SENSING	202141017269	01-04-2021
23	MICROFLUIDIC DEVICE FOR FLUID DENSITY SENSING	202141017269	01-04-2021
24	MICRO-THRUSTER DEVICE AND FABRICATION METHOD THEREOF	202141018171	01-04-2021
25	MODULATION OF NEURONAL CELL SURVIVAL AND AMYLOID PLAQUES	202141019148	01-04-2021
26	DYNAMICALLY CROSSLINKED SILICONE BASED POLYURETHANES FOR ALLOPLASTIC UROLOGICAL RECONSTRUCTION, AND PROCESS THEREOF	202141020422	01-05-2021
27	METHOD AND SYTEM FOR DESIGNING A MULTIPLIERLESSKERNEL MACHINE FOR ENERGY EFFICIENT EDGE DEVICES	202141021653	01-05-2021
28	ULTRA-LOW POWER PIEZOELECTRIC MICROMACHINED ULTRASONIC TRANSDUCERS (PMUTs) WITH OPTIMIZED TOP ELECTRODE	202141020322	01-05-2021
29	STIMUCELL®: A METHOD AND ELECTRIC SIMULATIONSYSTEM FOR HIGH THROUGHPUT CELLULARPROGRAMMING	202141025521	01-06-2021
30	A COMPOSITE MATERIAL, AN ARTICLE AND APPLICATIONS RELATED THERETO	202141027034	01-06-2021
31	A HYBRID FUEL INJECTOR FOR ABURNER	202141025004	01-06-2021
32	COMBINATION THERAPY COMPRISING CALCIMYCIN, ROMIDEPSIN, PANOBINOSTAT, OR A-1331852 AND CHEMOTHERAPEUTIC AGENTS FOR TREATMENT OF CANCER	202141028044	01-06-2021
33	NANO AND MICRO-PARTICLES TO PROMOTE PHAGOCYtic ACTIVITY OF AN IMMUNE CELL	202141027161	01-06-2021
34	POLYPEPTIDE FRAGMENTS, IMMUNOGENIC COMPOSITION AGAINST SARS-COV-2, AND IMPLEMENTATIONS THEREOF	PCT/IN2021/05	01-06-2021
35	SYSTEM AND METHOD FOR GENERATING MOLTEN METAL DROPLETS FOR ADDITIVE MANUFACTURING	202141028798	01-06-2021

Sr. No.	Title/Name of Patent	IP Registration Number	Date of Filed/Published
36	A GENE EXPRESSION SIGNATURE IN NASOPHARYNGEAL SWAB SAMPLES FOR HIGHLY SENSITIVE AND SPECIFIC COVID-19 PROGNOSIS	202141033990	01-07-2021
37	AGENTS AND METHODS FOR PREVENTION AND MANAGEMENT OF CORONAVIRUS INFECTION	202141033992	01-07-2021
38	Operating conditions for optimal high-temperature, high-pressure operation of water oxidation electrolyzers using mixed iron/nickel oxyhydroxide catalysts	202141034520	01-07-2021
39	URCHINS OF CARBON FIBERS, COMPOSITE MATERIAL, METHODS AND APPLICATIONS RELATED THERETO	202141034262	01-07-2021
40	A DENTAL IMPLANT ASSEMBLY	17/434,850	01-08-2021
41	A METHOD FOR FABRICATING AN ANTIMICROBIAL LAYER ON A FABRIC AND A COATED FABRIC THEREOF	202141035465	01-08-2021
42	HETEROSTRUCTURE SEMICONDUCTOR, CHEMIREISTIVE GAS SENSOR MADE THEREOF, AND METHOD OF FABRICATION THEREOF	17/398,169	01-08-2021
43	A novel dental implant system for improved osseointegration	20762647.4	01-09-2021
44	Ultra-thin Semiconductor Speakers	202041038277	01-09-2021
45	COMPOSITE SEMICONDUCTOR PRECURSOR SOLUTION AND METHOD FOR FABRICATING ELECTRONIC DEVICE USING THE COMPOSITE SEMICONDUCTOR PRECURSOR SOLUTION	202141044657	01-10-2021
46	STRETCHING OF CELLS AND TISSUES	202041056145	01-10-2021
47	CONTROLLING MOTION OF MAGNETICALLY-DRIVEN MICROSCOPIC PARTICLES	17/613,671	01-11-2021
48	A SMART ROAD ASSET MANAGEMENT SYSTEM AND METHOD THEREOF	202041057251	01-12-2021
49	CONTROLLING MOTION OF MAGNETICALLY-DRIVEN MICROSCOPIC PARTICLES	20812877.7	01-12-2021
50	NUCLEOTIDE SEQUENCE, EXPRESSION VECTORS, RECOMBINANT YEAST CELLS AND APPLICATIONS THEREOF	PCT/IB2021/06	01-12-2021
51	Hybrid 2D2D and 2D1D heterostructure for highly selective Chemiresistive H ₂ S Sensor	202041034329	01-08-2021
52	Ultra-thin Semiconductor Speakers	202041038277	01-09-2021

Sr. No.	Title/Name of Patent	IP Registration Number	Date of Filed/Published
53	APPARATUS AND SYSTEM FOR RAPID DIAGNOSIS OF MALIGNANT LESIONS FROM BIOPSY TISSUES FOR USE INSIDE THE OPERATION ROOM	202041029955	14-07-2020
54	LIQUID COOLING OF ELECTRICAL MACHINES	202141007434	01-02-2021
55	STORAGE OF THERMAL ENERGY	202141008297	01-02-2021
56	METHODS FOR IDENTIFYING HAEMOGLOBIN S OR C IN A BIOLOGICAL SAMPLE AND KITS THEREOF	202141009024	01-03-2021
57	Novel laser modulation technique comprising of sinusoid and white noise-based phase modulation for control of Stimulated Brillouin Scattering	202141009390	01-03-2021
58	PLATINUM BASED BORONDIPYRROMETHENE COMPOUND AND METHOD THEREOF	202141019928	01-04-2021
59	POSITIONING OF PAYLOADS	202141015720	01-04-2021
60	CORONAVIRUS BASED VIRUS LIKE PARTICLES (VLPs), METHODS AND APPLICATIONS THEREOF	202141022412	01-05-2021
61	METHOD AND APPARATUS FOR GENERATING OXYGEN WITHCONTROLLING THE OPERATIONS IN OXYGENCONCENTRATORS	202141021651	01-05-2021
62	Layered Composition and Implementations Thereof	202141025757	01-06-2021
63	A DIGITALLY RECONFIGURABLE META-SURFACE FOR COMMUNICATION IN SCATTER-RICH MULTIPATH CHANNEL'	202141039005	01-08-2021
64	A method for preparation of Polyurethane composite material and composites thereof	202141038867	01-08-2021
65	A PROCESS FOR THE PREPARATION OF Na ₂ Mn ₃ O ₇ AND ITS APPLICATIONS THEREOF	202141038342	01-08-2021
66	AN ORGAN PRESERVATION SYSTEM WITH METHOD FOR ACTIVE PERFUSION AND ORGAN HEALTH ASSESMENT	202141038346	01-08-2021
67	ELECTRODE MATERIAL COMPRISING LEAD-BASED OXIDE(S), METHODS AND DEVICES/SYSTEMS THEREOF	202141036905	01-08-2021
68	A Collaborative Robot for Medical Application	202141039735	01-09-2021
69	CATIONIC POLYMERIC MICROPARTICLES AND DRUG DELIVERY FOR THE TREATMENT OF TUBERCULOSIS INFECTION	202141042181	01-09-2021
70	COMPOSITION AND METHODS FOR MANAGING VIRAL INFECTIONS/DISEASES	202141042249	01-09-2021

Sr. No.	Title/Name of Patent	IP Registration Number	Date of Filed/Published
71	Piezoelectric Titanium Carbide-MXene, method of preparation and applications thereof	202141042031	01-09-2021
72	SYNTHETIC HELIX-HAIRPIN PEPTIDES FOR INHIBITING SARS-ASSOCIATED CORONAVIRUS AND APPLICATIONS THEREOF	202141040960	01-09-2021
73	VEHICLE ENCAPSULATED SPECIALIZED PRO-RESOLUTION MEDIATORS (SPMs), METHODS AND APPLICATIONS THEREOF	202141040859	01-09-2021
74	A METHOD FOR FABRICATING AN ANTIMICROBIAL LAYER ON A FABRIC AND A COATED FABRIC THEREOF	PCT/IB2021/05	01-10-2021
75	NANOCRYSTALLINE SPINEL-TYPE COMPOUNDS WITH LOCAL NON-CUBIC SPINEL STRUCTURES AND PROCESS THEREOF	202141044607	01-10-2021
76	A QUATERNARY OXIDE AND IMPLEMENTATIONS THEREOF	202141053175	01-11-2021
77	A Reconfigurable and Scalable Multi-Core Analog Computing Chip	202141054561	01-11-2021
78	AN ENERGY STORAGE DEVICE AND IMPLEMENTATIONS THEREOF	202141050663	01-11-2021
79	HIGH TEMPERATURE COMPATIBLE OPTICALLY READABLE UNIQUE IDENTIFICATION PATTERN	202141055216	01-11-2021
80	REFRACTORY MATERIAL AND IMPLEMENTATIONS THEREOF	202141055289	01-11-2021
81	CRISPR-DCAS13 SYSTEM, COMPOSITION, AND METHOD TO INDUCE TRANSLATIONAL READTHROUGH ACROSS STOP CODONS	202141058043	01-12-2021
82	MERCAPTOPYRIMIDINE COMPOUNDS THAT INHIBIT NONHOMOLOGOUS END JOINING AND METHODS THEREOF	202141062306	01-12-2021
83	METAL POWDER AND METHOD FOR MANUFACTURING SUCH METAL POWDER	202141061560	01-12-2021

7.3 & 7.4) Patent Published / Granted Data

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
1	16/629,156	HIGH ELECTRON MOBILITY TRANSISTOR (HEMT) WITH RESURF JUNCTION	01-01-2020	Published	2020	Co-Applicant
2	201821023778	METHOD FOR THE IDENTIFICATION OF SEED SEQUENCES FOR ENZYME ENGINEERING	01-01-2020	Published	2020	Co-Applicant
3	201841032295	A Dental Implant Assembly for Dental Prosthesis	01-02-2020	Published	2020	Co-Applicant
4	201941048944	SYSTEM AND APPARATUS FOR TRAINING DESIGN THINKING	01-11-2020	Published	2020	Co-Applicant
5	202041000899	PROCESS OF OBTAINING A FUNCTIONAL PROTEIN BY READTHROUGHS ACROSS PRE-MATURE STOP CODONS	08-01-2020	Published	2020	Co-Applicant
6	202047004131	A Gate Driver with Bipolar Bootstrap Capability	01-01-2020	Published	2020	Co-Applicant
7	202047034607	SUPERCONDUCTING BLOCK, SUPERCONDUCTING NANOCRYSTAL, SUPERCONDUCTING DEVICE AND A PROCESS THEREOF	12-08-2020	Published	2020	Co-Applicant
8	PCT/IB2020/050253	A System for Main-Machine Interaction in Vehicles	01-01-2020	Published	2020	Co-Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
9	PCT/IB2020/051724	A Dental Implant Assembly for Dental Prosthesis	01-02-2020	Published	2020	Co-Applicant
10	PCT/IN2020/050006	OPTO-MECHANICAL PRODUCTION OF NANOSHEETS FROM LAYERED MATERIALS	03-01-2020	Published	2020	Co-Applicant
11	15/733,088	CLINICAL SAMPLE STORAGE CASSETTES	01-05-2020	Published	2020	Co-Applicant
12	16/757,084	DENDRITIC CELLS-TARGETING VACCINE	17-04-2020	Published	2020	Co-Applicant
13	16/954,140	A Microfluidic Device With Integrated Micro-Structured Electrodes And Methods Thereof	15-06-2020	Published	2020	Co-Applicant
14	16/979113	SUPERCONDUCTING BLOCK, SUPERCONDUCTING NANOCRYSTAL, SUPERCONDUCTING DEVICE AND A PROCESS THEREOF	08-09-2020	Published	2020	Co-Applicant
15	17/048,152	AN APPARATUS TO MAINTAIN TEMPERATURE OF AN OBJECT	01-10-2020	Published	2020	Co-Applicant
16	17092471	SYSTEM AND METHOD FOR PROTECTION AGAINST SIDE CHANNEL ATTACKS	01-11-2020	Published	2020	Co-Applicant
17	18869638.9	DENDRITIC CELLS-TARGETING VACCINE	01-05-2020	Published	2020	Co-Applicant
18	18876789.1	CLINICAL SAMPLE STORAGE CASSETTES	01-06-2020	Published	2020	Co-Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
19	19765132.6	SUPERCONDUCTING BLOCK, SUPERCONDUCTING NANOCRYSTAL, SUPERCONDUCTING DEVICE AND A PROCESS THEREOF	21-08-2020	Published	2020	Co-Applicant
20	201880080105.9	CLINICAL SAMPLE STORAGE CASSETTES	01-06-2020	Published	2020	Co-Applicant
21	201941021608	CONTROLLING MOTION OF MAGNETICALLY-DRIVEN MICROSCOPIC PARTICLES	25-07-2020	Published	2020	Co-Applicant
22	201941028031	A SYSTEM AND METHOD FOR DETERMINATION OF POWER LAW CREEP PARAMETERS FROM A SINGLE BENDING SPECIMEN	13-07-2020	Published	2020	Co-Applicant
23	201941042707	CHARGE-BASED METHODS FOR STUDYING A BIOCHEMICAL MICRO-ENVIRONMENT	21-10-2020	Granted	2020	Co-Applicant
24	201941045663	SYSTEM AND METHOD FOR PROTECTION AGAINST SIDE CHANNEL ATTACKS	01-11-2020	Published	2020	Co-Applicant
25	201941050005	HOLLOW MICRONEEDLE DEVICE	01-12-2020	Published	2020	Co-Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
26	202041006792	METHOD AND SYSTEM FOR GENERATING SPREADING CODES BASED ON INTERLEAVED Z4-LINEAR SEQUENCES FOR NAVIGATION SYSTEMS	17-02-2020	Granted	2020	Co-Applicant
27	202041010186	FLUID DELIVERY	09-03-2020	Published	2020	Co-Applicant
28	202041011502	FIN-BASED SCR ARCHITECTURES HAVING DISTRIBUTED CURRENT CONFIGURATION AND ENHANCED ESD PROTECTION	17-03-2020	Published	2020	Co-Applicant
29	202041014450	A COMPOUND WITH IMPROVED PHOTOSTABILITY UNDER SUNLIGHT	01-03-2020	Published	2020	Co-Applicant
30	PCT/IB2020/051360	High Power Printed Field Effect Transistors (FET)	01-02-2020	Published	2020	Co-Applicant
31	PCT/IB2020/052598	A MICRO-ENVIRONMENT FOR PERSONAL COMFORT AND WORK	01-03-2020	Published	2020	Co-Applicant
32	PCT/IN2020/050290	IN-VITRO PROCESSES FOR SCREENING CANDIDATE MOLECULES, AND IMPLEMENTATIONS THEREOF	27-03-2020	Published	2020	Co-Applicant
33	202047014789	NANO-SENSOR FOR DETECTING GASEOUS COMPONENTS	01-04-2020	Published	2020	Co-Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
34	PCT/IB2020/053151	A DESILTING APPARATUS FOR CLEANING A PRE-DEFINED VICINITY	01-04-2020	Published	2020	Co-Applicant
35	202047014790	METHODS OF FABRICATION OF NANO-SENSOR AND NANO-SENSOR ARRAY	02-04-2020	Published	2020	Co-Applicant
36	202047014789	NANO-SENSOR FOR DETECTING GASEOUS COMPONENTS	02-04-2020	Published	2020	Co-Applicant
37	202041015152	A PORTABLE FLUORESCENCE READOUT DEVICE	06-04-2020	Published	2020	Co-Applicant
38	202041015738	BIOMARKERS, AND ASSOCIATED METHODS FOR DETECTING BACTERIAL AND VIRAL INFECTIONS IN A BLOOD SAMPLE	10-04-2020	Granted	2020	Co-Applicant
39	202041016120	AN ELECTROCHEMICAL LITHOGRAPHY TOOL FOR HIGH THROUGHPUT PATTERN GENERATION	14-04-2020	Published	2020	Co-Applicant
40	202041016123	PORTABLE ENERGY-EFFICIENT OPTOTHERMAL TEMPERATURE CYCLER FOR SMALL-VOLUME CHEMICAL REACTIONS	14-04-2020	Published	2020	Co-Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
41	202047016503	UNITARY STATOR, SLIT ROTOR AND A SWITCHED RELUCTANCE DEVICE THEREOF	16-04-2020	Granted	2020	Co-Applicant
42	202041016754	PLASMA ACTIVATED WATER AT NEAR NEUTRAL pH CONDITIONS	18-04-2020	Published	2020	Co-Applicant
43	202041017738	Antimicrobial composite fabric and method thereof	25-04-2020	Granted	2020	Co-Applicant
44	202041017967	SYSTEM AND DEVICE FOR DETERMINATION OF PARAMETERS ASSOCIATED WITH A SAMPLE	27-04-2020	Published	2020	Co-Applicant
45	202047019005	CLINICAL SAMPLE STORAGE CASSETTES	04-05-2020	Published	2020	Co-Applicant
46	202041019648	A SELF-ASSEMBLED NANO-ARCHITECTURE	08-05-2020	Published	2020	Co-Applicant
47	PCT/IN2020/050475	CONTROLLING MOTION OF MAGNETICALLY-DRIVEN MICROSCOPIC PARTICLES	27-05-2020	Published	2020	Co-Applicant
48	202041022728	AN IN-VIVO, INTRAOPERATIVE PROBE FOR BRAIN TUMOUR MARGIN DELINEATION AND METHODS THEREOF	09-06-2020	Published	2020	Co-Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
49	202041024394	APPARATUS FOR HIGH-THROUGHPUT RAPID ANTIBIOTIC SUSCEPTIBILITY TESTING AND METHODS THEREOF	10-06-2020	Published	2020	Co-Applicant
50	202041024905	A DEVICE TO DETERMINE VISCOSITY OF A FLUID AND A METHOD THEREOF	13-06-2020	Published	2020	Co-Applicant
51	202042025945	PATIENT SPECIFIC NEAR-NET SHAPED UNIAXIALLY PRESSED CERAMIC FEMORAL HEAD AND ACETABULAR SOCKET, AND FABRICATION METHOD THEREOF	19-06-2020	Published	2020	Co-Applicant
52	202042025944	PATIENT SPECIFIC NEAR-NET SHAPED UNIAXIALLY PRESSED CERAMIC FEMORAL HEAD AND ACETABULAR SOCKET, AND FABRICATION METHOD THEREOF	19-06-2020	Published	2020	Co-Applicant
53	202041027011	SMART WEARABLE DEVICE FOR CONTINUOUS MONITORING OF BODY TEMPERATURE AND BLOOD OXYGEN SATURATION	25-06-2020	Published	2020	Co-Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
54	202041027011	SMART WEARABLE DEVICE FOR CONTINUOUS MONITORING OF BODY TEMPERATURE AND BLOOD OXYGEN SATURATION	25-06-2020	Published	2020	Co-Applicant
55	202041027223	A DIAGNOSTIC TOOL FOR GRADING STENOSIS IN UPPER AIRWAY	26-06-2020	Published	2020	Co-Applicant
56	202041027369	SYSTEM AND METHOD FOR PROVIDING AUTOMATIC DIGITIZATION OF AN OBJECT	27-06-2020	Published	2020	Co-Applicant
57	PCT/IN2020/050676	A METHOD FOR LOCOMOTION OF A NANOROBOT AND IMPLEMENTATIONS THEREOF	01-07-2020	Published	2020	Co-Applicant
58	PCT/IB2020/058005	SYSTEM AND METHOD FOR AUTONOMOUS NAVIGATION OF UNMANNED AERIAL VEHICLE (UAV) IN GPS DENIED ENVIRONMENT	01-08-2020	Published	2020	Co-Applicant
59	202047034607	SUPERCONDUCTING BLOCK, SUPERCONDUCTING NANOCRYSTAL, SUPERCONDUCTING DEVICE AND A PROCESS THEREOF	12-08-2020	Published	2020	Co-Applicant
60	PCT/IN2020/050771	IN-SITU ETCHING PROCESS	01-09-2020	Published	2020	Co-Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
61	PCT/IB2020/059959	SYSTEM FOR OPERATING JOYSTICK	01-10-2020	Published	2020	Co-Applicant
62	PCT/IN2020/050431	LOW RESISTANCE NANOSTRUCTURED ELECTRICAL CONDUCTOR	01-11-2020	Published	2020	Co-Applicant
63	PCT/IB2020/058463	HIGH VOLTAGE AND HIGH ENERGY DENSITY BATTERY WITH INTERLAYERS	01-11-2020	Published	2020	Co-Applicant
64	PCT/IN2020/051035	A PROCESS AND DEVICE FOR FABRICATION OF HIGH TEMPERATURE SUPERCONDUCTORS	01-12-2020	Published	2020	Co-Applicant
65	PCT/IB2020/062016	SYSTEM AND METHOD FOR MONITORING COGNITIVE LOAD OF A DRIVER OF A VEHICLE	01-12-2020	Published	2020	Co-Applicant
66	202141007011	Edible Electronic Pill	01-02-2021	Published	2021	Co-Applicant
67	PCT/IN2021/050147	METHOD AND SYSTEM FOR GENERATING SPREADING CODES BASED ON INTERLEAVED Z4 - LINEAR SEQUENCES	01-02-2021	Published	2021	Co-Applicant
68	202041014759	Breathing Assistance Apparatus	01-03-2021	Published	2021	Co-Applicant
69	PCT/IB2021/054690	A DIAGNOSTIC TOOL FOR GRADING STENOSIS IN UPPER AIRWAY	01-05-2021	Published	2021	Co-Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
70	PCT/IB2021/055027	AN IN-VIVO, INTRAOPERATIVE PROBE FOR BRAIN TUMOUR MARGIN DELINEATION AND METHODS THEREOF	01-06-2021	Published	2021	Co-Applicant
71	202141050385	Polymer electrodes for batteries	01-11-2021	Published	2021	Co-Applicant
72	202147051243	A PORTABLE AND SELF-POWERED DEVICE AND A SYSTEM FOR OBSTACLE IDENTIFICATION AND REMOVAL	09-11-2021	Published	2021	Co-Applicant
73	202141053960	APPARATUS AND METHOD FOR SCALABLE FLUID DELIVERY	23-11-2021	Published	2021	Co-Applicant
74	202147055567	LOW RESISTANCE NANOSTRUCTURED ELECTRICAL CONDUCTOR	30-10-2021	Published	2021	Co-Applicant
75	PCT/IN2020/050006	OPTO-MECHANICAL PRODUCTION OF NANOSHEETS FROM LAYERED MATERIALS	03-01-2020	Published	2020	Applicant
76	16/643,430	MAGNETICALLY AUGMENTED PLASMONIC TWEEZERS	01-02-2020	Published	2020	Applicant
77	202041011502	FIN-BASED SCR ARCHITECTURES HAVING DISTRIBUTED CURRENT CONFIGURATION AND ENHANCED ESD PROTECTION	17-03-2020	Published	2020	Applicant

Sr. No.	Patent Registration Application No	Patent Title	Patent Application Date	Status of Patent Applications	Patent Published / Granted Calendar Year	Institute applied the Patent as
78	16/756,743	METHODS OF FABRICATION OF NANO-SENSOR AND NANO-SENSOR ARRAY	01-04-2020	Published	2020	Applicant
79	201941021608	CONTROLLING MOTION OF MAGNETICALLY-DRIVEN MICROSCOPIC PARTICLES	27-05-2020	Published	2020	Applicant
80	16/954,140	A Microfluidic Device With Integrated Micro-Structured Electrodes And Methods Thereof	15-06-2020	Published	2020	Applicant
81	201941045663	SYSTEM AND METHOD FOR PROTECTION AGAINST SIDE CHANNEL ATTACKS	01-11-2020	Published	2020	Applicant
82	201941050005	HOLLOW MICRONEEDLE DEVICE	01-12-2020	Published	2020	Co-Applicant
83	202041016123	Portable energy efficient temperature cyclers for small volume chemical reaction	01-04-2021	Published	2021	Applicant
84	202041022728	AN IN-VIVO, INTRAOPERATIVE PROBE FOR BRAIN TUMOUR MARGIN DELINEATION AND METHODS THEREOF	01-06-2021	Published	2021	Applicant
85	202147051243	A DEVICE, SYSTEM AND METHOD FOR OBSTACLE IDENTIFICATION AND REMOVAL	01-11-2021	Published	2021	Applicant

7.5) IP Commercialized and Transferred to Industry/Startup

Sr. No.	Name of Technology Licenced/Transferred/Commercialized	Technology Type	Patent/Licence Holder name (Institute Co-ownership is Must)	Technology Transferred to	Name of Licensor
1	ELISA test to detect COVID19 antibodies in people with prior exposure to the virus	Non-IP/Non-Patented Technology	Indian Institute of Science	Industry	NeoGen Biotech Pvt L
2	Production of Silicon Carbide	IP/Patented Technology	Indian Institute of Science	Industry	CUM
3	Generalized substation Panel	Non-IP/Non-Patented Technology	Indian Institute of Science	Start-up	M/s. Adot Grid
4	FEHydro - software library for hydrodynamic stability	IP/Patented Technology	Indian Institute of Science	Other organisation/Agency	Penn State Univer
5	Precipitated Silica from Rice Husk Ash	IP/Patented Technology	Indian Institute of Science	Start-up	Mith Ince Ltd
6	H2S Scrubbing Technology	Non-IP/Non-Patented Technology	Indian Institute of Science	Start-up	Mith Ince Ltd
7	A method for formulating radiation resistant floor and wall laminates having antiviral properties thereof	IP/Patented Technology	Indian Institute of Science	Industry	M/s I Biote
8	Air purifier application; A method for formulating radiation resistant floor and wall laminates having antiviral properties thereof	IP/Patented Technology	Indian Institute of Science	Industry	Airth Rese Labs
9	High Efficiency Oxygen Saving Nasal Cannula	IP/Patented Technology	Indian Institute of Science	Industry	AMI Polyr
10	Scalable manufacturing of bioceramics, design of stirred tank reactor and a process thereof	IP/Patented Technology	Indian Institute of Science	Industry	Ants Cera Ltd

Sr. No.	Name of Technology Licenced/Transferred/Commercialized	Technology Type	Patent/Licence Holder name (Institute Co-ownership is Must)	Technology Transferred to	Name of Licensee
11	Mid-IR photodetectors based on colloidal CuFeS ₂ quantum dots	Non-IP/Non-Patented Technology	Indian Institute of Science	Industry	"Unif Glob Pvt L Antiç Solut (OPC Ltd"
12	Face Mask Applciation; A method for formulating radiation resistant floor and wall laminates having antiviral properties thereof	IP/Patented Technology	Indian Institute of Science	Industry	Hoya
13	A method for formulating radiation resistant floor and wall laminates having antiviral properties thereof	IP/Patented Technology	Indian Institute of Science	Industry	VST I Solut
14	A swing adsorption-based separation unit for generating Medical Oxygen using atmospheric air as the feed	IP/Patented Technology	Indian Institute of Science	Industry	Apol Com Labo
15	A swing adsorption-based separation unit for generating Medical Oxygen using atmospheric air as the feed	IP/Patented Technology	Indian Institute of Science	Industry	Accu Gaug Instr Pvt. I
16	A swing adsorption-based separation unit for generating Medical Oxygen using atmospheric air as the feed	IP/Patented Technology	Indian Institute of Science	Industry	Elect Tech Pvt. I
17	A swing adsorption-based separation unit for generating Medical Oxygen using atmospheric air as the feed	IP/Patented Technology	Indian Institute of Science	Industry	Helix
18	Fiber lasers for high power within a medical device – associated optics / alignments / software / integration	Non-IP/Non-Patented Technology	Indian Institute of Science	Industry	Tech Elect
19	Hydraulic grab bucket for sewage desilting	IP/Patented Technology	Indian Institute of Science	Industry	Nsof Servi Ltd
20	ICU Ventilator	Non-IP/Non-Patented Technology	Indian Institute of Science	Industry	Apol System

Sr. No.	Name of Technology Licenced/Transferred/Commercialized	Technology Type	Patent/Licence Holder name (Institute Co-ownership is Must)	Technology Transferred to	Name of Licensee
21	ICU Ventilator	Non-IP/Non-Patented Technology	Indian Institute of Science	Industry	Vasni Health Sciences Ltd
22	O2 Concentrator	IP/Patented Technology	Indian Institute of Science	Industry	Vyasa Ventures
23	A swing adsorption-based separation unit for generating Medical Oxygen using atmospheric air as the feed	IP/Patented Technology	Indian Institute of Science	Industry	The Indian Doctor Co
24	Power System Emulator	Non-IP/Non-Patented Technology	Indian Institute of Science	Industry	M-Cells Tech Pvt L
25	A Portable Fluorescence Readout Device	IP/Patented Technology	Indian Institute of Science	Start-up	Shan Innov Pvt L
26	Methods for identifying hemoglobin S or C in a biological sample and kits thereof	IP/Patented Technology	Indian Institute of Science	Start-up	Shan Innov Pvt L
27	Real time sample classifier	IP/Patented Technology	Indian Institute of Science	Start-up	Shan Innov Pvt L
28	Controlling motion of magnetically-driven microscopic particles	IP/Patented Technology	Indian Institute of Science	Start-up	Ther. Pvt L
29	A method for locomotion of a nanorobot and implementations thereof	IP/Patented Technology	Indian Institute of Science	Start-up	Ther. Pvt L
30	Magnetically augmented plasmonic tweezers	IP/Patented Technology	Indian Institute of Science	Start-up	Ther. Pvt L
31	Controlling Electrical Devices	IP/Patented Technology	Indian Institute of Science	Start-up	Urjal Ltd
32	A Method and an Apparatus For Obtaining Sample Specific Signatures	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. L

Sr. No.	Name of Technology Licenced/Transferred/Commercialized	Technology Type	Patent/Licence Holder name (Institute Co-ownership is Must)	Technology Transferred to	Name of Licensee
33	A Method and a System for Detection Hazardous Chemicals in a Non-Metallic Container	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
34	Chemical Signature Resolved Detection of Concealed Objects	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
35	A method for detecting vibrational structure of a molecule system thereof	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
36	A method for rapid detection of a single bacterium	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
37	Biomarker for Blood Anamoly	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
38	Rapid Raman detection of viability of a microorganism	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I

Sr. No.	Name of Technology Licenced/Transferred/Commercialized	Technology Type	Patent/Licence Holder name (Institute Co-ownership is Must)	Technology Transferred to	Name of Licensee
39	A lipid based indicator for cardiovascular disorder	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
40	Simultaneous detection of multiple order diffraction	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
41	Homogenized coherent excitation of sample for determining molecular structure	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
42	Three dimensional molecular imaging through homogenized coherent excitation	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
43	Tunable SERS substrate	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
44	Microfluidic device for multistage separation of fluids	IP/Patented Technology	Indian Institute of Science	Start-up	Gyro Phot Innov and Tech Pvt. I
45	Biomarkers, and associated methods for bacterial and viral infections in a blood sample	IP/Patented Technology	Indian Institute of Science	Start-up	Heal Preci Medi Ltd

