

Appendix-I

S. No.	Dept.	NPTEL Course Id	Course Title	Hours/Weeks
1	CHE	103102211	Fluid Mechanics and Its Applications	30/12
2	CHE	103103153	Chemical Reaction Engineering-I	30/12
3	CHE	103103209	Aspen Plus®(R) Simulation Software - A Basic Course For Beginners	30/12
4	CHE	103104151	Chemical Engineering Thermodynamics	30/12
5	CHE	103105128	Transport phenomena	30/12
6	CHE	103105209	Material & Energy Balance Computations	30/12
7	CHE	103105210	Principles and Practices of Process Equipment and Plant Design	30/12
8	CHE	103105215	Mathematical Modelling and Simulation of Chemical Engineering Process	30/12
9	CHE	103106148	Process Control - Design, Analysis and Assessment	30/12
10	CHE	103107156	Chemical Process Safety	30/12
11	CHE	103108123	Transport Processes I: Heat and Mass Transfer	30/12
12	CSE	106102229	Advanced Computer Architecture	30/12
13	CSE	106102237	Advanced Distributed Systems	30/12
14	CSE	106106140	AI: Knowledge Representation and Reasoning	30/12
15	CSE	106105237	Algorithmic Game Theory	30/12
16	CSE	106105230	Algorithms for protein modelling and engineering	30/12
17	CSE	106106211	Applied Natural Language Processing	30/12
18	CSE	106105471	Approximation Algorithm	30/12
19	CSE	106104221	Arithmetic Circuit Complexity	30/12
20	CSE	106106226	Artificial Intelligence : Search Methods For Problem solving	30/12
21	CSE	106106140	Artificial Intelligence: Knowledge Representation And Reasoning	30/12
22	CSE	110101145	Bandit Algorithm (Online Machine Learning)	30/12
23	CSE	106104357	Basics of Computational Complexity	30/12
24	CSE	106105235	Blockchain and its Applications	30/12
25	CSE	106105184	Blockchain Architecture Design and Use Cases	30/12
26	CSE	106106361	Business Intelligence & Analytics	30/12
27	CSE	106103229	C-Based VLSI Design	30/12
28	CSE	106104241	Circuit Complexity Theory	30/12

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<https://docs.google.com/spreadsheets/d/1dxJhPTyXBsZaOlvZglbp8n11m8FKWnyut7rQ-8siwjl/edit?gid=970568886#gid=970568886>

S. No.	Dept.	NPTEL Course Id	Course Title	Hours/Weeks
29	CSE	106105167	Cloud Computing	30/12
30	CSE	106105190	Compiler Design	30/12
31	CSE	106104469	Computational Arithmetic - Geometry for Algebraic Curves	30/12
32	CSE	106104227	Computational Complexity Theory	30/12
33	CSE	106102011	Computational Geometry	30/12
34	CSE	106105183	Computer Networks And Internet Protocol	30/12
35	CSE	106105216	Computer Vision	30/12
36	CSE	106105162	Cryptography and Network Security	30/12
37	CSE	106106248	Cyber Security and Privacy	30/12
38	CSE	106107220	Data Analytics with Python	30/12
39	CSE	106106093	Database Design	30/12
40	CSE	106105215	Deep Learning	30/12
41	CSE	106106224	Deep Learning for Computer Vision	30/12
42	CSE	106103237	Design & Implementation of Human-Computer Interfaces	30/12
43	CSE	106103358	Digital Design with Verilog	30/12
44	CSE	106101466	Distributed Optimization and Machine Learning	30/12
45	CSE	106105159	Embedded Systems Design	30/12
46	CSE	106103182	Embedded Systems-Design Verification and Test	30/12
47	CSE	106105217	Ethical Hacking	30/12
48	CSE	106106221	Foundations of Cryptography	30/12
49	CSE	106105241	Foundations of Cyber Physical Systems	30/12
50	CSE	106106197	Foundations to Computer Systems Design	30/12
51	CSE	106101360	Games and Information	30/12
52	CSE	106106231	Getting Started with Competitive Programming	30/12
53	CSE	106105220	GPU Architectures And Programming	30/12
54	CSE	106105194	Hardware Security	30/12
55	CSE	106105162	Internetwork Security	30/12
56	CSE	106106220	Introduction to Database Systems	30/12
57	CSE	106101237	Introduction To Game Theory And Mechanism Design	30/12
58	CSE	106105166	Introduction to Internet of Things	30/12

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S. No.	Dept.	NPTEL Course Id	Course Title	Hours/Weeks
59	CSE	106106139	Introduction to Machine Learning	30/12
60	CSE	106106167	Introduction to Wireless and Cellular Communications	30/12
61	CSE	106101224	Learning Analytics Tools	30/12
62	CSE	106108482	Linear Algebra Through Geometry	30/12
63	CSE	106106198	Machine Learning for Engineering and science applications	30/12
64	CSE	106106147	Mobile Computing	30/12
65	CSE	106106136	Model Checking	30/12
66	CSE	106103184	Multi-Core Computer Architecture	30/12
67	CSE	106105158	Natural Language Processing	30/12
68	CSE	106105224	Object Oriented System Development Using UML, Java And Patterns	30/12
69	CSE	106106235	Online Privacy	30/12
70	CSE	106102132	Operating System	30/12
71	CSE	106105214	Operating System Fundamentals	30/12
72	CSE	106103188	Parallel Algorithms	30/12
73	CSE	106103359	Parallel Computer Architecture	30/12
74	CSE	106106230	Parameterized Algorithms	30/12
75	CSE	106104467	Practical Cyber Security for Cyber Security Practitioners	30/12
76	CSE	106106146	Privacy and Security in Online Social Media	30/12
77	CSE	106106241	Quantum Algorithms and Cryptography	30/12
78	CSE	106103187	Randomized Algorithms	30/12
79	CSE	106104228	Randomized Methods in Complexity	30/12
80	CSE	106105229	Real-Time Systems	30/12
81	CSE	106106143	Reinforcement Learning	30/12
82	CSE	106106472	Responsible & Safe AI Systems	30/12
83	CSE	106104118	Riemann Hypothesis and its Applications	30/12
84	CSE	106108229	Secure Computation: Part I	30/12
85	CSE	106108237	Secure Computation: Part II	30/12
86	CSE	106105242	Selected Topics in Algorithms	30/12
87	CSE	106106239	Social Network Analysis	30/12
88	CSE	106106169	Social Networks	30/12

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S. No.	Dept.	NPTEL Course Id	Course Title	Hours/Weeks
89	CSE	106105182	Software Engineering	30/12
90	CSE	106105218	Software Project Management	30/12
91	CSE	106101163	Software Testing	30/12
92	CSE	106105239	Statistical Learning for Reliability Analysis	30/12
93	CSE	106105185	Switching Circuits and Logic Design	30/12
94	CE	105106465	An Introduction to Climate Dynamics, Variability and Monitoring	30/12
95	CE	105105161	Computational hydraulics	30/12
96	CE	105101215	Rural Water Resources Management	30/12
97	CE	105101214	Groundwater hydrology and management	30/12
98	CE	105101213	Microwave Remote Sensing in Hydrology	30/12
99	AE	112106196	Gas dynamics	30/12
100	AE	101108086	Gasdynamics: Fundamentals and Applications	30/12
101	AE	101108068	Combustion in air breathing aero engines	30/12
102	AE	101106082	Rocket Propulsion	30/12
103	AE	101105333	Fundamentals of Supersonic and Hypersonic Flow	30/12
104	AE	101105091	Aeroengine Gas Turbine Cycles	30/12
105	AE	101105090	Smart Structures	30/12
106	AE	101105089	Aerodynamic Design Of Axial Flow Compressors & Fans	30/12
107	AE	101105088	Fundamentals of Theoretical and Experimental Aerodynamics	30/12
108	AE	101105085	Introduction to CFD	30/12
109	AE	101105083	Space Flight Mechanics	30/12
110	AE	101105077	Satellite Attitude Dynamics and Control	30/12
111	AE	101104450	Applied Computational Fluid Dynamics	30/12
112	AE	101104330	Introduction to Aircraft Control System	30/12
113	AE	101104084	Introduction to Airbreathing Propulsion	30/12
114	AE	101104078	Introduction to Rocket Propulsion	30/12
115	AE	101104069	Aircraft Design	30/12
116	AE	101104063	Engineering Thermodynamics	30/12
117	AE	101104062	Aircraft Stability and Control	30/12
118	AE	101104018	Introduction to Propulsion	30/12

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S. No.	Dept.	NPTEL Course Id	Course Title	Hours/Weeks
119	AE	101102090	Elements of Mechanical Vibration	30/12
120	AE	101101087	Lighter than Air Systems	30/12
121	AE	101101083	Introduction to Aircraft Design	30/12
122	AE	101101079	Introduction To Aerospace Engineering - Flight	30/12
123	CHM	104108363	One and Two dimensional NMR Spectroscopy: Concepts and Spectral Analysis	30/12
124	CHM	104108132	Time Dependent Quantum Chemistry	30/12
125	CHM	104108124	One And Two Dimensional Nmr Spectroscopy For Chemists	30/12
126	CHM	104108118	Ultrafast Optics and Spectroscopy	30/12
127	CHM	104108098	Symmetry and Structure in the Solid State	30/12
128	CHM	104106128	Symmetry and Group Theory	30/12
129	CHM	104106127	Symmetry, Stereochemistry and Applications	30/12
130	CHM	104106122	Fundamentals of Spectroscopy	30/12
131	CHM	104106107	Basic thermodynamics: Classical and Statistical Approaches	30/12
132	CHM	104106107	Chemical Principles II	30/12
133	CHM	104106106	Medicinal Chemistry	30/12
134	CHM	104106105	Electrochemical impedance Spectroscopy	30/12
135	CHM	104106096	Chemistry: Atomic Structure and Chemical Bonding	30/12
136	CHM	104106094	Advanced Chemical Thermodynamics and Kinetics	30/12
137	CHM	104106093	Chemical Crystallography	30/12
138	CHM	104106089	Introduction To Chemical Thermodynamics And Kinetics	30/12
139	CHM	104105462	Molecular Rearrangements and Reactive Intermediates in Organic Synthesis	30/12
140	CHM	104105365	Elementary Thermodynamics for All	30/12
141	CHM	104105139	Overview and Integration of Cellular Metabolism	30/12
142	CHM	104105130	Biological Inorganic Chemistry	30/12
143	CHM	104105120	Organic Chemistry in Biology and Drug Development	30/12
144	CHM	104105103	Industrial Inorganic Chemistry	30/12
145	CHM	104105102	Experimental Biochemistry	30/12
146	CHM	104105087	A Study Guide in Organic Retrosynthesis: Problem Solving Approach	30/12
147	CHM	104105085	Co-Ordination Chemistry (Chemistry Of Transition Elements)	30/12
148	CHM	104105084	Analytical Chemistry	30/12

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S. No.	Dept.	NPTEL Course Id	Course Title	Hours/Weeks
149	CHM	104105076	Biochemistry	30/12
150	CHM	104105033	Coordination Chemistry	30/12
151	CHM	104104101	Solid State Chemistry	30/12
152	CHM	104104086	Advanced Mathematical Methods for Chemistry	30/12
153	CHM	104104082	Quantum Computing	30/12
154	CHM	104103121	Essentials Of Biomolecules : Nucleic Acids And Peptides	30/12
155	CHM	104103112	Thermodynamics: Classical To Statistical	30/12
156	CHM	104103111	Reagents in Organic Synthesis	30/12
157	CHM	104103110	Principles of Organic Synthesis	30/12
158	CHM	104102113	Spectroscopic Techniques for Pharmaceutical and Biopharmaceutical Industries	30/12
159	CHM	104102009	Biophysical chemistry	30/12
160	CHM	104101366	Many body methods in quantum chemistry	30/12
161	CHM	104101362	Interpretative molecular spectroscopy	30/12
162	CHM	104101139	Fundamentals of Statistical Thermodynamics	30/12
163	CHM	104101137	Nuclear and Radiochemistry	30/12
164	CHM	104101136	Advanced Transition Metal Chemistry	30/12
165	CHM	104101135	NMR spectroscopy for Structural Biology	30/12
166	CHM	104101134	Circular Dichroism (CD) and Mossbauer Spectroscopy for Chemists	30/12
167	CHM	104101133	Classics in Total Synthesis - I	30/12
168	CHM	104101133	Classics in Total Synthesis-I	30/12
169	CHM	104101130	Concepts of Chemistry for Engineering	30/12
170	CHM	104101127	Essentials of Oxidation, Reduction and C-C Bond Formation. Application in Organic Synthesis	30/12
171	CHM	104101125	Basic Statistical Mechanics	30/12
172	CHM	104101124	Quantum Chemistry of Atoms and Molecules	30/12
173	CHM	104101123	Transition Metal Organometallics in Catalysis and Biology	30/12
174	CHM	104101122	Ultrafast laser spectroscopy	30/12
175	CHM	104101117	NMR spectroscopy for Chemists and Biologists	30/12
176	CHM	104101100	Advanced Transition Metal Organometallic Chemistry	30/12
177	CHM	104101099	Molecular Spectroscopy: A Physical Chemist's perspective	30/12
178	CHM	104101094	Symmetry and Group Theory	30/12

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S. No.	Dept.	NPTEL Course Id	Course Title	Hours/Weeks
179	CHM	104101093	Inorganic Chemistry of Life: Principles and Perspectives	30/12
180	CHM	104101091	Transition Metal Organometallic Chemistry: Principles to Applications	30/12
181	CHM	104101090	Chemistry Of Main Group Elements	30/12
182	CHM	104101084	Chemical and biological thermodynamics: principles to applications	30/12
183	CHM	103106119	Computational Fluid Dynamics	30/12
184	EE	108108147	Sensors and Actuators	30/12
185	EE	108106374	State space Approach to Control System Analysis and Design	30/12
186	EE	108105186	Digital Control in Switched Mode Power Converters and FPGA-based Prototyping	30/12
187	EE	108101185	Stochastic Control and Communication	30/12
188	EE	117105136	Spread Spectrum Communications and Jamming	30/12
189	EE	108108185	Real-Time Digital Signal Processing	30/12
190	EE	108106179	Stochastic Modeling and the Theory of Queues	30/12
191	EE	108106136	Multirate DSP	30/12
192	EE	108105101	Biomedical Signal Processing	30/12
193	EE	108101373	Digital Communication using GNU Radio	30/12
194	EE	108101185	Stochastic Control and Communication	30/12
195	EE	108106191	VLSI Design Flow: RTL to GDS	30/12
196	EE	108105102	Microprocessors and Microcontrollers	30/12
197	EE	108108113	Fabrication Techniques for MEMs-Based Sensors : Clinical Perspective	30/12
198	EE	108107380	VLSI Physical Design with Timing Analysis	30/12
199	EE	108106184	Phase-Locked Loops	30/12
200	EE	108102169	Introduction to Embedded System Design	30/12
201	ECO	109104125	An introduction to microeconomics	30/12
202	BSBE	102106082	Thermodynamics for Biological Systems : Classical and Statistical Aspects	30/12
203	BSBE	102106083	Transport Phenomena in Biological Systems	30/12
204	BSBE	102106069	Material and Energy Balances	30/12
205	BSBE	127106019	Numerical Methods for Engineers	30/12
206	BSBE	103108220	Transport Processes	30/12
207	BSBE	103108123	Transport Processes I: Heat and Mass Transfer	30/12
208	BSBE	103107207	Process Equipment Design	30/12

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209	BSBE	103106162	Environmental Quality Monitoring & Analysis	30/12
210	BSBE	103106148	Process Control - Design, Analysis and Assessment	30/12
211	BSBE	103106118	Matlab Programming for Numerical Computation	30/12
212	BSBE	103105210	Principles and Practices of Process Equipment and Plant Design	30/12
213	PHY	115108129	Advanced NMR Techniques in Solution and Solid-State	30/12
214	PHY	115106125	Quantum Transport	30/12
215	PHY	115105451	Fundamentals of Attosecond Science and Technology (FAST)	30/12
216	PHY	115105134	Physics of Functional Materials & Devices	30/12
217	PHY	115101132	Accelerator Physics	30/12
218	PHY	115101131	Neutron Scattering for Condensed Matter Studies	30/12
219	PHY	115101121	Physics of Biological Systems	30/12

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