1.1.3

List of courses offered across all programs during last five years

AY 2021-22

S.No	Program code	Program name	Course code	Course name	Year of offering the course
1	2	B.Tech EEE	20CA54101	Mathematics –I	2021-22
2	2	B.Tech EEE	20CA51101	Engineering Chemistry	2021-22
3	2	B.Tech EEE	20CA52101	Communicative English	2021-22
4	2	B.Tech EEE	20CA03101	Engineering Graphics & Design	2021-22
5	2	B.Tech EEE	20CA03102	Basic Civil & Mechanical Engineering	2021-22
6	2	B.Tech EEE	20CA52102	Communicative English Lab	2021-22
7	2	B.Tech EEE	20CA51102	Engineering Chemistry Lab	2021-22
8	2	B.Tech EEE	20CA03102	Engineering and IT Workshop	2021-22
9	2	B.Tech EEE	20CA54201	Mathematics - II	2021-22
10	2	B.Tech EEE	20CA55101	Engineering Physics	2021-22
11	2	B.Tech EEE	20CA02201	Electrical Circuits - I	2021-22
12	2	B.Tech EEE	20CA04301	Electronic Devices and Circuits	2021-22
13	2	B.Tech EEE	20CA05101	Problem Solving with Programming in C	2021-22
14	2	B.Tech EEE	20CA55102	Engineering Physics Lab	2021-22
15	2	B.Tech EEE	20CA05102	Problem Solving with Programming in C Lab	2021-22
16	2	B.Tech EEE	20CA02202	Electrical Electronics Engineering Workshop	2021-22
17	2	B.Tech EEE	20CA51201	Environmental Science (Mandatory course- I)	2021-22
18	2	B.Tech EEE	20CA54301	Mathematics - III	2021-22
19	2	B.Tech EEE	20CA02301	Electrical Circuits - II	2021-22
20	2	B.Tech EEE	20CA02302	Electrical Machines - I (DC Machines and transformers	2021-22
21	2	B.Tech EEE	20CA02303	Electromagnetic Fields	2021-22
22	2	B.Tech EEE	20CA04201	Digital Electronics and Logic Design	2021-22
23	2	B.Tech EEE	20CA02304	Electrical Circuits – I Lab	2021-22
24	2	B.Tech EEE	20CA04304	Electronic Devices and Circuits Lab	2021-22
25	2	B.Tech EEE	20CA02305	Electrical Machines – I Lab	2021-22
26	2	B.Tech EEE	20CA02306	Skill Oriented Course-I	2021-22
27	2	B.Tech EEE	20CA53201	Universal Human Values and Ethics Mandatory course - II	2021-22
28	2	B.Tech EEE	19CA54401	Mathematics - IV	2021-22
29	2	B.Tech EEE	20CA02401	Control Systems	2021-22
30	2	B.Tech EEE	20CA02402	Power System - I	2021-22
31	2	B.Tech EEE	20CA02403	Electrical Machines - II	2021-22
32	2	B.Tech EEE	20CA04406	Analog and Digital IC Applications	2021-22
33	2	B.Tech EEE	20CA02404	Electrical Circuits – II Lab	2021-22
34	2	B.Tech EEE	19CA02405	Electrical Machines – II Lab	2021-22
35	2	B.Tech EEE	20CA52401	Advanced Communicative English Lab	2021-22
36	2	B.Tech EEE	20CA02406	Skill oriented course - II	2021-22
37	2	B.Tech EEE	19CA04510	Linear & Digital Electronics	2021-22
38	2	B.Tech EEE	19CA04504	Microprocessors and Microcontrollers	2021-22
39	2	B.Tech EEE	19CA02501	Power Systems - II	2021-22
40	2	B.Tech EEE	19CA02502	Power Electronics	2021-22
41	2	B.Tech EEE	19CA02505	Modern Control Theory	2021-22
42	2	B.Tech EEE	19CA05403	Java Programming	2021-22
43	2	B.Tech EEE	19CA04511	Microprocessors & Microcontrollers Lab	2021-22
44	2	B.Tech EEE	19CA02503	Electrical Machines - II Lab	2021-22
45	2	B.Tech EEE	19CA02504	Power Electronics Lab	2021-22
46	2	B.Tech EEE	19CA02505	Socially Relevant Project II	2021-22
47	2	B.Tech EEE	19CA05505	AI Tools, Techniques and Applications	2021-22
48	2	B.Tech EEE	19CA02601	Electrical Measurements and Instrumentation	2021-22
49	2	B.Tech EEE	19CA02602	Power System Analysis	2021-22
50	2	B.Tech EEE	19CA05201	Python Programming	2021-22
51	2	B.Tech EEE	19CA05601	Managerial Economics and Financial Analysis	2021-22
52	2	B.Tech EEE	19CA52603	Soft Skills	2021-22
53	2	B.Tech EEE	19CA02603	Power System Analysis Lab	2021-22

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54	2	B.Tech EEE	19CA02604	Electrical Measurements and Instrumentation Lab	2021-22
55	2	B.Tech EEE	19CA05404	OOPs Through Java Programming Lab	2021-22
56	2	B.Tech EEE	19CA02605	Socially Relevant Project III	2021-22
57	2	B.Tech EEE	17CA02701	Power System Operation and Control	2021-22
58	2	B.Tech EEE	17CA02702	Utilization of Electrical Energy	2021-22
59	2	B.Tech EEE	17CA02705	Flexible Alternating Current Transmission Systems	2021-22
60	2	B.Tech EEE	17CA02713	PLC and Automation Laboratory	2021-22
61	2	B.Tech EEE	17CA02714	Power System Computer Aided Design Laboratory	2021-22
62	2	B.Tech EEE	17CA02715	Technical Seminar	2021-22
63	2	B.Tech EEE	17CA57711	AI Master Class Using Matlab (VAC-II)	2021-22
64	2	B.Tech EEE	17CA02717	Wind Energy	2021-22
65	2	B.Tech EEE	17CA02718	Solar Energy Basics	2021-22
66	2	B.Tech EEE	17CA02719	Electrical Utilities Fundamentals Future	2021-22
67	2	B.Tech EEE	17CA02720	Wireless Communication for Energy Body	2021-22
68	2	B.Tech EEE	17CA02721	Advance in UHV Transmission & Distribution	2021-22
69	2	B.Tech EEE	17CA02722	Introduction to Smart Grid	2021-22
70	2	B.Tech EEE	17CA02723	Power System Protection and Switch Gear	2021-22
71	2	B.Tech EEE	17CA02724	Electric Power System	2021-22
72	2	B.Tech EEE	17CA02801	HVDC & FACTS	2021-22
73	2	B.Tech EEE	17CA02804	Advanced Control Systems	2021-22
74	2	B.Tech EEE	17CA02806	Comprehensive Online Examination	2021-22
75	2	B.Tech EEE	17CA02807	Project Work	2021-22
76	3	B.Tech MECH	20CA54101	Mathematics I	2021-22
77	3	B.Tech MECH	20CA55103	Engineering Physics	2021-22
78	3	B.Tech MECH	20CA52101	Communicative English	2021-22
79	3	B.Tech MECH	20CA02101	Essential Electrical and Electronic Engineering	2021-22
80	3	B.Tech MECH	20CA05101	C Programming Language	2021-22
81	3	B.Tech MECH	20CA52102	Communicative English Lab	2021-22
82	3	B.Tech MECH	20CA55102	Engineering Physics Lab	2021-22
83	3	B.Tech MECH	20CA05102	C Programming Lab	2021-22
84	3	B.Tech MECH	20CA54201	Mathematics II	2021-22
85	3	B.Tech MECH	20CA51101	Engineering Chemistry	2021-22
86	3	B.Tech MECH	20CA03201	Engineering Graphics	2021-22
87	3	B.Tech MECH	20CA03202	Engineering Mechanics	2021-22
88	3	B.Tech MECH	20CA03203	Material Science and Engineering	2021-22
89	3	B.Tech MECH	20CA03102	Engg. Workshop	2021-22
90	3	B.Tech MECH	20CA51102	Engineering Chemistry Lab	2021-22
91	3	B.Tech MECH	20CA02205	Essential Electrical and Electronic Engineering Lab	2021-22
92	3	B.Tech MECH	20CA53201	Universal Human Values and Ethics (MC-I)	2021-22
93	3	B.Tech MECH	20CA54301	Mathematics III	2021-22
94	3	B.Tech MECH	20CA03301	Kinematics of Machinery	2021-22
95	3	B.Tech MECH	20CA03302	Strength of Materials	2021-22
96	3	B.Tech MECH	20CA03303	Manufacturing Processes	2021-22
97	3	B.Tech MECH	20CA03304	Thermodynamics	2021-22
98	3	B.Tech MECH	20CA03305	Material Science and Engineering Lab	2021-22
99	3	B.Tech MECH	20CA03306	Strength of Materials Lab	2021-22
100	3	B.Tech MECH	20CA03307	Manufacturing Processes Lab	2021-22
101	3	B.Tech MECH	SC-I	Skill Oriented Course	2021-22
102	3	B.Tech MECH	20CA51201	Environmental Science (MC-II)	2021-22
103	3	B.Tech MECH	20CA54402	Probability and Statistics	2021-22
104	3	B.Tech MECH	20CA03401	Dynamics of Machinery	2021-22
105	3	B.Tech MECH	20CA03402	Machine Tools	2021-22
106	3	B.Tech MECH	20CA03403	Thermal Engineering	2021-22
107	3	B.Tech MECH	20CA03404	Machine Drawing	2021-22
108	3	B.Tech MECH	20CA52401	Advanced English Communication Lab	2021-22
109	3	B.Tech MECH	20CA03405	Machine Tools Lab	2021-22
110	3	B.Tech MECH	20CA03406	Thermal Engineering Lab	2021-22
111	3	B.Tech MECH	SC-II	Skill Oriented Course	2021-22
112	3	B.Tech MECH	19CA03501	Applied Thermodynamics	2021-22
113	3	B.Tech MECH	19CA03502	Manufacturing Technology	2021-22
114	3	B.Tech MECH	19CA03503	Fluid Mechanics and Hydraulic Machinery	2021-22
115	3	B.Tech MECH	19CA03504	Design of Machine Elements-I	2021-22
116	3	B.Tech MECH	19CA03507	Industrial Engineering and Management	2021-22
117	3	B.Tech MECH	19ca04508	Introduction to MEMS	2021-22
118	3	B.Tech MECH	19CA03510	Applied Thermodynamics Lab	2021-22
119	3	B.Tech MECH	19CA03511	Manufacturing Technology Lab	2021-22

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120	3	B.Tech MECH	19CA03512	Fluid Mechanics and Hydraulic Machinery Lab	2021-22
121	3	B.Tech MECH	19CA03513	Socially Relevant Project II	2021-22
122	3	B.Tech MECH	19CA03601	Design of Machine Elements-II	2021-22
123	3	B.Tech MECH	19CA03602	Heat Transfer	2021-22
124	3	B.Tech MECH	19CA03603	CAD/CAM	2021-22
125	3	B.Tech MECH	19CA03607	Total Quality Management	2021-22
126	3	B.Tech MECH	19CA52601	Soft Skills	2021-22
127	3	B.Tech MECH	19CA53601	Managerial Economics and Financial Analysis	2021-22
128	3	B.Tech MECH	19CA03608	Heat Transfer Lab	2021-22
129	3	B.Tech MECH	19CA03609	CAD/CAM Lab	2021-22
130	3	B.Tech MECH	19CA03610	Socially Relevant Project III	2021-22
131	3	B.Tech MECH	17CA03701	Metrology and Measurements	2021-22
132	3	B.Tech MECH	17CA03702	Computer Aided Design/Computer Aided Manufacturing	2021-22
133	3	B.Tech MECH	17CA03706	Energy Management	2021-22
134	3	B.Tech MECH	17CA03707	Design for Manufacture (MOOC-I)	2021-22
135	3	B.Tech MECH	17CA03710	Advanced Production Technology (MOOC-II)	2021-22
136	3	B.Tech MECH	17CA03713	CAM Laboratory	2021-22
137	3	B.Tech MECH	17CA03714	Metrology and Measurements Laboratory	2021-22
138	3	B.Tech MECH	17CA03715	Technical Seminar	2021-22
139	3	B.Tech MECH	17CA57708	CATIA V6 (Value Added Course – II)	2021-22
140	3	B.Tech MECH	17CA03801	Automobile Engineering	2021-22
141	3	B.Tech MECH	17CA03804	Total Quality Management	2021-22
142	3	B.Tech MECH	17CA03806	Comprehensive Examination	2021-22
143	3	B.Tech MECH	17CA03807	Project Work	2021-22
144	4	B.Tech ECE	20CAS4101	Mathematics –I	2021-22
145	4	B.Tech ECE	20CA51101	Engineering Chemistry	2021-22
146	4	B.Tech ECE	20CAS2101	Communicative English	2021-22
147	4	B.Tech ECE	20CA03101	Engineering Graphics & Design	2021-22
148	4	B.Tech ECE	20CA03102	Basic Civil & Mechanical Engineering	2021-22
149	4	B.Tech ECE	20CAS2102	Communicative English Lab	2021-22
150	4	B.Tech ECE	20CA51102	Engineering Chemistry Lab	2021-22
151	4	B.Tech ECE	20CA03102	Engineering Workshop	2021-22
152	4	B.Tech ECE	20CAS4201	Mathematics II	2021-22
153	4	B.Tech ECE	20CAS5101	Engineering Physics	2021-22
154	4	B.Tech ECE	20CA02203	Network Analysis	2021-22
155	4	B.Tech ECE	20CA05101	Problem Solving with Programming in 'C'	2021-22
156	4	B.Tech ECE	20CA04201	Digital Electronics & Logic Design	2021-22
157	4	B.Tech ECE	20CA02204	Network Analysis Lab	2021-22
158	4	B.Tech ECE	20CAS5102	Engineering Physics Lab	2021-22
159	4	B.Tech ECE	20CA05102	Problem Solving with Programming in 'C' Lab	2021-22
160	4	B.Tech ECE	20CAS4301	Mathematics III	2021-22
161	4	B.Tech ECE	20CA04301	Electronic Devices & Circuits	2021-22
162	4	B.Tech ECE	20CA04302	Random Signals & Systems	2021-22
163	4	B.Tech ECE	20CA04303	Analog Communications	2021-22
164	4	B.Tech ECE	20CA02307	Principles of Electrical Engineering	2021-22
165	4	B.Tech ECE	20CA04304	Electronic Devices & CircuitsLab	2021-22
166	4	B.Tech ECE	20CA04305	Analog Communications Lab	2021-22
167	4	B.Tech ECE	20CA04306	Basic Simulation & Electrical Engineering Lab	2021-22
168	4	B.Tech ECE	20CA54401	Mathematics-IV	2021-22
169	4	B.Tech ECE	20CA04401	Analog Electronic Circuits	2021-22
170	4	B.Tech ECE	20CA04402	Digital Communications	2021-22
171	4	B.Tech ECE	20CA04403	Electromagnetic & Transmission Lines	2021-22
172	4	B.Tech ECE	20CA02401	Control Systems	2021-22
173	4	B.Tech ECE	20CA52401	Advance Communicative English Lab	2021-22
174	4	B.Tech ECE	20CA04404	Analog Electronic Circuits Lab	2021-22
175	4	B.Tech ECE	20CA04405	Digital Communications Lab	2021-22
176	4	B.Tech ECE	19CA04501	Antennas & Wave Propagation	2021-22
177	4	B.Tech ECE	19CA04502	Analog & Digital Communications	2021-22
178	4	B.Tech ECE	19CA04503	Integrated Circuits & Applications	2021-22
179	4	B.Tech ECE	19CA04504	Microprocessors & Microcontrollers	2021-22
180	4	B.Tech ECE	19CA04506	Digital System Design	2021-22
181	4	B.Tech ECE	19CA04508	Introduction to MEMS	2021-22
182	4	B.Tech ECE	19CA04509	Analog & Digital Communications Lab	2021-22
183	4	B.Tech ECE	19CA04510	Integrated Circuits & Applications Lab	2021-22
184	4	B.Tech ECE	19CA04511	Microprocessors & Microcontrollers Lab	2021-22
185	4	B.Tech ECE	19CA04512	Socially Relevant Project IV	2021-22

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186	4	B.Tech ECE	19CA04601	Microwave & Optical Communication	2021-22
187	4	B.Tech ECE	19CA05604	Internet of Things (IoT)	2021-22
188	4	B.Tech ECE	19CA05505	AI Tools, Techniques and Applications	2021-22
189	4	B.Tech ECE	19CA04602	VLSI Design	2021-22
190	4	B.Tech ECE	19CA52601	Soft Skills	2021-22
191	4	B.Tech ECE	19CA53601	Managerial Economics and Financial Analysis	2021-22
192	4	B.Tech ECE	19CA05511	AI Tools, Techniques and Applications Lab	2021-22
193	4	B.Tech ECE	19CA04606	Microwave & Optical Communication Lab	2021-22
194	4	B.Tech ECE	19CA04607	Socially Relevant Projects	2021-22
195	4	B.Tech ECE	17CA04701	Embedded System	2021-22
196	4	B.Tech ECE	17CA04702	Optical Communications	2021-22
197	4	B.Tech ECE	17CA04703	Radar Systems & Navigational Aids	2021-22
198	4	B.Tech ECE	17CA04708	RF Integrated Circuits (MOOC-I)	2021-22
199	4	B.Tech ECE	17CA04708	RF Integrated Circuits (MOOC-I)	2021-22
200	4	B.Tech ECE	17CA04711	Advanced 3G & 4G Wireless Communication (MOOC-II)	2021-22
201	4	B.Tech ECE	17CA04713	Microwave & Optical Communications Lab	2021-22
202	4	B.Tech ECE	17CA03715	Technical Seminar	2021-22
203	4	B.Tech ECE	17CA04714	VLSI & Embedded systems lab	2021-22
204	4	B.Tech ECE	17CA57704	Value Added Course - II	2021-22
205	4	B.Tech ECE	17CA04801	Digital Image Processing	2021-22
206	4	B.Tech ECE	17CA04802	Wireless Sensor Networks And Architecture	2021-22
207	4	B.Tech ECE	17CA04806	Comprehensive Online Exam	2021-22
208	4	B.Tech ECE	17CA04807	Main Project Work	2021-22
209	5	B.Tech CSE	20CA54101	Mathematics-I	2021-22
210	5	B.Tech CSE	20CA55103	Engineering Physics	2021-22
211	5	B.Tech CSE	20CA52101	Communicative English	2021-22
212	5	B.Tech CSE	20CA05101	C Programming Language	2021-22
213	5	B.Tech CSE	20CA02101	Essential Electrical and Electronics Engineering	2021-22
214	5	B.Tech CSE	20CA52102	Communicative English - Lab	2021-22
215	5	B.Tech CSE	20CA55102	Engineering Physics - Lab	2021-22
216	5	B.Tech CSE	20CA05102	C Programming Lab	2021-22
217	5	B.Tech CSE	20CA54201	Mathematics-II	2021-22
218	5	B.Tech CSE	20CA51101	Engineering Chemistry	2021-22
219	5	B.Tech CSE	20CA03102	Basic Civil and Mechanical Engineering	2021-22
220	5	B.Tech CSE	20CA03101	Engineering Graphics	2021-22
221	5	B.Tech CSE	20CA05201	Java Programming Language	2021-22
222	5	B.Tech CSE	20CA05202	Java Programming LAB	2021-22
223	5	B.Tech CSE	20CA51102	Engineering Chemistry LAB	2021-22
224	5	B.Tech CSE	20CA05203	IT Workshop LAB	2021-22
225	5	B.Tech CSE	20CA51201	Environmental Science	2021-22
226	5	B.Tech CSE	20CA05301	Discrete Mathematics	2021-22
227	5	B.Tech CSE	20CA05302	Software Engineering	2021-22
228	5	B.Tech CSE	20CA05303	Data Structures	2021-22
229	5	B.Tech CSE	20CA04201	Digital Logic Design	2021-22
230	5	B.Tech CSE	20CA05304	Database Management Systems	2021-22
231	5	B.Tech CSE	20CA05305	Data Structures LAB	2021-22
232	5	B.Tech CSE	20CA05306	Database Management Systems LAB	2021-22
233	5	B.Tech CSE	20CA05307	Software Engineering LAB	2021-22
234	5	B.Tech CSE	20CA05308	C, Java Skills in User Interface	2021-22
235	5	B.Tech CSE	20CA53301	Universal Human Values and Ethics	2021-22
236	5	B.Tech CSE	20CA05401	Python Programming	2021-22
237	5	B.Tech CSE	20CA54402	Probability and Statistics	2021-22
238	5	B.Tech CSE	20CA05402	Computer Organization	2021-22
239	5	B.Tech CSE	20CA05403	Operating Systems	2021-22
240	5	B.Tech CSE	20CA05404	Theory of Computation	2021-22
241	5	B.Tech CSE	20CA52403	Advanced Communicative English Lab	2021-22
242	5	B.Tech CSE	20CA05406	Python Programming LAB	2021-22
243	5	B.Tech CSE	20CA05407	Operating Systems LAB	2021-22
244	5	B.Tech CSE	20CA05408	Mobile Application Development	2021-22
245	5	B.Tech CSE	20CA05408	Internship 2 Months	2021-22
246	5	B.Tech CSE	19CA05502	Design and Analysis of Algorithms	2021-22
247	5	B.Tech CSE	19CA05503	Database Management Systems	2021-22
248	5	B.Tech CSE	19CA05504	Operating Systems	2021-22
249	5	B.Tech CSE	19CA05505	Design Patterns	2021-22
250	5	B.Tech CSE	19CA04513	Embedded Systems	2021-22
251	5	B.Tech CSE	19CA05509	Database Management Systems Lab	2021-22

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252	5	B.Tech CSE	19CA05510	Operating Systems Lab	2021-22
253	5	B.Tech CSE	19CA05511	Socially Relevant Projects-II	2021-22
254	5	B.Tech CSE	19CA05601	Compiler Design	2021-22
255	5	B.Tech CSE	19CA05602	Advanced Python Programming	2021-22
256	5	B.Tech CSE	19CA05603	Cryptography and Network Security	2021-22
257	5	B.Tech CSE	19CA05607	Machine Learning	2021-22
258	5	B.Tech CSE	19CA52601	Soft Skills	2021-22
259	5	B.Tech CSE	19CA53601	Managerial Economics and Financial Analysis	2021-22
260	5	B.Tech CSE	19CA05608	Advanced Python Programming & Cryptography & Network Security Lab	2021-22
261	5	B.Tech CSE	19CA05609	Compiler Design Lab	2021-22
262	5	B.Tech CSE	19CA05610	Socially Relevant Project-III	2021-22
263	5	B.Tech CSE	17CA05701	Big Data	2021-22
264	5	B.Tech CSE	17CA05702	Mobile Application Development	2021-22
265	5	B.Tech CSE	17CA05703	Cyber Security	2021-22
266	5	B.Tech CSE	17CA05707	E-Commerce (MOOC-I)	2021-22
267	5	B.Tech CSE	17CA05711	Intrusion Detection Systems (MOOC-II)	2021-22
268	5	B.Tech CSE	17CA05713	Big Data Laboratory	2021-22
269	5	B.Tech CSE	17CA05714	Mobile Application Development Laboratory	2021-22
270	5	B.Tech CSE	17CA05715	Technical Seminar	2021-22
271	5	B.Tech CSE	17CA57707	Six Sigma(Value Added Course –II)	2021-22
272	5	B.Tech CSE	17CA05801	Software Project Management	2021-22
273	5	B.Tech CSE	17CA05802	Cloud Computing	2021-22
274	5	B.Tech CSE	17CA05806	Comprehensive Examination	2021-22
275	5	B.Tech CSE	17CA05808	Main Project	2021-22
276	EO	MBA	20CE00101	Management &OrganisationalBehaviour	2021-22
277	EO	MBA	20CE00102	Managerial Economics	2021-22
278	EO	MBA	20CE00103	Accounting for Managers	2021-22
279	EO	MBA	20CE00104	Business Research Methods	2021-22
280	EO	MBA	20CE00105	Business Communication	2021-22
281	EO	MBA	20CE00106	Business Statistics	2021-22
282	EO	MBA	20CE00107	Information Technology	2021-22
283	EO	MBA	20CE00108	Business Communication Lab – I	2021-22
284	EO	MBA	20CE00109	Information Technology Lab	2021-22
285	EO	MBA	20CE00201	Human Resource Management	2021-22
286	EO	MBA	20CE00202	Financial Management	2021-22
287	EO	MBA	20CE00203	Marketing Management	2021-22
288	EO	MBA	20CE00204	Operations Research	2021-22
289	EO	MBA	20CE00205	Business Environment	2021-22
290	EO	MBA	20CE00206	Operations Management	2021-22
291	EO	MBA	20CE00207	Management Information Systems	2021-22
292	EO	MBA	20CE00208	Business Analytics Lab	2021-22
293	EO	MBA	20CE00209	Business Communication Lab –II	2021-22
294	EO	MBA	20CE00301	Entrepreneurship Development	2021-22
295	EO	MBA	20CE00311	Services Marketing	2021-22
296	EO	MBA	20CE00313	Product and brand Management	2021-22
297	EO	MBA	20CE00321	Security Analysis & Portfolio Management	2021-22
298	EO	MBA	20CE00322	Financial Institutions and Markets	2021-22
299	EO	MBA	20CE00331	Performance Management	2021-22
300	EO	MBA	20CE00334	Employee Empowerment	2021-22
301	EO	MBA	20CE00302	Business Simulation Lab II	2021-22
302	EO	MBA	20CE00401	Strategic Management	2021-22
303	EO	MBA	20CE00402	International Business Management	2021-22
304	EO	MBA	20CE00403	Legal Aspects of Business	2021-22
305	EO	MBA	20CE00404	Project –II Viva-Voce & Report Presentation & Submission	2021-22
306	EO	MBA	20CE00414	Advertisement and Sales Promotion Management	2021-22
307	EO	MBA	20CE00424	Financial Derivatives	2021-22
308	EO	MBA	20CE00432	International Human Resource Management	2021-22
309	FO	MCA	20CF00101	Mathematical Foundations of Computer Science	2021-22
310	FO	MCA	20CF00102	Data structures	2021-22
311	FO	MCA	20CF00103	Computer Organization and architecture	2021-22
312	FO	MCA	20CF00104	Operating Systems	2021-22
313	FO	MCA	20CF00105	Computer Networks	2021-22
314	FO	MCA	20CF00106	Python Programming	2021-22
315	FO	MCA	20CF00107	Data structures Through C++ Lab	2021-22
316	FO	MCA	20CF00108	Python Programming Lab	2021-22
317	FO	MCA	20CF00109	Office Automation Lab	2021-22

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318	F0	MCA	20CF00201	Database Management Systems	2021-22
319	F0	MCA	20CF00202	Object Oriented Programming through Java	2021-22
320	F0	MCA	20CF00203	Artificial Intelligence	2021-22
321	F0	MCA	20CF00204	Software Engineering	2021-22
322	F0	MCA	20CF00205	Object Oriented Analysis and Design	2021-22
323	F0	MCA	20CF00208	Data Mining	2021-22
324	F0	MCA	20CF00211	Database Management Systems Lab	2021-22
325	F0	MCA	20CF00212	Object Oriented Programming through Java Lab	2021-22
326	F0	MCA	20CF00213	Artificial Intelligence using R Lab	2021-22
327	F0	MCA	20CF00301	Full Stack Technologies	2021-22
328	F0	MCA	20CF00302	Machine Learning	2021-22
329	F0	MCA	20CF00303	Mobile Application Development	2021-22
330	F0	MCA	20CF00304	Fundamentals of Data Science	2021-22
331	F0	MCA	20CF00307	Software Testing	2021-22
332	F0	MCA	20CF00309	Internet of Things	2021-22
333	F0	MCA	20CF00311	Full Stack Technologies Lab	2021-22
334	F0	MCA	20CF00312	Machine Learning Lab	2021-22
335	F0	MCA	20CF00313	Mobile Application Development Lab	2021-22
336	F0	MCA	20CF00401	Main Project	2021-22
337	F0	MCA	20CF00402	MOOC-I	2021-22
338	F0	MCA	20CF00403	Seminar	2021-22
339	D83	M.Tech (PE&D)	21CD02101	Advanced Power Semiconductor Devices	2021-22
340	D83	M.Tech (PE&D)	21CD02102	Machine Modeling and Analysis	2021-22
341	D83	M.Tech (PE&D)	21CD02102	Machine Modeling and Analysis	2021-22
342	D83	M.Tech (PE&D)	21CD02103	Solid-State DC Drives	2021-22
343	D83	M.Tech (PE&D)	21CD02104	Applications of Power Electronics to Power Systems	2021-22
344	D83	M.Tech (PE&D)	21CD02107	Advanced Digital Signal Processing	2021-22
345	D83	M.Tech (PE&D)	21CD02109	Solid State Lighting and Control	2021-22
346	D83	M.Tech (PE&D)	21CD02111	MOOC Course	2021-22
347	D83	M.Tech (PE&D)	21CD02114	Power Electronics and Simulation Lab	2021-22
348	D83	M.Tech (PE&D)	21CD02201	Advanced Power Converters	2021-22
349	D83	M.Tech (PE&D)	21CD02202	Power Quality	2021-22
350	D83	M.Tech (PE&D)	21CD02203	Advanced Drives & Control	2021-22
351	D83	M.Tech (PE&D)	21CD02204	Renewable Energy Conversion Systems	2021-22
352	D83	M.Tech (PE&D)	21CD02207	HVDC & EHVAC Transmission Systems	2021-22
353	D83	M.Tech (PE&D)	21CD02209	Energy Efficient Electrical Systems	2021-22
354	D83	M.Tech (PE&D)	21CD53301	Research Methodology	2021-22
355	D83	M.Tech (PE&D)	21CD02304	Technical Seminar I	2021-22
356	D83	M.Tech (PE&D)	21CD02305	Project work – Phase I	2021-22
357	D83	M.Tech (PE&D)	21CD02401	Technical Seminar II	2021-22
358	D83	M.Tech (PE&D)	21CD02402	Project work – Phase II	2021-22
359	D04	M.Tech (CAD/CAM)	21CD54101	Computational Methods	2021-22
360	D04	M.Tech (CAD/CAM)	21CD03101	Advanced Finite Element Methods	2021-22
361	D04	M.Tech (CAD/CAM)	21CD03102	Computer Integrated Manufacturing	2021-22
362	D04	M.Tech (CAD/CAM)	21CD03103	Rapid Prototyping	2021-22
363	D04	M.Tech (CAD/CAM)	21CD03105	Computer Aided Process & Planning	2021-22
364	D04	M.Tech (CAD/CAM)	21CD03107	Materials Technology	2021-22
365	D04	M.Tech (CAD/CAM)	21CD03111-	MOOC Course	2021-22
366	D04	M.Tech (CAD/CAM)	21CD03110	Modeling and Analysis Lab	2021-22
367	D04	M.Tech (CAD/CAM)	21CD03201	Advanced Optimization Techniques	2021-22
368	D04	M.Tech (CAD/CAM)	21CD03202	Industrial Robotics and Expert systems	2021-22
369	D04	M.Tech (CAD/CAM)	21CD03203	CNC Technology & programming	2021-22
370	D04	M.Tech (CAD/CAM)	21CD03204	Composite Materials	2021-22
371	D04	M.Tech (CAD/CAM)	21CD03206	Special Manufacturing Process	2021-22
372	D04	M.Tech (CAD/CAM)	21CD03209	Global Integrated Manufacturing	2021-22
373	D04	M.Tech (CAD/CAM)	21CD53201	Research Methodology	2021-22
374	D04	M.Tech (CAD/CAM)	21CD03211	CAD/CAM Lab	2021-22
375	D04	M.Tech (CAD/CAM)	21CD03302	Seminar - I	2021-22
376	D04	M.Tech (CAD/CAM)	21CD03303	Project work – Phase I	2021-22
377	D04	M.Tech (CAD/CAM)	21CD03401	Seminar - II	2021-22
378	D04	M.Tech (CAD/CAM)	21CD03402	Project work – Phase II	2021-22
379	D57	M.Tech (VLSI&SD)	21CD04101	Digital System Design	2021-22
380	D57	M.Tech (VLSI&SD)	21CD04102	CMOS Analog IC Design	2021-22
381	D57	M.Tech (VLSI&SD)	21CD04103	CMOS Digital IC Design	2021-22
382	D57	M.Tech (VLSI&SD)	21CD04104	VLSI Signal Processing	2021-22
383	D57	M.Tech (VLSI&SD)	21CD04107	Advanced Computer Architecture	2021-22

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384	D57	M.Tech (VLSI&SD)	21CD04109	CPLD and FPGA Architectures and Applications	2021-22
385	D57	M.Tech (VLSI&SD)	21CD04111	MOOC Course	2021-22
386	D57	M.Tech (VLSI&SD)	21CD04114	Digital System Design Lab	2021-22
387	D57	M.Tech (VLSI&SD)	21CD04201	Low Power VLSI Design	2021-22
388	D57	M.Tech (VLSI&SD)	21CD04202	Test & Testability	2021-22
389	D57	M.Tech (VLSI&SD)	21CD04203	CMOS Mixed Signal Design	2021-22
390	D57	M.Tech (VLSI&SD)	21CD04204	Embedded System Design	2021-22
391	D57	M.Tech (VLSI&SD)	21CD04206	Semiconductor Memory Design and Testing	2021-22
392	D57	M.Tech (VLSI&SD)	21CD04210	Hardware & Software Design of embedded Systems	2021-22
393	D57	M.Tech (VLSI&SD)	21CD045201	Research Methodology	2021-22
394	D57	M.Tech (VLSI&SD)	21CD04211	VLSI System Design Lab	2021-22
395	D57	M.Tech (VLSI&SD)	21CD04301	Technical Seminar I	2021-22
396	D57	M.Tech (VLSI&SD)	21CD04302	Project Work – Phase I	2021-22
397	D57	M.Tech (VLSI&SD)	21CD04401	Technical Seminar II	2021-22
398	D57	M.Tech (VLSI&SD)	21CD04402	Project Work – Phase II	2021-22
399	D58	M.Tech (CSE)	21CD05101	Advanced Data Structures and Algorithms	2021-22
400	D58	M.Tech (CSE)	21CD05102	Fundamentals of Data Science	2021-22
401	D58	M.Tech (CSE)	21CD05103	Computer Organization & Architecture	2021-22
402	D58	M.Tech (CSE)	21CD05104	Advanced Operating System	2021-22
403	D58	M.Tech (CSE)	21CD05105	Software Engineering	2021-22
404	D58	M.Tech (CSE)	21CD05110	Machine Learning	2021-22
405	D58	M.Tech (CSE)	21CD05113	MOOCS	2021-22
406	D58	M.Tech (CSE)	21CD05114	Advanced Data Structures and Algorithms lab	2021-22
407	D58	M.Tech (CSE)	21CD05201	Advanced Python Programming	2021-22
408	D58	M.Tech (CSE)	21CD05202	Big Data Analytics	2021-22
409	D58	M.Tech (CSE)	21CD05203	Internet of Things	2021-22
410	D58	M.Tech (CSE)	21CD05204	Mobile Application Development	2021-22
411	D58	M.Tech (CSE)	21CD05205	Design Patterns	2021-22
412	D58	M.Tech (CSE)	21CD05206	Human Computer Interaction	2021-22
413	D58	M.Tech (CSE)	21CD05207	Pattern Recognition	2021-22
414	D58	M.Tech (CSE)	21CD05208	Cyber Security	2021-22
415	D58	M.Tech (CSE)	21CD05209	R Programming	2021-22
416	D58	M.Tech (CSE)	21CD05210	Computer Vision	2021-22
417	D58	M.Tech (CSE)	21CD05211	Cloud Computing	2021-22
418	D58	M.Tech (CSE)	21CD05212	Advanced Databases	2021-22
419	D58	M.Tech (CSE)	21CD05201	Research Methodology	2021-22
420	D58	M.Tech (CSE)	21CD05213	Map Reduce Programming Lab	2021-22
421	D58	M.Tech (CSE)	21CD05301	Technical Seminar - I	2021-22
422	D58	M.Tech (CSE)	21CD05302	Project Work- PHASE - I	2021-22
423	D58	M.Tech (CSE)	21CD05401	Technical Seminar - II	2021-22
424	D58	M.Tech (CSE)	21CD05402	Project Work- PHASE - II	

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S.No	Program code	Program name	Course code	Course name	Year of offering the course
1	2	B.Tech EEE	20CA54101	Mathematics –I	2020-21
2	2	B.Tech EEE	20CA51101	Engineering Chemistry	2020-21
3	2	B.Tech EEE	20CA52101	Communicative English	2020-21
4	2	B.Tech EEE	20CA03101	Engineering Graphics & Design	2020-21
5	2	B.Tech EEE	20CA03102	Basic Civil & Mechanical Engineering	2020-21
6	2	B.Tech EEE	20CA52102	Communicative English Lab	2020-21
7	2	B.Tech EEE	20CA51102	Engineering Chemistry Lab	2020-21
8	2	B.Tech EEE	20CA03102	Engineering and IT Workshop	2020-21
9	2	B.Tech EEE	20CA54201	Mathematics - II	2020-21
10	2	B.Tech EEE	20CA55101	Engineering Physics	2020-21
11	2	B.Tech EEE	20CA02201	Electrical Circuits - I	2020-21
12	2	B.Tech EEE	20CA04301	Electronic Devices and Circuits	2020-21
13	2	B.Tech EEE	20CA05101	Problem Solving with Programming in C	2020-21
14	2	B.Tech EEE	20CA55102	Engineering Physics Lab	2020-21
15	2	B.Tech EEE	20CA05102	Problem Solving with Programming in C Lab	2020-21
16	2	B.Tech EEE	20CA02202	Electrical Electronics Engineering Workshop	2020-21
17	2	B.Tech EEE	20CA51201	Environmental Science	2020-21
18	2	B.Tech EEE	19CA54301	Mathematics- III	2020-21
19	2	B.Tech EEE	19CA02301	Electrical Circuits II	2020-21
20	2	B.Tech EEE	19CA04301	Electronic Devices and Circuits	2020-21
21	2	B.Tech EEE	19CA02302	Engineering Electromagnetics	2020-21
22	2	B.Tech EEE	19CA02303	Electrical Machines - I	2020-21
23	2	B.Tech EEE	19CA05301	Data Structures	2020-21
24	2	B.Tech EEE	19CA56301	Essence of Indian Traditional Knowledge	2020-21
25	2	B.Tech EEE	19CA02304	Electrical Circuits and Simulation Lab	2020-21
26	2	B.Tech EEE	19CA04304	Electronic Devices and Circuits Lab	2020-21
27	2	B.Tech EEE	19CA54401	Mathematics- IV	2020-21
28	2	B.Tech EEE	19CA52401	Communicative English II	2020-21
29	2	B.Tech EEE	19CA02401	Control Systems	2020-21
30	2	B.Tech EEE	19CA58301	Life Sciences for Engineers	2020-21
31	2	B.Tech EEE	19CA02402	Generation and Transmission	2020-21
32	2	B.Tech EEE	19CA02403	Electrical Machines - II	2020-21
33	2	B.Tech EEE	19CA02404	Control Systems Lab	2020-21
34	2	B.Tech EEE	19CA02405	Electrical Machines - I	2020-21
35	2	B.Tech EEE	19CA52402	Communicative English II	2020-21
36	2	B.Tech EEE	19CA02406	Socially Relevant Project I	2020-21
37	2	B.Tech EEE	17CA02501	Control Systems	2020-21
38	2	B.Tech EEE	17CA02502	Power Electronics	2020-21
39	2	B.Tech EEE	17CA02503	Transmission and Distribution Systems	2020-21
40	2	B.Tech EEE	17CA04511	Digital Circuits and Systems	2020-21
41	2	B.Tech EEE	17CA02504	AC Machines – II	2020-21
42	2	B.Tech EEE	17CA02508	Power Quality	2020-21
43	2	B.Tech EEE	17CA02509	Control Systems and Simulation Laboratory	2020-21
44	2	B.Tech EEE	17CA02510	AC Machines Laboratory	2020-21
45	2	B.Tech EEE	17CA52501	Soft Skills Lab	2020-21
46	2	B.Tech EEE	17CA02601	Power System Analysis	2020-21
47	2	B.Tech EEE	17CA02602	Solid State Electric Motor Drives	2020-21
48	2	B.Tech EEE	17CA04604	Micro Processors and Microcontrollers	2020-21
49	2	B.Tech EEE	17CA02603	Power System Protection	2020-21
50	2	B.Tech EEE	17CA02606	Energy Audit and Management	2020-21
51	2	B.Tech EEE	17CA052601	Soft Skills II	2020-21
52	2	B.Tech EEE	17CA02610	Power Electronics and Simulation Lab	2020-21
53	2	B.Tech EEE	17CA04610	Microprocessors And Microcontrollers Laboratory	2020-21
54	2	B.Tech EEE	17CA02611	Mini Project	2020-21
55	2	B.Tech EEE	17CA02701	Power System Operation and Control	2020-21
56	2	B.Tech EEE	17CA02702	Utilization of Electrical Energy	2020-21
57	2	B.Tech EEE	17CA02705	Flexible Alternating Current Transmission Systems	2020-21
58	2	B.Tech EEE	17CA02713	PLC and Automation Laboratory	2020-21
59	2	B.Tech EEE	17CA02714	Power System Computer Aided Design Laboratory	2020-21
60	2	B.Tech EEE	17CA02715	Technical Seminar	2020-21
61	2	B.Tech EEE	17CA57711	AI Master Class Using Matlab (WAC III	2020-21
62	2	B.Tech EEE	17CA02717	Wind Energy	2020-21
63	2	B.Tech EEE	17CA02718	Solar Energy	2020-21
64	2	B.Tech EEE	17CA02719	Electrical Utilities Fundamentals Future	2020-21
65	2	B.Tech EEE	17CA02720	Wireless Communication for Energy Bodies	2020-21
66	2	B.Tech EEE	17CA02721	Advance in EHV Transmission & Distribution	2020-21
67	2	B.Tech EEE	17CA02722	Introduction to Smart Grid	2020-21
68	2	B.Tech EEE	17CA02723	Power System Protection and Switch Gear	2020-21
69	2	B.Tech EEE	17CA02724	Electric Power System	2020-21

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70	2	B.Tech EEE	17CA02801	HVDC & FACTS	2020-21
71	2	B.Tech EEE	19CA02801	Project Part-II	2020-21
72	3	B.Tech MECH	20CA54101	Mathematics I	2020-21
73	3	B.Tech MECH	20CA55103	Engineering Physics	2020-21
74	3	B.Tech MECH	20CA52101	Communicative English	2020-21
75	3	B.Tech MECH	20CA02101	Essential Electrical and Electronic Engineering	2020-21
76	3	B.Tech MECH	20CA05101	C Programming Language	2020-21
77	3	B.Tech MECH	20CA52102	Communicative English Lab	2020-21
78	3	B.Tech MECH	20CA55102	Engineering Physics Lab	2020-21
79	3	B.Tech MECH	20CA05102	C Programming Lab	2020-21
80	3	B.Tech MECH	20CA54201	Mathematics II	2020-21
81	3	B.Tech MECH	20CA51101	Engineering Chemistry	2020-21
82	3	B.Tech MECH	20CA03201	Engineering Graphics	2020-21
83	3	B.Tech MECH	20CA03202	Engineering Mechanics	2020-21
84	3	B.Tech MECH	20CA03203	Material Science and Engineering	2020-21
85	3	B.Tech MECH	20CA03102	Engg. Workshop	2020-21
86	3	B.Tech MECH	20CA51102	Engineering Chemistry Lab	2020-21
87	3	B.Tech MECH	20CA02205	Essential Electrical and Electronic Engineering Lab	2020-21
88	3	B.Tech MECH	20CA53201	Universal Human Values and Ethics (MC-I)	2020-21
89	3	B.Tech MECH	19CA54301	Mathematics III	2020-21
90	3	B.Tech MECH	19CA58301	Life Sciences for Engineers	2020-21
91	3	B.Tech MECH	19CA53303	Design Thinking	2020-21
92	3	B.Tech MECH	19CA03301	Engineering Mechanics	2020-21
93	3	B.Tech MECH	19CA03302	Strength of Materials	2020-21
94	3	B.Tech MECH	19CA03303	Manufacturing Processes	2020-21
95	3	B.Tech MECH	19CA56301	Essence of Indian Traditional Knowledge	2020-21
96	3	B.Tech MECH	19CA03304	Strength of Meterials Lab	2020-21
97	3	B.Tech MECH	19CA03305	Manufacturing Processes Lab	2020-21
98	3	B.Tech MECH	19CA54401	Mathematics IV	2020-21
99	3	B.Tech MECH	19CA52401	Communicative English II	2020-21
100	3	B.Tech MECH	19CA03401	Thermodynamics	2020-21
101	3	B.Tech MECH	19CA03402	Kinematics and Theory of Machines	2020-21
102	3	B.Tech MECH	19CA05405	AI Tools, Techniques and Applications	2020-21
103	3	B.Tech MECH	19CA03403	Metrology and Measurements	2020-21
104	3	B.Tech MECH	19CA03404	Computer Aided Machine Drawing	2020-21
105	3	B.Tech MECH	19CA52402	Communicative English II Lab	2020-21
106	3	B.Tech MECH	19CA05406	AI Tools, Techniques and Applications Lab	2020-21
107	3	B.Tech MECH	19CA03405	Metrology and Measurements Lab	2020-21
108	3	B.Tech MECH	19CA03406	Socially Relevant Project I	2020-21
109	3	B.Tech MECH	17CA03501	Machine Tools	2020-21
110	3	B.Tech MECH	17CA03502	Dynamics of Machinery	2020-21
111	3	B.Tech MECH	17CA03503	Machine Design-I	2020-21
112	3	B.Tech MECH	17CA03504	Thermal Engineering-II	2020-21
113	3	B.Tech MECH	17CA03505	Fluid Mechanics and Hydraulic Machines	2020-21
114	3	B.Tech MECH	17CA03509	Power Plant Engineering	2020-21
115	3	B.Tech MECH	17CA03510	Machine Tools Laboratory	2020-21
116	3	B.Tech MECH	17CA03511	Fluid Mechanics and Hydraulic Machines Laboratory	2020-21
117	3	B.Tech MECH	17CA52501	Soft Skills Lab	2020-21
118	3	B.Tech MECH	17CA03601	Finite Element Methods	2020-21
119	3	B.Tech MECH	17CA03602	Machine Design-II	2020-21
120	3	B.Tech MECH	17CA03603	Heat Transfer	2020-21
121	3	B.Tech MECH	17CA03604	Metal forming Process	2020-21
122	3	B.Tech MECH	17CA03607	Modern Manufacturing Methods	2020-21
123	3	B.Tech MECH	17CA052601	Soft Skills-II	2020-21
124	3	B.Tech MECH	17CA03610	CAE Laboratory	2020-21
125	3	B.Tech MECH	17CA03611	Heat Transfer Laboratory	2020-21
126	3	B.Tech MECH	17CA03612	Mini Project	2020-21
127	3	B.Tech MECH	17CA03701	Metrology and Measurements	2020-21
128	3	B.Tech MECH	17CA03702	Computer Aided Design/Computer Aided Manufacturing	2020-21
129	3	B.Tech MECH	17CA03706	Energy Management	2020-21
130	3	B.Tech MECH	17CA03707	Design for Manufacture (MOOC-I)	2020-21
131	3	B.Tech MECH	17CA03710	Advanced Production Technology (MOOC-II)	2020-21
132	3	B.Tech MECH	17CA03713	CAM Laboratory	2020-21
133	3	B.Tech MECH	17CA03714	Metrology and Measurements Laboratory	2020-21
134	3	B.Tech MECH	17CA03715	Technical Seminar	2020-21
135	3	B.Tech MECH	17CA57708	CATIA V5 (Value Added Course-II)	2020-21
136	3	B.Tech MECH	17CA03801	Automobile Engineering	2020-21
137	3	B.Tech MECH	17CA03804	Total Quality Management	2020-21
138	3	B.Tech MECH	17CA03806	Comprehensive Examination	2020-21
139	3	B.Tech MECH	17CA03807	Project Work	2020-21
140	4	B.Tech ECE	20CA54101	Mathematics-III	2020-21
141	4	B.Tech ECE	20CA51101	Engineering Chemistry	2020-21

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142	4	B.Tech ECE	20CAS2101	Communicative English	2020-21
143	4	B.Tech ECE	20CA03101	Engineering Graphics & Design	2020-21
144	4	B.Tech ECE	20CA03102	Basic Civil & Mechanical Engineering	2020-21
145	4	B.Tech ECE	20CAS2102	Communicative English Lab	2020-21
146	4	B.Tech ECE	20CAS1102	Engineering Chemistry Lab	2020-21
147	4	B.Tech ECE	20CA03102	Engineering Workshop	2020-21
148	4	B.Tech ECE	20CAS4201	Mathematics II	2020-21
149	4	B.Tech ECE	20CAS5101	Engineering Physics	2020-21
150	4	B.Tech ECE	20CA02203	Network Analysis	2020-21
151	4	B.Tech ECE	20CA05101	Problem Solving with Programming in 'C'	2020-21
152	4	B.Tech ECE	20CA04201	Digital Electronics & Logic Design	2020-21
153	4	B.Tech ECE	20CA02204	Network Analysis Lab	2020-21
154	4	B.Tech ECE	20CAS5102	Engineering Physics Lab	2020-21
155	4	B.Tech ECE	20CA05102	Problem Solving with Programming in 'C' Lab	2020-21
156	4	B.Tech ECE	19CAS4301	Mathematics III	2020-21
157	4	B.Tech ECE	19CAS8301	Life Sciences for Engineers	2020-21
158	4	B.Tech ECE	19CA04301	Electronic Devices & Circuits	2020-21
159	4	B.Tech ECE	19CA04302	Random Signals & Systems	2020-21
160	4	B.Tech ECE	19CA04303	Digital Electronics & Logic Design	2020-21
161	4	B.Tech ECE	19CA02305	Network Analysis and Transmission Lines	2020-21
162	4	B.Tech ECE	19CAS6301	Essence of Indian Traditional Knowledge	2020-21
163	4	B.Tech ECE	19CA04304	Electronic Devices & Circuits Lab	2020-21
164	4	B.Tech ECE	19CA04305	Basic Simulation Lab	2020-21
165	4	B.Tech ECE	19CAS4401	Mathematics-IV	2020-21
166	4	B.Tech ECE	19CAS2401	Communicative English II	2020-21
167	4	B.Tech ECE	19CA04401	Electromagnetic Theory	2020-21
168	4	B.Tech ECE	19CA04402	Analog Electronic Circuits	2020-21
169	4	B.Tech ECE	19CAS3303	Design Thinking	2020-21
170	4	B.Tech ECE	19CA02401	Control Systems	2020-21
171	4	B.Tech ECE	19CA04403	Digital Electronics & Logic Design Lab	2020-21
172	4	B.Tech ECE	19CA04404	Analog Electronic Circuits Lab	2020-21
173	4	B.Tech ECE	19CAS2402	Communicative English II Lab	2020-21
174	4	B.Tech ECE	19CA04405	Socially Relevant Project	2020-21
175	4	B.Tech ECE	17CA04501	Digital Communication Systems	2020-21
176	4	B.Tech ECE	17CA04502	Digital System Design	2020-21
177	4	B.Tech ECE	17CA04503	Antennas & Wave Propagation	2020-21
178	4	B.Tech ECE	17CA04504	Electronic Measurements and Instrumentation	2020-21
179	4	B.Tech ECE	17CA05403	Computer Organization	2020-21
180	4	B.Tech ECE	17CA04506	Artificial Neural Networks and Fuzzy Logic	2020-21
181	4	B.Tech ECE	17CAS2501	Soft Skills Lab	2020-21
182	4	B.Tech ECE	17CA04509	Linear & Digital IC Applications Lab	2020-21
183	4	B.Tech ECE	17CA04510	Digital Communication lab	2020-21
184	4	B.Tech ECE	17CA04601	Digital Signal Processing	2020-21
185	4	B.Tech ECE	17CA04602	VLSI System Design	2020-21
186	4	B.Tech ECE	17CA04603	Microwave Engineering	2020-21
187	4	B.Tech ECE	17CA04604	Microprocessors& Microcontrollers	2020-21
188	4	B.Tech ECE	17CA04605	Satellite Communication	2020-21
189	4	B.Tech ECE	17CA052601	Soft Skills-II	2020-21
190	4	B.Tech ECE	17CA04609	Digital Signal Processing lab	2020-21
191	4	B.Tech ECE	17CA04610	Microprocessors & Microcontrollers Lab	2020-21
192	4	B.Tech ECE	17CA04611	Mini Project	2020-21
193	4	B.Tech ECE	17CA04701	Embedded System	2020-21
194	4	B.Tech ECE	17CA04702	Optical Communications	2020-21
195	4	B.Tech ECE	17CA04703	Radar Systems & Navigational Aids	2020-21
196	4	B.Tech ECE	17CA04708	RF Integrated Circuits (MOOC-I)	2020-21
197	4	B.Tech ECE	17CA04708	RF Integrated Circuits (MOOC-I)	2020-21
198	4	B.Tech ECE	17CA04711	Advanced 3G & 4G Wireless Communication (MOOC-II)	2020-21
199	4	B.Tech ECE	17CA04713	Microwave & Optical Communications Lab	2020-21
200	4	B.Tech ECE	17CA03715	Technical Seminar	2020-21
201	4	B.Tech ECE	17CA04714	VLSI & Embedded systems lab	2020-21
202	4	B.Tech ECE	17CAS7704	Value Added Course - II	2020-21
203	4	B.Tech ECE	17CA04801	Digital Image Processing	2020-21
204	4	B.Tech ECE	17CA04802	Wireless Sensor Networks And Architecture	2020-21
205	4	B.Tech ECE	17CA04806	Comprehensive Online Exam	2020-21
206	4	B.Tech ECE	17CA04807	Main Project Work	2020-21
207	4	B.Tech ECE	20CAS4101	Mathematics-I	2020-21
208	5	B.Tech ECE	20CAS5103	Engineering Physics	2020-21
209	5	B.Tech ECE	20CAS2101	Communicative English	2020-21
210	5	B.Tech ECE	20CA05101	C Programming and Data Structures	2020-21
211	5	B.Tech ECE	20CA02101	Essential Electrical and Electronics Engineering	2020-21
212	5	B.Tech ECE	20CAS2102	Communicative English - Lab	2020-21
213	5	B.Tech ECE	20CAS5102	Engineering Physics Lab	2020-21

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214	5	B.Tech ECE	20CA05102	C Programming Lab	2020-21
215	5	B.Tech ECE	20CA54201	Mathematics-II	2020-21
216	5	B.Tech ECE	20CA51101	Engineering Chemistry	2020-21
217	5	B.Tech ECE	20CA03102	Basic Civil and Mechanical Engineering	2020-21
218	5	B.Tech ECE	20CA03101	Engineering Graphics	2020-21
219	5	B.Tech ECE	20CA05201	Java Programming Language	2020-21
220	5	B.Tech ECE	20CA05202	Java Programming LAB	2020-21
221	5	B.Tech ECE	20CA51102	Engineering Chemistry LAB	2020-21
222	5	B.Tech ECE	20CA05203	IT Workshop LAB	2020-21
223	5	B.Tech ECE	20CA51201	Environmental Science	2020-21
224	5	B.Tech CSE	19CA54302	Numerical Methods	2020-21
225	5	B.Tech CSE	19CA05301	Data Structures	2020-21
226	5	B.Tech CSE	19CA05302	Discrete Mathematics	2020-21
227	5	B.Tech CSE	19CA04306	Digital Logic Design	2020-21
228	5	B.Tech CSE	19CA05303	Software Engineering	2020-21
229	5	B.Tech CSE	19CA53301	Design Thinking & Product Innovation	2020-21
230	5	B.Tech CSE	19CA56301	Essence of Indian Traditional Knowledge	2020-21
231	5	B.Tech CSE	19CA05304	Data Structures Lab	2020-21
232	5	B.Tech CSE	19CA05305	Software Engineering Lab	2020-21
233	5	B.Tech CSE	19CA53302	Design Thinking & Product Innovation Lab	2020-21
234	5	B.Tech CSE	19CA52401	Communicative English-II	2020-21
235	5	B.Tech CSE	19CA05401	Computer Organization	2020-21
236	5	B.Tech CSE	19CA05402	Formal Languages and Automata Theory	2020-21
237	5	B.Tech CSE	19CA05403	Object Oriented Programming through Java	2020-21
238	5	B.Tech CSE	19CA58301	Life Science for Engineers	2020-21
239	5	B.Tech CSE	19CA03103	Basic Civil and Mechanical Engineering	2020-21
240	5	B.Tech CSE	19CA52402	Communicative English-II Lab	2020-21
241	5	B.Tech CSE	19CA05404	Object Oriented Programming through Java Lab	2020-21
242	5	B.Tech CSE	19CA03206	Basic Civil and Mechanical Engineering Lab	2020-21
243	5	B.Tech CSE	19CA05407	Socially Relevant Project-I	2020-21
244	5	B.Tech CSE	17CA05501	Operating Systems	2020-21
245	5	B.Tech CSE	17CA05502	Computer Networks	2020-21
246	5	B.Tech CSE	17CA05503	Compiler Design	2020-21
247	5	B.Tech CSE	17CA05504	Object Oriented Analysis and Design	2020-21
248	5	B.Tech CSE	17CA05505	Data Warehousing and Data Mining	2020-21
249	5	B.Tech CSE	17CA05507	Software Testing Methodologies	2020-21
250	5	B.Tech CSE	17CA05509	Object Oriented Analysis and Design Laboratory	2020-21
251	5	B.Tech CSE	17CA05510	Data Mining Laboratory	2020-21
252	5	B.Tech CSE	17CA05506	Design Patterns	2020-21
253	5	B.Tech CSE	17CA52501	Soft Skills Lab	2020-21
254	5	B.Tech CSE	17CA05601	Artificial Intelligence	2020-21
255	5	B.Tech CSE	17CA05602	Web Programming	2020-21
256	5	B.Tech CSE	17CA05603	Advanced Python Programming	2020-21
257	5	B.Tech CSE	17CA05604	Information Security	2020-21
258	5	B.Tech CSE	17CA05606	Distributed Systems	2020-21
259	5	B.Tech CSE	17CA052601	Soft Skills-II	2020-21
260	5	B.Tech CSE	17CA05611	Web Programming Laboratory	2020-21
261	5	B.Tech CSE	17CA05612	Advanced Python Programming Laboratory	2020-21
262	5	B.Tech CSE	17CA05613	Mini Project	2020-21
263	5	B.Tech CSE	17CA05791	Big Data	2020-21
264	5	B.Tech CSE	17CA05702	Mobile Application Development	2020-21
265	5	B.Tech CSE	17CA05703	Cyber Security	2020-21
266	5	B.Tech CSE	17CA05707	E-Commerce (MOOC-I)	2020-21
267	5	B.Tech CSE	17CA05711	Intrusion Detection Systems (MOOC-II)	2020-21
268	5	B.Tech CSE	17CA05713	Big Data Laboratory	2020-21
269	5	B.Tech CSE	17CA05714	Mobile Application Development Laboratory	2020-21
270	5	B.Tech CSE	17CA05715	Technical Seminar	2020-21
271	5	B.Tech CSE	17CA57707	Six Sigma(Value Added Course –II)	2020-21
272	5	B.Tech CSE	17CA05801	Software Project Management	2020-21
273	5	B.Tech CSE	17CA05802	Cloud Computing	2020-21
274	5	B.Tech CSE	17CA05806	Comprehensive Examination	2020-21
275	5	B.Tech CSE	17CA05808	Main Project	2020-21
276	E0	MBA	20CE00101	Management &Organisational Behaviour	2020-21
277	E0	MBA	20CE00102	Managerial Economics	2020-21
278	E0	MBA	20CE00103	Accounting for Managers	2020-21
279	E0	MBA	20CE00104	Business Research Methods	2020-21
280	E0	MBA	20CE00105	Business Communication	2020-21
281	E0	MBA	20CE00106	Business Statistics	2020-21
282	E0	MBA	20CE00107	Information Technology	2020-21
283	E0	MBA	20CE00108	Business Communication Lab – I	2020-21
284	E0	MBA	20CE00109	Information Technology Lab	2020-21
285	E0	MBA	20CE00201	Human Resource Management	2020-21

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286	EO	MBA	20CE00202	Financial Management	2020-21
287	EO	MBA	20CE00203	Marketing Management	2020-21
288	EO	MBA	20CE00204	Operations Research	2020-21
289	EO	MBA	20CE00205	Business Environment	2020-21
290	EO	MBA	20CE00206	Operations Management	2020-21
291	EO	MBA	20CE00207	Management Information Systems	2020-21
292	EO	MBA	20CE00208	Business Analytics Lab	2020-21
293	EO	MBA	20CE00209	Business Communication Lab –II	2020-21
294	EO	MBA	20CE00301	Entrepreneurship Development	2020-21
295	EO	MBA	20CE00311	Services Marketing	2020-21
296	EO	MBA	20CE00313	Product and brand Management	2020-21
297	EO	MBA	20CE00321	Security Analysis & Portfolio Management	2020-21
298	EO	MBA	20CE00322	Financial Institutions and Markets	2020-21
299	EO	MBA	20CE00331	Performance Management	2020-21
300	EO	MBA	20CE00334	Employee Empowerment	2020-21
301	EO	MBA	20CE00302	Business Simulation Lab II	2020-21
302	EO	MBA	20CE00401	Strategic Management	2020-21
303	EO	MBA	20CE00402	International Business Management	2020-21
304	EO	MBA	20CE00403	Legal Aspects of Business	2020-21
305	EO	MBA	20CE00404	Project –II Viva-Voce & Report Presentation & Submission	2020-21
306	EO	MBA	20CE00414	Advertisement and Sales Promotion Management	2020-21
307	EO	MBA	20CE00424	Financial Derivatives	2020-21
308	EO	MBA	20CE00432	International Human Resource Management	2020-21
309	FO	MCA	20CF00101	Mathematical Foundations of Computer Science	2020-21
310	FO	MCA	20CF00102	Data structures	2020-21
311	FO	MCA	20CF00103	Computer Organization and architecture	2020-21
312	FO	MCA	20CF00104	Operating Systems	2020-21
313	FO	MCA	20CF00105	Computer Networks	2020-21
314	FO	MCA	20CF00106	Python Programming	2020-21
315	FO	MCA	20CF00107	Data structures Through C++ Lab	2020-21
316	FO	MCA	20CF00108	Python Programming Lab	2020-21
317	FO	MCA	20CF00109	Office Automation Lab	2020-21
318	FO	MCA	20CF00201	Database Management Systems	2020-21
319	FO	MCA	20CF00202	Object Oriented Programming through Java	2020-21
320	FO	MCA	20CF00203	Artificial Intelligence	2020-21
321	FO	MCA	20CF00204	Software Engineering	2020-21
322	FO	MCA	20CF00205	Object Oriented Analysis and Design	2020-21
323	FO	MCA	20CF00208	Data Mining	2020-21
324	FO	MCA	20CF00211	Database Management Systems Lab	2020-21
325	FO	MCA	20CF00212	Object Oriented Programming through Java Lab	2020-21
326	FO	MCA	20CF00213	Artificial intelligence using R Lab	2020-21
327	FO	MCA	20CF00301	Full Stack Technologies	2020-21
328	FO	MCA	20CF00302	Machine Learning	2020-21
329	FO	MCA	20CF00303	Mobile Application Development	2020-21
330	FO	MCA	20CF00304	Fundamentals of Data Science	2020-21
331	FO	MCA	20CF00307	Software Testing	2020-21
332	FO	MCA	20CF00309	Internet of Things	2020-21
333	FO	MCA	20CF00311	Full Stack Technologies Lab	2020-21
334	FO	MCA	20CF00312	Machine Learning Lab	2020-21
335	FO	MCA	20CF00313	Mobile Application Development Lab	2020-21
336	FO	MCA	20CF00401	Main Project	2020-21
337	FO	MCA	20CF00402	MOOC-IIFoundation of User Experience Design	2020-21
338	FO	MCA	20CF00403	Seminar	2020-21
339	D04	M.Tech (CAD/CAM)	17CD54101	Computational Methods	2020-21
340	D04	M.Tech (CAD/CAM)	17CD03101	Advanced Finite Element Methods	2020-21
341	D04	M.Tech (CAD/CAM)	17CD03102	Computer Integrated Manufacturing	2020-21
342	D04	M.Tech (CAD/CAM)	17CD03103	Advances in Manufacturing Technology	2020-21
343	D04	M.Tech (CAD/CAM)	21CD03105	PE-I (Computer Aided Process Planning)	2020-21
344	D04	M.Tech (CAD/CAM)	21CD03107	PE-II(Materials Technology)	2020-21
345	D04	M.Tech (CAD/CAM)	17CD03110	Modelling And CNC Lab	2020-21
346	D04	M.Tech (CAD/CAM)	17CD03201	Advanced Optimization Techniques	2020-21
347	D04	M.Tech (CAD/CAM)	17CD03202	Industrial Robotics and Expert systems	2020-21
348	D04	M.Tech (CAD/CAM)	17CD03203	CNC Technology & programming	2020-21
349	D04	M.Tech (CAD/CAM)	17CD03204	Mechatronics Applications and Manufacturing	2020-21
350	D04	M.Tech (CAD/CAM)	21CD03206	PE-III(Special Manufacturing Process)	2020-21
351	D04	M.Tech (CAD/CAM)	21CD03209	PE-IV(Global Integrated Manufacturing)	2020-21
352	D04	M.Tech (CAD/CAM)	17CD03211	CAD/CAM Lab	2020-21
353	D04	M.Tech (CAD/CAM)	17CD53301	Research Methodology	2020-21
354	D04	M.Tech (CAD/CAM)	17CD03301	MOOC Course-II [illegible]	2020-21
355	D04	M.Tech (CAD/CAM)	17CD03304	Teaching Practicum	2020-21
356	D04	M.Tech (CAD/CAM)	17CD03305	Project work Phase I	2020-21

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357	D04	M.Tech (CAD/CAM)	17CD03401	Seminar	2020-21
358	D04	M.Tech (CAD/CAM)	17CD03402	Project work – Phase II	2020-21
359	D57	M.Tech (VLSI&SD)	17CD04101	Structural Digital System Design	2020-21
360	D57	M.Tech (VLSI&SD)	17CD04102	CMOS Analog IC Design	2020-21
361	D57	M.Tech (VLSI&SD)	17CD04103	CMOS Digital IC Design	2020-21
362	D57	M.Tech (VLSI&SD)	17CD04104	Hardware Description Languages	2020-21
363	D57	M.Tech (VLSI&SD)	17CD04106	Professional Elective-I(Low Power VLSI Design)	2020-21
364	D57	M.Tech (VLSI&SD)	17CD04109	Professional Elective-II(Embedded System Design)	2020-21
365	D57	M.Tech (VLSI&SD)	17CD04111	Digital System Design Lab	2020-21
366	D57	M.Tech (VLSI&SD)	17CD04201	CPLD and FPGA Architecture Applications	2020-21
367	D57	M.Tech (VLSI&SD)	17CD04202	Testing & Testability	2020-21
368	D57	M.Tech (VLSI&SD)	17CD04203	CMOS Mixed Signal Design	2020-21
369	D57	M.Tech (VLSI&SD)	17CD04204	Algorithms for VLSI Design Automation	2020-21
370	D57	M.Tech (VLSI&SD)	17CD04205	Professional Elective-III(Internet of Things)	2020-21
371	D57	M.Tech (VLSI&SD)	17CD04208	Professional Elective-IV(RF IC Design)	2020-21
372	D57	M.Tech (VLSI&SD)	17CD04211	Mixed signal Lab	2020-21
373	D57	M.Tech (VLSI&SD)	17CD05301	Research Methodology	2020-21
374	D57	M.Tech (VLSI&SD)	17CD04302	MOOC Course I (Development of Real Time Systems)	2020-21
375	D57	M.Tech (VLSI&SD)	17CD04304	Teaching Assignment	2020-21
376	D57	M.Tech (VLSI&SD)	17CD04305	Project Work – Phase I	2020-21
377	D57	M.Tech (VLSI&SD)	17CD04401	Technical Seminar	2020-21
378	D57	M.Tech (VLSI&SD)	17CD04305	Project Work Phase-II	2020-21
379	D58	M.Tech (CSE)	17CD05101	Advanced Data Structures and Algorithms	2020-21
380	D58	M.Tech (CSE)	17CD05102	Fundamentals of Data Science	2020-21
381	D58	M.Tech (CSE)	17CD05103	Computer Organization & Architecture	2020-21
382	D58	M.Tech (CSE)	17CD05104	Advanced Operating System	2020-21
383	D58	M.Tech (CSE)	17CD05105	Professional Elective-I(Software Engineering)	2020-21
384	D58	M.Tech (CSE)	17CD05109	Professional Elective-II(Data Mining and Knowledge Discovery)	2020-21
385	D58	M.Tech (CSE)	17CD05113	Advanced Data Structures and Algorithms Lab	2020-21
386	D58	M.Tech (CSE)	17CD05201	Object Oriented Analysis &Design	2020-21
387	D58	M.Tech (CSE)	17CD05202	Big Data Analytics	2020-21
388	D58	M.Tech (CSE)	17CD05203	Internet of Things	2020-21
389	D58	M.Tech (CSE)	17CD05204	Mobile Application Development	2020-21
390	D58	M.Tech (CSE)	17CD05206	Professional Elective-III(Human Computer Interaction)	2020-21
391	D58	M.Tech (CSE)	17CD05211	Professional Elective-IV(Cloud Computing)	2020-21
392	D58	M.Tech (CSE)	17CD05213	Map Reduce Programming Lab	2020-21
393	D58	M.Tech (CSE)	17CD53301	Research Methodology	2020-21
394	D58	M.Tech (CSE)	17CD05303	MOOC Course(Distributed Systems)	2020-21
395	D58	M.Tech (CSE)	17CD05304	Teaching Assignment	2020-21
396	D58	M.Tech (CSE)	17CD05305	Project work – Phase I	2020-21
397	D58	M.Tech (CSE)	17CD05401	Seminar	2020-21
398	D58	M.Tech (CSE)	17CD05402	Project work – Phase II	2020-21
399	D83	M.Tech (PE&D)	17CD02101	Advanced Power Semiconductor Devices	2020-21
400	D83	M.Tech (PE&D)	17CD02102	Machine Modeling and Analysis	2020-21
401	D83	M.Tech (PE&D)	17CD02103	Solid-State DC Drives	2020-21
402	D83	M.Tech (PE&D)	17CD02104	Applications of Power Electronics to Power Systems	2020-21
403	D83	M.Tech (PE&D)	17CD02107	Professional Elective-I(Advanced Digital Signal Processing)	2020-21
404	D83	M.Tech (PE&D)	17CD02109	Professional Elective-II(Solid State Lighting and Control)	2020-21
405	D83	M.Tech (PE&D)	17CD02111	Power Electronics and Simulation Lab	2020-21
406	D83	M.Tech (PE&D)	17CD02201	Advanced Power Converters	2020-21
407	D83	M.Tech (PE&D)	17CD02202	Power Quality	2020-21
408	D83	M.Tech (PE&D)	17CD02203	Advanced Drives & Control	2020-21
409	D83	M.Tech (PE&D)	17CD02204	Renewable Energy Conversion Systems	2020-21
410	D83	M.Tech (PE&D)	17CD02207	Professional Elective-III(HVDC & EHVAC Transmission Systems)	2020-21
411	D83	M.Tech (PE&D)	17CD02209	Professional Elective-IV(Energy Efficient Electrical Systems)	2020-21
412	D83	M.Tech (PE&D)	17CD02211	Electrical Drives and Simulation Lab	2020-21
413	D83	M.Tech (PE&D)	17CD53301	Research Methodology	2020-21
414	D83	M.Tech (PE&D)	17CD02302	MOOC Course(Industrial Automation and Control)	2020-21
415	D83	M.Tech (PE&D)	17CD02304	Teaching Assignment	2020-21
416	D83	M.Tech (PE&D)	17CD02305	Project work – Phase I	2020-21
417	D83	M.Tech (PE&D)	17CD02401	Seminar	2020-21
418	D83	M.Tech (PE&D)	17CD02402	Project work – Phase II	2020-21

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AY 2019-20

S.No	Program code	Program name	Course code	Course name	Year of offering the course
1	02	B.Tech EEE	19CA54101	Mathematics - I	2019-2020
2	02	B.Tech EEE	19CA51101	Engineering Chemistry	2019-2020
3	02	B.Tech EEE	19CA03101	Engineering Graphics & Design	2019-2020
4	02	B.Tech EEE	19CA03103	Basic Civil & Mechanical Engineering	2019-2020
5	02	B.Tech EEE	19CA51103	Environmental Science	2019-2020
6	02	B.Tech EEE	19CA51102	Engineering Chemistry Lab	2019-2020
7	02	B.Tech EEE	19CA51104	Basic Civil & Mechanical Engineering	2019-2020
8	02	B.Tech EEE	19CA02101	Basic Electrical Engineering Workshop	2019-2020
9	02	B.Tech EEE	19CA54201	Mathematics - II	2019-2020
10	02	B.Tech EEE	19CA55103	Applied Physics	2019-2020
11	02	B.Tech EEE	19CA02201	Electrical Circuits - I	2019-2020
12	02	B.Tech EEE	19CA52101	Communicative English - I	2019-2020
13	02	B.Tech EEE	19CA05101	Problem Solving & Programming	2019-2020
14	02	B.Tech EEE	19CA56201	Constitution of India	2019-2020
15	02	B.Tech EEE	19CA55104	Applied Physics Lab	2019-2020
16	02	B.Tech EEE	19CA02202	Electrical Circuits – I Lab	2019-2020
17	02	B.Tech EEE	19CA05102	Problem Solving & Programming Lab	2019-2020
18	02	B.Tech EEE	19CA03102	Basic Engineering Workshop	2019-2020
19	02	B.Tech EEE	19CA52102	Communicative English - ILab	2019-2020
20	03	B.Tech MECH	19CA54101	Mathematics I	2019-2020
21	03	B.Tech MECH	19CA55103	Applied Physics	2019-2020
22	03	B.Tech MECH	19CA05101	Problem Solving and Programming	2019-2020
23	03	B.Tech MECH	19CA52101	Communicative English I	2019-2020
24	03	B.Tech MECH	19CA51103	Environmental Science	2019-2020
25	03	B.Tech MECH	19CA03102	Basic Engineering Workshop	2019-2020
26	03	B.Tech MECH	19CA55104	Applied Physics Lab	2019-2020
27	03	B.Tech MECH	19CA05102	Problem Solving and Programming Lab	2019-2020
28	03	B.Tech MECH	19CA52102	Communicative English I Lab	2019-2020
29	03	B.Tech MECH	19CA54201	Mathematics II	2019-2020
30	03	B.Tech MECH	19CA51101	Engineering Chemistry	2019-2020
31	03	B.Tech MECH	19CA03201	Engineering Graphics	2019-2020
32	03	B.Tech MECH	19CA05101	Problem Solving and Programming	2019-2020
33	03	B.Tech MECH	19CA03202	Material Science and Engineering	2019-2020
34	03	B.Tech MECH	19CA56201	Constitution of India	2019-2020
35	03	B.Tech MECH	19CA51102	Engineering Chemistry Lab	2019-2020
36	03	B.Tech MECH	19CA05102	Problem Solving & Programming Lab	2019-2020
37	03	B.Tech MECH	19CA03203	Material Science and Engineering Lab	2019-2020
38	03	B.Tech MECH	19CA03204	Mechanical Engineering Workshop	2019-2020
39	04	B.Tech ECE	19CA54101	Mathematics I	2019-2020
40	04	B.Tech ECE	19CA55103	Applied Physics	2019-2020
41	04	B.Tech ECE	19CA05101	Problem Solving and Programming	2019-2020
42	04	B.Tech ECE	19CA52101	Communicative English I	2019-2020
43	04	B.Tech ECE	19CA51103	Environmental Science	2019-2020
44	04	B.Tech ECE	19CA03102	Basic Engineering Workshop	2019-2020
45	04	B.Tech ECE	19CA55104	Applied Physics Lab	2019-2020
46	04	B.Tech ECE	19CA05102	Problem Solving and Programming Lab	2019-2020
47	04	B.Tech ECE	19CA52102	Communicative English I Lab	2019-2020
48	04	B.Tech ECE	19CA54201	Mathematics II	2019-2020
49	04	B.Tech ECE	19CA51101	Engineering Chemistry	2019-2020
50	04	B.Tech ECE	19CA02203	Principles of Electrical Engineering	2019-2020
51	04	B.Tech ECE	19CA03103	Basic Civil & Mechanical Engineering	2019-2020
52	04	B.Tech ECE	19CA03101	Engineering Graphics & Design	2019-2020
53	04	B.Tech ECE	19CA56201	Constitution of India	2019-2020
54	04	B.Tech ECE	19CA04201	Electronics & Communication Engineering Workshop	2019-2020
55	04	B.Tech ECE	19CA51102	Engineering Chemistry lab	2019-2020
56	04	B.Tech ECE	19CA02204	Principles of Electrical Engineering Lab	2019-2020
57	04	B.Tech ECE	19CA03206	Basic Civil & Mechanical Engineering Lab	2019-2020
58	05	B.Tech CSE	19CA54101	Mathematics - I	2019-2020

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59	05	B.Tech CSE	19CA51101	Engineering Chemistry	2019-2020
60	05	B.Tech CSE	19CA05101	Problem Solving and Programming	2019-2020
61	05	B.Tech CSE	19CA03101	Engineering Graphics and Design	2019-2020
62	05	B.Tech CSE	19CA51103	Environmental Science	2019-2020
63	05	B.Tech CSE	19CA03102	Basic Engineering Workshop	2019-2020
64	05	B.Tech CSE	19CA51102	Engineering Chemistry Lab	2019-2020
65	05	B.Tech CSE	19CA05102	Problem Solving and Programming Lab	2019-2020
66	05	B.Tech CSE	19CA02101	Essential Electrical and Electronics Engineering	2019-2020
67	05	B.Tech CSE	19CA54202	Probability and Statistics	2019-2020
68	05	B.Tech CSE	19CA55103	Applied Physics	2019-2020
69	05	B.Tech CSE	19CA05201	Python Programming	2019-2020
70	05	B.Tech CSE	19CA52101	Communicative English –I	2019-2020
71	05	B.Tech CSE	19CA56201	Constitution of India	2019-2020
72	05	B.Tech CSE	19CA02102	Essential Electrical and Electronic Engineering Lab	2019-2020
73	05	B.Tech CSE	19CA55104	Applied Physics Lab	2019-2020
74	05	B.Tech CSE	19CA05202	Python Programming Lab	2019-2020
75	05	B.Tech CSE	19CA52102	Communicative English –I Lab	2019-2020
76	05	B.Tech CSE	19CA05203	Computer Science and Engineering Workshop	2019-2020
77	E0	MBA	17CE00101	Management & Organisational Behaviour	2019-2020
78	E0	MBA	17CE00102	Managerial Economics	2019-2020
79	E0	MBA	17CE00103	Accounting for Managers	2019-2020
80	E0	MBA	17CE00104	Business Statistics	2019-2020
81	E0	MBA	17CE00105	Business Communication	2019-2020
82	E0	MBA	17CE00106	Business Research Methods - I	2019-2020
83	E0	MBA	17CE00107	Information Technology for Managers	2019-2020
84	E0	MBA	17CE00108	Business Communication Lab-I	2019-2020
85	E0	MBA	17CE00109	Information Technology Lab	2019-2020
86	E0	MBA	17CE00201	Human Resource Management	2019-2020
87	E0	MBA	17CE00202	Financial Management	2019-2020
88	E0	MBA	17CE00203	Marketing Management	2019-2020
89	E0	MBA	17CE00204	Operations Research	2019-2020
90	E0	MBA	17CE00205	Business Environment	2019-2020
91	E0	MBA	17CE00206	Operations Management	2019-2020
92	E0	MBA	17CE00207	Management Information Systems	2019-2020
93	E0	MBA	17CE00208	Business Analytics Lab	2019-2020
94	E0	MBA	17CE00209	Business Communication Lab-II	2019-2020
95	E0	MBA	17CE00301	Entrepreneurship Development	2019-2020
96	E0	MBA	17CE00302	Business Research Methods - 2	2019-2020
97	E0	MBA	17CE00303	Business Simulation Laboratory	2019-2020
98	E0	MBA	17CE00401	Strategic Management	2019-2020
99	E0	MBA	17CE00402	International Business Management	2019-2020
100	E0	MBA	17CE00403	Legal Aspects of Business	2019-2020
101	E0	MBA	17CE00404	Project Viva Voce & Report Submission	2019-2020
102	02	B.Tech EEE	17CA54301	Mathematics -III	2019-2020
103	02	B.Tech EEE	17CA02301	DC Machines	2019-2020
104	02	B.Tech EEE	17CA02302	Electrical Circuits-II	2019-2020
105	02	B.Tech EEE	17CA02303	Electrical Measurements and Instrumentation	2019-2020
106	02	B.Tech EEE	17CA04301	Electronic Devices and Circuits	2019-2020
107	02	B.Tech EEE	17CA02304	Electromagnetic Field Theory	2019-2020
108	02	B.Tech EEE	17CA56301	Mandatory Course(Human Values and Professional Ethics)	2019-2020
109	02	B.Tech EEE	17CA02305	Electrical Circuits and Simulation Laboratory	2019-2020
110	02	B.Tech EEE	17CA04305	Electronic Devices and Circuits Laboratory	2019-2020
111	02	B.Tech EEE	17CA02401	Power Generation Systems	2019-2020
112	02	B.Tech EEE	17CA02402	AC Machines-I	2019-2020
113	02	B.Tech EEE	17CA04407	Linear and Digital Integrated Circuits	2019-2020
114	02	B.Tech EEE	17CA53501	Business Economics and Financial Analysis	2019-2020
115	02	B.Tech EEE	17CA54401	Mathematics -IV Analog Electronic Circuits	2019-2020
116	02	B.Tech EEE	17CA57401	Value Added Course-I (Finishing)	2019-2020

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117	02	B.Tech EEE	17CA02403	DC Machines Laboratory	2019-2020
118	02	B.Tech EEE	17CA02404	Electrical Measurements and Instrumentation Laboratory	2019-2020
119	03	B.Tech MECH	17CA54301	Mathematics-III	2019-2020
120	03	B.Tech MECH	17CA03301	Thermodynamics	2019-2020
121	03	B.Tech MECH	17CA03302	Engineering Mechanics	2019-2020
122	03	B.Tech MECH	17CA03303	Manufacturing Technology	2019-2020
123	03	B.Tech MECH	17CA53301	Managerial Economics and Financial Analysis	2019-2020
124	03	B.Tech MECH	17CA03304	Engineering Drawing for Mechanical Engineers	2019-2020
125	03	B.Tech MECH	17CA03305	Computer Aided Drafting Laboratory	2019-2020
126	03	B.Tech MECH	17CA03306	Manufacturing Technology Laboratory	2019-2020
127	03	B.Tech MECH	17CA56301	Mandatory Course	2019-2020
128	03	B.Tech MECH	17CA54302	Probability and Statistics	2019-2020
129	03	B.Tech MECH	17CA02405	Basic Electrical And Electronic Technology	2019-2020
130	03	B.Tech MECH	17CA03401	Mechanics of Solids	2019-2020
131	03	B.Tech MECH	17CA03402	Thermal Engineering-I	2019-2020
132	03	B.Tech MECH	17CA03403	Machine Drawing	2019-2020
133	03	B.Tech MECH	17CA03404	Kinematics of Machinery	2019-2020
134	03	B.Tech MECH	17CA03405	Mechanics of Solids Laboratory	2019-2020
135	03	B.Tech MECH	17CA03406	Thermal Engineering Laboratory	2019-2020
136	03	B.Tech MECH	17CA57408	Value added Course-I(HVAC Duct Design)	2019-2020
137	04	B.Tech ECE	17CA54302	Complex analysis and Partial Differential equations	2019-2020
138	04	B.Tech ECE	17CA04301	Electronic Devices & Circuits	2019-2020
139	04	B.Tech ECE	17CA04302	Switching Theory and Logic Design	2019-2020
140	04	B.Tech ECE	17CA04303	Probability Theory & Stochastic Processes	2019-2020
141	04	B.Tech ECE	17CA04304	Signals and Systems	2019-2020
142	04	B.Tech ECE	17CA02306	Basic Electrical Technology	2019-2020
143	04	B.Tech ECE	17CA04305	Electronic Devices and Circuits Laboratory	2019-2020
144	04	B.Tech ECE	17CA02307	Electrical Technology and Simulation Laboratory	2019-2020
145	04	B.Tech ECE	17CA56301	Mandatory Course	2019-2020
146	04	B.Tech ECE	17CA04401	Electronic Circuit Analysis	2019-2020
147	04	B.Tech ECE	17CA04402	Analog Communications	2019-2020
148	04	B.Tech ECE	17CA04403	Linear IC Application	2019-2020
149	04	B.Tech ECE	17CA02501	Control Systems	2019-2020
150	04	B.Tech ECE	17CA04404	Electromagnetic Theory & Transmission Lines	2019-2020
151	04	B.Tech ECE	17CA53301	Managerial Economics and Financial Analysis	2019-2020
152	04	B.Tech ECE	17CA04405	Electronic Circuit Analysis Lab	2019-2020
153	04	B.Tech ECE	17CA04406	Analog Communications Lab	2019-2020
154	04	B.Tech ECE	17CA57406	Value Added Course(Microsoft Certified Engineer)	2019-2020
155	05	B.Tech CSE	17CA54302	Probability and Statistics	2019-2020
156	05	B.Tech CSE	17CA04306	Digital Logic Design	2019-2020
157	05	B.Tech CSE	17CA05301	Discrete Mathematical Structures	2019-2020
158	05	B.Tech CSE	17CA05302	Database Management Systems	2019-2020
159	05	B.Tech CSE	17CA02308	Basic Electrical and Electronics Engineering	2019-2020
160	05	B.Tech CSE	17CA53301	Managerial Economics and Financial Analysis	2019-2020
161	05	B.Tech CSE	17CA56301	Mandatory Course	2019-2020
162	05	B.Tech CSE	17CA05303	Database Management Systems Laboratory	2019-2020
163	05	B.Tech CSE	17CA02309	Basic Electrical and Electronics Laboratory	2019-2020
164	05	B.Tech CSE	17CA05401	Theory of Computation	2019-2020
165	05	B.Tech CSE	17CA05402	Software Engineering	2019-2020
166	05	B.Tech CSE	17CA05403	Computer Organization	2019-2020
167	05	B.Tech CSE	17CA05404	Statistics & R	2019-2020
168	05	B.Tech CSE	17CA05405	Java Programming	2019-2020
169	05	B.Tech CSE	17CA05406	Design and Analysis of Algorithms	2019-2020
170	05	B.Tech CSE	17CA57401	Value Added Course-II(Matlab)	2019-2020
171	05	B.Tech CSE	17CA05407	Statistics & R Laboratory	2019-2020
172	05	B.Tech CSE	17CA05408	Java Programming Laboratory	2019-2020
173	02	B.Tech EEE	17CA02501	Control Systems	2019-2020
174	02	B.Tech EEE	17CA02502	Power Electronics	2019-2020

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175	02	B.Tech EEE	17CA02503	Transmission and Distribution Systems	2019-2020
176	02	B.Tech EEE	17CA04531	Digital Circuits and Systems	2019-2020
177	02	B.Tech EEE	17CA02504	AC Machines – II	2019-2020
178	02	B.Tech EEE	17CA02508	**Professional Elective – I(Power Quality)**	2019-2020
179	02	B.Tech EEE	17CA02509	Control Systems and Simulation Laboratory	2019-2020
180	02	B.Tech EEE	17CA02510	AC Machines Laboratory	2019-2020
181	02	B.Tech EEE	17CA52501	Soft Skills Lab	2019-2020
182	02	B.Tech EEE	17CA02601	Power System Analysis	2019-2020
183	02	B.Tech EEE	17CA02602	Solid State Electric Motor Drives	2019-2020
184	02	B.Tech EEE	17CA04604	Micro Processors and Microcontrollers	2019-2020
185	02	B.Tech EEE	17CA02603	Power System Protection	2019-2020
186	02	B.Tech EEE	17CA02606	**Professional Elective - II(Energy Audit and Management)**	2019-2020
187	02	B.Tech EEE	17CA02610	Power Electronics and Simulation Laboratory	2019-2020
188	02	B.Tech EEE	17CA04610	Microprocessors And Microcontrollers Laboratory	2019-2020
189	03	B.Tech MECH	17CA03501	Machine Tools	2019-2020
190	03	B.Tech MECH	17CA03502	Dynamics of Machinery	2019-2020
191	03	B.Tech MECH	17CA03503	Machine Design-I	2019-2020
192	03	B.Tech MECH	17CA03504	Thermal Engineering-II	2019-2020
193	03	B.Tech MECH	17CA03505	Fluid Mechanics and Hydraulic Machines	2019-2020
194	03	B.Tech MECH	17CA03509	**Professional Elective – I(Power Plant Engineering)**	2019-2020
195	03	B.Tech MECH	17CA03510	Machine Tools Laboratory	2019-2020
196	03	B.Tech MECH	17CA03511	Fluid Mechanics and Hydraulic Machines Laboratory	2019-2020
197	03	B.Tech MECH	17CA52501	Soft skills Lab	2019-2020
198	03	B.Tech MECH	17CA03601	Finite Element Methods	2019-2020
199	03	B.Tech MECH	17CA03602	Machine Design-II	2019-2020
200	03	B.Tech MECH	17CA03603	Heat Transfer	2019-2020
201	03	B.Tech MECH	17CA03604	Metal forming Process	2019-2020
202	03	B.Tech MECH	17CA03607	**Professional Elective - II(Modern Manufacturing Methods)**	2019-2020
203	03	B.Tech MECH	17CA052601	**Open Elective(Soft Skills -II)**	2019-2020
204	03	B.Tech MECH	17CA03610	CAE Laboratory	2019-2020
205	03	B.Tech MECH	17CA03611	Heat Transfer Laboratory	2019-2020
206	03	B.Tech MECH	17CA03612	Mini Project	2019-2020
207	04	B.Tech ECE	17CA04501	Digital Communication systems	2019-2020
208	04	B.Tech ECE	17CA04502	Digital System Design	2019-2020
209	04	B.Tech ECE	17CA04503	Antennas & Wave Propagation	2019-2020
210	04	B.Tech ECE	17CA04504	Electronic Measurements and Instrumentation	2019-2020
211	04	B.Tech ECE	17CA05403	Computer Organization	2019-2020
212	04	B.Tech ECE	17CA04506	**Professional Elective – I(Artificial Neural Networks and Fuzzy Logic)**	2019-2020
213	04	B.Tech ECE	17CA04509	Linear & Digital IC Applications	2019-2020
214	04	B.Tech ECE	17CA04510	Digital Communication lab	2019-2020
215	04	B.Tech ECE	17CA52501	Soft Skills Lab	2019-2020
216	04	B.Tech ECE	17CA04601	Digital Signal Processing	2019-2020
217	04	B.Tech ECE	17CA04602	VLSI System Design	2019-2020
218	04	B.Tech ECE	17CA04603	Microwave Engineering	2019-2020
219	04	B.Tech ECE	17CA04604	Microprocessors & Microcontrollers	2019-2020
220	04	B.Tech ECE	17CA04605	**Professional Elective - II(Satellite Communication)**	2019-2020
221	04	B.Tech ECE	17CA052601	**Open Elective – I(Soft Skills-II)**	2019-2020
222	04	B.Tech ECE	17CA04609	Digital Signal Processing lab	2019-2020
223	04	B.Tech ECE	17CA04610	Microprocessors & Microcontrollers Lab	2019-2020
224	04	B.Tech ECE	17CA04611	Mini Project	2019-2020
225	05	B.Tech CSE	17CA05501	Operating Systems	2019-2020
226	05	B.Tech CSE	17CA05502	Computer Networks	2019-2020
227	05	B.Tech CSE	17CA05503	Compiler Design	2019-2020
228	05	B.Tech CSE	17CA05504	Object Oriented Analysis and Design	2019-2020
229	05	B.Tech CSE	17CA04511	Microprocessors and [illegible]	2019-2020
230	05	B.Tech CSE	17CA05507	Professional [illegible]	2019-2020
231	05	B.Tech CSE	17CA05509	Object Oriented Analysis Design Laboratory	2019-2020
232	05	B.Tech CSE	17CA04512	Microprocessors and Interfacing Laboratory	2019-2020

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233	05	B.Tech CSE	17CA52501	Soft Skills Lab	2019-2020
234	05	B.Tech CSE	17CA05601	Software Testing Methodologies	2019-2020
235	05	B.Tech CSE	17CA05602	Web Programming	2019-2020
236	05	B.Tech CSE	17CA05603	Data Warehousing and Data Mining	2019-2020
237	05	B.Tech CSE	17CA05604	Design Patterns	2019-2020
238	05	B.Tech CSE	17CA05606	Professional Elective – II(Distributed Systems)	2019-2020
239	05	B.Tech CSE	17CA052601	Open Elective – I(Soft Skills-II)	2019-2020
240	05	B.Tech CSE	17CA05609	Software Testing Methodologies Laboratory *	2019-2020
241	05	B.Tech CSE	17CA05610	Digital Signal Processing lab	2019-2020
242	05	B.Tech CSE	17CA05611	Microprocessors & Microcontrollers Lab	2019-2020
243	02	B.Tech EEE	15A02701	Electrical Distribution Systems	2019-2020
244	02	B.Tech EEE	15A04603	Digital Signal Processing	2019-2020
245	02	B.Tech EEE	15A02702	Power System Operation and Control	2019-2020
246	02	B.Tech EEE	15A02703	Utilisation of Electrical Energy	2019-2020
247	02	B.Tech EEE	15A02705	CBCC-II(Switched Mode Power Converters)	2019-2020
248	02	B.Tech EEE	15A02707	CBCC-II(Smart Grid)	2019-2020
249	02	B.Tech EEE	15A04606	Digital Signal Processing Laboratory	2019-2020
250	02	B.Tech EEE	15A02710	Power Systems & Simulation Laboratory	2019-2020
251	02	B.Tech EEE	15A02802	MOOCS – II(Power System Dynamics and Control)	2019-2020
252	02	B.Tech EEE	15A02804	MOOCS – II(HVDC Transmission)	2019-2020
253	02	B.Tech EEE	15A02806	Comprehensive Viva Voce	2019-2020
254	02	B.Tech EEE	15A02807	Technical Seminar	2019-2020
255	02	B.Tech EEE	15A02808	Project Work *	2019-2020
256	03	B.Tech MECH	15A52601	Management Science	2019-2020
257	03	B.Tech MECH	15A03701	Automobile Engineering	2019-2020
258	03	B.Tech MECH	15A03702	CAD/CAM	2019-2020
259	03	B.Tech MECH	15A03703	Metrology and Measurements	2019-2020
260	03	B.Tech MECH	15A03704	CBCC-II(Refrigeration and Air Conditioning)	2019-2020
261	03	B.Tech MECH	15A03707	CBCC-II(Computational Fluid Dynamics)	2019-2020
262	03	B.Tech MECH	15A03710	CAD/ CAM Laboratory	2019-2020
263	03	B.Tech MECH	15A03711	Metrology and Measurements Laboratory	2019-2020
264	03	B.Tech MECH	15A03708	MOOCS-II(Computational Fluid Dynamics)	2019-2020
265	03	B.Tech MECH	15A03804	MOOCS -II(Power Plant Engineering)	2019-2020
266	03	B.Tech MECH	15A03807	Comprehensive Viva Voce	2019-2020
267	03	B.Tech MECH	15A03808	Technical Seminar	2019-2020
268	03	B.Tech MECH	15A03809	Project work *	2019-2020
269	04	B.Tech ECE	15A04701	Optical Fiber Communication	2019-2020
270	04	B.Tech ECE	15A04702	Embedded Systems	2019-2020
271	04	B.Tech ECE	15A04703	Microwave Engineering	2019-2020
272	04	B.Tech ECE	15A04704	Data Communications and Networking	2019-2020
273	04	B.Tech ECE	15A04705	CBCC-II(Radar Systems)	2019-2020
274	04	B.Tech ECE	15A04708	CBCC-II(Digital Image Processing)	2019-2020
275	04	B.Tech ECE	15A04711	Microwave and Optical Communication Laboratory	2019-2020
276	04	B.Tech ECE	15A04712	VLSI & Embedded Systems Laboratory	2019-2020
277	04	B.Tech ECE	15A04802	MOOCS-II(Low Power VLSI Circuits & Systems)	2019-2020
278	04	B.Tech ECE	15A04804	MOOCS-II (RF Integrated Circuits)	2019-2020
279	04	B.Tech ECE	15A04805	Comprehensive Viva Voce	2019-2020
280	04	B.Tech ECE	15A04806	Technical Seminar	2019-2020
281	04	B.Tech ECE	15A04807	Project Work	2019-2020
282	05	B.Tech CSE	15A52601	Management Science	2019-2020
283	05	B.Tech CSE	15A05701	Grid & Cloud Computing	2019-2020
284	05	B.Tech CSE	15A05702	Information Security	2019-2020
285	05	B.Tech CSE	15A05703	Mobile Application Development	2019-2020
286	05	B.Tech CSE	15A05704	CBCC-II(Software Architecture)	2019-2020
287	05	B.Tech CSE	15A05707	CBCC-II(Software Project Management)	2019-2020
288	05	B.Tech CSE	15A05710	Grid & Cloud Computing Laboratory	2019-2020
289	05	B.Tech CSE	15A05711	Mobile Application Development Laboratory	2019-2020
290	05	B.Tech CSE	15A05802	MOOCS-II(Mobile Computing)	2019-2020

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291	05	B.Tech CSE	15A05804	MOOCS-II(Building Large Scale Software Systems)	2019-2020
292	05	B.Tech CSE	15A05807	Comprehensive Viva-Voce	2019-2020
293	05	B.Tech CSE	15A05808	Technical Seminar	2019-2020
294	05	B.Tech CSE	15A05809	Project Work	2019-2020
295	E0	MBA	17CE00301	Entrepreneurship Development	2019-2020
296	E0	MBA	17CE00302	Business Research Methods II	2019-2020
297	E0	MBA	17CE00311	Services Marketing	2019-2020
298	E0	MBA	17CE00331	Performance Management	2019-2020
299	E0	MBA	17CE00322	Financial Institutions, Markets and Services	2019-2020
300	E0	MBA	17CE00332	Human Resource Development	2019-2020
301	E0	MBA	17CE00321	Security Analysis & Portfolio Management	2019-2020
302	E0	MBA	17CE00333	Organisational Development	2019-2020
303	E0	MBA	17CE00314	Retail Management	2019-2020
304	E0	MBA	17CE00334	Employee Engagement and Empowerment	2019-2020
305	E0	MBA	17CE00312	Internet Marketing	2019-2020
306	E0	MBA	17CE00303	Business Simulation Laboratory II	2019-2020
307	E0	MBA	17CE00401	Strategic Management	2019-2020
308	E0	MBA	17CE00402	International Business Management	2019-2020
309	E0	MBA	17CE00403	Legal Aspects of Business	2019-2020
310	E0	MBA	17CE00411	International Marketing	2019-2020
311	E0	MBA	17CE00431	Knowledge Management	2019-2020
312	E0	MBA	17CE00424	Financial Derivatives	2019-2020
313	E0	MBA	17CE00432	International Human Resource Management	2019-2020
314	E0	MBA	17CE00414	Advertisement and Sales Promotion Management	2019-2020
315	E0	MBA	17CE00404	Project Work	2019-2020
316	F0	MCA	17CF00301	Database Management Systems	2019-2020
317	F0	MCA	17CF00302	Computer Networks	2019-2020
318	F0	MCA	17CF00303	Linux Programming	2019-2020
319	F0	MCA	17CF00304	Software Engineering	2019-2020
320	F0	MCA	17CF00305	Java Programming	2019-2020
321	F0	MCA	17CF00306	Database Management Systems Lab	2019-2020
322	F0	MCA	17CF00307	Linux Programming Lab	2019-2020
323	F0	MCA	17CF00308	Java Programming Lab	2019-2020
324	F0	MCA	17CF00401	Object Oriented Analysis and Design	2019-2020
325	F0	MCA	17CF00402	Web Technologies	2019-2020
326	F0	MCA	17CF00403	Data Warehousing and Mining	2019-2020
327	F0	MCA	17CF00405	Information Security (Elective – I)	2019-2020
328	F0	MCA	17CF00408	Distributed Systems (Elective – II)	2019-2020
329	F0	MCA	17CF00410	Object Oriented Analysis and Design Lab	2019-2020
330	F0	MCA	17CF00411	Web Technologies Lab	2019-2020
331	F0	MCA	17CF00413	Data Warehousing and Mining Lab	2019-2020
332	D04	M.Tech (CAD/CAM)	17CD54101	Computational Methods	2019-2020
333	D04	M.Tech (CAD/CAM)	17CD03101	Advanced Finite Element Methods	2019-2020
334	D04	M.Tech (CAD/CAM)	17CD03102	Computer Integrated Manufacturing	2019-2020
335	D04	M.Tech (CAD/CAM)	17CD03103	Advances in Manufacturing Technology	2019-2020
336	D04	M.Tech (CAD/CAM)	17CD03105	PE-I (Computer Aided Process Planning)	2019-2020
337	D04	M.Tech (CAD/CAM)	17CD03108	PE-II(Rapid Prototyping)	2019-2020
338	D04	M.Tech (CAD/CAM)	17CD03110	Modelling And CNC Lab	2019-2020
339	D04	M.Tech (CAD/CAM)	17CD03201	Advanced Optimization Techniques	2019-2020
340	D04	M.Tech (CAD/CAM)	17CD03202	Industrial Robotics and Expert systems	2019-2020
341	D04	M.Tech (CAD/CAM)	17CD03203	CNC Technology & programming	2019-2020
342	D04	M.Tech (CAD/CAM)	17CD03204	Mechatronics Applications in Manufacturing	2019-2020
343	D04	M.Tech (CAD/CAM)	17CD03208	PE-III(Special Manufacturing Process)	2019-2020
344	D04	M.Tech (CAD/CAM)	17CD03209	PE-IV(Global Integrated Manufacturing)	2019-2020
345	D04	M.Tech (CAD/CAM)	17CD03211	CAD/CAM Lab	2019-2020
346	D04	M.Tech (CAD/CAM)	17CD53301	Research Methodology	2019-2020
347	D04	M.Tech (CAD/CAM)	17CD03301	MOOC Course(Design for Manufacturing)	2019-2020
348	D04	M.Tech (CAD/CAM)	17CD03304	Teaching Assignment	2019-2020
349	D04	M.Tech (CAD/CAM)	17CD03305	Project work – Phase I	2019-2020
350	D04	M.Tech (CAD/CAM)	17CD03401	Seminar	2019-2020
351	D04	M.Tech (CAD/CAM)	17CD03402	Project work – Phase II	2019-2020
352	D57	M.Tech (VLSI&SD)	17CD04101	Structural Digital System Design	2019-2020
353	D57	M.Tech (VLSI&SD)	17CD04102	CMOS Analog IC Design	2019-2020
354	D57	M.Tech (VLSI&SD)	17CD04103	CMOS Digital IC Design	2019-2020
355	D57	M.Tech (VLSI&SD)	17CD04104	Hardware Description Languages	2019-2020
356	D57	M.Tech (VLSI&SD)	17CD04106	Professional Elective-I(Low Power VLSI Design)	2019-2020
357	D57	M.Tech (VLSI&SD)	17CD04109	Professional Elective-II(Embedded System Design)	2019-2020
358	D57	M.Tech (VLSI&SD)	17CD04111	Digital System Design Lab	2019-2020
359	D57	M.Tech (VLSI&SD)	17CD04201	CPLD and FPGA Architectures and Applications	2019-2020
360	D57	M.Tech (VLSI&SD)	17CD04202	Testing & Testability	2019-2020
361	D57	M.Tech (VLSI&SD)	17CD04203	CMOS Mixed Signal Design	2019-2020
362	D57	M.Tech (VLSI&SD)	17CD04204	Algorithms for VLSI Design Automation	2019-2020

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363	D57	M.Tech (VLSI&SD)	17CD04205	Professional Elective-III(Internet of Things)	2019-2020
364	D57	M.Tech (VLSI&SD)	17CD04208	Professional Elective-IV(RF IC Design)	2019-2020
365	D57	M.Tech (VLSI&SD)	17CD04211	Mixed signal Lab	2019-2020
366	D57	M.Tech (VLSI&SD)	17CD05301	Research Methodology	2019-2020
367	D57	M.Tech (VLSI&SD)	17CD04302	MOOC Course 1 (Development of Real Time Systems)	2019-2020
368	D57	M.Tech (VLSI&SD)	17CD04304	Teaching Assignment	2019-2020
369	D57	M.Tech (VLSI&SD)	17CD04305	Project Work – Phase I	2019-2020
370	D57	M.Tech (VLSI&SD)	17CD04401	Technical Seminar	2019-2020
371	D57	M.Tech (VLSI&SD)	17CD04305	Project Work Phase-II	2019-2020
372	D58	M.Tech (CSE)	17CD05101	Advanced Data Structures and Algorithms	2019-2020
373	D58	M.Tech (CSE)	17CD05102	Fundamentals of Data Science	2019-2020
374	D58	M.Tech (CSE)	17CD05103	Computer Organization & Architecture	2019-2020
375	D58	M.Tech (CSE)	17CD05104	Advanced Operating System	2019-2020
376	D58	M.Tech (CSE)	17CD05105	Professional Elective-I(Software Engineering)	2019-2020
377	D58	M.Tech (CSE)	17CD05109	Professional Elective-II(Data Mining and Knowledge Discovery)	2019-2020
378	D58	M.Tech (CSE)	17CD05113	Advanced Data Structures and Algorithms Lab	2019-2020
379	D58	M.Tech (CSE)	17CD05201	Object Oriented Analysis &Design	2019-2020
380	D58	M.Tech (CSE)	17CD05202	Big Data Analytics	2019-2020
381	D58	M.Tech (CSE)	17CD05203	Internet of Things	2019-2020
382	D58	M.Tech (CSE)	17CD05204	Mobile Application Development	2019-2020
383	D58	M.Tech (CSE)	17CD05206	Professional Elective-III(Human Computer Interaction)	2019-2020
384	D58	M.Tech (CSE)	17CD05211	Professional Elective-IV(Cloud Computing)	2019-2020
385	D58	M.Tech (CSE)	17CD05213	Map Reduce Programming Lab	2019-2020
386	D58	M.Tech (CSE)	17CD53301	Research Methodology	2019-2020
387	D58	M.Tech (CSE)	17CD05302	MOOC Course(Distributed Systems)	2019-2020
388	D58	M.Tech (CSE)	17CD05304	Teaching Assignment	2019-2020
389	D58	M.Tech (CSE)	17CD05305	Project work – Phase I	2019-2020
390	D58	M.Tech (CSE)	17CD05401	Seminar	2019-2020
391	D58	M.Tech (CSE)	17CD05402	Project work – Phase II	2019-2020
392	D83	M.Tech (PE&D)	17CD02101	Advanced Power Semiconductor Devices	2019-2020
393	D83	M.Tech (PE&D)	17CD02102	Machine Modeling and Analysis	2019-2020
394	D83	M.Tech (PE&D)	17CD02103	Solid-State DC Drives	2019-2020
395	D83	M.Tech (PE&D)	17CD02104	Applications of Power Electronics to Power Systems	2019-2020
396	D83	M.Tech (PE&D)	17CD02107	Professional Elective-I(Advanced Digital Signal Processing)	2019-2020
397	D83	M.Tech (PE&D)	17CD02109	Professional Elective-II(Solid State Lighting and Control)	2019-2020
398	D83	M.Tech (PE&D)	17CD02111	Power Electronics and Simulation Lab	2019-2020
399	D83	M.Tech (PE&D)	17CD02201	Advanced Power Converters	2019-2020
400	D83	M.Tech (PE&D)	17CD02202	Power Quality	2019-2020
401	D83	M.Tech (PE&D)	17CD02203	Advanced Drives & Control	2019-2020
402	D83	M.Tech (PE&D)	17CD02204	Renewable Energy Conversion Systems	2019-2020
403	D83	M.Tech (PE&D)	17CD02207	Professional Elective-III(HVDC & EHVAC Transmission Systems)	2019-2020
404	D83	M.Tech (PE&D)	17CD02209	Professional Elective-IV(Energy Efficient Electrical Systems)	2019-2020
405	D83	M.Tech (PE&D)	17CD02211	Electrical Drives and Simulation Lab	2019-2020
406	D83	M.Tech (PE&D)	17CD53301	Research Methodology	2019-2020
407	D83	M.Tech (PE&D)	17CD02302	MOOC Course(Industrial Automation and Control)	2019-2020
408	D83	M.Tech (PE&D)	17CD02304	Teaching Assignment	2019-2020
409	D83	M.Tech (PE&D)	17CD02305	Project work – Phase I	2019-2020
410	D83	M.Tech (PE&D)	17CD02401	Seminar	2019-2020
411	D83	M.Tech (PE&D)	17CD02402	Project work – Phase II	2019-2020

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3.1 List of courses offered across all programs during last five years

AY 2018-19

S.No	Program code	Program name	Course code	Course name	Year of offering the course
1	2	B.Tech EEE	17CA52101	Functional English	2018-2019
2	2	B.Tech EEE	17CA54101	Mathematics-I	2018-2019
3	2	B.Tech EEE	17CA05101	Computer Programming	2018-2019
4	2	B.Tech EEE	17CA55101	Engineering Physics	2018-2019
5	2	B.Tech EEE	17CA03101	Engineering Drawing	2018-2019
6	2	B.Tech EEE	17CA52102	English Language and Communication Skills Lab	2018-2019
7	2	B.Tech EEE	17CA55102	Engineering Physics Lab	2018-2019
8	2	B.Tech EEE	17CA05102	Computer Programming Lab	2018-2019
9	2	B.Tech EEE	17CA50101	Foundation of Yoga (Audit Course)	2018-2019
10	2	B.Tech EEE	17CA52201	English for Professional Communication	2018-2019
11	2	B.Tech EEE	17CA54201	Mathematics -II	2018-2019
12	2	B.Tech EEE	17CA51101	Engineering Chemistry	2018-2019
13	2	B.Tech EEE	17CA51102	Environmental Studies	2018-2019
14	2	B.Tech EEE	17CA02201	Electrical Circuits-I	2018-2019
15	2	B.Tech EEE	17CA03203	Engineering & I.T.Workshop	2018-2019
16	2	B.Tech EEE	17CA51103	Engineering Chemistry Laboratory	2018-2019
17	2	B.Tech EEE	17CA02202	Electrical Circuits Laboratory	2018-2019
18	2	B.Tech EEE	17CA50201	Clinical Psychology(Audit Course)	2018-2019
19	3	B.Tech MECH	17CA52101	Functional English	2018-2019
20	3	B.Tech MECH	17CA54101	Mathematics-I	2018-2019
21	3	B.Tech MECH	17CA05101	Computer Programming	2018-2019
22	3	B.Tech MECH	17CA51101	Engineering Chemistry	2018-2019
23	3	B.Tech MECH	17CA51102	Environmental Studies	2018-2019
24	3	B.Tech MECH	17CA52102	English Language and Communication Skills Lab	2018-2019
25	3	B.Tech MECH	17CA51103	Engineering Chemistry Lab	2018-2019
26	3	B.Tech MECH	17CA05102	Computer Programming Lab	2018-2019
27	3	B.Tech MECH	17CA50101	Foundation of Yoga (Audit Course)	2018-2019
28	3	B.Tech MECH	17CA52201	English for Professional Communication	2018-2019
29	3	B.Tech MECH	17CA54201	Mathematics -II	2018-2019
30	3	B.Tech MECH	17CA55101	Engineering Physics	2018-2019
31	3	B.Tech MECH	17CA03101	Engineering Drawing	2018-2019
32	3	B.Tech MECH	17CA03202	Material Science and Engineering	2018-2019
33	3	B.Tech MECH	17CA03203	Engineering & I.T.Workshop	2018-2019
34	3	B.Tech MECH	17CA55102	Engineering Physics Laboratory	2018-2019
35	3	B.Tech MECH	17CA03204	Material Science and Engineering Laboratory	2018-2019
36	3	B.Tech MECH	17CA50201	Clinical Psychology(Audit Course)	2018-2019
37	4	B.Tech ECE	17CA52101	Functional English	2018-2019
38	4	B.Tech ECE	17CA54101	Mathematics-I	2018-2019
39	4	B.Tech ECE	17CA05101	Computer Programming	2018-2019
40	4	B.Tech ECE	17CA51101	Engineering Chemistry	2018-2019
41	4	B.Tech ECE	17CA51102	Environmental Studies	2018-2019
42	4	B.Tech ECE	17CA52102	English Language and Communication Skills Lab	2018-2019
43	4	B.Tech ECE	17CA51103	Engineering Chemistry Lab	2018-2019
44	4	B.Tech ECE	17CA05102	Computer Programming Lab	2018-2019
45	4	B.Tech ECE	17CA50101	Foundation of Yoga (Audit Course)	2018-2019
46	4	B.Tech ECE	17CA52201	English for Professional Communication	2018-2019
47	4	B.Tech ECE	17CA54201	Mathematics -II	2018-2019
48	4	B.Tech ECE	17CA55101	Engineering Physics	2018-2019
49	4	B.Tech ECE	17CA03101	Engineering Drawing	2018-2019
50	4	B.Tech ECE	17CA02203	Network Analysis	2018-2019
51	4	B.Tech ECE	17CA03203	Engineering & I.T.Workshop	2018-2019
52	4	B.Tech ECE	17CA55102	Engineering Physics Laboratory	2018-2019
53	4	B.Tech ECE	17CA02204	Network Analysis Laboratory	2018-2019
54	4	B.Tech ECE	17CA50201	Clinical Psychology(Audit Course)	2018-2019
55	5	B.Tech CSE	17CA52101	Functional English	2018-2019
56	5	B.Tech CSE	17CA54101	Mathematics-I	2018-2019
57	5	B.Tech CSE	17CA05101	Computer Programming	2018-2019
58	5	B.Tech CSE	17CA55101	Engineering Physics	2018-2019
59	5	B.Tech CSE	17CA03101	Engineering Drawing	2018-2019
60	5	B.Tech CSE	17CA52102	English Language and Communication Skills Lab	2018-2019
61	5	B.Tech CSE	17CA55102	Engineering Physics Lab	2018-2019
62	5	B.Tech CSE	17CA05102	Computer Programming Lab	2018-2019
63	5	B.Tech CSE	17CA50101	Foundation of Yoga (Audit Course)	2018-2019
64	5	B.Tech CSE	17CA52201	English for Professional Communication	2018-2019
65	5	B.Tech CSE	17CA54201	Mathematics -II	2018-2019
66	5	B.Tech CSE	17CA51101	Engineering Chemistry	2018-2019
67	5	B.Tech CSE	17CA51102	Environmental Studies	2018-2019
68	5	B.Tech CSE	17CA05201	Data Structures	2018-2019

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69	5	B.Tech CSE	17CA03201	Engineering & I.T.Workshop	2018-2019
70	5	B.Tech CSE	17CA05202	Python Programming & Engineering Chemistry Laboratory	2018-2019
71	5	B.Tech CSE	17CA05203	Data Structures Laboratory	2018-2019
72	5	B.Tech CSE	17CA50201	Clinical Psychology(Audit Course)	2018-2019
73	E0	MBA	17CE00101	Management & Organisational Behaviour	2018-2019
74	E0	MBA	17CE00102	Managerial Economics	2018-2019
75	E0	MBA	17CE00103	Accounting for Managers	2018-2019
76	E0	MBA	17CE00104	Business Statistics	2018-2019
77	E0	MBA	17CE00105	Business Communication	2018-2019
78	E0	MBA	17CE00106	Business Research Methods - I	2018-2019
79	E0	MBA	17CE00107	Information Technology for Managers	2018-2019
80	E0	MBA	17CE00108	Business Comunication Lab - I	2018-2019
81	E0	MBA	17CE00109	Information Technology Lab	2018-2019
82	E0	MBA	17CE00201	Human Resource Management	2018-2019
83	E0	MBA	17CE00202	Financial Management	2018-2019
84	E0	MBA	17CE00203	Marketing Management	2018-2019
85	E0	MBA	17CE00204	Operations Research	2018-2019
86	E0	MBA	17CE00205	Business Environment	2018-2019
87	E0	MBA	17CE00206	Operations Management	2018-2019
88	E0	MBA	17CE00207	Management Information Systems	2018-2019
89	E0	MBA	17CE00208	Business Analytics Lab	2018-2019
90	E0	MBA	17CE00209	Business Communication Lab-II	2018-2019
91	F0	MCA	17CF54101	Probability and Statistics	2018-2019
92	F0	MCA	17CF52101	Technical Communication Skills	2018-2019
93	F0	MCA	17CF53101	Accounting and Financial Management	2018-2019
94	F0	MCA	17CF00101	Mathematical Foundations of Computer Science	2018-2019
95	F0	MCA	17CF00102	Introduction to Problem Solving and Programming	2018-2019
96	F0	MCA	17CF52102	English Language Communication Skills Lab	2018-2019
97	F0	MCA	17CF00103	Computer Programming Lab	2018-2019
98	F0	MCA	17CF00104	IT Workshop	2018-2019
99	F0	MCA	17CF53201	Organization Structure and Human Resource Management	2018-2019
100	F0	MCA	17CF00201	Data Structures	2018-2019
101	F0	MCA	17CF00202	Computer Organization	2018-2019
102	F0	MCA	17CF00203	Operating Systems	2018-2019
103	F0	MCA	17CF00204	Object Oriented Programming Through C++	2018-2019
104	F0	MCA	17CF52201	Advanced Communication Skills Lab	2018-2019
105	F0	MCA	17CF00205	Data Structures through C++ Lab	2018-2019
106	F0	MCA	17CF00206	Python Programming Lab	2018-2019
107	D57	M.Tech (VLSI&SD)	17CD04101	Structural Digital System Design	2018-2019
108	D57	M.Tech (VLSI&SD)	17CD04102	CMOS Analog IC Design	2018-2019
109	D57	M.Tech (VLSI&SD)	17CD04103	CMOS Digital IC Design	2018-2019
110	D57	M.Tech (VLSI&SD)	17CD04104	Hardware Description Languages	2018-2019
111	D57	M.Tech (VLSI&SD)	17CD04106	Professional Elective-I(Low Power VLSI Design)	2018-2019
112	D57	M.Tech (VLSI&SD)	17CD04109	Professional Elective-II(Embedded System Design)	2018-2019
113	D57	M.Tech (VLSI&SD)	17CD04111	Digital System Design Lab	2018-2019
114	D57	M.Tech (VLSI&SD)	17CD04201	CPLD and FPGA Architecture Applications	2018-2019
115	D57	M.Tech (VLSI&SD)	17CD04202	Testing & Testability	2018-2019
116	D57	M.Tech (VLSI&SD)	17CD04203	CMOS Mixed Signal Design	2018-2019
117	D57	M.Tech (VLSI&SD)	17CD04204	Algorithms for VLSI Design Automation	2018-2019
118	D57	M.Tech (VLSI&SD)	17CD04205	Professional Elective-III(Internet of Things)	2018-2019
119	D57	M.Tech (VLSI&SD)	17CD04208	Professional Elective-IV(RF IC Design)	2018-2019
120	D57	M.Tech (VLSI&SD)	17CD04211	Mixed signal Lab	2018-2019
121	D83	M.Tech (PE&D)	17CD02101	Advanced Power Semiconductor Devices	2018-2019
122	D83	M.Tech (PE&D)	17CD02102	Machine Modeling and Analysis	2018-2019
123	D83	M.Tech (PE&D)	17CD02103	Solid-State DC Drives	2018-2019
124	D83	M.Tech (PE&D)	17CD02104	Applications of Power Electronics to Power Systems	2018-2019
125	D83	M.Tech (PE&D)	17CD02107	Professional Elective-I(Advanced Digital Signal Processing)	2018-2019
126	D83	M.Tech (PE&D)	17CD02109	Professional Elective-II(Solid State Lighting and Control)	2018-2019
127	D83	M.Tech (PE&D)	17CD02111	Power Electronics and Simulation Lab	2018-2019
128	D83	M.Tech (PE&D)	17CD02201	Advanced Power Converters	2018-2019
129	D83	M.Tech (PE&D)	17CD02202	Power Quality	2018-2019
130	D83	M.Tech (PE&D)	17CD02203	Advanced Drives & Control	2018-2019
131	D83	M.Tech (PE&D)	17CD02204	Renewable Energy Conversion Systems	2018-2019
132	D83	M.Tech (PE&D)	17CD02207	Professional Elective-III(Flexible AC Transmission Systems)	2018-2019
133	D83	M.Tech (PE&D)	17CD02209	Professional Elective-IV(Energy Efficient Electrical Systems)	2018-2019
134	D83	M.Tech (PE&D)	17CD02211	Electrical Drives and Simulation Lab	2018-2019

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135	D04	M.Tech (CAD/CAM)	17CD54101	Computational Methods	2018-2019
136	D04	M.Tech (CAD/CAM)	17CD03101	Advanced Finite Element Methods	2018-2019
137	D04	M.Tech (CAD/CAM)	17CD03102	Computer Integrated Manufacturing	2018-2019
138	D04	M.Tech (CAD/CAM)	17CD03103	Advances in Manufacturing Technology	2018-2019
139	D04	M.Tech (CAD/CAM)	17CD03105	PE-I (Computer Aided Process Planning)	2018-2019
140	D04	M.Tech (CAD/CAM)	17CD03108	PE-II(Rapid Prototyping)	2018-2019
141	D04	M.Tech (CAD/CAM)	17CD03110	Modelling And CNC Lab	2018-2019
142	D04	M.Tech (CAD/CAM)	17CD03201	Advanced Optimization Techniques	2018-2019
143	D04	M.Tech (CAD/CAM)	17CD03202	Industrial Robotics and Expert systems	2018-2019
144	D04	M.Tech (CAD/CAM)	17CD03203	CNC Technology & programming	2018-2019
145	D04	M.Tech (CAD/CAM)	17CD03204	Mechatronics Applications in Manufacturing	2018-2019
146	D04	M.Tech (CAD/CAM)	17CD03206	PE-III(Special Manufacturing Process)	2018-2019
147	D04	M.Tech (CAD/CAM)	17CD03209	PE-IV(Global Integrated Manufacturing)	2018-2019
148	D04	M.Tech (CAD/CAM)	17CD03211	CAD/CAM Lab	2018-2019
149	D58	M.Tech (CSE)	17CD05101	Advanced Data Structures and Algorithms	2018-2019
150	D58	M.Tech (CSE)	17CD05102	Fundamentals of Data Science	2018-2019
151	D58	M.Tech (CSE)	17CD05103	Computer Organization & Architecture	2018-2019
152	D58	M.Tech (CSE)	17CD05104	Advanced Operating System	2018-2019
153	D58	M.Tech (CSE)	17CD05105	Professional Elective-I(Software Engineering)	2018-2019
154	D58	M.Tech (CSE)	17CD05109	Professional Elective-II(Data Mining and Knowledge Discovery)	2018-2019
155	D58	M.Tech (CSE)	17CD05113	Advanced Data Structures and Algorithms Lab	2018-2019
156	D58	M.Tech (CSE)	17CD05201	Object Oriented Analysis &Design	2018-2019
157	D58	M.Tech (CSE)	17CD05202	Big Data Analytics	2018-2019
158	D58	M.Tech (CSE)	17CD05203	Internet of Things	2018-2019
159	D58	M.Tech (CSE)	17CD05204	Mobile Application Development	2018-2019
160	D58	M.Tech (CSE)	17CD05206	Professional Elective-III(Human Computer Interaction)	2018-2019
161	D58	M.Tech (CSE)	17CD05211	Professional Elective-IV(Cloud Computing)	2018-2019
162	D58	M.Tech (CSE)	17CD05213	Map Reduce Programming Lab	2018-2019
163	02	B.Tech EEE	17CA54301	Mathematics -III	2018-2019
164	02	B.Tech EEE	17CA02301	DC Machines	2018-2019
165	02	B.Tech EEE	17CA02302	Electrical Circuits-II	2018-2019
166	02	B.Tech EEE	17CA02303	Electrical Measurements and Instrumentation	2018-2019
167	02	B.Tech EEE	17CA04301	Electronic Devices and Circuits	2018-2019
168	02	B.Tech EEE	17CA02304	Electromagnetic Field Theory	2018-2019
169	02	B.Tech EEE	17CA56301	Mandatory Course(Human Values and Professional Ethics)	2018-2019
170	02	B.Tech EEE	17CA02305	Electrical Circuits and Simulation Laboratory	2018-2019
171	02	B.Tech EEE	17CA04305	Electronic Devices and Circuits Laboratory	2018-2019
172	02	B.Tech EEE	17CA02401	Power Generation Systems	2018-2019
173	02	B.Tech EEE	17CA02402	AC Machines - I	2018-2019
174	02	B.Tech EEE	17CA04407	Linear and Digital Integrated Circuits	2018-2019
175	02	B.Tech EEE	17CA53501	Business Economics and Financial Analysis	2018-2019
176	02	B.Tech EEE	17CA54401	Mathematics -IV	2018-2019
177	02	B.Tech EEE	17CA04408	Analog Electronic Circuits	2018-2019
178	02	B.Tech EEE	17CA57401	Value Added Course – I (Matlab)	2018-2019
179	02	B.Tech EEE	17CA02403	DC Machines Laboratory	2018-2019
180	02	B.Tech EEE	17CA02404	Electrical Measurements and Instrumentation Laboratory	2018-2019
181	03	B.Tech MECH	17CA54301	Mathematics-III	2018-2019
182	03	B.Tech MECH	17CA03301	Thermodynamics	2018-2019
183	03	B.Tech MECH	17CA03302	Engineering Mechanics	2018-2019
184	03	B.Tech MECH	17CA03303	Manufacturing Technology	2018-2019
185	03	B.Tech MECH	17CA53301	Managerial Economics and Financial Analysis	2018-2019
186	03	B.Tech MECH	17CA03304	Engineering Drawing for Mechanical Engineers	2018-2019
187	03	B.Tech MECH	17CA03305	Computer Aided Drafting Laboratory	2018-2019
188	03	B.Tech MECH	17CA03306	Manufacturing Technology Laboratory	2018-2019
189	03	B.Tech MECH	17CA56301	Mandatory Course(Human Values and Professional Ethics)	2018-2019
190	03	B.Tech MECH	17CA54302	Probability and Statistics	2018-2019
191	03	B.Tech MECH	17CA02405	Basic Electrical And Electronic Technology	2018-2019
192	03	B.Tech MECH	17CA03401	Mechanics of Solids	2018-2019
193	03	B.Tech MECH	17CA03402	Thermal Engineering-I	2018-2019
194	03	B.Tech MECH	17CA03403	Machine Drawing	2018-2019
195	03	B.Tech MECH	17CA03404	Kinematics of Machinery	2018-2019
196	03	B.Tech MECH	17CA03405	Mechanics of Solids Laboratory	2018-2019
197	03	B.Tech MECH	17CA03406	Thermal Engineering Laboratory	2018-2019
198	03	B.Tech MECH	17CA57408	Value added Course – II(Pro-Cust Design)	2018-2019
199	04	B.Tech ECE	17CA54302	Complex analysis and Partial Differential Equations	2018-2019
200	04	B.Tech ECE	17CA04301	Electronic Devices & Circuits	2018-2019
201	04	B.Tech ECE	17CA04302	Switching Theory and Logic Design	2018-2019
202	04	B.Tech ECE	17CA04303	Probability Theory & Stochastic Process	2018-2019
203	04	B.Tech ECE	17CA04304	Signals and Systems	2018-2019
204	04	B.Tech ECE	17CA02306	Basic Electrical Technology	2018-2019
205	04	B.Tech ECE	17CA04305	Electronic Devices and Circuits Laboratory	2018-2019

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206	04	B.Tech ECE	17CA02307	Electrical Technology and Simulation Laboratory	2018-2019
207	04	B.Tech ECE	17CA56301	Mandatory Course(Human Values and Professional Ethics	2018-2019
208	04	B.Tech ECE	17CA04401	Electronic Circuit Analysis	2018-2019
209	04	B.Tech ECE	17CA04402	Analog Communications	2018-2019
210	04	B.Tech ECE	17CA04403	Linear IC Application	2018-2019
211	04	B.Tech ECE	17CA02501	Control Systems	2018-2019
212	04	B.Tech ECE	17CA04404	Electromagnetic Theory & Transmission Lines	2018-2019
213	04	B.Tech ECE	17CA53301	Managerial Economics and Financial Analysis	2018-2019
214	04	B.Tech ECE	17CA04405	Electronic Circuit Analysis Lab	2018-2019
215	04	B.Tech ECE	17CA04406	Analog Communications Lab	2018-2019
216	04	B.Tech ECE	17CA57406	Value Added Course(Microsoft Certified Engineer)	2018-2019
217	05	B.Tech CSE	17CA54302	Probability and Statistics	2018-2019
218	05	B.Tech CSE	17CA04306	Digital Logic Design	2018-2019
219	05	B.Tech CSE	17CA05301	Discrete Mathematical Structures	2018-2019
220	05	B.Tech CSE	17CA05302	Database Management Systems	2018-2019
221	05	B.Tech CSE	17CA02308	Basic Electrical and Electronics Engineering	2018-2019
222	05	B.Tech CSE	17CA53301	Managerial Economics and Financial Analysis	2018-2019
223	05	B.Tech CSE	17CA56301	Mandatory Course(Human Values and Professional Ethics	2018-2019
224	05	B.Tech CSE	17CA05303	Database Management Systems Laboratory	2018-2019
225	05	B.Tech CSE	17CA02309	Basic Electrical and Electronics Laboratory	2018-2019
226	05	B.Tech CSE	17CA05401	Theory of Computation	2018-2019
227	05	B.Tech CSE	17CA05402	Software Engineering	2018-2019
228	05	B.Tech CSE	17CA05403	Computer Organization	2018-2019
229	05	B.Tech CSE	17CA05404	Statistics & R	2018-2019
230	05	B.Tech CSE	17CA05405	Java Programming	2018-2019
231	05	B.Tech CSE	17CA05406	Design and Analysis of Algorithms	2018-2019
232	05	B.Tech CSE	17CA57401	Value Added Course -I(Matlab)	2018-2019
233	05	B.Tech CSE	17CA05407	Statistics & R Laboratory	2018-2019
234	05	B.Tech CSE	17CA05408	Java Programming Laboratory	2018-2019
235	02	B.Tech EEE	15A02501	Electrical Measurements	2018-2019
236	02	B.Tech EEE	15A04509	Linear & Digital IC Applications	2018-2019
237	02	B.Tech EEE	15A02502	Electrical Power Transmission Systems	2018-2019
238	02	B.Tech EEE	15A02503	Power Electronics	2018-2019
239	02	B.Tech EEE	15A02504	Electrical Machines – III	2018-2019
240	02	B.Tech EEE	15A04510	MOOCS -I Digital Circuits and Systems	2018-2019
241	02	B.Tech EEE	15A02505	MOOCS -I Networks Signals and Systems	2018-2019
242	02	B.Tech EEE	15A02506	Electrical Machines Laboratory – II	2018-2019
243	02	B.Tech EEE	15A02507	Electrical Measurements Laboratory	2018-2019
244	02	B.Tech EEE	15A99501	Audit course – Social Values & Ethics	2018-2019
245	02	B.Tech EEE	15A52601	Management Science	2018-2019
246	02	B.Tech EEE	15A02601	Power Semiconductor Drives	2018-2019
247	02	B.Tech EEE	15A02602	Power System Protection	2018-2019
248	02	B.Tech EEE	15A04601	Microprocessors & Microcontrollers	2018-2019
249	02	B.Tech EEE	15A02603	Power System Analysis	2018-2019
250	02	B.Tech EEE	15A02604	CBCC -I(Naural Networks and Fuzzy Logic)	2018-2019
251	02	B.Tech EEE	15A04607	Microprocessors & Microcontrollers Laboratory	2018-2019
252	02	B.Tech EEE	15A02607	Power Electronics & Simulation Laboratory	2018-2019
253	02	B.Tech EEE	15A52602	Advanced English Language Communication Skills (AELCS)	2018-2019
254	02	B.Tech EEE	15A02608	Comprehensive Online Examination - II	2018-2019
255	03	B.Tech MECH	15A01510	Fluid Mechanics and Hydraulic Machines	2018-2019
256	03	B.Tech MECH	15A03501	Thermal Engineering - II	2018-2019
257	03	B.Tech MECH	15A03502	Dynamics of Machinery	2018-2019
258	03	B.Tech MECH	15A03503	Machine Tools	2018-2019
259	03	B.Tech MECH	15A03504	Design of Machine Members - I	2018-2019
260	03	B.Tech MECH	15A03506	MOOCS -II(Nano Technology)	2018-2019
261	03	B.Tech MECH	15A01511	Fluid Mechanics and Hydraulic Machines Laboratory	2018-2019
262	03	B.Tech MECH	15A03508	Machine Tools Laboratory	2018-2019
263	03	B.Tech MECH	15A99501	Audit course – Social Values & Ethics	2018-2019
264	03	B.Tech MECH	15A03601	Operations Research	2018-2019
265	03	B.Tech MECH	15A03602	Design of Machine Members – II	2018-2019
266	03	B.Tech MECH	15A03603	Heat Transfer	2018-2019
267	03	B.Tech MECH	15A03604	Finite Element Method	2018-2019
268	03	B.Tech MECH	15A03605	Metal forming Process	2018-2019
269	03	B.Tech MECH	15A03606	CBCC-I(Non Conventional Source of Energy)	2018-2019
270	03	B.Tech MECH	15A03609	Heat Transfer Laboratory	2018-2019
271	03	B.Tech MECH	15A03610	Computer Aided Engineering Laboratory	2018-2019
272	03	B.Tech MECH	15A52602	Advanced English Language Communication Skills (AELCS)	2018-2019
273	03	B.Tech MECH	15A03611	Comprehensive Online Examination - II	2018-2019
274	04	B.Tech ECE	15A04511	Computer Organization	2018-2019
275	04	B.Tech ECE	15A04501	Antennas and Wave Propagation	2018-2019
276	04	B.Tech ECE	15A04502	Digital Communication Systems	2018-2019

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277	04	B.Tech ECE	15A04503	Linear Integrated Circuits and Applications	2018-2019
278	04	B.Tech ECE	15A04504	Digital System Design	2018-2019
279	04	B.Tech ECE	15A04506	MOOCS-I(MEMS & MicroSystems)	2018-2019
280	04	B.Tech ECE	15A04507	IC Applications Laboratory	2018-2019
281	04	B.Tech ECE	15A04508	Digital Communication Systems Laboratory	2018-2019
282	04	B.Tech ECE	15A99501	Audit course – Social Values & Ethics	2018-2019
283	04	B.Tech ECE	15A52301	Managerial Economics and Financial Analysis	2018-2019
284	04	B.Tech ECE	15A04601	Microprocessors & Microcontrollers	2018-2019
285	04	B.Tech ECE	15A04602	Electronic Measurements and Instrumentation	2018-2019
286	04	B.Tech ECE	15A04603	Digital Signal Processing	2018-2019
287	04	B.Tech ECE	15A04604	VLSI Design	2018-2019
288	04	B.Tech ECE	15A04605	CBCC-I(Matlab Programming)	2018-2019
289	04	B.Tech ECE	15A04607	Microprocessors & Microcontrollers Laboratory	2018-2019
290	04	B.Tech ECE	15A04608	Digital Signal Processing Laboratory	2018-2019
291	04	B.Tech ECE	15A52602	Advanced English Language Communicatio (AELCS) Labora	2018-2019
292	04	B.Tech ECE	15A04609	Comprehensive Online Examination-II	2018-2019
293	05	B.Tech CSE	15A05501	Operating Systems	2018-2019
294	05	B.Tech CSE	15A05502	Computer Networks	2018-2019
295	05	B.Tech CSE	15A05503	Object Oriented Analysis and Design	2018-2019
296	05	B.Tech CSE	15A05504	Principles of Programming Languages	2018-2019
297	05	B.Tech CSE	15A05505	Software Testing	2018-2019
298	05	B.Tech CSE	15A05507	MOOCS-I(R Programming)	2018-2019
299	05	B.Tech CSE	15A05509	Object Oriented Analysis and Design & Software Testing La	2018-2019
300	05	B.Tech CSE	15A05510	Operating Systems Laboratory	2018-2019
301	05	B.Tech CSE	15A99501	Social Values & Ethics (Audit Course)	2018-2019
302	05	B.Tech CSE	15A05601	Compiler Design	2018-2019
303	05	B.Tech CSE	15A05602	Data Warehousing & Mining	2018-2019
304	05	B.Tech CSE	15A05603	Design Patterns	2018-2019
305	05	B.Tech CSE	15A05604	Design and Analysis of Algorithms	2018-2019
306	05	B.Tech CSE	15A05605	Web and Internet Technologies	2018-2019
307	05	B.Tech CSE	15A05606	CBCC-I(Optimization Techniques)	2018-2019
308	05	B.Tech CSE	15A05609	Web and Internet Technologies Laboratory	2018-2019
309	05	B.Tech CSE	15A05610	Data Warehousing & Mining Laboratory	2018-2019
310	05	B.Tech CSE	15A52602	Advanced English Language Communication Skills(AELCS) L	2018-2019
311	05	B.Tech CSE	15A05611	Comprehensive Online Examination-II	2018-2019
312	02	B.Tech EEE	15A02701	Electrical Distribution Systems	2018-2019
313	02	B.Tech EEE	15A04603	Digital Signal Processing	2018-2019
314	02	B.Tech EEE	15A02702	Power System Operation and Control	2018-2019
315	02	B.Tech EEE	15A02703	Utilization of Electrical Energy	2018-2019
316	02	B.Tech EEE	15A02706	CBCC-II(Energy Auditing and Demad Side Management)	2018-2019
317	02	B.Tech EEE	15A02707	CBCC-III(Smart Grid)	2018-2019
318	02	B.Tech EEE	15A04608	Digital Signal Processing Laboratory	2018-2019
319	02	B.Tech EEE	15A02710	Power Systems & Simulation Laboratory	2018-2019
320	02	B.Tech EEE	15A02802	MOOCS – II(Power System Dynamics and Control)	2018-2019
321	02	B.Tech EEE	15A02804	MOOCS – III(HVDC Transmission)	2018-2019
322	02	B.Tech EEE	15A02806	Comprehensive Viva Voce	2018-2019
323	02	B.Tech EEE	15A02807	Technical Seminar	2018-2019
324	02	B.Tech EEE	15A02808	Project Work	2018-2019
325	03	B.Tech MECH	15A52601	Management Science	2018-2019
326	03	B.Tech MECH	15A03701	Automobile Engineering	2018-2019
327	03	B.Tech MECH	15A03702	CAD/CAM	2018-2019
328	03	B.Tech MECH	15A03703	Metrology and Measurements	2018-2019
329	03	B.Tech MECH	15A03704	CBCC-II(Refrigeration and Air Conditioning)	2018-2019
330	03	B.Tech MECH	15A03707	CBCC-III(Computatinal Fluid Dynamics)	2018-2019
331	03	B.Tech MECH	15A03710	CAD/ CAM Laboratory	2018-2019
332	03	B.Tech MECH	15A03711	Metrology and Measurements Laboratory	2018-2019
333	03	B.Tech MECH	15A03803	MOOCS-II(Composite Materials)	2018-2019
334	03	B.Tech MECH	15A03804	MOOCS -III(Power Plant Engineering)	2018-2019
335	03	B.Tech MECH	15A03807	Comprehensive Viva Voce	2018-2019
336	03	B.Tech MECH	15A03808	Technical Seminar	2018-2019
337	03	B.Tech MECH	15A03809	Project work	2018-2019
338	04	B.Tech ECE	15A04701	Optical Fiber Communication	2018-2019
339	04	B.Tech ECE	15A04702	Embedded Systems	2018-2019
340	04	B.Tech ECE	15A04703	Microwave Engineering	2018-2019
341	04	B.Tech ECE	15A04704	Data Communications and Networking	2018-2019
342	04	B.Tech ECE	15A04705	CBCC-II(Radar Systems)	2018-2019
343	04	B.Tech ECE	15A04708	CBCC-III(Digital Image Processing)	2018-2019
344	04	B.Tech ECE	15A04711	Microwave and Optical Communication Laboratory	2018-2019
345	04	B.Tech ECE	15A04712	VLSI & Embedded Systems Laboratory	2018-2019
346	04	B.Tech ECE	15A04802	MOOCS-II*(Low Power VLSI Circuits & Systems)	2018-2019
347	04	B.Tech ECE	15A04804	MOOCS-III *(RF Integrated Circuits)	2018-2019

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348	04	B.Tech ECE	15A04805	Comprehensive Viva Voce	2018-2019
349	04	B.Tech ECE	15A04806	Technical Seminar	2018-2019
350	04	B.Tech ECE	15A04807	Project Work	2018-2019
351	05	B.Tech CSE	15AS2601	Management Science	2018-2019
352	05	B.Tech CSE	15A05701	Grid & Cloud Computing	2018-2019
353	05	B.Tech CSE	15A05702	Information Security	2018-2019
354	05	B.Tech CSE	15A05703	Mobile Application Development	2018-2019
355	05	B.Tech CSE	15A05704	CBCC-II(Software Architecture)	2018-2019
356	05	B.Tech CSE	15A05707	CBCC-III(Software Project Management)	2018-2019
357	05	B.Tech CSE	15A05710	Grid & Cloud Computing Laboratory	2018-2019
358	05	B.Tech CSE	15A05711	Mobile Application Development laboratory	2018-2019
359	05	B.Tech CSE	15A05802	MOOCS-II(Mobile Computing)	2018-2019
360	05	B.Tech CSE	15A05804	MOOCS-III(Building Large Scale Software Systems)	2018-2019
361	05	B.Tech CSE	15A05807	Comprehensive Viva-Voce	2018-2019
362	05	B.Tech CSE	15A05808	Technical Seminar	2018-2019
363	05	B.Tech CSE	15A05809	Project Work	2018-2019
364	E0	MBA	17CE00301	Entrepreneurship Development	2018-2019
365	E0	MBA	17CE00302	Business Research Methods II	2018-2019
366	E0	MBA	17CE00311	Services Marketing	2018-2019
367	E0	MBA	17CE00331	Performance Management	2018-2019
368	E0	MBA	17CE00322	Financial Institutions, Markets and Services	2018-2019
369	E0	MBA	17CE00332	Human Resource Development	2018-2019
370	E0	MBA	17CE00321	Security Analysis & Portfolio Management	2018-2019
371	E0	MBA	17CF00333	Organisational Development	2018-2019
372	E0	MBA	17CE00314	Retail Management	2018-2019
373	E0	MBA	17CE00334	Employee Engagement and Empowerment	2018-2019
374	E0	MBA	17CE00312	Internet Marketing	2018-2019
375	E0	MBA	17CE00308	Business Simulation Laboratory II	2018-2019
376	E0	MBA	17CE00401	Strategic Management	2018-2019
377	E0	MBA	17CE00402	International Business Management	2018-2019
378	E0	MBA	17CE00403	Legal Aspects of Business	2018-2019
379	E0	MBA	17CE00411	International Marketing	2018-2019
380	E0	MBA	17CE00431	Knowledge Management	2018-2019
381	E0	MBA	17CE00424	Financial Derivatives	2018-2019
382	E0	MBA	17CE00432	International Human Resource Management	2018-2019
383	E0	MBA	17CE00414	Advertisement and Sales Promotion Management	2018-2019
384	E0	MBA	17CE00404	Project Work	2018-2019
385	F0	MCA	17CF00301	Database Management Systems	2018-2019
386	F0	MCA	17CF00302	Computer Networks	2018-2019
387	F0	MCA	17CF00303	Linux Programming	2018-2019
388	F0	MCA	17CF00304	Software Engineering	2018-2019
389	F0	MCA	17CF00305	Java Programming	2018-2019
390	F0	MCA	17CF00306	Database Management Systems Lab	2018-2019
391	F0	MCA	17CF00307	Linux Programming Lab	2018-2019
392	F0	MCA	17CF00308	Java Programming Lab	2018-2019
393	F0	MCA	17CF00401	Object Oriented Analysis and Design	2018-2019
394	F0	MCA	17CF00402	Web Technologies	2018-2019
395	F0	MCA	17CF00403	Data Warehousing and Mining	2018-2019
396	F0	MCA	17CF00405	Information Security (Elective – I)	2018-2019
397	F0	MCA	17CF00408	Distributed Systems (Elective – II)	2018-2019
398	F0	MCA	17CF00410	Object Oriented Analysis and Design Lab	2018-2019
399	F0	MCA	17CF00411	Web Technologies Lab	2018-2019
400	F0	MCA	17CF00412	Data Warehousing and Mining Lab	2018-2019
401	D57	M.Tech (VLSI&SD)	17CD05301	Research Methodology	2018-2019
402	D57	M.Tech (VLSI&SD)	17CD04302	MOOC Course I (Development of Real Time Systems)	2018-2019
403	D57	M.Tech (VLSI&SD)	17CD04304	Teaching Assignment	2018-2019
404	D57	M.Tech (VLSI&SD)	17CD04305	Project Work – Phase I	2018-2019
405	D57	M.Tech (VLSI&SD)	17CD04401	Technical Seminar	2018-2019
406	D57	M.Tech (VLSI&SD)	17CD04305	Project Work Phase-II	2018-2019
407	D83	M.Tech (PE&D)	17CD53301	Research Methodology	2018-2019
408	D83	M.Tech (PE&D)	17CD02302	MOOC Course(Industrial Automation and Control)	2018-2019
409	D83	M.Tech (PE&D)	17CD02304	Teaching Assignment	2018-2019
410	D83	M.Tech (PE&D)	17CD02305	Project work – Phase I	2018-2019
411	D83	M.Tech (PE&D)	17CD02401	Seminar	2018-2019
412	D83	M.Tech (PE&D)	17CD02402	Project work – Phase II	2018-2019
413	D58	M.Tech (CSE)	17CD53301	Research Methodology	2018-2019
414	D58	M.Tech (CSE)	17CD05303	MOOC Course(Distributed Systems)	2018-2019
415	D58	M.Tech (CSE)	17CD05304	Teaching Assignment	2018-2019
416	D58	M.Tech (CSE)	17CD05305	Project work – Phase I	2018-2019
417	D58	M.Tech (CSE)	17CD05401	Seminar	2018-2019
418	D58	M.Tech (CSE)	17CD05402	Project work – Phase II	2018-2019

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419	D04	M.Tech (CAD/CAM)	17CD53301	Research Methodology	2018-2019
420	D04	M.Tech (CAD/CAM)	17CD03301	MOOC Course(Design for Manufacturing)	2018-2019
421	D04	M.Tech (CAD/CAM)	17CD03304	Teaching Assignment	2018-2019
422	D04	M.Tech (CAD/CAM)	17CD03305	Project work – Phase I	2018-2019
423	D04	M.Tech (CAD/CAM)	17CD03401	Seminar	2018-2019
424	D04	M.Tech (CAD/CAM)	17CD03402	Project work – Phase II	2018-2019

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S.No	Program code	Program name	Course code	Course name	Year of offering the course
1	2	B.Tech EEE	17CAS2101	Functional English	2017-2018
2	2	B.Tech EEE	17CAS4101	Mathematics-I	2017-2018
3	2	B.Tech EEE	17CA05101	Computer Programming	2017-2018
4	2	B.Tech EEE	17CAS5101	Engineering Physics	2017-2018
5	2	B.Tech EEE	17CA03101	Engineering Drawing	2017-2018
6	2	B.Tech EEE	17CAS2102	English Language and Communication Skills Lab	2017-2018
7	2	B.Tech EEE	17CAS5102	Engineering Physics Lab	2017-2018
8	2	B.Tech EEE	17CA05103	Computer Programming Lab	2017-2018
9	2	B.Tech EEE	17CAS0101	Foundation of Yoga (Audit Course)	2017-2018
10	2	B.Tech EEE	17CAS2201	English for Professional Communication	2017-2018
11	2	B.Tech EEE	17CAS4201	Mathematics -II	2017-2018
12	2	B.Tech EEE	17CAS1101	Engineering Chemistry	2017-2018
13	2	B.Tech EEE	17CAS1102	Environmental Studies	2017-2018
14	2	B.Tech EEE	17CA02201	Electrical Circuits-I	2017-2018
15	2	B.Tech EEE	17CA03203	Engineering & I.T.Workshop	2017-2018
16	2	B.Tech EEE	17CAS1103	Engineering Chemistry Laboratory	2017-2018
17	2	B.Tech EEE	17CA02202	Electrical Circuits Laboratory	2017-2018
18	2	B.Tech EEE	17CAS0201	Clinical Psychology(Audit Course)	2017-2018
19	3	B.Tech MECH	17CAS2101	Functional English	2017-2018
20	3	B.Tech MECH	17CAS4101	Mathematics-I	2017-2018
21	3	B.Tech MECH	17CA05101	Computer Programming	2017-2018
22	3	B.Tech MECH	17CAS1101	Engineering Chemistry	2017-2018
23	3	B.Tech MECH	17CAS1102	Environmental Studies	2017-2018
24	3	B.Tech MECH	17CAS2102	English Language and Communication Skills Lab	2017-2018
25	3	B.Tech MECH	17CAS1103	Engineering Chemistry Lab	2017-2018
26	3	B.Tech MECH	17CA05102	Computer Programming Lab	2017-2018
27	3	B.Tech MECH	17CAS0101	Foundation of Yoga (Audit Course)	2017-2018
28	3	B.Tech MECH	17CAS2201	English for Professional Communication	2017-2018
29	3	B.Tech MECH	17CAS4201	Mathematics -II	2017-2018
30	3	B.Tech MECH	17CAS5101	Engineering Physics	2017-2018
31	3	B.Tech MECH	17CA03101	Engineering Drawing	2017-2018
32	3	B.Tech MECH	17CA03202	Material Science and Engineering	2017-2018
33	3	B.Tech MECH	17CA03203	Engineering & I.T.Workshop	2017-2018
34	3	B.Tech MECH	17CAS5102	Engineering Physics Laboratory	2017-2018
35	3	B.Tech MECH	17CA03204	Material Science and Engineering Laboratory	2017-2018
36	3	B.Tech MECH	17CAS0201	Clinical Psychology(Audit Course)	2017-2018
37	4	B.Tech ECE	17CAS2101	Functional English	2017-2018
38	4	B.Tech ECE	17CAS4101	Mathematics-I	2017-2018
39	4	B.Tech ECE	17CA05101	Computer Programming	2017-2018
40	4	B.Tech ECE	17CAS1101	Engineering Chemistry	2017-2018
41	4	B.Tech ECE	17CAS1102	Environmental Studies	2017-2018
42	4	B.Tech ECE	17CAS2102	English Language and Communication Skills Lab	2017-2018
43	4	B.Tech ECE	17CAS1103	Engineering Chemistry Lab	2017-2018
44	4	B.Tech ECE	17CA05102	Computer Programming Lab	2017-2018
45	4	B.Tech ECE	17CAS0101	Foundation of Yoga (Audit Course)	2017-2018
46	4	B.Tech ECE	17CAS2201	English for Professional Communication	2017-2018
47	4	B.Tech ECE	17CAS4201	Mathematics -II	2017-2018
48	4	B.Tech ECE	17CAS5101	Engineering Physics	2017-2018
49	4	B.Tech ECE	17CA03101	Engineering Drawing	2017-2018
50	4	B.Tech ECE	17CA02203	Network Analysis	2017-2018
51	4	B.Tech ECE	17CA03203	Engineering & I.T.Workshop	2017-2018
52	4	B.Tech ECE	17CAS5102	Engineering Physics Laboratory	2017-2018
53	4	B.Tech ECE	17CA02204	Network Analysis Laboratory	2017-2018
54	4	B.Tech ECE	17CAS0201	Clinical Psychology(Audit Course)	2017-2018
55	5	B.Tech CSE	17CAS2201	Functional English	2017-2018
56	5	B.Tech CSE	17CAS4101	Mathematics-I	2017-2018
57	5	B.Tech CSE	17CA05101	Computer Programming	2017-2018
58	5	B.Tech CSE	17CAS5101	Engineering Physics	2017-2018
59	5	B.Tech CSE	17CA03101	Engineering Drawing	2017-2018
60	5	B.Tech CSE	17CAS2102	English Language and Communication Skills Lab	2017-2018
61	5	B.Tech CSE	17CAS5102	Engineering Physics Lab	2017-2018
62	5	B.Tech CSE	17CA05102	Computer Programming Lab	2017-2018
63	5	B.Tech CSE	17CAS0101	Foundation of Yoga (Audit Course)	2017-2018
64	5	B.Tech CSE	17CAS2201	English for Professional Communication	2017-2018
65	5	B.Tech CSE	17CAS4201	Mathematics -II	2017-2018
66	5	B.Tech CSE	17CAS1101	Engineering Chemistry	2017-2018
67	5	B.Tech CSE	17CAS1102	Environmental Studies	2017-2018
68	5	B.Tech CSE	17CA05203	Data Structures	2017-2018
69	5	B.Tech CSE	17CA03203	Engineering & I.T.Workshop	2017-2018
70	5	B.Tech CSE	17CA05202	Python Programming & Engineering Chemistry Laboratory	2017-2018
71	5	B.Tech CSE	17CA05203	Data Structures Laboratory	2017-2018
72	5	B.Tech CSE	17CA02201	Clinical Psychology(Audit Course)	2017-2018
73	EO	MBA	17CE00101	Management & Organisational Behaviour	2017-2018
74	EO	MBA	17CE00102	Managerial Economics	2017-2018
75	EO	MBA	17CE00103	Accounting for Managers	2017-2018
76	EO	MBA	17CE00104	Business Statistics	2017-2018
77	EO	MBA	17CE00105	Business Communication	2017-2018
78	EO	MBA	17CE00106	Business Research Methods - I	2017-2018
79	EO	MBA	17CE00107	Information Technology for Managers	2017-2018
80	EO	MBA	17CE00108	Business Communication Lab	2017-2018
81	EO	MBA	17CE00109	Information Technology Lab	2017-2018
82	EO	MBA	17CE00201	Human Resource Management	2017-2018

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83	EO	MBA	17CE00202	Financial Management	2017-2018
84	EO	MBA	17CE00203	Marketing Management	2017-2018
85	EO	MBA	17CE00204	Operations Research	2017-2018
86	EO	MBA	17CE00205	Business Environment	2017-2018
87	EO	MBA	17CE00206	Operations Management	2017-2018
88	EO	MBA	17CE00207	Management Information Systems	2017-2018
89	EO	MBA	17CE00208	Business Analytics Lab	2017-2018
90	EO	MBA	17CE00209	Business Communication Lab-II	2017-2018
91	FO	MCA	17CF54101	Probability and Statistics	2017-2018
92	FO	MCA	17CF52101	Technical Communication Skills	2017-2018
93	FO	MCA	17CF53101	Accounting and Financial Management	2017-2018
94	FO	MCA	17CF00101	Mathematical Foundations of Computer Science	2017-2018
95	FO	MCA	17CF00102	Introduction to Problem Solving and Programming	2017-2018
96	FO	MCA	17CF52102	English Language Communication Skills Lab	2017-2018
97	FO	MCA	17CF00103	Computer Programming Lab	2017-2018
98	FO	MCA	17CF00104	IT Workshop	2017-2018
99	FO	MCA	17CF53201	Organization Structure and Human Resource Management	2017-2018
100	FO	MCA	17CF00201	Data Structures	2017-2018
101	FO	MCA	17CF00202	Computer Organization	2017-2018
102	FO	MCA	17CF00203	Operating Systems	2017-2018
103	FO	MCA	17CF00204	Object Oriented Programming Through C++	2017-2018
104	FO	MCA	17CF52201	Advanced Communication Skills Lab	2017-2018
105	FO	MCA	17CF00205	Data Structures through C++ Lab	2017-2018
106	FO	MCA	17CF00206	Python Programming Lab	2017-2018
107	D57	M.Tech (VLSI&SD)	17CD04101	Structural Digital System Design	2017-2018
108	D57	M.Tech (VLSI&SD)	17CD04102	CMOS Analog IC Design	2017-2018
109	D57	M.Tech (VLSI&SD)	17CD04103	CMOS Digital IC Design	2017-2018
110	D57	M.Tech (VLSI&SD)	17CD04104	Hardware Description Languages	2017-2018
111	D57	M.Tech (VLSI&SD)	17CD04106	Professional Elective-I(Low Power VLSI Design)	2017-2018
112	D57	M.Tech (VLSI&SD)	17CD04109	Professional Elective-II(Embedded System Design)	2017-2018
113	D57	M.Tech (VLSI&SD)	17CD04111	Digital System Design Lab	2017-2018
114	D57	M.Tech (VLSI&SD)	17CD04201	CPLD and FPGA Architecture Applications	2017-2018
115	D57	M.Tech (VLSI&SD)	17CD04202	Testing & Testability	2017-2018
116	D57	M.Tech (VLSI&SD)	17CD04203	CMOS Mixed Signal Design	2017-2018
117	D57	M.Tech (VLSI&SD)	17CD04204	Algorithms for VLSI Design Automation	2017-2018
118	D57	M.Tech (VLSI&SD)	17CD04205	Professional Elective-III(Internet of Things)	2017-2018
119	D57	M.Tech (VLSI&SD)	17CD04208	Professional Elective-IV(RF IC Design)	2017-2018
120	D57	M.Tech (VLSI&SD)	17CD04211	Mixed signal Lab	2017-2018
121	D83	M.Tech (PE&D)	17CD02101	Advanced Power Semiconductor Devices	2017-2018
122	D83	M.Tech (PE&D)	17CD02102	Machine Modeling and Analysis	2017-2018
123	D83	M.Tech (PE&D)	17CD02103	Solid-State DC Drives	2017-2018
124	D83	M.Tech (PE&D)	17CD02104	Applications of Power Electronics to Power Systems	2017-2018
125	D83	M.Tech (PE&D)	17CD02107	Professional Elective-I(Advanced Digital Signal Processing)	2017-2018
126	D83	M.Tech (PE&D)	17CD02109	Professional Elective-II(Solid State Lighting and Control)	2017-2018
127	D83	M.Tech (PE&D)	17CD02111	Power Electronics and Simulation Lab	2017-2018
128	D83	M.Tech (PE&D)	17CD02201	Advanced Power Converters	2017-2018
129	D83	M.Tech (PE&D)	17CD02202	Power Quality	2017-2018
130	D83	M.Tech (PE&D)	17CD02203	Advanced Drives & Control	2017-2018
131	D83	M.Tech (PE&D)	17CD02204	Renewable Energy Conversion Systems	2017-2018
132	D83	M.Tech (PE&D)	17CD02207	Professional Elective-III(HVDC & EHVAC Transmission Systems)	2017-2018
133	D83	M.Tech (PE&D)	17CD02209	Professional Elective-IV(Energy Efficient Electrical Systems)	2017-2018
134	D83	M.Tech (PE&D)	17CD02211	Electrical Drives and Simulation Lab	2017-2018
135	D04	M.Tech (CAD/CAM)	17CD54101	Computational Methods	2017-2018
136	D04	M.Tech (CAD/CAM)	17CD03101	Advanced Finite Element Methods	2017-2018
137	D04	M.Tech (CAD/CAM)	17CD03102	Computer Integrated Manufacturing	2017-2018
138	D04	M.Tech (CAD/CAM)	17CD03103	Advances in Manufacturing Technology	2017-2018
139	D04	M.Tech (CAD/CAM)	17CD03105	PE-I (Computer Aided Process Planning)	2017-2018
140	D04	M.Tech (CAD/CAM)	17CD03108	PE-II(Rapid Prototyping)	2017-2018
141	D04	M.Tech (CAD/CAM)	17CD03110	Modeling And CNC Lab	2017-2018
142	D04	M.Tech (CAD/CAM)	17CD03201	Advanced Optimization Techniques	2017-2018
143	D04	M.Tech (CAD/CAM)	17CD03202	Industrial Robotics and Expert systems	2017-2018
144	D04	M.Tech (CAD/CAM)	17CD03203	CNC Technology & programming	2017-2018
145	D04	M.Tech (CAD/CAM)	17CD03204	Mechatronics Applications in Manufacturing	2017-2018
146	D04	M.Tech (CAD/CAM)	17CD03206	PE-II(Special Manufacturing Process)	2017-2018
147	D04	M.Tech (CAD/CAM)	17CD03209	PE-IV(Global Integrated Manufacturing)	2017-2018
148	D04	M.Tech (CAD/CAM)	17CD03213	CAD/CAM Lab	2017-2018
149	D58	M.Tech CSE	17CD05101	Advanced Data Structures and Algorithms	2017-2018
150	D58	M.Tech CSE	17CD05102	Fundamentals of Data Science	2017-2018
151	D58	M.Tech CSE	17CD05103	Computer Organization & Architecture	2017-2018
152	D58	M.Tech CSE	17CD05104	Advanced Operating System	2017-2018
153	D58	M.Tech CSE	17CD05106	Professional Elective-I(Software Engineering)	2017-2018
154	D58	M.Tech CSE	17CD05109	Professional Elective-II(Data Mining and Knowledge Discovery)	2017-2018
155	D58	M.Tech CSE	17CD05113	Advanced Data Structures and Algorithms Lab	2017-2018
156	D58	M.Tech CSE	17CD05201	Object Oriented Analysis &Design	2017-2018
157	D58	M.Tech CSE	17CD05202	Big Data Analytics	2017-2018
158	D58	M.Tech CSE	17CD05203	Internet of Things	2017-2018
159	D58	M.Tech CSE	17CD05204	Mobile Application Development	2017-2018
160	D58	M.Tech CSE	17CD05206	Professional Elective-II(Human Computer Interaction)	2017-2018
161	D58	M.Tech CSE	17CD05211	Professional Elective-III(Soft Computing)	2017-2018
162	D58	M.Tech CSE	17CD05213	Map Reduce Programming Lab	2017-2018
163	02	B.Tech EEE	15A54401	Mathematics -IV	2017-2018
164	02	B.Tech EEE	15A02301	Electrical Machines - II	2017-2018
165	02	B.Tech EEE	15A02302	Electrical Machines – I	2017-2018

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166	02	B.Tech EEE	15A02303	Control Systems Engineering	2017-2018
167	02	B.Tech EEE	15A04301	Electronic Devices & Circuits	2017-2018
168	02	B.Tech EEE	15A05201	Data Structures	2017-2018
169	02	B.Tech EEE	15A02305	Electric Circuits Simulation Laboratory	2017-2018
170	02	B.Tech EEE	15A04305	Electronic Devices & Circuits Laboratory	2017-2018
171	02	B.Tech EEE	15A54402	Mathematics – IV	2017-2018
172	02	B.Tech EEE	15A52301	Managerial Economics and Financial Analysis	2017-2018
173	02	B.Tech EEE	15A02401	Electrical Machines – II	2017-2018
174	02	B.Tech EEE	15A02402	Electrical Power Generating Systems	2017-2018
175	02	B.Tech EEE	15A02403	Electromagnetic Fields	2017-2018
176	02	B.Tech EEE	15A04408	Analog Electronic Circuits	2017-2018
177	02	B.Tech EEE	15A02404	Electrical Machines Laboratory – I	2017-2018
178	02	B.Tech EEE	15A02405	Control Systems & Simulation Laboratory	2017-2018
179	02	B.Tech EEE	15A02406	Comprehensive Online Examination – I	2017-2018
180	03	B.Tech MECH	15A54301	Mathematics – III	2017-2018
181	03	B.Tech MECH	15A52301	Managerial Economics & Financial Analysis	2017-2018
182	03	B.Tech MECH	15A01308	Mechanics of Solids	2017-2018
183	03	B.Tech MECH	15A03301	Engineering Drawing for Mechanical Engineers	2017-2018
184	03	B.Tech MECH	15A03302	Engineering Mechanics	2017-2018
185	03	B.Tech MECH	15A03303	Thermodynamics	2017-2018
186	03	B.Tech MECH	15A01309	Mechanics of Solids Lab	2017-2018
187	03	B.Tech MECH	15A03304	Computer Aided Drafting Lab	2017-2018
188	03	B.Tech MECH	15A54401	Probability and Statistics	2017-2018
189	03	B.Tech MECH	15A99301	Basic Electrical and Electronics Engineering	2017-2018
190	03	B.Tech MECH	15A03401	Machine Drawing	2017-2018
191	03	B.Tech MECH	15A03402	Kinematics of Machines	2017-2018
192	03	B.Tech MECH	15A03403	Thermal Engineering - I	2017-2018
193	03	B.Tech MECH	15A03404	Manufacturing Technology	2017-2018
194	03	B.Tech MECH	15A03405	Thermal Engineering Laboratory	2017-2018
195	03	B.Tech MECH	15A03406	Manufacturing Technology Laboratory	2017-2018
196	03	B.Tech MECH	15A03407	Comprehensive Online Examination-I	2017-2018
197	04	B.Tech ECE	15A54301	Mathematics-III	2017-2018
198	04	B.Tech ECE	15A04301	Electronic Devices and Circuits	2017-2018
199	04	B.Tech ECE	15A04302	Switching Theory and Logic Design	2017-2018
200	04	B.Tech ECE	15A04303	Signals and Systems	2017-2018
201	04	B.Tech ECE	15A04304	Probability Theory and Stochastic Processes	2017-2018
202	04	B.Tech ECE	15A02306	Electrical Technology	2017-2018
203	04	B.Tech ECE	15A04305	Electronic Devices and Circuits Laboratory	2017-2018
204	04	B.Tech ECE	15A02307	Electrical Technology and Basic Simulation Laboratory	2017-2018
205	04	B.Tech ECE	15A54402	Mathematics-IV	2017-2018
206	04	B.Tech ECE	15A04401	Electronic Circuit Analysis	2017-2018
207	04	B.Tech ECE	15A04402	Analog Communication Systems	2017-2018
208	04	B.Tech ECE	15A04403	Electromagnetic Theory and Transmission Lines	2017-2018
209	04	B.Tech ECE	15A05201	Data Structures	2017-2018
210	04	B.Tech ECE	15A02303	Control Systems Engineering	2017-2018
211	04	B.Tech ECE	15A04404	Electronic Circuit Analysis Laboratory	2017-2018
212	04	B.Tech ECE	15A04405	Analog Communication Systems Laboratory	2017-2018
213	04	B.Tech ECE	15A04406	Comprehensive Online Examination-I	2017-2018
214	05	B.Tech CSE	15A54301	Mathematics III	2017-2018
215	05	B.Tech CSE	15A05301	Database Management Systems	2017-2018
216	05	B.Tech CSE	15A05302	Discrete Mathematics	2017-2018
217	05	B.Tech CSE	15A99301	Basic Electrical and Electronics Engineering	2017-2018
218	05	B.Tech CSE	15A04306	Digital Logic Design	2017-2018
219	05	B.Tech CSE	15A52301	Managerial Economics and Financial Analysis	2017-2018
220	05	B.Tech CSE	15A05303	Database Management Systems Laboratory	2017-2018
221	05	B.Tech CSE	15A99302	Basic Electrical and Electronics Laboratory	2017-2018
222	05	B.Tech CSE	15A54401	Probability and Statistics	2017-2018
223	05	B.Tech CSE	15A05401	Software Engineering	2017-2018
224	05	B.Tech CSE	15A05402	Computer Organization	2017-2018
225	05	B.Tech CSE	15A04407	Microprocessors & Interfacing	2017-2018
226	05	B.Tech CSE	15A05403	Object Oriented Programming using Java	2017-2018
227	05	B.Tech CSE	15A05404	Formal Languages and Automata Theory	2017-2018
228	05	B.Tech CSE	15A04408	Microprocessors & Interfacing Laboratory	2017-2018
229	05	B.Tech CSE	15A05405	Java Programming Laboratory	2017-2018
230	05	B.Tech CSE	15A05406	Comprehensive Online Examination-I	2017-2018
231	02	B.Tech EEE	15A02501	Electrical Measurements	2017-2018
232	02	B.Tech EEE	15A04509	Linear & Digital IC Applications	2017-2018
233	02	B.Tech EEE	15A02502	Electrical Power Transmission Systems	2017-2018
234	02	B.Tech EEE	15A02503	Power Electronics	2017-2018
235	02	B.Tech EEE	15A02504	Electrical Machines – III	2017-2018
236	02	B.Tech EEE	15A04510	MOOCS -I Digital Circuits and Systems	2017-2018
237	02	B.Tech EEE	15A02505	MOOCS -I Networks Signals and Systems	2017-2018
238	02	B.Tech EEE	15A02506	Electrical Machines Laboratory – II	2017-2018
239	02	B.Tech EEE	15A02507	Electrical Measurements Laboratory	2017-2018
240	02	B.Tech EEE	15A99501	Audit course – Social Values & Ethics	2017-2018
241	02	B.Tech EEE	15A52501	Management Science	2017-2018
242	02	B.Tech EEE	15A02601	Power Semiconductor Drives	2017-2018
243	02	B.Tech EEE	15A02602	Power System Protection	2017-2018
244	02	B.Tech EEE	15A04601	Microprocessors & Microcontrollers	2017-2018
245	02	B.Tech EEE	15A02603	Power System Analysis	2017-2018
246	02	B.Tech EEE	15A02604	CBCC -I(Neural Networks and Fuzzy Logic)	2017-2018
247	02	B.Tech EEE	15A04607	Microprocessors & Microcontrollers Laboratory	2017-2018
248	02	B.Tech EEE	15A02607	Power Electronics & Simulation Laboratory	2017-2018
249	02	B.Tech EEE	15A52602	Advanced English Language Communication Skills (AELCS) Laboratory (Audit Course)	2017-2018

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250	02	B.Tech EEE	15A02606	Comprehensive Online Examination - II	2017-2018
251	03	B.Tech MECH	15A01510	Fluid Mechanics and Hydraulic Machines	2017-2018
252	03	B.Tech MECH	15A03501	Thermal Engineering - II	2017-2018
253	03	B.Tech MECH	15A03502	Dynamics of Machinery	2017-2018
254	03	B.Tech MECH	15A03503	Machine Tools	2017-2018
255	03	B.Tech MECH	15A03504	Design of Machine Members - I	2017-2018
256	03	B.Tech MECH	15A03506	MOOCS -I(Nano Technology)	2017-2018
257	03	B.Tech MECH	15A01511	Fluid Mechanics and Hydraulic Machines Laboratory	2017-2018
258	03	B.Tech MECH	15A03508	Machine Tools Laboratory	2017-2018
259	03	B.Tech MECH	15A99501	Audit course - Social Values & Ethics	2017-2018
260	03	B.Tech MECH	15A03601	Operations Research	2017-2018
261	03	B.Tech MECH	15A03602	Design of Machine Members - II	2017-2018
262	03	B.Tech MECH	15A03603	Heat Transfer	2017-2018
263	03	B.Tech MECH	15A03604	Finite Element Method	2017-2018
264	03	B.Tech MECH	15A03605	Metal forming Process	2017-2018
265	03	B.Tech MECH	15A03606	CBCC-I(Non Conventional Source of Energy)	2017-2018
266	03	B.Tech MECH	15A03609	Heat Transfer Laboratory	2017-2018
267	03	B.Tech MECH	15A03610	Computer Aided Engineering Laboratory	2017-2018
268	03	B.Tech MECH	15A52602	Advanced English Language Communication Skills (AELCS) Laboratory (Audit Course)	2017-2018
269	03	B.Tech MECH	15A03611	Comprehensive Online Examination - II	2017-2018
270	04	B.Tech ECE	15A04501	Computer Organization	2017-2018
271	04	B.Tech ECE	15A04501	Antennas and Wave Propagation	2017-2018
272	04	B.Tech ECE	15A04502	Digital Communication Systems	2017-2018
273	04	B.Tech ECE	15A04503	Linear Integrated Circuits and Applications	2017-2018
274	04	B.Tech ECE	15A04504	Digital System Design	2017-2018
275	04	B.Tech ECE	15A04506	MOOCS -I(MEMS & MicroSystems)	2017-2018
276	04	B.Tech ECE	15A04507	IC Applications Laboratory	2017-2018
277	04	B.Tech ECE	15A04508	Digital Communication Systems Laboratory	2017-2018
278	04	B.Tech ECE	15A99501	Audit course - Social Values & Ethics	2017-2018
279	04	B.Tech ECE	15A52301	Managerial Economics and Financial Analysis	2017-2018
280	04	B.Tech ECE	15A04601	Microprocessors & Microcontrollers	2017-2018
281	04	B.Tech ECE	15A04602	Electronic Measurements and Instrumentation	2017-2018
282	04	B.Tech ECE	15A04603	Digital Signal Processing	2017-2018
283	04	B.Tech ECE	15A04604	VLSI Design	2017-2018
284	04	B.Tech ECE	15A04605	CBCC-I(Matlab Programming)	2017-2018
285	04	B.Tech ECE	15A04607	Microprocessors & Microcontrollers Laboratory	2017-2018
286	04	B.Tech ECE	15A04608	Digital Signal Processing Laboratory	2017-2018
287	04	B.Tech ECE	15A52602	Advanced English Language Communicatio (AELCS) Laboratory (Audit Course)	2017-2018
288	04	B.Tech ECE	15A04609	Comprehensive Online Examination-II	2017-2018
289	05	B.Tech CSE	15A05501	Operating Systems	2017-2018
290	05	B.Tech CSE	15A05502	Computer Networks	2017-2018
291	05	B.Tech CSE	15A05503	Object Oriented Analysis and Design	2017-2018
292	05	B.Tech CSE	15A05504	Principles of Programming Languages	2017-2018
293	05	B.Tech CSE	15A05505	Software Testing	2017-2018
294	05	B.Tech CSE	15A05507	MOOCS-I(R Programming)	2017-2018
295	05	B.Tech CSE	15A05509	Object Oriented Analysis and Design & Software Testing Laboratory	2017-2018
296	05	B.Tech CSE	15A05510	Operating Systems Laboratory	2017-2018
297	05	B.Tech CSE	15A99501	Social Values & Ethics (Audit Course)	2017-2018
298	05	B.Tech CSE	15A05601	Compiler Design	2017-2018
299	05	B.Tech CSE	15A05602	Data Warehousing & Mining	2017-2018
300	05	B.Tech CSE	15A05603	Design Patterns	2017-2018
301	05	B.Tech CSE	15A05604	Design and Analysis of Algorithms	2017-2018
302	05	B.Tech CSE	15A05605	Web and Internet Technologies	2017-2018
303	05	B.Tech CSE	15A05606	CBCC-I(Optimization Techniques)	2017-2018
304	05	B.Tech CSE	15A05608	Web and Internet Technologies Laboratory	2017-2018
305	05	B.Tech CSE	15A05610	Data Warehousing & Mining Laboratory	2017-2018
306	05	B.Tech CSE	15A52602	Advanced English Language Communication Skills(AELCS) Laboratory (Audit Course)	2017-2018
307	05	B.Tech CSE	15A05611	Comprehensive Online Examination-II	2017-2018
308	02	B.Tech EEE	15A02701	Electrical Distribution Systems	2017-2018
309	02	B.Tech EEE	15A04603	Digital Signal Processing	2017-2018
310	02	B.Tech EEE	15A02702	Power System Operation and Control	2017-2018
311	02	B.Tech EEE	15A02703	Utilization of Electrical Energy	2017-2018
312	02	B.Tech EEE	15A02706	CBCC-II(Energy Auditing and Demad Side Management)	2017-2018
313	02	B.Tech EEE	15A02707	CBCC-II(Smart Grid)	2017-2018
314	02	B.Tech EEE	15A04609	Digital Signal Processing Laboratory	2017-2018
315	02	B.Tech EEE	15A02710	Power Systems & Simulation Laboratory	2017-2018
316	02	B.Tech EEE	15A02802	MOOCS – II(Power System Dynamics and Control)	2017-2018
317	02	B.Tech EEE	15A02804	MOOCS – II(EHVDC Transmission)	2017-2018
318	02	B.Tech EEE	15A02806	Comprehensive Viva Voce	2017-2018
319	02	B.Tech EEE	15A02807	Technical Seminar	2017-2018
320	02	B.Tech EEE	15A02808	Project Work	2017-2018
321	03	B.Tech MECH	15A02601	Management Science	2017-2018
322	03	B.Tech MECH	15A03701	Automobile Engineering	2017-2018
323	03	B.Tech MECH	15A03702	CAD/CAM	2017-2018
324	03	B.Tech MECH	15A03703	Metrology and Measurements	2017-2018
325	03	B.Tech MECH	15A03704	CBCC-II(Refrigeration and Air Conditioning)	2017-2018
326	03	B.Tech MECH	15A03707	CBCC-III(Computational Fluid Dynamics)	2017-2018
327	03	B.Tech MECH	15A03710	CAD/CAM Laboratory	2017-2018
328	03	B.Tech MECH	15A03711	Metrology and Measurements Laboratory	2017-2018
329	03	B.Tech MECH	15A03803	MOOCS-II(Composite Materials)	2017-2018
330	03	B.Tech MECH	15A03804	MOOCS -II(Power Plant Engineering)	2017-2018
331	03	B.Tech MECH	15A03807	Comprehensive Viva Voce	2017-2018
332	03	B.Tech MECH	15A03808	Technical Seminar	2017-2018

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333	03	B.Tech MECH	15A03809	Project work	2017-2018
334	04	B.Tech ECE	15A04701	Optical Fiber Communication	2017-2018
335	04	B.Tech ECE	15A04702	Embedded Systems	2017-2018
336	04	B.Tech ECE	15A04703	Microwave Engineering	2017-2018
337	04	B.Tech ECE	15A04704	Data Communications and Networking	2017-2018
338	04	B.Tech ECE	15A04705	CBCC-I(Radar Systems)	2017-2018
339	04	B.Tech ECE	15A04706	CBCC-II(Digital Image Processing)	2017-2018
340	04	B.Tech ECE	15A04711	Microwave and Optical Communication Laboratory	2017-2018
341	04	B.Tech ECE	15A04712	VLSI & Embedded Systems Laboratory	2017-2018
342	04	B.Tech ECE	15A04802	MOOCS-I(*Low Power VLSI Circuits & Systems)	2017-2018
343	04	B.Tech ECE	15A04804	MOOCS-II(*RF Integrated Circuits)	2017-2018
344	04	B.Tech ECE	15A04805	Comprehensive Viva Voce	2017-2018
345	04	B.Tech ECE	15A04808	Technical Seminar	2017-2018
346	04	B.Tech ECE	15A04807	Project Work	2017-2018
347	05	B.Tech CSE	15A05601	Management Science	2017-2018
348	05	B.Tech CSE	15A05701	Grid & Cloud Computing	2017-2018
349	05	B.Tech CSE	15A05702	Information Security	2017-2018
350	05	B.Tech CSE	15A05703	Mobile Application Development	2017-2018
351	05	B.Tech CSE	15A05704	CBCC-I(Software Architecture)	2017-2018
352	05	B.Tech CSE	15A05707	CBCC-II(Software Project Management)	2017-2018
353	05	B.Tech CSE	15A05710	Grid & Cloud Computing Laboratory	2017-2018
354	05	B.Tech CSE	15A05711	Mobile Application Development Laboratory	2017-2018
355	05	B.Tech CSE	15A05802	MOOCS-I(Mobile Computing)	2017-2018
356	05	B.Tech CSE	15A05804	MOOCS-II(Building Large Scale Software Systems)	2017-2018
357	05	B.Tech CSE	15A05807	Comprehensive Viva-Voce	2017-2018
358	05	B.Tech CSE	15A05808	Technical Seminar	2017-2018
359	05	B.Tech CSE	15A05809	Project Work	2017-2018
360	FD	MCA	15F05301	Java Programming	2017-2018
361	FD	MCA	15F05302	Computer Networks	2017-2018
362	FD	MCA	15F05303	Design and Analysis of Algorithms	2017-2018
363	FD	MCA	15F05304	Software Engineering	2017-2018
364	FD	MCA	15F05305	Operating Systems	2017-2018
365	FD	MCA	15F05306	Algorithm Analysis Lab	2017-2018
366	FD	MCA	15F05307	Operating Systems Lab	2017-2018
367	FD	MCA	15F05308	Java Programming Lab	2017-2018
368	FD	MCA	15F05401	Web Technologies and Scripting Languages	2017-2018
369	FD	MCA	15F05402	Linux Programming	2017-2018
370	FD	MCA	15F05403	Software Testing Methodologies	2017-2018
371	FD	MCA	15F05404	Elective – I / OBCS(Management Information System)	2017-2018
372	FD	MCA	15F05408	Elective – II(Operations Research)	2017-2018
373	FD	MCA	15F05412	Linux Programming Lab	2017-2018
374	FD	MCA	15F05413	Web Technologies Lab	2017-2018
375	FD	MCA	15F05414	Software Testing Lab	2017-2018
376	FD	MCA	15F05501	Cloud Computing	2017-2018
377	FD	MCA	15F05502	Data Warehousing & Mining	2017-2018
378	FD	MCA	15F05503	Object Oriented Analysis and Design	2017-2018
379	FD	MCA	15F05504	Elective – III (MOOC)(Introduction to Big Data by Harvard University)	2017-2018
380	FD	MCA	15F05504	Introduction to Big Data by Harvard Univ via edx	2017-2018
381	FD	MCA	15F05505	Introduction to internet of things	2017-2018
382	FD	MCA	15F05506	Human Computer Interaction by California Univ via coursera	2017-2018
383	FD	MCA	15F05507	Visual Design by Harvard Univ via edx	2017-2018
384	FD	MCA	15F05508	Big Data Analytics by IIT Madras, Chennai	2017-2018
385	FD	MCA	15F05509	Computer Maintenances	2017-2018
386	FD	MCA	15F05510	Web Performance Optimization	2017-2018
387	FD	MCA	15F05511	Introduction to Hadoop and Mapreduce	2017-2018
388	FD	MCA	15F05512	Introduction to Reverse Engineering Software	2017-2018
389	FD	MCA	15F05513	Elective – IV(Web Services)	2017-2018
390	FD	MCA	15F05513	Web Services	2017-2018
391	FD	MCA	15F05514	Distributed Databases	2017-2018
392	FD	MCA	15F05515	Distributed Computing	2017-2018
393	FD	MCA	15F05516	Mobile Application Development	2017-2018
394	FD	MCA	15F05517	Object Oriented Analysis and Design Lab	2017-2018
395	FD	MCA	15F05518	Cloud Computing Lab	2017-2018
396	FD	MCA	15F05519	Data Warehousing & Mining Lab	2017-2018
397	FD	MCA	15F05601	Project Seminar	2017-2018
398	FD	MCA	15F05602	Orientation / Project Work	2017-2018

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Chadalawada nagar, Renigunta Road, Tirupathi-517502

COMMUNICATIVE ENGLISH

I B.Tech I Semester: Common to all branches								
Course code	Category	Hours/week			Credits	Maximum Marks		
20CA52101	Foundation	L	T	P	C	CIA	SEE	TOTAL
		3	-	-	3	30	70	100
Contact Classes:46	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes:46		

OBJECTIVES:

The course should enable the students to :

I. Facilitate effective listening skills for better comprehension of academic lectures and English spoken by native speakers

II. Focus on appropriate reading strategies for comprehension of various academic texts and authentic materials

III. Help improve speaking skills through participation in activities such as role plays,discussions and structured talks/oral presentations

IV. Impart effective strategies for good writing and demonstrate the same in summarizing, writing well organized essays, record and report useful information

V. Provide knowledge of grammatical structures and vocabulary and encourage their appropriate use in speech and writing

UNIT-I	Lesson: On the Conduct of Life: William Hazlitt	Classes:10

Listening: Identifyingthe topic, the context and specific pieces of information by listening to short audio texts and answering a series of questions.

Speaking: Asking and answering general questions on familiar topics such as home, family, work, studies and interests; introducing oneself and others.

Reading: Skimming to get the main idea of a text; scanning to look for specific pieces of information.

Reading for Writing: Beginnings and endings of paragraphs - introducing the topic, summarizing the main idea and/or providing a transition to the next paragraph.

Grammar and Vocabulary: Content words and function words; word forms: verbs, nouns, adjectives and adverbs; nouns: countables and uncountables; singular and plural; basic sentence structures; simple question form - wh-questions; word order in sentences.

Learning Outcomes

At the end of the module, the learners will be able to

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- **Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information**
- **Ask and answer general questions on familiar topics and introduce oneself/others**
- **Employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information**
- **Recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs**
- **Form sentences using proper grammatical structures and correct word forms**

UNIT-II	Lesson: The Brook: Alfred Tennyson	Classes:10

Listening: Answering a series of questions about main idea and supporting ideas after listening to audio texts.

Speaking: Discussion in pairs/ small groups on specific topics followed by short structured talks.

Reading: Identifying sequence of ideas; recognizing verbal techniques that help to link the ideas in a paragraph together.

Writing: Paragraph writing (specific topics) using suitable cohesive devices; mechanics of writing - punctuation, capital letters.

Grammar and Vocabulary: Cohesive devices - linkers, sign posts and transitional signals; use of articles and zero article; prepositions.

Learning Outcomes

At the end of the module, the learners will be able to

- comprehend short talks on general topics
- participate in informal discussions and speak clearly on a specific topic using suitable discourse markers
- understand the use of cohesive devices for better reading comprehension
- write well structured paragraphs on specific topics
- identify basic errors of grammar/ usage and make necessary corrections in short texts

UNIT-III	Lesson: The Death Trap: Saki	Classes:10

Listening: Listening for global comprehension and summarizing what is listened to.

Speaking: Discussing specific topics in pairs or small groups and reporting what is discussed

Reading: Reading a text in detail by making basic inferences -recognizing and interpreting specific context clues; strategies to use text clues for comprehension.

Writing: Summarizing - identifying main idea/s and rephrasing what is read; avoiding redundancies and repetitions.

Grammar and Vocabulary: Verbs - tenses; subject-verb agreement; direct and indirect speech, reporting verbs for academic purposes.

Learning Outcomes

At the end of the module, the learners will be able to

- comprehend short talks and summarize the content with clarity and precision
- participate in informal discussions and report what is discussed
- infer meanings of unfamiliar words using contextual clues

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- write summaries based on global comprehension of reading/listening [illegible]
- use correct tense forms, appropriate structures and a range of reporti[illegible] verbs in speech and writing

UNIT-IV	Lesson: Innovation: Muhammad Yunus	Classes:08

Listening: Making predictions while listening to conversations/ transactional [illegible]ues without video; listening with video.

Speaking: Role plays for practice of conversational English in academic cont[illegible] (formal and informal) - asking for and giving information/directions.

Reading: Studying the use of graphic elements in texts to convey information [illegible] 46 trends/patterns/relationships, communicate processes or display complicated [illegible]

Writing: Letter Writing: Official Letters/Report Writing

Grammar and Vocabulary: Quantifying expressions - adjectives and adve[illegible] comparing and contrasting; Voice - Active & Passive Voice

Learning Outcomes

At the end of the module, the learners will be able to

- infer and predict about content of spoken discourse
- understand verbal and non-verbal features of communication and [illegible] formal/informal conversations
- interpret graphic elements used in academic texts
- produce a coherent paragraph interpreting a figure/graph/chart/table
- use language appropriate for description and interpretation of graphic elements

UNIT-V	Lesson: Politics and the English Language: George Orwell	Classes:08

Listening: Identifying key terms, understanding concepts and answering [illegible] relevant questions that test comprehension.

Speaking: Formal oral presentations on topics from academic contexts - with[illegible] the use of PPT slides.

Reading: Reading for comprehension.

Writing: Writing structured essays on specific topics using suitable claims [illegible] licences

Grammar and Vocabulary: Editing short texts –identifying and correcting [illegible] errors in grammar and usage (articles, prepositions, tenses, subject verb agreement)

Learning Outcomes

At the end of the module, the learners will be able to

- take notes while listening to a talk/lecture and make use of them [illegible] questions
- make formal oral presentations using effective strategies
- comprehend, discuss and respond to academic texts orally and in [illegible]
- produce a well-organized essay with adequate support and detail

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Communicative English Lab

I B. Tech - I Semester : (Common to All Branches of Engineering)

Course code	Category	Hours/week			Credits			
20CA52102	Foundation	L	T	P	C	CIA	SEE	TOTAL
		-	-	3	1.5	30	70	100
Contact Classes:	Tutorial Classes: Nil		Practical Classes:45					

OBJECTIVES:

The course should enable the :

- students will be exposed to a variety of self instructional, learner friendly modes of language learning
- students will learn better pronunciation through stress, intonation and rhythm
- students will be trained to use language effectively to face interviews, group discussions, public speaking
- students will be initiated into greater use of the computer in resume preparation, report writing, format making etc

List of Topics

1. Phonetics
2. Reading comprehension
3. Describing objects/places/persons
4. Role Play or Conversational Practice
5. JAM
6. Etiquettes of Telephonic Communication
7. Information Transfer
8. Note Making and Note Taking
9. E-mail Writing
10. Group Discussions-1
11. Resume Writing
12. Debates
13. Oral Presentations
14. Poster Presentation
15. Interviews Skills-1

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DEPARTMENT OF FRESHMAN ENGINEERING

SOFT SKILLS-II SYLLABUS

III B. Tech – II Semester: Common for All Branches

Course Code	Category	Hours/Week			Credits	Maximum Marks		
19CA52601	Foundation	L	T	P	C	CIA	SEE	Total
		3	1	-	3	30	70	100
Contact Classes:45	Tutorial Classes:15	Practical Classes: Nil			Total Classes:60			

Objectives:

- To enhance employability skills through Group discussions and Mock Interviews.
- To enable the students collectively in organizational skills.
- To train the students to meet communicative competence.

UNIT – I	VERBAL ABILITY & COMMUNICATION SKILLS	Classes:09

Communication: Verbal and Non-Verbal Communication, Barriers to effective Communication, Types of Communication - Oral, Aural, Writing and Reading

Grammar:- usage of Articles, Preposition, Verb, Tenses, Adverbs, If-Conditionals, Adjectives, Degrees of Comparison, Conjunction, Simple, Compound & Complex, Active & Passive voice, Reported Speech and Common Errors in English.

Word Power: - Synonyms, Antonyms, Affixes, One word substitutions and Idioms & Phrases.

UNIT- II	EMPLOYABILITY SKILLS	Classes:09

COMPREHENSIONS:-Listening Comprehension, Reading Comprehension, Technical Reports, Resume Writing, E-mail Writing and Essay Writing

SVAR (Accent): Phonetics, Inflections, Stress and Intonation.

GROUP ACTIVITIES: Just-A-Minute (JAM), Debate, Group Discussion and Interview Skills

UNIT - III	Arithmetic III	Classes:09

Number System(HCF&LCM), Averages, Percentages, Simple Interest & Compound Interest, Problems on Ages, Profit & Loss, Probability, Permutation & Combinations, Logarithms

UNIT - IV	Arithmetic IV	Classes:10

Time & work, Time and Distance, Allegation and Mixtures, Mesuration2D, Mensuration3D, Data Interpretation.

UNIT –V	Reasoning II	Classes:08

Analogy, Classification, Number series, Coding Decoding, Direction & Distance,Blood Relation.

Critical Reasoning – Syllogism, Statements & Assumptions, Statements & Arguments, Data sufficiency, Seating Arrangement, Puzzles.

Text Books:

1. Rizvi M. Ashraf Effective Technical Communication, Tata McGraw-Hill Publishing Company Limited, 2006.
2. R.S Aggarwal, Quantitative Aptitude for Competitive Examinations, S. Chand Publications
3. R.S.Aggarwal, Verbal and Non Verbal Reasoning, S.Chand Publications.

References:

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AI TOOLS, TECHNIQUES AND APPLICATIONS

II B.TECH II SEM ME

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA05405	Elective	3	-	-	3	30	70	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 45		

OBJECTIVES:

The course should enable the students to:

I. Study the concepts of artificial intelligence in problem solving.
II. Explore the methods of agents and reasoning patterns.
III. Introduce the concepts of knowledge representation and learning.
IV. Analyze and solve statistical learning methods using AI techniques.

UNIT-I	INTRODUCTION	Classes: 08

The AI problems, what is an AI technique, the levels of the model, the underlying assumption, problems; Problem spaces and search: Defining the problem as a state space search, production systems, problem characteristics and production system characteristics; Problem-solving: Uninformed search strategies; Informed search strategies: Heuristic search strategies, local search algorithms and optimization problems, backtracking search for CSP.

UNIT-II	KNOWLEDGE AND REASONING	Classes: 10

Logical agents, knowledge-based agents, the wumpus world and propositional logic, reasoning patterns in propositional logic and agents based on propositional logic; First-order logic: Syntax and semantic of first-order logic, knowledge engineering in first-order logic; Inference in first-order logic: Propositional vs first-order inference, unification and lifting, forward chaining, backward chaining, resolution.

UNIT-III	KNOWLEDGE REPRESENTATION	Classes: 08

Categories and objects, actions, situations and events, mental events and mental objects: The internet shopping world, truth maintenance systems.

Uncertain knowledge and reasoning: Uncertainty, acting under uncertainty, basic probability notation, the axioms of probability, inference using full joint distributions, independence, Baye's rule and its use.

UNIT-IV	LEARNING	Classes: 10

Learning from observations, forms of learning, Inductive learning: Learning decision trees, ensemble learning; Why learning works: Computational learning theory.

UNIT-V	STATISTICAL LEARNING METHODS	Classes: 09

Knowledge in learning: A logical formulation of learning, knowledge in learning; Neural networks; Fuzzy logic systems: Introduction, crisp sets, fuzzy sets, some fuzzy terminology, fuzzy logic control, sugeno style of fuzzy inference processing, fuzzy hedges, α cut threshold.

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4. Walden InfoTech Software.
5. Orel
6. Young India Films

References:

1. Bailey, Stephen. Academic writing: A handbook for international students. Routledge, 2014.
2. Chase, Becky Tarver. Pathways: Listening, Speaking and Critical Thinking. Heinley ELT; 2nd Edition, 2018.
3. Skillful Level 2 Reading & Writing Student's Book Pack (B1) Macmillan Educational.
4. Hewings, Martin. Cambridge Academic English (B2). CUP, 2012.
5. A Textbook of English Phonetics for Indian Students by T.Balasubramanyam

Web Links

- www.esl-lab.com
- www.englishmedialab.com
- www.englishinteractive.net

Course Outcomes

At the end of the course, the students will be able to

CO1: Remember and understand the different aspects of the English language proficiency with emphasis on LSRW skills

CO2: Apply communication skills through various language learning activities

CO3: Analyze the English speech sounds, stress, rhythm, intonation and syllable division for better listening and speaking comprehension.

CO4: Evaluate and exhibit acceptable etiquette essential in social and professional settings.

CO5: Create awareness on mother tongue influence and neutralize it in order to improve fluency in spoken English.

ENGINEERING WORKSHOP

I Semester: Common to all

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA03103	Core	-	-	3	1.5	30	70	100
Contact Classes:-	Tutorial Classes: Nil			Practical Classes: 51		Total Classes: 51		

OBJECTIVES:

1. Identify and use of tools, types of joints in carpentry, fitting, tin smithy welding and foundry operations.

Any 10 of the following experiments has to be performed

CARPENTRY	
Expt. 1	Preparation of dove tail joint as per given taper angle.
Expt. 2	Preparation of lap joint as per given dimensions.
Expt. 3	Preparation of Cross Lap joint as per given taper angle.
FITTING	
Expt. 4	Make a square fit for given sizes.
Expt. 5	Make a V Joint for given dimensions.
Expt. 6	Make a half round fit for given dimensions.
TIN SMITHY	
Expt. 7	Prepare the development of a surface and make a rectangular tray.
Expt. 8	Prepare the development of a surface and make a round tin.
FOUNDRY	
Expt. 9	Prepare a single Piece pattern.
Expt. 10	Prepare a Split pattern.
WELDING	
Expt. 11	Preparation of V butt joint
Expt. 12	Preparation of Lap joint
Expt. 13	Preparation of T fillet joint

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C PROGRAMMING LAB

B.Tech I Year II Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA05102	Foundation	0	0	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 48				Total Classes:48		

COURSE OBJECTIVES:

1. Learn C Programming language.
2. To make the student solve problems, implement algorithms using C language.
3. To write diversified solutions using C language.

LIST OF PROGRAMS

Week -1

Write C program to

a) Print the size of all data types.
b) Find the Sum of three numbers
c) Exchange (swap) of two numbers by using third variable.
d) Exchange (swap) of two numbers without using third variable.

Week - 2

a) Develop a calculator to convert time, distance, area, volume and temperature from one unit to another.
b) Write a C program to find the Priority and associativity of operators using expressions. Take the expressions with different operators.
c) Write a C program to swap two numbers using bitwise operators.

Week - 3

a) Write a C program to find whether the given integer is odd or even.
b) Write a C program to find the Maximum of three numbers.
c) Write a C program to print 'hello world' without using semicolon.
d) Write a C program to find whether the given number is odd or even using bitwise operator.
e) Write a C program to find the maximum of two numbers using Conditional operator.
f) Write a program which takes two integers and one arithmetic operator from the user, and performs the operation and then prints the result by using **switch-case**.(Operators : +, -, *, /, %)

Week -4

a) Write a C program to generate the required multiplication table.
b) Write a C program to find the Factorial of a given integer.
c) Write a C program to compute x power of n (x^n) without using built in functions.
d) Write a C program to check whether the given integer is prime or not.
e) Write a C program to find GCD

Week - 5

a) Write a C program to find the sum of the digits of an integer.
b) Write a C program to find whether the given integer is a Palindrome or not.
c) Write a C program to generate Fibonacci numbers in the given range.

Week - 6

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a) Write a C program to print the following pattern. 1 2 2 3 3 3 b) Print multiplication tables up to the given table. c) Write a C program to print series of prime numbers in the given range.	
Week - 7	
a) Write a C program to check whether the given integer is strong number or not. b) Write a C program to evaluate the sum of the following series up to 'n' terms $e^x = 1 + x + x^2/2! + x^3/3! + x^4/4! +$ --------	
Week - 8	
a) Compute the maximum, minimum and average of N numbers. b) Write a C program to find the sum of positive and negative numbers in a given set(Array) of numbers. c) Write a program to implement linear search technique d) Write a C program to read two matrices and find i) Sum. ii) Product and display the result in the matrix form.	
Week -9	
a) Write a C program to read a matrix and perform the following operations i) Find the sum of Diagonal Elements of a matrix. ii) Print Transpose of a matrix. iii) Print sum of even and odd numbers in a given matrix.	
Week - 10	
a) Write a C program to read two strings and perform the following operations without using built-in string library functions. i) String length determination. ii) Compare Two Strings. iii) Concatenate Two Strings. iv) String reversing v) Determining whether a string is a palindrome or not b) Write a C program to accept a line of characters and print the number of Vowels, Consonants, blank spaces, digits and special characters. c) Write a C program to read a set of strings and sort them in alphabetical order.	
Week -11	
a) Write a C program to illustrate the following types of functions i) Function with no arguments and no return values ii) Function with arguments and no return value iii) Function without arguments and with return value iv) Function with arguments and with return value	
Week - 12	
a) Write a C program to exchange two numbers using pointers. b) Write a program to print the elements of an array in reverse order using pointers.	
Week - 13	
a) Write a C program to express a four digit number in words. For example 1546 should be written as one thousand five hundred and forty six b) Write a C program using recursion for finding Factorial of a number c) Calculate the greatest common divisor using recursion for two numbers as specified by	

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C Programming Lab

I B. Tech – I Semester : Common for All Branches

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA05102	Foundation	–	–	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total Classes:45		

Objectives:

- Learn C Programming language.
- To make the student solve problems, implement algorithms using C language.
- To write diversified solutions using C language.

LIST OF PROGRAMS

Week -1

Write C program to

a) Print the size of all data types.
b) Find the Sum of three numbers
c) Exchange (swap) of two numbers by using third variable.
d) Exchange (swap) of two numbers without using third variable.

Week - 2

a) Develop a calculator to convert time, distance, area, volume and temperature from one unit to another.
b) Write a C program to find the Priority and associativity of operators using expressions. Take the expressions with different operators.
c) Write a C program to swap two numbers using bitwise operators.

Week - 3

a) Write a C program to find whether the given integer is odd or even.
b) Write a C program to find the Maximum of three numbers.
c) Write a C program to print 'hello world' without using semicolon.
d) Write a C program to find whether the given number is odd or even using bitwise operator.
e) Write a C program to find the maximum of two numbers using Conditional operator.
f) Write a program which takes two integers and one arithmetic operator from the user, and performs the operation and then prints the result by using **switch-case**.(Operators : +, -, *, /, %)

Week -4

a) Write a C program to generate the required multiplication table.
b) Write a C program to find the Factorial of a given integer.

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INDUSTRIAL ENGINEERING & MANAGEMENT (PROFESSIONAL ELECTIVE -I)

III B.Tech I Semester: ME								
Course Code	**Category**	**Hours/Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
19CA03507	**Core**	3	-	-	3	30	70	100
Contact Classes: 54	**Tutorial Classes: Nil**	**Practical Classes: Nil**				**Total Classes: 54**		

Course prerequisites :Basic knowledge on engineering mathematics

OBJECTIVES:

1. To create awareness to learn principles, concepts, functions of management and also to design organizational structures.
2. To gain knowledge on plant location, layouts and analyze concepts of network techniques.
3. To familiarize the students regarding work study and work sampling
4. To train with materials and marketing management concepts in organizational context.
5. To get awareness on Human Resource Management and its functions

UNIT-I	**Management and Organization**	**Classes:11**

Concepts of Management and Organization – Functions of Management – Evolution of Management Thought: Taylor's Scientific Management, Fayol's Principles of Management - Systems Approach to Management. Basic concepts related to Organization - Departmentation and Decentralization, Types of organization, Line organization, Line and staff organization, functional organization, Committee organization, matrix organization and their merits and demerits

UNIT-II	**Plant Location & Project Management**	**Classes:11**

Plant location, definition, factors affecting the plant location, comparison of rural and urban sites-methods for selection of plant. Plant Layout – definition, objectives, types of production, types of plant layout. PERT & CPM Project management, network modeling-probabilistic model, various types of activity-times estimation programme evaluation review techniques- Critical Path-probability of completing the project, deterministic model, critical path method -critical path calculation.

UNIT-III	**Work Study**	**Classes:10**

WORK STUDY: Definition, objectives, Method study - definition, objectives, steps involved-various types of associated charts-difference between micro-motion and memo-motion studies. Work measurement- definition, time study, steps involved-equipment, different methods of performance rating- allowances, standard time calculation. Work Sampling – definition, steps involved, standard time calculations, differences with time study- Applications. Predetermined motion time study – Method time measurement (MTM), introduction to ergonomics.

UNIT-IV	**Materials Management**	**Classes:11**

MATERIALS MANAGEMENT: Objectives, Inventory – functions, types, associated costs, inventory classification techniques. Stores Management and Stores Records. Purchase management, duties of purchase manager, associated forms. Marketing, selling, marketing mix, product life cycle.

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UNIT-V	Human Resource Management	Classes:11
HUMAN RESOURCE MANAGEMENT: Functions of HRM, Job Evaluation, different types of evaluation methods. Job description, Merit Rating- difference with job evaluation, different methods of merit ratings, wage incentives, different types of wage incentive schemes.		
Text Books:		
1. O.P. Khanna, Industrial Engineering and Management.,DhanpatRai, 2018,17th ed. 2. Stoner, Freeman, Gilbert, Management, Pearson Edu., 2007, 6th Ed. 3. Pannerselvam, Production and Operations Management. PHI, 2010. 4. Armine, Manufacturing Organization and Management. Pearson, 2009.		
ReferenceBooks:		
1. Ralph M Barnes, Motion and Time Studies. John Wiley and Sons, 2007. 2. Chase, Jacobs, Aquilano, Operations Management. TMH, 2007, 10th Ed. 3. L.S. Srinath, PERT/CPM. East-West Press, 2005.		
Course Outcomes:		
1. Discuss the principles and functions of management & decide the competitive strategy that works best for the organization. (L3) 2. Understand the importance of plant locations and develop effective project management techniques. (L2) 3. Understand the concept of work study, method study and types of associated charts, the work measurement, work sampling and their steps. (L2) 4. Learn the concepts of material management and apply the knowledge of inventory management and marketing strategies in work setting (L3). 5. Discuss the importance of various sub systems of HRM. (L3)		

CO-PO Mapping:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	-	-	-	-	-	-	-	3	3	-	3	-	-
CO2	3	3	-	3	-	-	-	-	-	-	3	-	-	2
CO3	3	3	-	3	-	-	-	-	-	-	-	3	-	-
CO4	3	3	-	-	-	1	-	-	3	3	3	3	-	-
CO5	-	-	-	-	-	-	-	1	3	3	-	-	-	-

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DESIGN FOR MANUFACTURE (MOOC Course-II)

IV B.Tech I Semester: ME

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA03707	Elective	3	-	-	3	30	70	100
Contact Classes: 51	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 51		

UNIT-I	Introduction	**10**

Introduction: Design philosophy – steps in Design process – General Design rules for manufacturability – basic principles of designing for economical production – creativity in design.

UNIT-II	Materials	**10**

Selection of Materials for design – Developments in Material technology – criteria for material selection – Material selection interrelationship with process selection – process selection charts.

UNIT-III	Machining Process	**11**

Overview of various machining processes – general design rules for machining - Dimensional tolerance and surface roughness – Design for machining, Ease – Redesigning of components for machining ease with suitable examples. General design recommendations for machined parts.

UNIT-IV	Metal Casting	**10**

Appraisal of various casting processes, selection of casting process, - general design considerations for casting – casting tolerances – use of solidification simulation in casting design – product design rules for sand casting.

UNIT-V	Metal Joining	**11**

Metal Joining: Appraisal of various welding processes, Factors in design of weldments – general design guidelines – pre and post treatment of welds – effects of thermal stresses in weld joints – design of brazed joints.

Text Books:

1. **Design for Manufacture** / John Cobert / Adisson Wesley, 1995.
2. **ASM Handbook**, Vol.20.
3. **Product design and Manufacturing** / A.K Chitale and R.C Gupta / Prentice – Hall of India, New Delhi, 2003.

Reference Books:

1. **Engineering Design- A Material and Processing Approach** / George E. Deiter / McGraw Hill Intl., 2nd Edition, 2000.

2. Design and Manufacturing / Surender Kumar & Goutham Sutradhar / Oxford & IBH Publishing Co. Pvt .Ltd., New Delhi, 1998

Course Outcomes:

At the end of this course the student will be able to:

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Advanced PRODUCTION TECHNOLOGY (MOOC-II)

IV B.Tech VII Semester: ME

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA03710	Elective	-	-	-	3	30	70	100
Contact Classes:	Tutorial Classes:	Practical Classes: Nil				Total Classes:		

UNIT-I	Metal casting

Metal casting processes: Sand casting shell moulding – expandable pattern casting - plaster mould and ceramic mould castings- investment casting – vacuum casting – permanent mould casting – slush casting – squeeze casting and semi solid metal casting.

UNIT-II	Welding Processes

solid state welding processes: cold welding – ultrasonic welding – friction welding. Resistance welding – explosion welding – diffusion welding – adhesive joining – joining plastics- thermal spraying

UNIT-III	Metal Cutting

Mechanics of chip formation-Geometry of Single point cutting tool – cutting forces – cutting power – tool life – selection ofcutting tool materials and cutting fluids – machining –economics.

UNIT-IV	Advanced Machining Processes

Electro discharge machining – electro chemical grinding – electron beam machining – abrasive jet machining – micromachining– applications.

UNIT-V	Processing of Powders, Ceramics and Plastics

Production, compaction, sintering of powders – design considerations – shaping of ceramics – forming and shaping of glass – Processing methods for plastics, tool making and die making for plastics.

Course Outcomes: At the end of course students should be able to

1. Apply knowledge of advanced casting techniques.(L3)
2. Understand various welding processes.(L2)
3. Apply knowledge of basic methodology of metal cutting and to educate the student about the structure, working, forces involved in single point and multipoint cutting tools.(L3)
4. Understand the various unconventional manufacturing processes and to know about the applications of advanced machining processes.(L2)
5. Illustrate the various process in making of components for engineering / domestic

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

INTERNET OF THINGS (IOT)

VI Semester ECE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA05604	Core	3	0	0	3	30	70	100
Contact Classes: 48	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 48		

OBJECTIVES:

The course should enable the students to:

1. Introduce the fundamental concepts of IoT and physical computing.
2. Expose the student to a variety of embedded boards and IoT Platforms.
3. Create a basic understanding of the communication protocols in IoT communications.
4. Familiarize the student with application program interfaces for IoT.
5. Enable students to create simple IoT applications.

UNIT-I — **Classes: 09**

Overview of IoT: The Internet of Things: An Overview, The Flavour of the Internet of Things, The "Internet" of "Things", The Technology of the Internet of Things, Enchanted Objects, Who is Making the Internet of Things? Design Principles for Connected Devices: Calm and Ambient Technology, Privacy, Web Thinking for Connected Devices, Affordances. Prototyping: Sketching, Familiarity, Costs Vs Ease of Prototyping, Prototypes and Production, Open source Vs Close source, Tapping into the community.

UNIT-II — **Classes: 10**

Embedded Devices: Electronics, Embedded Computing Basics, Arduino, Raspberry Pi, Mobile phones and tablets, Plug Computing: Always-on Internet of Things.

UNIT-III — **Classes: 10**

Communication in the IoT: Internet Communications: An Overview, IP Addresses, MAC Addresses, TCP and UDP Ports, Application Layer Protocols Prototyping Online Components: Getting Started with an API, Writing a New API, Real-Time Reactions, Other Protocols Protocol.

UNIT-IV — **Classes: 10**

Business Models: A short history of business models, The business model canvas, Who is the business model for, Models, Funding an Internet of Things startup, Lean Startups. Manufacturing: What are you producing, Designing kits, Designing printed circuit boards.

UNIT- V — **Classes: 09**

Manufacturing continued: Manufacturing printed circuit boards, Mass-producing the case and other fixtures, Certification, Costs, Scaling up software. Ethics: Characterizing the Internet of Things, Privacy, Control, Environment, Solutions.

Text Books:

1. Internet of Things - A Hands-on Approach, Arshdeep Bahga and Vijay Madisetti, Universities Press, 2015, ISBN: 9788173719547 R16 B.TECH ECM.
2. Getting Started with Raspberry Pi, Matt Richardson & Shawn Wallace, O'Reilly (SPD), 2014, ISBN: 9789350239759.

Web References:

1. https://www.arduino.cc/
2. https://www.raspberrypi.org/

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Choose the sensors and actuators for an IoT application.
CO2: Select protocols for a specific IoT application.
CO3: Utilize the cloud platform and APIs for IoT applications.
CO4: Experiment with embedded boards for creating IoT prototypes.
CO5: Design a solution for a given IoT application.

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

ADVANCE COMMUNICATIVE ENGLISH LABORATORY

II B. Tech - II Semester : Common for all branches								
Course code	**Category**	**Hours/week**		**Credits**	**Maximum Marks**			
20CA52401	Foundation	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**TOTAL**
		-	-	3	1.5	30	70	100
Contact Classes: Nil	**Tutorial Classes: Nil**		**Practical Classes:54**		**Total Classes:54**			

OBJECTIVES:

The course should enable the students to :

1. The course allows the students to use multi-media instruction for language development
2. To improve the students' fluency in English and enable them to listen the English spoken at normal conversational speed by
   educated English speakers and respond appropriately in different socio-cultural and Professional contexts.
3. Further, they would be required to communicate their ideas relevantly and coherently in writing and placing MNCs.

List of Topics

1. Syllables, stress & Intonation
2. Listening Skills
3. Report writing
4. Book review
5. Film review
6. Grooming
7. Non-verbal skills(Body Language)
8. Power Point Presentation(Ppt)
9. Group Discussion II
10. Time management
11. Stress management
12. Problem solving & Decision Making
13. Corporate Etiquettes
14. SWOT Analysis
15. Interview Skills II

Minimum Requirements for SOFT SKILLS Lab:

Soft Skills Laboratory shall have the following infra-structural facilities to accommodate at least 60 students in the lab:

1. Spacious room with appropriate acoustics.
2. Round Tables with movable chairs
3. Audio-visual aids
4. LCD Projector
5. Public Address system
6. P – IV Processor, Hard Disk – 80 GB, RAM–512 MB Minimum, Speed – 2.8 GHZ
7. T. V, a digital stereo & Camcorder
8. Headphones of High quality

Suggested Software:

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IT WORKSHOP LAB

II- Semester : CSE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA05203	Foundation	-	-	3		30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total Classes: 45		

Objectives:

- Introduce the internal parts of a computer, peripherals, I/O ports, connecting cables
- Teach basic command line interface commands on Linux
- Teach the usage of Internet for productivity and self paced life long learning
- Introduce Compression, Multimedia and Antivirus tools
- Introduce Office Tools such as Word processors, Spreadsheets and Presentation tools.

LIST OF EXPERIMENTS

WEEK -1

Learn about Computer: Identify the internal parts of a computer, and its peripherals. Represent the same in the form of diagrams including Block diagram of a computer. Write specifications for each part of a computer including peripherals and specification of Desktop computer. Submit it in the form of a report.

WEEK -2

Assembling a Computer: Disassemble and assemble the PC back to working condition. Students should be able to trouble shoot the computer and identify working and non-working parts. Student should identify the problem correctly by various methods.

WEEK-3

Operating System installation : Installing an Operating System such as Linux on Computer hardware.
Operating system features: Students should record the various features that are supported by the operating system(s) installed. They have to submit a report on it. Students should be able to access CD/DVD drives, write CD/DVDs, access pen drives, print files, etc. Students should install new application software and record the installation process.

WEEK-4

Productivity tools

MS WORD: Students should be able to create documents using the word processor tool. Some of the tasks that are to be performed are inserting and deleting the characters, words and lines, Alignment of the lines, Inserting header and Footer, changing the font, changing the colour, including images and tables in the word file, making page setup, copy and paste block of text, images, tables, linking the images which are present in other directory, formatting paragraphs, spell checking, etc.

WEEK-5

Productivity tools

MS POWER POINT: creating, opening, saving and running the presentations, selecting the style for slides, formatting the slides with different fonts, colours, creating charts and tables, inserting and deleting text, graphics and animations, bulleting and numbering, hyperlinking, running the slide show, setting the timing for slide show.

WEEK-6

Productivity tools

MS-EXCEL: Students should be able to create, open, save the application documents and format

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CATIA V5 SYLLABUS		
Module	**Session**	**Contents**
Introduction	1	**CATIA as a CAD software:-** Concept of Parametric Modeling, Feature Based Modeling, User Interface, Mouse operations, File types and Management, drawing profiles. Major user industries of Catia. Why Catia is preferred?
Sketcher	2	**Sketcher**: Profile toolbar, operation (corner, chamfer, delimitations, transformations, project 3D element), constriants, types of constraints, workbench.
	3	**Sketcher:-** sketch tools, tools(Sketch sloving status, sketch analysis, output feature), visulization toolbar, user selection filter.
Modelling of Machined Component (Part Modelling)	4	**Modeling of Machined component**, Material Addition and Removal (Pad, Pocket, Shaft, Groove), Sketch and Positioned Sketch, Types of Fillets, Types of Chamfer, Types of Hole.
	5	**Modeling of Machined component - 2. Pattern (Rectangular, Circular, User) , Thread/Tap, Datum Features (**Plane, Axes, Points),Simple Draft. Frequently used commands for Machined components in Catia / Creo
	6	**Advance Design features :-** Axis System, Types of draft, Shell, Stiffener, rib slot, **Multi section solid, Removed multi sectionsolid**, Apply Material, Measure, Render.
	7	**Introduction To Multi body concept:-** Copy Paste, Paste special, Insert body, Boolean Operations (Add, remove, Intersect), **Transformation** (Translation, Mirror, Scaling, Affinity).
	8	**Multi body concept:- Standared example ,** Negative body concept (Boolean Operations)
	9	**Advance Features:-** Parameters, Formula, Relations, Design Table.
	10	**Introduction To Drafting & Detailing Theory:-** (types Generative – Interactive), Initial Drafting setting, Sheet Background, Views (ortho, ISO), Dimensions (Types-Generate Dimension & Create Dimension).
	11	**Views:-** (Aux, Section, Details, Clipping, Broken), View properties, DATUMS & Tolerance.
	12	**Annotations:-** GD & T, Symbols, Note, Leaders, Table, Symbols (Machining, Roughness, Welding, Custom), Dress-upToolbar.

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Drafting	**13**	**Surfacing Modeling based Plastic Component:-** Environment, Tool bars, Surface Creation (Extrude, Revolve, Sphere, Cylinder), Surface Modification, Surface Editing (Trim, Split, Shape Fillet, Close Surface, Thickness).
	14	**Surfacing:-** Offset(All 3 types), Fill, Blend, Join, healing, Project-Combine.
	15	**Advanced Surfacing:-** Adaptive Sweep, Sweep(ALL), Multi section Surface.
Wire-frame Modeling	**16**	**Wire-frame Modeling:-** Point, Line, Planes, Curves, Circle-Conic, STANDARD EXAMPLES. Use of wire frame modeling.
BIW Templates	**17**	**BIW Templates:-** What is BIW, Junction, Diabolo, Hole, Mating Flange, Bead, BlendCorner.
Assembly & Mechanism	**18**	**Introduction** to Assembly:- Types of assembly approach, Types of Constrains and DOF, placement of components in the Assembly, Manipulating Components, **BOTTOM UP Approach**
	19	**TOP DOWN** Approach:- Part, Product, Component, Space Analysis, Reuse Pattern, Save management.
	20	**Assembly Drafting:-** Scene(Exploded View), Bill of material, Ballon creation, Graph Tree Reordering.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING II B. Tech (CSE), IV- SEMESTER - 2021-22 COURSE: PYTHON PROGRAMMING										
Course Code	Category	Hours / Week			Credits	Maximum Marks				
						CIA			SEE	Total
		L	T	P		CIE	AAT	TOT		
20CA05401	Core	3	-	-	3	25	05	30	70	100
Classes: 48 Hrs.	Tutorial: Nil	Practical Classes: Nil				Total Classes: 48Hrs				

Objectives:

The course should enable the students to:

1. To elucidate problem solving through python programming language
2. To train in development of solutions using modular concepts
3. To teach practical Pythonic solution patterns
4. To introduce function-oriented programming paradigm through python

UNIT - I INTRODUCTION TO PYTHON — 8Hrs

Introduction to Python: Python- Numbers, Strings, Variables, operators, expressions, statements, String operations, Math function calls, Input/Output statements

UNIT - II CONTROL STATEMENTS — 10Hrs

Conditional If, while and for loops, User defined Functions, parameters to functions, recursive functions, Turtle Graphics.

UNIT - III DATA STRUCTURES AND IDIOMATIC PROGRAMMING IN PYTHON — 10Hrs

Lists, Tuples, Dictionaries, Strings, Files and their libraries. Beautiful Idiomatic approach to solve programming problems.

UNIT - IV PYTHON OBJECT ORIENTED PROGRAMMING — 10Hrs

Introduction to oops: Concept of class, object and instances, Method. Inheritance. Polymorphism. Data Abstraction. Encapsulation. Oops through Python: Data hiding, Polymorphism, Inheritance, Class and static variables, Class methods and Static methods, Constructors and Destructors.

UNIT –V EVENT DRIVEN PROGRAMMING — 10Hrs

Turtle Bar Chart, Event Driven programming. Key press events, Mouse events, timer events.

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them as per the requirement. Some of the tasks that may be practiced are Managing the worksheet environment, creating cell data, inserting and deleting cell data, format cells, adjust the cell size.
WEEK-7
Productivity tools **MS-EXCEL:** Applying formulas and functions, preparing charts, sorting cells, Pivot table. Students should submit a user manual of the Spreadsheet.
WEEK -8
Networking and Internet **Networking**: Students should connect two computers directly using a cable or wireless connectivity and share information. Students should connect two or more computers using switch/hub and share information. Crimpling activity, logical configuration etc. should be done by the student. The entire process has to be documented.
WEEK -9
Networking and Internet **Browsing Internet**: Student should access the Internet for Browsing. Students should search the Internet for required information. Students should be able to create e-mail account and send email. They should get acquaintance with applications like Facebook, skype etc.
WEEK -10
Antivirus: Students should download freely available Antivirus software, install it and use it to check for threats to the computer being used. Students should submit information about the features of the antivirus used, installation process, about virus definitions, virus engine etc.
WEEK-11
Cloud based productivity enhancement and collaboration tools: • Manage event registrations, create quizzes, analyze responses: Google Forms • Build public sites, internal project hubs:Google Sites • Keep track of important events, sharing one's schedule, and create multiple calendars:Google Calendar.
Reference Books:
1. Introduction to Computers, Peter Norton, McGraw Hill 2. MOS study guide for word, Excel, Powerpoint& Outlook Exams, Joan Lambert, Joyce Cox, PHI. 3. Introduction to Information Technology, ITL Education Solutions limited, Pearson Education. 4. Networking your computers and devices, Rusen, PHI

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING II B. Tech (CSE), IV- SEMESTER – 2021-22 COURSE: PYTHON PROGRAMMING LABORATORY										
Course Code	Category	Hours / Week			Credits	Maximum Marks				
						CIA			SEE	Total
		L	T	P	C	DDE	LIE	TOTAL		
20CA05406	PE	-	-	3	2	20	10	30	70	100
Classes: 45 Hrs	Tutorial: Nil	Practical Classes: Nil				Total Classes: 45Hrs				

Objectives:

The course should enable the students to:

1. To write, test, and debug simple Python programs.
2. To implement Python programs with conditionals and loops.
3. Use functions for structuring Python programs.
4. Represent compound data using Python lists, tuples, dictionaries.
5. Read and write data from/to files in Python.
6. To implement Python programs with Turtle graphics.

LIST OF EXPERIMENTS

Week -1 BASIC PROGRAMS

Write a program:

1. To print 'HELLO CREC'
2. To Compute All Arithmetic Operators.
3. To Swap Two Variables with and without third variable.

Week -2 BASIC PROGRAMS

Write a program

1. To Generate A Random Number
2. To Find The Area Of A Triangle.
3. To Calculate Quadratic equation.

Week-3 CONTROL STATEMENTS

1. Design a Python script to convert a Binary number to Decimal number and verify if it is a Perfect number.
2. Write a program to compute the GCD of two numbers.

Week-4 CONTROL STATEMENTS

1. Design a Python Script to determine the Square Root of a given number without using inbuilt functions in Python.
2. Write a program to find the sum of the digits of a number.
3. Write a program to find given number is strong number or not

Week-5 CONTROL STATEMENTS

1. Write a program to find the maximum of a list of numbers.
2. Write a program to find the factorial of given number.
3. Write a program to find the whether the given number is prime or not.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
II B. Tech (CSE), IV- SEMESTER – 2021-22
COURSE: MOBILE APPLICATION DEVELOPMENT LABORATORY

Course Code	Category	Hours / Week			Credits	Maximum Marks				
						CIA			SEE	Total
		L	T	P	C	DDE	LIE	TOTAL		
20CA05408	SC	-	-	3	2	20	10	30	70	100
Classes: 45 Hrs.	Tutorial: Nil	Practical Classes: Nil				Total Classes: 45 Hrs.				

Objectives:

1. To understand fundamentals of android operating systems.
2. Illustrate the various components, layouts and views in creating android applications
3. To understand fundamentals of android programming.

WEEK 1

Installation of Android studio.

WEEK 2

Create "Hello World" Application

a. Create a new Android Project
b. Run "Hello World" on the Emulator
c. On a Physical Device
d. Greeting the User

WEEK 3

Create Application by Using Widgets
Creating the Application by using the Activity class

1. onCreate()
2. onStart()
3. onResume()
4. onPause()
5. onStop()
6. onDestroy()
7. (vii) onRestart()

WEEK 4

Creating the Application by using Text Edit control.

WEEK 5

Creating the Application Choosing Options

1. CheckBox
2. (ii) RadioButton

WEEK 6

Creating the Application Choosing Options

1. RadioGroup
2. (ii) Spinner

WEEK 7

Create Application by Using Building Blocks for Android Application Design
Design the Application by using

1. Linear Layout

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2. (ii) Relative Layout

WEEK 8

Create Application by Using Building Blocks for Android Application Design in Absolute Layout

WEEK 9

Design the Application for Menus and Action Bar

WEEK 10

Design the application to display the Drop-Down List Action Bar.

Text Books:

1. Android Programming by B.M Harwani, Pearson Education, 2013.

Course Outcomes

Upon completion of the course, the students should be able to:

CO1	**Apply essential Android Programming concepts.**
CO2	**Develop various Android applications related to layouts & rich uses interactive interfaces**
CO3	**Utilize rapid prototyping techniques to design and develop sophisticated mobile interfaces.**
CO4	**Develop mobile applications for the Android operating system that use basic and advanced phone features.**
CO5	

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MOBILE APPLICATION DEVELOPMENT

VII Semester: CSE (Non-FSI) / VIII Semester: CSE (FSI)

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA05702	Core	3	-	-	3	30	70	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 45		

Objectives:

- To introduce the Android technology and its application.
- Design & program real working education based mobile application projects.
- Become familiar with common mobile application technologies and platforms; open files, save files, create and program original material, integrate separate files into a mobile application project, create and edit audio sound effects & music.

UNIT-I	Introduction to Android:	Classes: 10

The Android 4.1 jelly Bean SDK, Understanding the Android Software Stack, installing the Android SDK, Creating Android Virtual Devices, Creating the First Android Project, Using the Text view Control, Using the Android Emulator, The Android Debug Bridge(ADB), Launching Android Applications on a Handset

UNIT-II	Basic Widgets	Classes: 10

Understanding the Role of Android Application Components, Understanding the Utility of Android API, Overview of the Android Project Files, Understanding Activities, Role of the Android Manifest File, Creating the User Interface, Commonly Used Layouts and Controls, Event Handling, Displaying Messages Through Toast, Creating and Starting an Activity, Using the Edit Text Control, Choosing Options with Checkbox, Choosing Mutually Exclusive Items Using Radio Buttons

UNIT-III	Building Blocks for Android Application Design	Classes: 10

Introduction to Layouts, Linear Layout, Relative Layout, Absolute Layout, Using Image View, Frame Layout, Table Layout, Grid Layout, Adapting to Screen orientation.Utilizing Resources and Media Resources, Creating Values Resources, Using Drawable Resources, Switching States with Toggle Buttons, Creating an Images Switcher Application, Scrolling Through Scroll View.

UNIT-IV	Using Selection widgets and Debugging:	Classes: 08

Using List View, Using the Spinner control, Using the GridView Control, Creating an Image Gallery Using the ViewPager Control, Using the Debugging Tool: Dalvik Debug Monitor Service(DDMS), Debugging Application, Using the Debug Perspective.

UNIT-V	Building Menus and Storing Data:	Classes: 07

Creating Interface Menus and Action Bars, Menus and Their Types, Creating Menus Through XML, Creating Menus Through Coding, Applying a Context Menu to a List View, Using the Action Bar, Replacing a Menu with the Action Bar, Creating a Tabbed Action Bar, Creating a Drop-Down List Action Bar. **Using Databases:** Using the SQLiteOpenHelperclasss, Accessing Databases with the ADB, Creating a Data Entry Form.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
III B.Tech (CSE), V- SEMESTER – 2021-22
COURSE : DATABASE MANAGEMENT SYSTEMS
Course Code: 19CA05503

Course Outcomes (COs)

CO1 Students will be able to understand database concepts and popular database languages.

CO2 Students will be able to conceptualize data using different data models.

CO3 Students will be able to write different types of interactive queries with selected databases.

CO4 Students can create efficient relational databases for various business applications such as banking, e-commerce, and retail etc.

CO5 Students can design and develop database applications and database system software components such as transaction, storage and concurrency modules.

UNIT-I INTRODUCTION TO DATABASE SYSTEMS 8Hrs

Introduction-Database System, Purpose of Database Systems, History of Data base Systems, Database Advantages of Database systems Applications, View of Data - Data Abstraction, Instances and Schema, Data Models, Database Languages - DDL, DML, Database Architecture, Database Users and Administrators.

UNIT-II DATA MODELS 10Hrs

Introduction to Data base design , ER diagrams, Beyond ER Design, Entities, Attributes and Entity sets, Relationships and Relationship sets, Additional features of ER Model, Conceptual Design with the ER Model, Conceptual Design for Large enterprises. Relational Model: Introduction to the Relational Model - Integrity Constraints over Relations, Enforcing Integrity constraints, querying relational data, Logical data base Design, Introduction to Views Destroying/ altering Tables and Views.

UNIT-III RELATIONAL ALGEBRA AND CALCULUS 10Hrs

Relational Algebra and Calculus: Relational Algebra - Selection and Projection, Set operations, Renaming, Joins, Division, Examples of Algebra Queries, Relational calculus - Tuple relational Calculus - Domain relational calculus - Expressive Power of Algebra and calculus. Form of Basic SQL Query - Examples of Basic SQL Queries, Introduction to Nested Queries, Correlated Nested Queries, Set - Comparison Operators, Aggregate Operators, NULL values - Comparison using Null values - Logical connectives - AND, OR and NOT - Impact on SQL Constructs, Outer Joins, Disallowing NULL values, Complex Integrity Constraints in SQL Triggers and Active Data bases.

UNIT-IV NORMAL FORMS 10Hrs

Normalization: Purpose of Normalization or schema refinement, concept of functional dependency, normal forms based on functional dependency (1NF, 2NF and 3 NF), Lossless join and dependency preserving decomposition, concept of surrogate key, Boyce-codd normal form(BCNF), Multivalued Dependencies

UNIT-V TRANSACTION AND CONCURRENCY CONTROL 10Hrs

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Transaction Concept, Transaction State, Implementation of Atomicity and Durability, Concurrent Executions, Serializability, Recoverability, Implementation of Isolation, Testing for Serializability, **Concurrency Control** - Lock - Based Protocols - Timestamp Based Protocols.

.

Text Books:

1) Abraham Silberschatz, Henry F. Korth, S. Sudarshan, "Database System Concepts", McGraw-Hill, 4th Edition, 2002.

2) Database Management Systems, 3/e, Raghurama Krishnan, Johannes Gehrke, TMH

Reference Books:

1) Introduction to Database Systems, 8/e C J Date, PEA.

2) Database Management System, 6/e Ramez Elmasri, Shamkant B. Navathe, PEA

3) Database Principles Fundamentals of Design Implementation and Management, Corlos Coronel, Steven Morris,

Peter Robb, Cengage Learning.

E-Resources:

1) https://nptel.ac.in/courses/106/105/106105175/

2) https://www.geeksforgeeks.org/introduction-to-nosql

3) http://www.e-booksdirectory.com/details.php?ebook=10166

4) http://www.e-booksdirectory.com/details.php?ebook=7400re

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IV B.TECH I SEM CSE
E-COMMERCE(17CA05707)

Course Outcomes:

CO1: Define and describe the 9 major ecommerce business models.

CO2 : Identify the differences and similarities among customers and their perception of value in B2B and B2Ce-commerce.

CO3: Compare and contrast developing a marketing mix in B2B and B2Cecommerce.

CO4: Summarize ways of moving money in e-commerce and related issues.

C05:. Discuss major trends that are impacting both the e-commerce world and society in general..

SYLLABUS

Unit-I	**Electronic Commerce**	**Classes: 12**
Electronic Commerce: Frame work, anatomy of E-Commerce applications, E- Commerce Consumer applications, E-Commerce organization applications. **Consumer Oriented Electronic commerce:** Mercantile Process models.		
Unit-II	**Electronic Payment Systems**	**Classes: 12**
Electronic paymentsystems: DigitalToken-Based, SmartCards, CreditCards ,RisksinElectronic Paymentsystems. **Inter Organizational Commerce:** EDI, EDI Implementations, and Value added networks.		
Unit-III	**Inter Organizational Commerce**	**Classes: 13**
Inter Organizational Commerce: Work Flow, Automation Customization and internal Commerce, Supply chain Management. **Corporate Digital Library:** Types of Digital Documents, Corporate Data Warehouses, e-Advertising and Marketing, Advertising on the Internet, On-line Marketing Process, and Market Research.		
Unit-IV	**Consumer Search**	**Classes: 11**
Consumer Search: Search and Resource Discovery Paradigms, Information Search and Retrieval, Electronic Commerce Catalogs (Directories), Overview of the Directory Business, Information Filtering, Consumer-Data Interface.		

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Unit-V	Multimedia and e-Commerce	Classes: 12
Multimedia and e-Commerce: Digital Video and e-commerce, Desktop Video Processing, Desktop Video Conferencing.		
Text Books:		
1. Electronic Commerce, Pete Loshin/ Ohn Vacca, Fourth Edition, FirewallMedia. 2. Electronic Commerce, Efraim Turban, Fourth Edition,Pearson.		

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CODE: 17CA05711

INTRUSION DETECTION SYSTEMS

VII Semester: CSE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA05711	MOOC	3	-	-	3	30	70	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 45		

Objectives:

The course should enable the students to:

- To impart knowledge on application of Intrusion Detection Systems (IDS), Network security monitoring, Network Forensics and Intrusion Prevention system (IPS).
- To develop skills for identifying, resolving, and documenting network crises and activating the response team.

Unit-I	INTRODUCTION TO INTRUSIO DETECTION SYSTEMS	Classes: 09

Basic Concepts of Security, Introduction to Intrusions, Need of Intrusion Detection, Taxonomy of Intrusion Detection Systems (IDSs), , Audit, Concept and definition , Distributed intrusion detection system.

Password Management-Password protection, Password Selection Strategies.

Unit-II	HOST-BASED AND NETWORK-BASED INTRUSION DETECTION	Classes: 09

HOST-BASED INTRUSION DETECTION: Host Vulnerability, Security Attacks, Security Services and Security Mechanisms, A Model for Network Security, Standard for Network Security.

NETWORK-BASED INTRUSION DETECTION: Network Vulnerabilities and Attacks – Routing Attacks, IP Attacks, ICMP Attacks, TCP Attacks, DNS Attacks, Denial of Service (DoS) Attacks and Distributed Denial of Service attacks(DDoS).

Unit-III	ARCHITECTURE AND IMPLEMENTATION OF IDS	Classes: 09

Architecture and Implementation: Centralized – Distributed – Cooperative Intrusion Detection - Tiered architecture

Unit-IV	INTRUSION PREVENTION SYSTEM	Classes: 09

Intrusion Prevention Overview, Signatures and Actions: Types, Triggers and actions, Operational Tasks: deploying & configuring IPS devices and applications, Monitoring IPS activities, Securing IPS communications.

Types of prevention systems: Introduction to Host-based and Network-Based Intrusion prevention systems- Capabilities, Benefits, Limitations

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Unit-V	LEGAL ISSUES AND ORGANIZATIONS STANDARDS	Classes : 09

Legal Issues and Organizations Standards: Law Enforcement / Criminal Prosecutions – Standard of Due Care – Evidentiary Issues, Organizations and Standardizations.

Text Books:

1. R. D. Pietro & L. V. Mancini, "Intrusion Detection Systems", Handbook of Advances in Information Security, Springer, 2008

Reference Books:

1. Earl Carter, Jonathan Hogue, "Intrusion Prevention Fundamentals," First Edition, Pearson Education, New Delhi, 2002.
2. Ali A. Ghorbani, Wei Lu, "Network Intrusion Detection and Prevention: Concepts and Techniques", Springer, 2010.
3. Carl Enrolf, Eugene Schultz, Jim Mellander, "Intrusion detection and Prevention", McGraw Hill, 2004
4. Richard Bejtlich, "Extrusion Detection: Security Monitoring for Internal Intrusions," First Edition. Pearson Education, New Delhi, 2004.

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BIG DATA LABORATORY

VII Semester: CSE (Non-FSI) / VIII Semester: CSE (FSI)

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA05713	Core	-	-	4	2	30	70	100
Contact Classes: 45	Tutorial Classes:Nil	Practical Classes: Nil				Total Classes: 45		

Objectives:

- Learn Working with big data tools

Week 1

1. Implement the following Data structures in Java
a)Linked Lists b) Stacks c) Queues d) Set e) Map

Week 2

2. (i)Perform setting up and Installing Hadoop in its three operating modes:
Standalone,
Pseudo distributed,
Fully distributed.
(ii)Use web based tools to monitor your Hadoop setup

Week 3

3. Implement the following file management tasks in Hadoop:
Adding files and directories
Retrieving files
Deleting files
Hint: A typical Hadoop workflow creates data files (such as log files) elsewhere and copies them into HDFS using one of the above command line utilities.

Week 4

4. Run a basic Word Count Map Reduce program to understand Map Reduce Paradigm.

Week 5

5. Write a Map Reduce program that mines weather data.
Weather sensors collecting data every hour at many locations across the globe gather a large volume of log data, which is a good candidate for analysis with MapReduce, since it is semi structured and record-oriented

Week 6:

6. Implement Matrix Multiplication with Hadoop Map Reduce

Week 7,8:

7. Install & Run Pig then write Pig Latin scripts to sort, group, join, project, filter your data.

Week 9,10:

8. Install and Run Hive then use Hive to create, alter, and drop databases, tables, views,functions, and indexes

Text Books:

- Hadoop: The Definitive Guide by Tom White, 3rd Edition, O'reilly

Reference Books:

- Hadoop in Action by Chuck Lam, MANNING Publications.

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MOBILE APPLICATION DEVELOPMENT LABORATORY

VII Semester: CSE (Non-FSI) / VIII Semester: CSE (FSI)

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA05714	Core	-	-	4	2	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 42				Total Classes:42		

Objectives:

- To understand fundamentals of android operating systems.
- Illustrate the various components, layouts and views in creating android applications
- To understand fundamentals of android programming.

WEEK 1

Create "Hello World" Application

1.1 Create a new Android Project

1.2 Run "Hello World" on the Emulator

1.3 On a Physical Device

1.4 Greeting the User

WEEK 2

2. Create Application by Using Widgets
Creating the Application by using the Activity class
(i) onCreate()
(ii) onStart()
(iii) onResume()
(iv) onPause()
(v) onStop()
(vi) onDestroy()
(vii) onRestart()

WEEK 3

3. Creating the Application by using Text Edit control.

WEEK 4

4. Creating the Application Choosing Options
(i) CheckBox
(ii) RadioButton

WEEK 5

5.Creating the Application Choosing Options

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MBA - I YEAR

SEMESTER - I

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Management and organization Behaviour

		I MBA I Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00101	Foundation	L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

COURSE OBJECTIVE:

To understand the fundamentals of management and behavioral aspects of individual and groups in an organization. This will form foundation to study other functional areas of management. Further, this course provides insight into behavioral issues.

COURSE OUTCOMES: The student is able to

CO1: Examine the Management concepts and functions. [K4]
CO2: Apply the concepts of planning, decision making, and delegation of authority, decentralization and departmentalization in real life situations. [K3]
CO3: Analyze the controlling principles and practices, Ethics and corporate social responsibility. [K4]
CO4: Discuss the organizational behavior and climate. [K6]
CO5: Evaluate the basic concepts of organizational conflicts and climate. [K5]

SYLLABUS:

UNIT-I: MANAGEMENT

Definition, Nature, Scope and Importance, Science, Art, Profession, Managerial roles and functions, Management skills, Evolution of management thought, levels of management, challenges of manage, management Vs. Administration.

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UNIT-II: PLANNING& DECISION MAKING

Nature and Importance of planning,– Steps in planning – Types of planning,– Planning premises, - Forecasting techniques- Decision making – Significance – Process of Decision making – techniques – MBO.

UNIT-III: ORGANIZING& CONTROLLING

Concept, Nature, Principles, and Types of Organization structures, Departmentalization, Span of management – power - Authority and Responsibility Relationship – Delegation - Centralization and decentralization of Authority.

Control Concepts, Steps, Design of effective control System - Types of Controlling Techniques, Co-ordination types and principles.

UNIT-IV: ORGANISATIONAL BEHAVIOUR AND CULTURE

Organizational Behavior: Definition, Nature, Scope, Importance, Linkages with other social sciences-Organizational climate -Organizational Culture – Implications of OC.

UNIT-V: ORGANISATIONAL CONFLICTS

Goal conflict- Role- Organizational level of conflict – Group level – Conflict Management – Organizational effectiveness – concept – Approaches – Factors – Organizational change,-Nature – Factors – Process- Organizational growth & Change Agents- OD- concept, Process and Techniques

Relevant cases and situation analysis is discussed in each unit

REFERENCE BOOKS:

1. Koonz, Weihrich and Aryasri: "***Principles of Management***", Tata McGraw Hill, 2004.
2. William, Tripathy : "**MGMT (including instructor recourses)**", Cengage Learning, NewDelhi, 2013.
3. Griffin, Moorhead: "Managing Organizational Behavior", Cengage Learning, NewDelhi, 2013.
4. Jerald Greenberg and Robert A Baron: "***Behavior in Organizations***", PHI Learning PrivateLimited, New Delhi, 2009.
5. Mullins, Laurie: "**Management and Organizational Behavior**", Pearson Education,New Delhi, 2013
6. Jennifer M.George and Gareth R. Jones: "***Understanding and Managing Organizational Behavior***", Pearson Education, NewDelhi, 2009.
7. Meenakshi Gupta: "***Principles of Management***", PHI Private Limited, New Delhi, 2009.
8. Anil Bhat, Arya Kumar: "***Management***", Oxford University, New Delhi,2008
9. Jai B.P.Sinha: "***Culture and Organizational Behavior***", Sage Publication India Private Limited, New Delhi, 2008.
10. K.Aswathappa: "**Organizational Behavior-Text, Cases and Games**",HimalayaPublishing House, New Delhi,2008,
11. PareekUdai: "*Understanding Organizational Behavior*", Oxford University Press,New

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Course : Managerial Economics (20CE00102)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	3	2	1	2	1	1	1	1
CO2	2	1	3	3	2	1	1	2
CO3	3	1	2	2	1	1	2	1
CO4	3	1	1	1	1	1	1	1
CO5	3	2	1	3	1	1	1	1

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Accounting for Managers

		I MBA I Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00103		L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Description:

Thiscourseis designed tointroduceandanalyzetheneed,users view,conceptsandconventions of Accounting. The course starts with the preparation of books of Accounts and then discusses preparation of financial statements, their analysis, accounting standards and emerging issues inAccounting field as a branch of study.

COURSE OBJECTIVES:

To prepare, understand, interpret and analyze financial statements with a thorough conceptual understanding. To appreciate and use financial statements as a means of business transparency for stakeholders. To use the analytical techniques and arrive at conclusions from financial information for the purpose of managerial decision making.

COURSE OUTCOMES

CO1 : Develop and understand the nature and purpose of financial statements in relationship to decision making and the applicability of Accounting Standards. [K4]

CO2 : Enhancing knowledge in preparation of final accounts, Income tax concepts and returns of GST.[K3]

CO3: Appreciate the distinction in preparing accounts for NFP organisations, applying methods of depreciation and inventory valuation [K4]

CO4: Analysing financial statements from stakeholders' point of view[K4]

CO5: Evaluating the financial statements key managerial decisions [K5]

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UNIT – I	Introduction	1. Classes: 10

Meaning and Definition of Accounting – Need of Accounting for business decisions - Objectives of Preparation of Accounts — Users of Accounting Information - Classification of Accounts – Rules of Debit and Credit - Accounting Concepts and Conventions - Accounting Cycle – Process of Accounting – Journalizing –Posting – Trial Balance – Introduction to Accounting Standards – Accounting Standards Board of India.

UNIT – II	Financial Statements	Classes: 10

Preparation and Presentation of Final Accounts -Trading Account – Profit and Loss Account – Balance Sheet- Provisions of Company's Act, 2013 relating to the preparation and presentation of Final Accounts of Companies - Income Taxconcepts – Tax Evasion – Computation of GST [simple problems] - GST Returns

UNIT – III	Income and Expenditure	Classes: 10

NFP organisations - Distinction between Capital and Revenue- Capital Expenditure – Revenue Expenditure - Deferred Revenue Expenditure – Capital Receipt and Revenue Receipt- Depreciation: Concept, Reasons, Methods of Depreciation Straight Line, written down, sum of years digits, annuity, machine hour rate – AS-6 - Inventory – Types - Inventory Valuation Methods–AS-2

UNIT – IV	Financial Analysis I	Classes: 10

Financial Statement Analysis: Importance, Uses, Horizontal Analysis, Vertical Analysis – Trend Percentages- Ratio Analysis: Importance, Uses – Solvency – Liquidity – Activity – Profitability Ratios.

UNIT – V	Financial Analysis II	Classes: 10

Concept of Funds - Uses and Preparation of Cash Flow Statements – Direct and Indirect methods - Uses and Preparation of Funds Flow Statements - Schedule of Changes in Working Capital – Ascertaining Funds from Operations – Managerial decisions

REFERENCES:

1. Paresh Shah: "Financial accounting for Management", Oxford University press, New Delhi, 2013.
2. V.Rajasekharan, R.Lalitha, Financial Accounting & Analysis, 1st Edition, Pearson Education, NewDelhi, 2010
3. DhaneshK.Khatri, Financial Accounting & Analysis, Tata McGraw-Hill Publishing Limited, New Delhi, 2014.
4. N.Ramachandran, Financial Accounting & Analysis, 4th Edition, Tata McGrawHill Publishing Limited, New Delhi, 2016.
5. MaheswariMaheswari, Financial Accounting, 6th Edition, Vikas Publishing House, 2018.
6. T. Vijaya Kumar, Accounting for Management, Tata McGraw Hill Education Pvt Ltd, New Delhi, 2014.

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Business Communication Lab-I

		I MBA I Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00108	Foundation	L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:10	Practical classes: Nil				Total classes:55		

Objectives:

The introduction of Business Communication Lab is considered as essential in the I year I semester level. At this stage the students have to develop themselves for their career so that they have to practice listening, speaking, Reading and writing skills in English for interpersonal communication and for their Profession in this globalised era.

Course Outcomes:

CO1: To extract the need and importance of effective communication skills in the social and work related situations. (K4)

CO2:To use phonetics in different business/work related situations. (K3)

CO3:To elevate listening skills and effective communication skills. (K2)

CO4:Thorough application of speaking skills and capable of organising various events. (K3)

CO5:Develop writing and reading skills and equipping managerial skills. (K6)

Unit – I	**Understanding the need of Communication Skills**	**Classes: 15**

Understanding the need of Communication Skillsfor Managers , importance of effective communication through different social/work related situations,Enact role play of verbal and Nonverbal communication, Identifying the communication barriers in theorganization through case studies, identify effective use of body language, paralanguage and spatial communication

Unit – II	**Phonetics**	**Classes: 10**

Phonetics– Introduction to sounds of speech, vowels and consonants, phonetic transcription, orthographic transcription, syllabification, word stress, Innovation, Accent,Rhythm, Oral Skills, Situational Dialogues, Role Plays.

Unit - III	**Listening exercises**	**Classes: 10**

Listening with a focus on pronunciation (ear training) : segmental-sounds, stress, oak forms, intonation – listening for meaning (oral comprehension) listening to talks, lectures, conversations, discussions, jokes, riddles etc.

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Unit – IV	Speaking Skills	Classes: 10

Speaking about the future plans, expressing opinions, Telephone conversations, PPT Presentations, Poster Presentations, Public Speaking, Welcome Address (Inviting Dignitaries to department workshops, symposiums and university functions proposing vote of thanks), Interview Skills and Mock Interviews.

Unit – V	Writing and Reading exercises	Classes: 10

Reading and comprehension of the texts supported by suitable exercises Use of Dictionary, Note making after reading a text, showing the main idea and supporting ideas and the relationships between them -Practice in writing paragraphs, short essays and summaries. Skills Training:- Non-Verbal communication,Decision Making, Goal Setting, Etiquettes and grooming, Stress Management, Time Management, Problem Solving Skills.

Reference Books:

1.□Basic Business Communication Skills for empowering the internet generation,LesikarFlately, Tata McGraw Hill.

2.Business Communication for Managers, Penrose, Rasberry and Myers, Cengage.

3.□A Text Book of English Phonetics for Indian Students by, T. Balasubramanian,McMillan.

Mode of Evaluation: Assignments, Seminars, Written Examinations.

***

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ENTREPRENEURSHIP DEVELOPMENT

	II MBA I Semester :							
Course code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	Internal	External	Total
20CE00301	Foundation	4	-	-	4	40	60	100
Contact Classes: 50	Tutorial Classes: 15	Practical Classes - Nil				Total Classes - 65		

COURSE OBJECTIVES:

The main **objective** of this **course** is **develop entrepreneurial** abilities by providing background information about support systems , skill sets , financial and risk covering institutions and other for building an enterprise so that future budding **entrepreneurs** can make right decisions for starting and running a venture.

COURSE OUTCOMES:

CO1: To equip and develop the learners entrepreneurial skills and qualities essential to undertake business [k3].

CO2: To build the learner's entrepreneurial competencies needed for managing business efficiently and effectively [k6].

CO3: To analyze the business plan for starting a business [K4].

CO4: To formulate and manage a small business [K6]

CO5: To manage and monitor thesmall business [K5].

UNIT – I: Entrepreneurial Competence:

Entrepreneurship consept – Entrepreneurship as a Career – Entrepreneurial Personality -Characteristics of Successful Entrepreneurs – Knowledge and Skills of an Entrepreneur.

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UNIT- II: Entrepreneurial Environment:

Business Environment – Role of Family and Society - Entrepreneurship Development. Training andOther Support Organizational Services - Central and State Government Industrial Policies andRegulations.

UNIT- III Business Plan Preparation:

Sources of Product for Business - Prefeasibility Study - Criteria for Selection of Product -Ownership - Capital Budgeting- Project Profile Preparation - Matching Entrepreneur with the Project - Feasibility Report Preparation and Evaluation Criteria.

UNIT- IV: Launching of Small Business:

Finance and Human Resource Mobilisation - Operations Planning - Market and Channel Selection - Growth Strategies - Product Launching -Incubation - Venture capital, Start-ups.

UNIT- V: Management of Small Business:

Monitoring and Evaluation of Business - Business Sickness - Prevention and Rehabilitation of Business Units - Effective Management of small Business - Case Studies.

REFERENCES:

1. S.S.Khanka, Entrepreneurial Development, S.Chand and Company Limited, New Delhi, 2016.
2. R.D.Hisrich, Entrepreneurship, Tata McGraw Hill, New Delhi, 2018.
3. Rajeev Roy, Entrepreneurship, Oxford University Press, 2nd Edition, 2011.

TEXT BOOKS:

1. Dr. Vasant Desai, "Small Scale Industries and Entrepreneurship", HPH, 2006.
2. Arya Kumar. Entrepreneurship, Pearson, 2012.
3. Prasanna Chandra, Projects – Planning, Analysis, Selection, Implementation and Reviews,Tata McGraw-Hill, 8 th edition ,2017.

SNO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO.1	3	2	1	1	1	2	1	2
CO.2	2	1	1	1	2	1	1	2
CO.3	1	3	1	3	1	2	1	1
CO.4	1	1	1	1	2	1	2	2
CO.5	1	1	1	1	2	1	2	2

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Legal Aspects of Business

		II MBA II Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00403	Foundation	L	T	P	C	Internal	External	Total
		3	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

COURSE OBJECTIVES:

To sensitize the students as also help they appreciate the overall legal framework within which business activities are carried out.To create awareness in respect of rules and regulations affecting various managerial functions.

COURSE OUTCOMES:

CO1: Analyze the Indian Contract Act. [K4]
CO2: Evaluate Sales of Goods Act and the machinery for redressal of consumer grievances. [K5]
CO3: Elaborate rights and duties of agent and principal, Principal's liability for the acts of agent and the procedure for termination of agency. [K6]
CO4: Examine the rights and duties of partners, dissolution of partnership firm and the formation of company, amendments act in 2013. [K4]
CO5: Explain the kinds of Negotiable Instruments and Goods and Services Act. [K5]

UNIT –I: THE INDIAN CONTRACT ACT, 1872

Nature of the Act - – Essentials of a Valid Contract – Classification of Contracts- Capacity – Free Consent —Performance of a Contract – Discharge of a Contract – Remedies for Breach of a Contract

UNIT –II: SALES OF GOODS ACT, 1930 & CONSUMER PROTECTION ACT, 1986
Distinction between Sales and Agreement to Sell –Conditions and Warranties – Performance of Contract of Sale – Rights of an Unpaid Seller.**Consumer Protection Act, 1986:** Consumer Rights– Machinery for Redressal of Consumer Grievances- District Consumer Forum – State Level Commission – National Level Commission.

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UNIT –III: CONTRACT OF AGENCY ACT, 1872

Kinds of Agents –Creation of Agency-Rights and Duties of Principal – Rights and Duties of Agent - Principal's Liability for the Acts of the Agent-Liability of Agent –Termination of Agency.

UNIT-IV: INDIAN PARTNERSHIP ACT, 1932

Meaning and Essentials of Partnership Firm –Registration Deed – Tests of Partnership-Rights and Duties of Partners –Dissolution of Partnership.

UNIT –V: COMPANIES ACT 2013 & NEGOTIABLE INSTRUMENTS ACT, 1881

(i) Nature and Types of Companies – Formation of a Company –Memorandum of Association-Articles of Association–Kinds of Shares – Company Act amended in 2013 - Duties of Directors-Winding up Procedure.

(ii) Kinds of Negotiable Instruments and Endorsement- Presentation of a Negotiable Instrument Discharge of a Negotiable Instrument – Goods and Services Tax Act,2017

Relevant cases have to be discussed in each unit

TEXT BOOKS:

1. "Legal Aspects of Business" Ravindra Kumar: Cengage Learning, New Delhi, 2011
2. "Business Legislation for Management", Kuchhal M C, DeepaPrakash: Vikas Publishing House, New Delhi, 2012

REFERENCE BOOKS:

1. "Legal Aspects of Business", Pathak: Tata McGraw Hill, New Delhi, 2010
2. "A Manual of Business Laws", S.N.Maheshwari, S.K.Maheshwari: Himalaya Publishing House, 2013.
3. "Legal Aspects of Business", P.K.Padhi: PHI Learnings, New Delhi, 2013
4. "Business Law", S.S Gulshan: Excel Books, New Delhi, 2012.

Course : Legal Aspects of Business (20CE00403)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	2	3	1	1	2	2	1	1
CO2	1	2	1	3	1	1	2	2
CO3	3	1	1	2	1	2	1	1
CO4	3	1	2	1	2	1	2	3
CO5	1	2	1	3	2	2	1	1

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PYTHON PROGRAMMING LAB

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CF00108	core			4	2	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total classes:45		

Course Objectives:

- To train the students in solving computational problems
- To elucidate solving mathematical problems using Python programming language
- Practical understanding of building different types of models and their evaluation

Course Outcomes:

- Design real life situational problems and think creatively about solutions of them.
- Apply a solution clearly and accurately in a program using Python.
- Student will be able to understand the fundamentals of Python programming concepts and its applications.
- Students will be able to solve computational problems.
- Apply the best features of Python to program real life problems

Week-1	Write a program to demonstrate a) Different numeric data types and b) To perform different Arithmetic Operations on numbers in Python.
Week-2	Write a Python program to find first n prime numbers. Write a Python Program to find the maximum from a list of numbers.
Week-3	Write a Python program to find GCD of two numbers. Write a Python Program to find the square root of a number by Newton's Method
Week-4	Write a Python program to multiply matrices. Write a program to print each line of a file in reverse order.
Week-5	Write a program to convert a list of tuples in a dictionary. Write a Python program to check whether an element exists within a tuple.
Week-6	Write a function dups to find all duplicates in the list. Write a function cumulative product to compute cumulative product of a list of numbers.
Week-7	Write a Python script to concatenate following dictionaries to create a new one. Sample Dictionary : dic1={1:10, 2:20} dic2={3:30, 4:40} dic3={5:50,6:60} Write a Python program to replace dictionary values with their average.
Week-8	Write a program to read character data from a text file by using the following read methods. read(),read(n),readline(),readlines().
Week-9	Write a program to describe about Instance variable using ATM Machine Class

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	Write a program to describe about Class variable using Robot Class
Week-10	Write a program to access static & instance variable in a class. Write a program to demonstrate the user defined & predefined exceptions.
References:	
• ***A Practitioner's Guide to Software Test Design***, Lee Copeland, 2003	

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OFFICE AUTOMATION LAB

I - Semester

OFC: AUTOMATION LAB

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CF00109	Foundation	-	-	4	2	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil			Practical Classes: 45		Total Classes: 45		

Course Objectives:

- Learning about the Computer internal components.
- Practice on operating system installation and configuration settings.
- Prepare productivity tools like word processors, spreadsheets, presentations.

Course Outcomes:

- Able to Assemble and dissemble the computer components.
- Able to prepare power point presentations
- Able to construct data charts and graphs.
- Able to generate reports.
- Prepare professional documents, perform accounting operations, and prepare professional multimedia presentations..

Exp-1	Learn about computer internal parts & Peripherals.
Exp-2	Assembling & Disassembling a Computer.
Exp-3	Installation of various Operating Systems.
Exp-4	Networking two or more computers and document the process.
Exp-5	Browsing Internet and creating an email account: Studying various web browsers and their features.
Exp-6	**Word Processor**: Introduction to Word:Creating project Certificate; Abstract features to be covered; Formatting Styles: Inserting table, bullets and numbering, changing text direction, cell alignment, footnote, hyperlink, symbols, spell check, images from files and clipart, drawing toolbar and Word Art, formatting images, textboxes and paragraphs, Page numbers, Header and Footer, Mail merge, Macro.
Exp- 7	**Spreadsheet-I**: Spreadsheet basics, modifying worksheets, formatting cells, formulas and functions.
Exp-8	**Spreadsheet-II**: Sorting and filtering, charts, renaming and inserting worksheets, hyper linking, count function, sorting, and conditional formatting.
Exp- 9	**Presentations**: creating, opening, saving and running the presentations, Selecting the style for slides, formatting the slides with different fonts, colors, creating charts and tables, inserting and deleting text, graphics and animations, bulleting and numbering, hyperlinking, running the slide show, setting the timing for slide show.

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Optional Tasks:	
Exp- 10	A report on specifications of Laboratory Equipment
Exp-11	A report on different Antivirus softwares and their installation, usage.
References:	
1. Introduction to Computers, Peter Norton, Mc Graw Hil.l 2. "MOS study guide for word, Excel, Power point & Outlook Exams", Joan Lambert, Joyce Cox, PHI.	

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DATABASE MANAGEMENT SYSTEMS

II– Semester								
Course Code	**Category**	**Hours / Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
20CF00201	Core	3	-	-	3	40	60	100
Contact Classes: 50	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 50		

FULL STACK TECHNOLOGIES LAB

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CF00311	Core	-	-	3	2	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45			Total Classes:45			

Course Objectives:

From the course the student will Learn

- The core concepts of both the frontend and backend programming course.
- Get familiar with the latest web development technologies.
- Learn all about SQL and Mongo databases.

Course Outcomes:

At the end of the course, student will be

- Able to Identify the Basic Concepts of Web & Markup Languages
- Develop web Applications using Scripting Languages & Frameworks
- Creating & Running Applications using JSP libraries
- Creating Our First Controller Working with and Displaying in Angular Js and Nested Forms with ng-form Working with the Files in React JS and Constructing Elements with Data
- Creating Our First Controller Working with and Displaying an Online fee payment form using JScript and MangoDB

List of Programs

Week-1	Implementation of 'get' and 'post' methods
Week- 2	CSS implementation in colors, boarder padding
Week- 3	CSS implementation button frames tables, navigation bars.
Week- 4	Create registration and login forms with validations using Jscript query.
Week- 5	Jscript to retrieve student information from student database using database connectivity.
Week- 6	Angular Js data binding
Week- 7	Angular JS directives and Events
Week- 8	Using angular Js fetching data from MySQL.
Week- 9	Using React Js creating constructs data elements.
Week-10	Using React Js implementations DoM
Week-11	Invoking data using Jscript from Mongo DB
Week-12	Create an Online fee payment form using JScript and MangoDB

Reference Books

1.Jeffrey C. Jackson, "Web Technologies--A Computer Science Perspective", Pearson Education, 2006
2. Robert. W. Sebesta, "Programming the World Wide Web", Fourth Edition, Pearson Education, 2007
3. Angular JS: Up and Running Enhanced Productivity with Structured Web Apps By Brad Green, Shyam Seshadri Publisher: O'Reilly Media

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ARTIFICIAL INTELLIGENCE USING R LAB

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CF00213	Core	-	-	4	2	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total Classes: 45		

Course Objectives:

- Able to Install and use R for simple programming tasks.
- To Extend the functionality of R by using add-on packages
- Understand basic idea of how to program in R and its working environment.
- Understand how to write simple facts using R
- Extract data from files and other sources and perform various data manipulation tasks on them.

Course Outcomes:

- Create a software application using the Java programming language.
- Debug a software application written in the Java programming language.
- Test a software application written in the Java programming language.
- Apply the knowledge of R gained to data Analytics for real life applications

List of Experiments

Week-1

1. Write predicates One converts centigrade temperatures to Fahrenheit, the other checks if a temperature is below freezing using R.

Week-2

1. Write a program to solve 8 queens problem using R.

Week-3

1.Write a Program to Solve any problem using depth first search using R.
2. Write a Program to Solve any problem using best first search using R.

Week-4

1. Write a program to implement factorial, Fibonacci of a given number using R.

Week-5

1. Write a program to solve Robot (traversal) problem using means End Analysis using R.

Week-6

1. Write a program to solve traveling salesman problem using R.

Week-7

1. Write a program to solve water jug problem using R.

Week-8

1. Write a program to solve the Monkey Banana problem using R.

Week-9

1. Write a program to solve 8-puzzle problem using best first search

Web References:

- https://www.dbit.ac.in/cse/syllabus/artificial-intelligence-lab.pdf
- https://www.brcmcet.edu.in/downloads/files/n51c82bcca56b1.pdf

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MACHINE LEARNING LAB

		L	T	P	C	CIA	SEE	Total
20CF00312	core	-	-	3	2	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total classes:45		

Course Objectives:

- Understand the implementation procedures for the machine learning algorithms.
- Design Java/Python programs for various Learning algorithms.
- Identify and apply Machine Learning algorithms to solve real world problems

Course Outcomes:

- Implement procedures for the machine learning algorithms
- Design Python programs for various Learning algorithms
- Building an Artificial Neural Network for machine learning algorithms
- Apply appropriate data sets to the Machine Learning algorithms
- Identify and apply Machine Learning algorithms to solve real world problems

Week-1	Implement and demonstrate the FIND-S algorithm for finding the most specific hypothesis based on a given set of training data samples. Read the training data from a .CSV file
Week-2	For a given set of training data examples stored in a .CSV file, implement and demonstrate the Candidate-Elimination algorithm to output a description of the set of all hypotheses consistent with the training examples.
Week-3	Write a program to demonstrate the working of the decision tree based ID3 algorithm. Use an appropriate data set for building the decision tree and apply this knowledge to classify a new sample
Week-4	Build an Artificial Neural Network by implementing the Back propagation Algorithm and test the same using appropriate data sets..
Week-5	Write a program to implement the naïve Bayesian classifier for a sample training data set stored as a .CSV file. Compute the accuracy of the classifier, considering few test datasets.
Week-6	Assuming a set of documents that need to be classified, use the naïve Bayesian Classifier model to perform this task. Built-in Java classes/API can be used to write the program. Calculate the accuracy, precision, and recall for your data set.
Week-7	Write a program to construct a Bayesian network considering medical data. Use this model to demonstrate the diagnosis of heart patients using standard Heart Disease Data Set. You can use Java/Python ML library classes/API.
Week-8	Apply EM algorithm to cluster a set of data stored in a .CSV file. Use the same data set for clustering using k-Means algorithm. Compare the results of these two algorithms and comment on the quality of clustering. You can add Java/Python ML library classes/API in the program.
Week-9	Write a program to implement k-Nearest Neighbour algorithm to classify the iris data set. Print both correct and wrong predictions. Java/Python ML library classes can be used for this problem
Week-10	Implement the non-parametric Locally Weighted Regression algorithm in order to fit data points. Select appropriate data set for your experiment and draw graphs..

References:

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MOBILE APPLICATION DEVELOPMENT LAB

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CF00313	Core	-	-	3	2	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil			Practical Classes: 45		Total Classes: 45		

Course Objectives:

- To understand fundamentals of android operating systems.
- Illustrate the various components, layouts and views in creating android applications
- To understand fundamentals of android programming.

Course Outcomes:

- Create data sharing with different applications and sending and intercepting SMS.
- Develop applications using services and publishing android applications.
- To demonstrate their skills of using Android software development tools.
- To create Android environment using different interceptions.
- Demonstrate various applications connecting databases.

Week-1

Setting Up the Development Environment :

1.1 Download/Install the SDK

For in-depth instructions, visit Android Installation Documentation. Otherwise perform the following steps.

- Go to http://developer.android.com/sdk/index.html.
- Unpack to a convenient location - Remember the full path to this location, we will refer to it as <android_sdk_dir> for the rest of the lab.
  - o *<android_sdk_dir> would then be/home/<username>/android_dir.*
- Add the path to the <android_sdk_dir>/tools directory to your system PATH
  - o Windows:

1. Right-click My Computer.
2. Click Properties.
3. Click Advanced tab.
4. Click Environment Variables button.
5. Double Click Path under System Variables.
6. Add ; <android_sdk_dir>/tools;<android_sdk_dir>/platform-tools to the end of the Variable Values text field.

- Navigate to your <android_sdk_dir>/tools directory and type android.

Add the appropriate components. See step 4 in

http://developer.android.com/sdk/installing.html.

- Test your installation by running adb from the command line. If you did everything right, you should get a long list of help instructions.

1. Click the menu Help -> Software Updates.
2. Click Available Software tab -> Add Site button.
3. Enter https://dl-ssl.google.com/andriod/eclipse into the "Location" field.
4. Click OK button.
5. Click the checkbox next to Developer Tools.
6. Click the Install button.
7. Click the Next button.
8. Accept the terms, click Finish.
9. Restart Eclipse.

Week-2

1.2 Download/Install the Eclipse Plugin

- It is recommended that you use Eclipse 3.4 or later

o **Lab Machines** - Fedora Eclipse based on 3.4.2 The version of Eclipse used by the lab machines is missing a vital component and requires adding an additional Eclipse plugin in

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RAPID PROTOTYPING

I M.Tech. I SEMESTER: CAD/CAM								
Course Code	**Category**	**Hours / Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
21CD03103	Core	4	-	-	4	40	60	100
Contact Classes: 64	**Tutorial Classes: Nil**	**Practical Classes: Nil**				**Total Classes: 64**		

UNIT-I	INTRODUCTION TO RAPID PROTOTYPING	Classes : 14

Introduction: Need for the compression in product development, History of RP system, Survey of applications, Growth of RP industry and classification of RP system. RPT and its role in modern manufacturing mechanical design.

Stereo Lithography System: Principle, Process parameter, Process details, Data preparation, Data files and machine details, Applications.

UNIT-II	FUSION DECOMPOSITION MODELING & SOLID GROUND CURING	Classes : 14

Fusion Decomposition Modeling: Principle, process parameter, Path generation, Applications.

Solid ground curing: Principle of operation, Machine details, Applications,

UNIT-III	Laminated Object Manufacturing & CONCEPTS MODELERS	Classes: 12

Laminated Object Manufacturing: Principle of Operation, LOM materials, Process details, Applications.

Concepts Modelers: Principle, Thermal jet printer, Sander's model market, 3-D printer, Genisys Xs printer HP system 5, Object Quadra system.

UNIT-IV	LASER ENGINEERING NET SHAPING (LENS)	Classes : 14

LASER ENGINEERING NET SHAPING (LENS)

Rapid Tooling: Indirect Rapid tooling- Silicon rubber tooling- Aluminum filled epoxy tooling, Spray metal tooling, Cast kriksite, 3Q keltool, etc, Direct Rapid Tooling Direct. AIM, Quick cast process, Copper polyamide, Rapid Tool, DMILS, Prometal, Sand casting tooling, Laminate tooling soft, Tooling vs. hard tooling.

Software for RP: STL files, Overview of Solid view, magics, imics, magic communication, etc. Internet based software, Collaboration tools.

UNIT-V	RAPID MANUFACTURING PROCESS OPTIMIZATION	Classes : 14

Factors influencing accuracy, Data preparation error, Part building error, Error in finishing, Influence of build orientation.

Text Books:

1. Rapid Prototyping Technology, Kenneth G. Cooper, Marcel Dekker,INC.
2. Rapid Manufacturing, Flham D.T & Dinjoy S.S, Verlog London 2001.
3. Rapid Prototyping theory & practice, Manufacturing System Engineering Series, Ali K.Kamarani, Springer Verlag.

References:

1. Rapid prototyping, Andreas Gebhardt, Hanser Gardener Publications, 2003
2. Rapid Prototyping and Engineering applications: A tool box for prototype development, Liou W.Liou, Frank W.Liou, CRC Press, 2007.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING								
II M.Tech (CSE), II- SEMESTER – 2021-22								
COURSE : HUMAN COMPUTER INTERACTION								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
						CIA	SEE	Total
21CD05206	PE-III	L	T	P	C			
		4	-	-	4	40	60	100
Classes : 60	Tutorial: Nil	Practical Classes: Nil				Total Classes: 60Hrs		

Objectives:

The course should enable the students to:

1. Determine the characteristics of good user interface designs.
2. Recognize how a computer system may be modified to include human diversity.
3. Develop user interface design tools.
4. Investigate the automatic generation of user interface s from high-level specifications.
5. Evaluate user interfaces and applications using a variety of methods.

Outcomes:

1. Find innovative ways of interacting with computers
2. Help the disabled by designing non-traditional ways of interacting
3. Use cognitive psychology in the design of devices for interaction

UNIT-I Introduction **10Hrs**

Human computer interface: Characteristics of graphics interface, direct manipulation graphical system; web user interface, popularity, characteristic and principles.

UNIT-II Human Computer Interaction **14Hrs**

User interface design process: Obstacles, usability, human characteristics in design, human interaction speed, business functions; Requirement analysis, direct ,indirect methods, basic business functions, design standards, system timings; Human consideration in screen design structures of menus, functions of menus, contents of menu, formatting, phrasing the menu, selecting menu choice, navigating menus, graphical menus.

UNIT-III Windows **14Hrs**

Characteristics: Components, presentation styles, types, managements, organizations, operations.

Web systems: Device based controls characteristics, screen based controls, operate control, text boxes, selection control, combination control, custom control, presentation control.

UNIT-IV Multimedia **12Hrs**

Text for web pages: Effective feedback, guidance and assistance, internationalization, accessibility; Icons, image, multimedia, coloring.

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DESIGN THINKING

I B. Tech - I Semester:								
Course code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
19CA53303	Foundation	3	-	-	3	30	70	100
Contact Classes:	Tutorial Classes: Nil	Practical Classes: Nil			Total Classes:51			

UNIT-I	INTRODUCTION TO DESIGN THINKING	Classes:09

Introduction to Design thinking: Concept and its role within new product development and Innovation, Frame work of design thinking, Non linear process, principles and mindset.
Inspirational Design Briefing: Nine Criteria, Writing, Research findings, pitfalls to avoid, Keys to success.

UNIT-II	CUSTOMER EXPERIENCE MAPPING	Classes:11

Customer Experience Mapping: Inputs to experience mapping, Experience mapping process, Experience map as spring board to innovative solutions.

UNIT-III	BRIDGE RESEARCH AND CONCEPT DESIGN	Classes:10

Bridge research and concept design: Challenges in idea generation, Need for systematic method to connect to the user, The Visualize, Empathize and Ideate method, applying the method.

UNIT-IV	CREATIVITY IN IDEA GENERATION	Classes:10

Boosting creativity in idea generation using Design heuristics: Design Heuristics, The evidence base, Design heuristics for idea generation, Using Design heuristics to generate design concepts, Evidence of the value of design heuristics tools.
The role of design in early stage ventures: An emerging start up culture, Basics, Process, and Troubleshooting common mistakes.

UNIT-V	CORPORATE CULTURE OF DESIGN THINKING	Classes:11

Leading for Corporate culture of design thinking: What is corporate culture, Impact of corporate culture, Corporate forces that undermine the design thinking, Four pillars of innovation for enabling design thinking, Four stages of transforming to a culture of design thinking.

Text Books:

1. Philip Kosky, Robert T. Balmer, William D. Keat, George Wise, "Exploring Engineering: An Introduction to Engineering and Design", 4th edition, Elsevier, 2016.
2. David Rałzman, "History of Modern Design", 2nd edition, Laurence King Publishing Ltd., 2010
3. An AVA Book, "Design Thinking", AVA Publishing, 2010.

Reference Books:

1. G. Pahl, W.Beitz, J. Feldhusen, KH Grote, "Engineering Design: A Systematic Approach", 3rd edition, Springer, 2007.
2. Tom Kelley, Jonathan Littman, "Ten Faces in Innovation", Currency Books, 2006.

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CAM LABORATORY

IV B.Tech I Semester: ME								
Course Code	**Category**	**Hours / Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
17CA03713	**Core**	-	-	4	2	30	70	100
Contact Classes: Nil	**Tutorial Classes: Nil**	**Practical Classes: 68**				**Total Classes: 68**		

List of Experiments

Expt. 1	Introduction to CNC Machines and G-Code, M-Codes
Expt. 2	CNC part programming for operations like turning, step turning, taper turning.
Expt. 3	CNC part programming for threading canned cycles.
Expt. 4	CNC program for plane milling operation.
Expt. 5	CNC program for plane drilling operation.
Expt. 6	Generation of CNC part programming with CAM packages for a given 3D models.
Expt. 7	Development of APT programming for 2D objects
Expt. 8	Programming for Robot pick and place and continuous path.

Text Books:

1. Mikell P. Groover, Emory W. Zimmers , CAD/CAM, 5/e, Pearson Prentice Hall of India, Delhi, 2008
2. P. Radhakrishnan, S. Subramanyan & V. Raju, CAD/CAM/CIM, 3/e, New Age International Publishers, 2008

Course Outcomes

At the end of this laboratory the student will be able to:

1. Illustrate Manual Part programs using G and M codes and simulate those using CNC lathe and milling programs. (L4)
2. Perform machining on CNC machines and fabricate simple machine components on Lathe, Drilling and Milling Machines. (L3)
3. Develop part programming for robots. (L4)

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DESIGN THINKING & PRODUCT INNOVATION								
II B. Tech I Semester: CSE								
Course code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
19CA53301	Foundation	3	1	-	3	40	60	100
Contact Classes:45	Tutorial Classes :15	Practical Classes: NIL				Total Classes:60		

Objectives:

The course should enable the students to :

- To introduce the basics of design thinking.
- To familiarize product design process.
- To bring awareness on idea generation.
- To familiarize the role of design thinking in services design.

Unit-I	INTRODUCTION	Classes:10

Introduction to design, characteristics of successful product development, product development process, identification of opportunities, product planning, Innovation in product development.

Unit-II	DESIGN THINKING	Classes:13

Design thinking: Introduction, Principles, the process, Innovation in design thinking, benefits of Design thinking, design thinking and innovation, case studies.

Unit-III	IDEA GENERATION	Classes:13

Idea generation: Introduction, techniques, Conventional methods, Intuitive methods, Brainstorming, Gallery method, Delphi method, Synaptic, etc. Select ideas from ideation methods, case studies.

Unit-IV	METRICS	Classes:12

Introduction, size metrics, data structure metrics, information flow metrics, entropy-based measures, metric analysis. Software reliability& Hardware reliability, failures& faults, reliability concepts, reliability models.

Unit-V	DESIGN THINKING FOR SERVICE DESIGN	Classes:12

Design thinking for service design: How to design a service, Principles of service design, Benefits of service design, Service blueprint, Design strategy, organization, principles for information design, principles of technology for service design.

Text Books:

1. ChristophMeinel and Larry Leifer, "Design Thinking", Springer, 2011

Reference Books:

1. AdersRiiseMachlum, "Extending the TILES Toolkit" from Ideation to Prototyping
2. http://www.algarytm.com/it-executives-guide-to-design-thinking:e-book.
3. Marc Stickdorn and Jacob Schneider, "This is Service Design Thinking", Wiely, 2011
4. Pahl and Vietz, "Engineering Design", Springer, 2007.

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DESIGN THINKING LABORATORY & PRODUCT INNOVATION LABORATORY

II B.ech I Semester: CSE

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA53302	Foundation			2	2	30	70	100
Contact Classes:Nill	Tutorial Classes:Nill	Practical Classes: 42				Total Classes:42		

COURSE OBJECTIVES:

- Build mindsets & foundations essential for designers
- Learn about the Human-Centered Design methodology and understand their real-world applications
- Use Design Thinking for problem solving methodology for investigating illdefined problems.
- Undergo several design challenges and work towards the final design challenge

Apply Design Thinking on the following Streams to

- Project Stream 1: Electronics, Robotics, IOT and Sensors
- Project Stream 2: Computer Science and IT Applications
- Project Stream 3: Mechanical and Electrical tools
- Project Stream4: Eco-friendly solutions for waste management, infrastructure, safety, alternative energy sources, Agriculture, Environmental science and other fields of engineering.

TASKS TO BE DONE:

Task 1 : Everyone is a Designer

- Understand class objectives & harness the designer mindset

Task 2: The Wallet/Bag Challenge and Podcast

- Gain a quick introduction to the design thinking methodology
- Go through all stages of the methodology through a simple design challenge
- Podcast: Observe, Listen and Engage with the surrounding environment and identify a design challenge.

Task 3: Teams & Problems

- Start Design Challenge and learn about teams & problems through this
- Foster team collaboration, find inspiration from the environment and learn how to identify problems

Task 4: Empathizing

- Continue Design Challenge and learn empathy

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- Learn techniques on how to empathize with users
- Go to the field and interview people in their environments
- Submit Activity Card

Task 5: Ideating

- Continue Design Challenge and learn how to brainstorm effectively
- Encourage exploration and foster spaces for brainstorming
- Submit Activity Card

Task 6: Prototyping

- Continue Design Challenge and learn how to create effective prototypes
- Build tangible models and use them as communication tools
- Start giving constructive feedback to classmates and teammates
- Submit Activity Card

Task 7: Testing

- Finish Design Challenge and iterate prototypes and ideas through user feedback
- Evolve ideas and prototypes through user feedback and constructive criticism
- Get peer feedback on individual and group performance
- Submit Activity Card

Task 8:

- Final Report Submission and Presentation

REFERENCES:

1. Tom Kelly, The Art of Innovation: Lessons in Creativity From IDEO, America's Leading Design Firm (Profile Books, 2002)
2. Tim Brown, Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation (HarperBusiness, 2009)
3. Jeanne Liedtka, Randy Salzman, and Daisy Azer, Design Thinking for the Greater Good: Innovation in the Social Sector (Columbia Business School Publishing, 2017)

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COMMUNICATIVE ENGLISH II

II B.Tech II Semester: Common to all branches

Course code	Category	Hours/week			Credits	Maximum Marks		
19CA52401	Foundation	L	T	P	C	CIA	SEE	TOTAL
		2	-	-	2	30	70	100
Contact Classes:46	Tutorial Classes: Nil		Practical Classes: Nil			Total Classes:46		

OBJECTIVES:

The course should enable the students to :

I. Help improve speaking skills through participation in activities
II. Impart effective strategies for good writing and demonstrate the same in summarizing, writing well useful information
III. Provide knowledge of presentations structures and vocabulary and encourage their appropriate use in speech and writing

UNIT-I	Classes:10

1. Features of Communication and Forms of Communication
2. Non-Verbal Communication and Types of Non-verbal Communication
3. Barriers to Communication and Remedies

Learning Outcomes

At the end of the module, the learners will be able to

- Become effective technical communicators.
- Sensitive use of non-verbal language suitable to different situations in professional life.
- Understand how to overcome the barriers in Communication process.

UNIT-II	Classes:10

4. Self Introduction-about you
5. English for Etiquette- Greetings-Introducing a person-Congratulating-Complimenting-
6. English for Etiquette - Requesting-Accepting/Declining an invitation-Expressing Gratitude.

Learning Outcomes

At the end of the module, the learners will be able to

- Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information
- Ask and answer general questions on familiar topics and introduce oneself/others
- Form sentences using proper grammatical structures and correct word forms

UNIT-III	Classes:10

7. Effective usage of Modal Auxiliaries in framing Coversations.
8. Dialogue building-Formal conversation-Semi formal-Informal Conversation.
9. Asking/Giving directions-Asking some for directions-Giving directions

Learning Outcomes

At the end of the module, the learners will be able to

- comprehend short talks on general topics
- participate in informal discussions and speak clearly on a specific topic using suitable discourse markers
- understand the use of cohesive devices for better conversation

UNIT-IV	Classes:08

10. Writing Stories from outline-Developing the hints-How to write stories from the outline given.
11. Letter writing-Informal letter-Formal letter (Business and order)-Official letter.
12. Abstract Writing-Book Review-Film Review

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Learning Outcomes

At the end of the module, the learners will be able to

- infer meanings of unfamiliar words using contextual clues
- write summaries based on global comprehension of reading/listening texts
- Use appropriate format for writing memos and produce a coherent paragraph for notice
- use language appropriate for description elements

UNIT-V		Classes:08

13. Designing a Resume-Guidelines for a better presentations-Purpose of the Resume-Designing and formatting your Resume with covering letter- Difference between CV & Resume
14. Welcome Speech and Vote of Thanks-Charesteristics of Welcome Speech-Some common welcome quotes-How to write Vote of thanks-The order of speech for vote of thanks.
15. Report Writing- Types of Reports-Project Report

Learning Outcomes

At the end of the module, the learners will be able to

- make formal oral presentations using effective strategies
- write his/her winning Resume
- produce a well-organized speech

Text Books:

1. Advanced Skills for Communication in English: Book I by V.JEYA SANTHI Dr.R.SELVAM M.A., M.Phil., Ph.D. - December 2015 *with*200 Reads, Publisher: 978-81-2343-101-7, Publisher: New Century Book House
2. Effective Technical Communication, M Ashraf Rizvi, Tata Mc.Graw-Hill Pub,company Ltd

Reference Books:

1. Business Etiquette : A Guide For The Indian Professional (English, Paperback, Shital Kakkar Mehra) Publisher: HarperCollins Publishers India Genre: Business & Economics ISBN: 9789350291085, 9350291088
2. Resume: The Secrets to Writing a Resume that is guaranteed to Get You the Job (Resume Writing, CV, Interview, Career Planning, Cover Letter, Negotiating Book 1) Kindle Edition Publisher: Lifestyle Initiative, Inc. (23 June 2016)
3. How to Write and Give a Speech: A Practical Guide for Anyone Who Has to Make Every Word Count 3rd Edition, Kindle Edition Publisher: St. Martin's Griffin; 3 edition (4 March 2014)

Web References:

Speaking

https://www.talkenglish.com/

BBC Learning English – Pronunciation tips

Merriam-Webster – Perfect pronunciation Exercises

All Skills

https://www.englishclub.com/

http://www.world-english.org/

http://learnenglish.britishcouncil.org/

Outcomes:

At the end of the course, the learners will be able to

1. Understand the context, topic, and pieces of specific information from social or transactional dialogues spoken by native speakers of English
2. Become effective technical communicators.
3. Analyze discourse markers to speak clearly on a specific topic in informal discussions And create a coherent paragraph writing

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COMMUNICATIVE ENGLISH II LABORATORY

II B. Tech - II Semester : Common for all branches

Course code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
19CA52402	Foundation	-	-	3	2	30	70	100

Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes:45	Total Classes:45

OBJECTIVES:

The course should enable the students to :

1. The course allows the students to use multi-media instruction for language development
2. To improve the students' fluency in English, through a well-developed vocabulary and enable them to listen the English spoken at normal conversational speed by educated English speakers and respond appropriately in different socio-cultural and Professional contexts.
3. Further, they would be required to communicate their ideas relevantly and coherently in writing and placing MNCs.

UNIT-I	COMMUNICATIVE COMPETENCE	Classes:09

1. Syllables
2. Stress & Intonations
3. Listening Comprehension, Listening to the News and Understand

UNIT-II	WRITING SKILLS	Classes:09

1. Precise Writing
2. Resume Preparation
3. E-mail Writing

UNIT-III	PRESENTATION SKILLS	Classes:12

1. Oral presentation
2. Power point presentation
3. Poster presentation

UNIT-IV	GETTING READY FOR JOB	Classes:09

1. SWOT Analysis
2. Group Discussions
3. Interview skills

UNIT-V	INTERPERSONAL SKILLS	Classes:06

1. Time Management
2. Problem Solving & Decision Making
3. Etiquettes-Telephonic Etiquettes

Minimum Requirements for SOFT SKILLS Lab:

Soft Skills Laboratory shall have the following infra-structural facilities to accommodate at least 60 students in the lab:

1. Spacious room with appropriate acoustics.
2. Round Tables with movable chairs
3. Audio-visual aids
4. LCD Projector
5. Public Address system
6. P – IV Processor, Hard Disk – 80 GB, RAM–512 MB Minimum, Speed – 2.8 GHZ
7. T. V, a digital stereo & Camcorder
8. Headphones of High quality

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Suggested Software:

1. Walden Info tech: Advanced English Communication Skills Lab
2. K-VAN SOLUTIONS-Advanced English Language Communication Skills lab
3. DELTA's key to the Next Generation TOEFL Test: Advanced Skills Practice.
4. TOEFL & GRE(KAPLAN, AARCO & BARRONS, USA, Cracking GRE by CLIFFS)
5. Train2success.com

References:

1. Objective English for Competitive Exams, Hari Mohana Prasad, 4th edition, Tata Mc Graw Hill.
2. Technical Communication by Meenakshi Raman & Sangeeta Sharma, O U Press 3rdEdn. 2015.
3. Essay Writing for Exams, Audrone Raskauskiene, Irena Ragaisience & Ramute Zemaitience, OUP, 2016
4. Soft Skills for Everyone, Butterfield Jeff, Cengage Publications, 2011.
5. Management Shapers Series by Universities Press (India) Pvt. Ltd., Himayatnagar, Hyderabad 2008.
6. Campus to Corporate, Gangadhar Joshi, Sage Publications, 2015
7. Communicative English, E Suresh Kumar & P. Sreehari, Orient Black swan, 2009.
8. English for Success in Competitive Exams, Philip Sunil Solomon OUP, 2015

Outcomes:

1. Accomplishment of sound vocabulary and its proper use contextually
2. Flair in Writing and felicity in written expression.
3. Enhanced job prospects and Effective Speaking Abilities

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OBJECT ORIENTED PROGRAMMING THROUGH JAVA LABORATORY

II B.Tech(CSE), II Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA05404	Core	-	-	2	1	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 42				Total Classes: 42		

Course Objectives:

The course will enable the students to:

- Learn to use object orientation to solve problems and use java language to implement them
- To experiment with the syntax and semantics of java language and gain experience with java programming

Week-1	Installation and Practice

1.Preparing and practice – Installation of Java software, study of any Integrated development environment, sample programs on Java. Learn to compile, debug and execute Java programs.

Week-2	Basic Programs

1. Write a Java program to solve Quadratic equation.
2. Write a Java program to generate Fibonacci series
   a. Using Iterative procedure
   b. Using Recursive procedure

Week-3	Matrices, Overloading

1. Write a Java program to multiply two Matrices.
2. Write a Java program on Method overloading

Week-4	Method Overriding, Constructor overloading

1.Write a Java program on Method overriding.
2.Write a Java program on Constructor overloading

Week-5	Number and String Palindrome, abstract class

1. Write a Java program that checks whether given number is Palindrome or not.
2. Write a Java program that checks whether given string is Palindrome or not.
3. Write a Java program to create a super class called Figure that receives the dimensions of two dimensional objects. It also defines a method called area that computes the area of an object. The program derives two subclasses from Figure. The first is Rectangle and second is Triangle. Each of the sub classes override area() so that it returns the area of a rectangle and triangle respectively.

Week-6	Sorting Names, Dynamic method dispatch

1.Write a Java program to sort a list of names in ascending order.
2. Write a Java program that performs Dynamic method dispatch.

Week-7	Inheritance, Interface

1.Write Java program(s) on use of inheritance, preventing inheritance using final
2.Write Java program(s) on ways of implementing interface

Week-8	Exception Handling

1.Write Java Program(s) which uses the exception handling features of the language, creates exceptions and handles them properly.
   a). Uses the predefined exceptions.
   b). Create own exceptions.

Week-9	Creating threads, Command Line Arguments

1.Write a Java Program on creating multiple threads
   a). Using extending thread class.
   b). Using implementing runnable interface

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2.Write a Java Program that demonstrate Command Line Arguments	
Week-10	Applets
1. Write a Java Program to develop an Applet that demonstrate a simple message. 2. Write a Java Program to pass parameters to an Applet	
Week-11	Multithreading
1.Develop an applet for waving a Flag using Applets and Threads. 2.Write a Java program that creates three threads. First thread displays "Good Morning" every one second, the second thread displays "Hello" every two seconds and the third thread displays "Welcome" every three seconds.	
Week-12	Files, Keyboard Events
1. Write a Java program to find and replace pattern in a given file. 2.Write a Java program to handle keyboard events.	
Week-13	AWT Controls, Layout Managers
1.Write a Java Program to create the following a). AWT Button b). AWT checkbox c). Scrollbar 2. Write Java Programs to demonstrate Layout Managers	
Week-14	Caluculator
Design a simple calculator which performs all arithmetic operations. The interface should look like the calculator application of the operating system. Handle the exceptions if any	
Reference Books:	
1P. J. Deitel, H. M. Deitel, "Java for Programmers", Pearson Education, PHI, 4th Edition, 2007. 2.P. Radha Krishna, "Object Oriented Programming through Java"Universities Press, 2nd Edition,2007 3 Bruce Eckel, "Thinking in Java", Pearson Education, 4th Edition, 2006. 4 Sachin Malhotra, Saurabh Chaudhary, "Programming in Java", Oxford University Press, 5th Edition.	
Web References:	
1.www.niecdelhi.ac.in 2.https://www.linkedin.com/in/achin-jain-85061412 3.www.rank1infotech.com	
Course Outcomes : • Ability to use an IDE to develop, run and test Java Programs • Ability to solve the problems using object oriented approach and develop solutions which are robust • Ability to develop portable programs which work in all environments	

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ADVANCED PYTHON PROGRAMMING LABORATORY

VI- Semester : CSE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA05612	Core	-	-	3	2	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total Classes: 45		

Objectives:

The course should enable the students to:

- To write, test, and debug simple Python programs.
- To implement Python programs with conditionals and loops.
- Use functions for structuring Python programs.
- Represent compound data using Python lists, tuples, dictionaries.
- Read and write data from/to files in Python.
- Use GUI programming, To implement Python programs with package.

LIST OF EXPERIMENTS

Week -1	**BASICS**

- Write a python script to display a simple message
- Write a python script to perform basic arithmetic operations on two values which are accepted from the user.
- Exponentiation (power of a number)
- Find the maximum of a list of numbers

Week-2	**CONTROL FLOW**

- Write a python script to calculate the factorial of a given number.
- Write a python script to calculate sum of individual digits of a given number.
- Write a python script to display the prime number series up to the given N Value.

Week-3	**CONTROL FLOW**

- Write a python script to find the largest number among three numbers and display them in ascending order using if-else construct.
- Write a python script to display Fibonacci sequence of numbers using while loop, for loop and do-while loop constructs.

Week-4	**FUNCTIONS**

- Write a python script to find GCD of two numbers using recursive and non recursive Functions.
- Write a python script to convert the following using functions: (i) Fahrenheit to Celsius Temperature. (ii) Celsius to Fahrenheit temperature.

Week -5	**STRINGS**

- Write a python script to demonstrate string methods.

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• Write a python Program for Creation of String. • Write a Python Program to Update entire String.	
Week -6	**LIST**
• Write a python script to create a list and add n number of user-defined values to the list and display the same on to the console screen. • Write a python script to perform the following operations on Lists: (i) Matrix Addition. (ii) Matrix Multiplication.	
Week -7	**LIST**
• Write a python script to search a key element in the given list of elements. • Write a python script to arrange the given list of elements in ascending or descending order. • Find the maximum of a list of numbers.	
Week -8	**TUPLE AND DICTINARIES**
• Write a Python program to convert a list of tuples into a dictionary. • Write a Python script to concatenate following dictionaries to create a new one.	
Week -9	**FILES**
Write a python script to remove all the occurrences of a given character from a text file, copy the resultant text into another text file. Find the total occurrences of the eliminated characters and display the count along with the contents of the text file on to the console.	
Week -10	**FILES**
• Write a Python program to read a file line by line store it into a variable. • Write a Python program to copy the contents of a file to another file .	
Week -11	**OBJECT ORIENTED PROGRAMMING AND GUI PROGRAMMING**
• Write a GUI Script for creating text label in a window. • Write a Python Script to create a command button. When the button is clicked the event should be handled and the message on the window should change from "Hello" to "Good Bye".	
Week -12	**OBJECT ORIENTED PROGRAMMING AND GUI PROGRAMMING**
• Write a Python class to convert an integer to a roman numeral. • Write a Python class to reverse a string word by word.	
Week-13	**OBJECT ORIENTED PROGRAMMING AND GUI PROGRAMMING**
• Write a python script to demonstrate the Exception Handling. • Write a Python script to demonstrate the Mouse and Key Event handling. • Write a python script to demonstrate menu driven applications.	
Week-14	**TKINTER PACKAGE.**
By forming a group of 3 to 4 members develop a mini project for Horse Race Simulation with the help of GUI programming and tkinter package.	

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SOFT SKILLS LAB

V - Semester : CSE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA52501	Elective	-	-	4	2	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 42				Total Classes: 42		

Objectives:

The course should enable the students to :

- The course allows the students to use multi-media instruction for language development
- To improve the students' fluency in English, through a well-developed vocabulary and enable them to listen the English spoken at normal conversational speed by educated English speakers and respond appropriately in different socio-cultural and professional contexts.
- Further, they would be required to communicate their ideas relevantly and coherently in writing.
- To prepare all the students for their placements.

UNIT-I	COMMUNICATIVE COMPETENCE	Classes: 09

1. Reading Comprehension
2. Listening Comprehension
3. Vocabulary Development

UNIT-II	WRITING SKILLS	Classes: 09

1. Report Writing
2. Resume Preparation
3. E-mail Writing

UNIT-III	PRESENTATION SKILLS	Classes: 12

1. Oral presentation
2. Power point presentation
3. Informative presentation

UNIT-IV	OPTIMIZATION AND GENERALIZATION	Classes: 09

- SWOT/C Analysis
- Group Discussions
- Interview skills

UNIT-V	INTERPERSONAL SKILLS	Classes: 06

1. Time Management
2. Problem Solving & Decision Making
3. Etiquettes

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MOBILE APPLICATION DEVELOPMENT LABORATORY

VII Semester: CSE (Non-FSI) / VIII Semester: CSE (FSI)

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA05714	Core	-	-	4	2	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 42			Total Classes:42			

Objectives:

- To understand fundamentals of android operating systems.
- Illustrate the various components, layouts and views in creating android applications
- To understand fundamentals of android programming.

WEEK 1

Create "Hello World" Application

1.1 Create a new Android Project

1.2 Run "Hello World" on the Emulator

1.3 On a Physical Device

1.4 Greeting the User

WEEK 2

2. Create Application by Using Widgets
Creating the Application by using the Activity class
(i) onCreate()
(ii) onStart()
(iii) onResume()
(iv) onPause()
(v) onStop()
(vi) onDestroy()
(vii) onRestart()

WEEK 3

3. Creating the Application by using Text Edit control.

WEEK 4

4. Creating the Application Choosing Options
(i) CheckBox
(ii) RadioButton

WEEK 5

5.Creating the Application Choosing Options

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(i) RadioGroup (ii) Spinner
WEEK 6
6. Create Application by Using Building Blocks for Android Application Design Design the Application by using (i) Linear Layout (ii) Relative Layout
WEEK 7
7. Create Application by Using Building Blocks for Android Application Design in Absolute Layout
WEEK 8
8. Design the Application for Menus and Action Bar
WEEK 9
9. Design the application to display the Drop-Down List Action Bar.
Text Books:
• Android Programming by B.M Harwani, Pearson Education, 2013.

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Managerial Economics

		I MBA I Semester						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00102	Foundation	L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Objective:

The objective of this course is to understand the relevance of economics in business concepts. This will enable the students to study various concepts related to functional areas of Demand of the products and services, Production, Market structures, Pricing and Costing, National Income and inter sectoral changes from a broader perspective.

COURSE OUTCOMES: The student is able to

CO1: Examine the basic concepts and principles of Managerial Economics and its relationship with other subjects.(K4)
CO2: Apply the concepts of production and demand concepts in Business Situations (K3)
CO3: Apply the concepts of pricing in business situations and Examine concepts of business structures (K3)
CO4: Analyse the concepts of Economic decision making ,Risk and uncertainties and apply in business (K4)
CO5: Examine the basic concepts of National Income , Money and capital markets ,Fiscal and monetary policies. Evaluate Economic Indicators and inter sectoral linkages (K5)

Unit – I	Foundation of Managerial Economics & Basic Concepts	Classes: 10

Introduction to Managerial Economics:

Nature and Scope of Managerial Economics, Meaning, characteristics, scope and subject matter relationship with other disciplines, decision making and forward planning, Fundamental principles of managerial economics: - Opportunity cost principle-incremental principal, principle of time perspective, discounting principle and equi-marginal principle.

Unit – II	Production and Demand Analysis	Classes: 10

Introduction to Production - Production function - Cobb-Douglas Production function - Law of variable proportions - Marginal Rate of Technical Substitution - Iso - quants - types of Iso-quants - Returns to scale and returns to variable – Iso-costs - Economies of scale. Demand Analysis: Meaning and definition of demand, determinants of demand, law of demand, exception to the law of demand, elasticity of demand, Demand Forecasting, Meaning and definitions- methods of demand forecasting, criteria of good forecasting methods.

Unit – III	Pricing and Market structures	Classes: 10

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Introduction to Pricing - objectives of pricing - Multiple product pricing - Pricing of new products - skimming and penetration - Pricing methods - Market structures - Monopoly - Duopoly - Oligopoly (Paul Sweezy kinked demand curve) - Perfect competition - Monopolistic competition - Price discrimination - Introduction to game theory.Revenue – meaning – total revenue, average revenue and marginal revenue - Break even analysis- break even chart.

Unit – IV	Economic Decision Making	Classes: 10

Principles of Economic decision-making – Concept of Required Rate of Return – Annual cost and Annual-worth Comparisons – Present-worth analysis – The Cost of Capital, Economic Life, Replacement Economy – Analysis of risk and uncertainty.

Unit – V	National Income and Inter Sectoral Linkages	Classes: 10

Introduction to National Income Accounts – Models of National Income Determination – Economic Indicators; Technology and Employment – Issues and Challenges; Business and Government. Inter-Sectoral Linkages: Macro Aggregates and Policy Interrelationships – Fiscal and Monetary Policies; Industrial Finance – Money Market, Capital market and Institutional Finance.

Reference:

1. Samuel Paul, Mote and Gupta: Managerial Economics
2. Paul Samuelson, Economics.
3. Craig Petersen &Cris Lewis: Managerial Economics
4. P.L.Mehta., Managerial Economics, Sultan chand
5. Paul G Keat, Phili KY Young., Managerial economics, Pearson,
6. H.Craig Peterson, W.Cris Lewis, Managerial economics, Pearson.
7. Dominic Salvatore, Oxford.
8. Koutsoyiannis, Modern Micro Economics.
9. Gupta G.S., MANAGERIAL ECONOMICS, Tata McGraw-Hill.
10. Varshney and Maheshwari, MANAGERIAL ECONOMICS, Sultan and Chand
11. Peterson, HC and W.C.Lewis, MANAGERIAL ECONOMICS, PHI, New Delhi.
12. Riggs, J.L. MANAGERIAL ECONOMICS, McGraw-Hill.
13. Stiglitz J., PRINCIPLES OF MICROECONOMICS, Norton Publishers 2nd Edition, 1998. 14. Joel Dean, Managerial Economics.

Mode of Evaluation: *Assignments, Seminars, Written Examinations*

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(Affiliated to JNTUA, Approved by AICTE, New Delhi and Accredited by NAAC 'A' Grade)

Tirupati – 517506,Chittoor Dt. Andhra Pradesh.

BUSINESS COMMUNICATION

	I MBA I Semester							
Course code	Category	Hours / Week			Credits	Maximum Marks		
20CE00105		L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact Classes: 50	Tutorial Classes: 15	Practical Classes - Nil				Total Classes - 65		

COURSE OBJECTIVES :

To understand and demonstrate writing and speaking processes through invention, organization, drafting, revision, editing, and presentation. To understand the importance of specifying audience and purpose and to select appropriate communication choices.To understand and appropriately apply modes of expression, i.e., descriptive, expositive, narrative, scientific, and self-expressive, in written, visual, and oral communication.

COURSE OUTCOMES:

CO1: To build tertiary level grammatical usage in language[K3]
CO2: To apply LSRW skills in a professional context[K3]
CO3:To acquaint students with evolving trends in professional communication. [K6]
CO4: To excel the students in documentation.[K2]
CO5: To develop the conversation skills of the students [K3].

UNIT -I: Fundamentals Of Business Communication:

Formal and Informal Communication Listening to Conversations – Interviews - Introducing a Product or Service - Small Talk - SWOT Analysis - Telling a story effectively - Reading Reports - Comprehending passages in Business and Economy-related Newspapers – Basics of Business - Correspondence - Formal Letters - Letters calling Quotations - Follow Up and Complaints Letters.

UNIT - II Presentation and Group Discussion Skills:

LISTENING –SPEAKING: Seminars, Conferences - Preparing PowerPoint's – READING: Profiles of Companies - Interpreting Data - Case Studies – WRITING: Reports - Survey – Feasibility

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UNIT – III: Documenting Skills:

Press Meets SPEAKING: Group Discussion, Dynamics of a Group Culture, - READING: Critical Thinking - Problem Definition and Solving – WRITING: Company Profiles - Minutes of Meetings - Case Studies - Job Application - Email - Cover letter Formats.

UNIT- IV: Non-Verbal Communication:

Grooming, Body Language - Tone and Pitch - Intercultural and Cross - Cultural Communication - SPEAKING: Presentations - READING: Meeting and their procedures - WRITING – Project Proposals, Mini Projects, Seeking Funding – Tenders - Circulars.

UNIT-V: Telephone and Email Etiquette:

Listening to and executing formal telephone conversations - conversational tactics - seeking information LISTENING – Sales Meeting - Panel Discussion - Accents - SPEAKING: Negotiation Skills, Life Skills - Elevator Pitch - Leadership Behavior - READING – WRITING - Requisition Letters - for Reference and Recommendation - Statements of Purposes - Persuasive language Emails - Portfolios.

REFERENCES:

1. Business Communication. Harvard Business Essentials Series, HBS
2. Excellence in Business communications, John V. Thill and Courtland L. Bovee, Pearson, 2015.
3. Business Communication, Menakshi Raman, Prakash Singh, Oxford University Press

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Business Communication Lab-I

		I MBA I Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00108	Foundation	L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:10	Practical classes: Nil				Total classes:55		

Objectives:

The introduction of Business Communication Lab is considered as essential in the I year I semester level. At this stage the students have to develop themselves for their career so that they have to practice listening, speaking, Reading and writing skills in English for interpersonal communication and for their Profession in this globalised era.

Course Outcomes:

CO1: To extract the need and importance of effective communication skills in the social and work related situations. (K4)

CO2:To use phonetics in different business/work related situations. (K3)

CO3:To elevate listening skills and effective communication skills. (K2)

CO4:Thorough application of speaking skills and capable of organising various events. (K3)

CO5:Develop writing and reading skills and equipping managerial skills. (K6)

Unit – I	**Understanding the need of Communication Skills**	**Classes: 15**

Understanding the need of Communication Skillsfor Managers , importance of effective communication through different social/work related situations,Enact role play of verbal and Nonverbal communication, Identifying the communication barriers in theorganization through case studies, identify effective use of body language, paralanguage and spatial communication

Unit – II	**Phonetics**	**Classes: 10**

Phonetics– Introduction to sounds of speech, vowels and consonants, phonetic transcription, orthographic transcription, syllabification, word stress, Innovation, Accent,Rhythm, Oral Skills, Situational Dialogues, Role Plays.

Unit - III	**Listening exercises**	**Classes: 10**

Listening with a focus on pronunciation (ear training) : segmental-sounds, stress, eak forms, intonation - listening for meaning (oral comprehension) listening to talks, lectures, conversations, discussions, jokes, riddles etc.

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Unit – IV	Speaking Skills	Classes: 10

Speaking about the future plans, expressing opinions, Telephone conversations, PPT Presentations, Poster Presentations, Public Speaking, Welcome Address (Inviting Dignitaries to department workshops, symposiums and university functions proposing vote of thanks), Interview Skills and Mock Interviews.

Unit – V	Writing and Reading exercises	Classes: 10

Reading and comprehension of the texts supported by suitable exercises Use of Dictionary, Note making after reading a text, showing the main idea and supporting ideas and the relationships between them -Practice in writing paragraphs, short essays and summaries. Skills Training:- Non-Verbal communication,Decision Making, Goal Setting, Etiquettes and grooming, Stress Management, Time Management, Problem Solving Skills.

Reference Books:

1.□Basic Business Communication Skills for empowering the internet generation,LesikarFlately, Tata McGraw Hill.

2.Business Communication for Managers, Penrose, Rasberry and Myers, Cengage.

3.□A Text Book of English Phonetics for Indian Students by, T. Balasubramanian,McMillan.

Mode of Evaluation: Assignments, Seminars, Written Examinations.

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INFORMATION TECHNOLOGY LAB - I

		I MBA I Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00109		L	T	P	C	Internal	External	Total
		-	-	4	2	40	60	100
Contact classes: 31	Tutorial Classes: 0	Practical classes: Nil				Total classes: 31		

Course Objectives:

The Objective of the course is to provide basic understanding of applications of information technology and hands on experience to students in using computers for data organization and addressing business needs.

Course Outcomes:

CO1: To Understand the evolution of computer (K2)
CO2: To Develop different business IT related documents(K3)
CO3: To Analysis various data for decision Making in Business (k4)
CO4: To Present the information by using different tools in Information technology to the students(K2)
CO5: To analyse and interpret data to support decision making(K6)

UNIT – I	**STUDY OF EVOLUTION OF COMPUTERS**	**Classes: 10**

Generations – Assembling & Dissembling of Computer Components, Computer Networks – Applications of computers in Management –Internet, E-Commerce, E-Business.

UNIT – II	**MS Word**	**Classes: 10**

Creating, saving editing and printing of documents -Find and replace options - Formatting with tables, charts and pictures- Mail Merge - Spell check and grammar checks

UNIT – III	**MS Excel**	**Classes: 6**

Creating, naming and saving worksheets Data entry-Manual and automatic - Formatting cells and cell referencing - Working with graphs and charts - Creating and using formulas and functions - Previewing and printing worksheets. Data management tools Statistical Applications –Measures of central tendency.

UNIT – IV	**MS-Power Point**	**Classes: 6**

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Presenting features, creating, saving a presentation using different methods editing, using different designs, layouts, color schemes, formatting, custom animating and displaying the presentation.

UNIT – V	MS Access & Data Interpretation	Classes: 6

MS-Access: Create Databases, Tables & Relationships – Create forms to enter Data – Filter Data- Use of queries in data manipulation – Generating Reports.

Data Interpretation: Insert tables- Data Analysis using tables - Pie Charts - Caselets - Bars - Line Graphs - Data Sufficiency

Reference Books:

1. Peter Norton, Introduction to Computers and Communications, -Sixth Edition-Tata McGraw Hill,2009
2. V.Rajaraman, Introduction to Information Technology, Prentice Hall India, 2008
3. Cox et al, 2007 Microsoft Office System Step-by- Step, First Edition, PHI, 2007.
4. Winston, Microsoft Office Excel 2007 Data Analysis and Business Modeling, First
5. Edition, Prentice Hall India, 2007.
6. Lambet, Lambert III &Prepernau, Microsoft Office Access 2007 Step-by-Step, First
7. Edition, Prentice Hall India, 2007.
8. David Whigam, Business Data Analysis Using Excel, First Edition, Oxford University
9. Quantitative Aptitude, Agarwal R S, S Chand
10. Data Interpretation & Data Sufficiency, Ananta Ashisha

Mode of Evaluation: Assignments (20%), Seminars (20%), Written Examinations (60%)

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Business Analytics Lab

		I MBA II Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
17CE00208	Foundation	L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: nil				Total classes:65		

Course Objectives:

To understand the basic concepts of business analytic.To learn financial, marketing experiments. To learn HRM, systems experiments. To understand the concepts of Information Technology

Course Outcomes:

CO1: To understand the basic concepts of businessanalytics [K2]

CO2: Demonstrating and experimenting financial aspects [K3]

CO3: Examining marketing and sales aspects [k4]

CO4: Demonstrating & creating humanresource administration [K6]

CO5: Design Management information systems[k6]

UNIT - I	**Introduction to Business Analytics – Accounting experiments**	**Classes: 10**

Introduction to Business Analytics – functions – concepts. Creation of company – Preparation of Ledger - Posting Trial Balance – Profit and Loss Account – Balance sheet sole traders - Softwares:Finnacle

UNIT - II	**Financial Experiments**	**Classes: 10**

Capital budgeting decisions – Calculations of NPV – Calculations of IRR – Calculations of Profitable Index – Softwares:Tally 9.0

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UNIT – III	Marketing Experiments	Classes: 10

Storing and retrieving of data of customers - Storing and retrieving of data of sales - Storing and retrieving of data of dealers - products and geographical areas (Tables and Graphs) –Softwares:Hub spot - Rejoiner

UNIT – IV	HRM Experiments	Classes: 10

Creation of Employees data base - Demonstrating the salary administration – Softwares: Saral Pay Pack - Opfin

UNIT – V	Systems Experiments	Classes: 10

Understanding the Information Systems – Design of MIS - Overview of Internet and Internet tools. Softwares: Mac OS - Linux

Reference:

1. Ms Office-SanjaySaxena
2. Ms Office Excel-Frye, PHIpublications
3. Ms Office Access- Step by step, PHIpublications

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CHADALAWADA RAMANAMMA ENGINEERING COLLEGE

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(Affiliated to JNTUA, Approved by AICTE, New Delhi and Accredited by NAAC 'A' Grade)

Tirupati – 517506,Chittoor Dt. Andhra Pradesh.

BUSINESS COMUNICATION LAB - II

		I MBA II Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00209	Foundation	L	T	P	C	Internal	External	Total
		3	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Objectives:

Aim is to enable students understand how to write business letters and improve written communication. Course Outcome. At the end of the course, students will be enabled with the following skills.

Course Outcomes :

CO1: Identify key principles in business writing(K3)
CO2: To draft effective business correspondence with clarity(K6)
CO3: Designing and developing written instructions(K6)
CO4:Drafting Report writing (K6)
CO5:Designing resume and career goals(K6)

Unit – I	Business Writing	**Classes: 9**

Introduction, Importance of Written Business Communication, Direct and Indirect Approached to Business Messages, Five Main Stages of Writing

Unit – II	Business Correspondence	**Classes: 9**

Introduction, Business Letter Writing, Effective Business Correspondence, Common Components of Business Letters, Strategies for Writing the Body of a Letter, Kinds of Business Letters, Writing Effective Memos. Practice Exercises.

Unit – III	Instructions	**Classes: 9**

3:Instructions: Introduction, Written Instructions, General Warning, Caution and Danger, Format in Instructions, Oral Instructions, Audience Analysis, Product Instructions. Practice Exercises.

Unit – IV	Business Reports and Proposals	**Classes: 9**

4: Business Reports and Proposals: Introduction, What is a Report, Steps in Writing a Routine Business Report, Parts of a Report, Corporate Reports, Business Proposals.

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Unit – V	Careers and Resumes	Classes: 9

5: Careers and Resumes : Introduction, Career Building, Understanding yourself, setting a career goal, job search / looking at various options, preparing your resume, resume formats, traditional, electronic and video resumes,online recruitment process. Write your resume to market yourself.

Reference books:

1. Lesikar: Basic Business Communication, TMH.
2. Stephen Bailey, Academic Writing for International Students of Business, Routledge.
3. David Irwin: Effective Business Communications, Viva-Thorogood.
4. Rajendra Pal, J S KorlahaHi: Essentials of BusinessCommunication: Sultan Chand & Sons,
5. SaileshSengupta, Business and Managerial Communications, PHI.

6. Mode of evaluation: Assignments, Seminars, Mid Examinations.

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ENTREPRENEURSHIP DEVELOPMENT

	II MBA I Semester :							
Course code	Category	Hours / Week			Credits	Maximum Marks		
20CE00301	Foundation	L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact Classes: 50	Tutorial Classes: 15	Practical Classes - Nil				Total Classes - 65		

COURSE OBJECTIVES:

The main **objective** of this **course** is **develop entrepreneurial** abilities by providing background information about support systems , skill sets , financial and risk covering institutions and other for building an enterprise so that future budding **entrepreneurs** can make right decisions for starting and running a venture.

COURSE OUTCOMES:

CO1: To equip and develop the learners entrepreneurial skills and qualities essential to undertake business [k3].

CO2: To build the learner's entrepreneurial competencies needed for managing business efficiently and effectively [k6].

CO3: To analyze the business plan for starting a business [K4].

CO4: To formulate and manage a small business [K6]

CO5: To manage and monitor thesmall business [K5].

UNIT – I: Entrepreneurial Competence:

Entrepreneurship concept – Entrepreneurship as a Career – Entrepreneurial Personality -Characteristics of Successful Entrepreneurs – Knowledge and Skills of an Entrepreneur.

UNIT- II: Entrepreneurial Environment:

Business Environment – Role of Family and Society - Entrepreneurship Development: Training andOther Support Organisational Services - Central and State Government Industrial Policies and Regulations.

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UNIT- III Business Plan Preparation:

Sources of Product for Business - Prefeasibility Study - Criteria for Selection of Product -Ownership - Capital Budgeting- Project Profile Preparation - Matching Entrepreneur with the Project - Feasibility Report Preparation and Evaluation Criteria.

UNIT- IV: Launching of Small Business:

Finance and Human Resource Mobilisation - Operations Planning - Market and Channel Selection - Growth Strategies - Product Launching -Incubation - Venture capital, Start-ups.

UNIT- V: Management of Small Business:

Monitoring and Evaluation of Business - Business Sickness - Prevention and Rehabilitation of Business Units - Effective Management of small Business - Case Studies.

REFERENCES:

1. S.S.Khanka, Entrepreneurial Development, S.Chand and Company Limited, New Delhi, 2016.
2. R.D.Hisrich, Entrepreneurship, Tata McGraw Hill, New Delhi, 2018.
3. Rajeev Roy, Entrepreneurship, Oxford University Press, 2nd Edition, 2011.

TEXT BOOKS:

1. Dr. Vasant Desai, "Small Scale Industries and Entrepreneurship", HPH, 2006.
2. Arya Kumar. Entrepreneurship, Pearson, 2012.
3. Prasanna Chandra, Projects – Planning, Analysis, Selection, Implementation and Reviews,Tata McGraw-Hill, 8 th edition ,2017.

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Employee Engagement and Empowerment

		II MBA I Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00334	Foundation	L	T	P	C	Internal	External	Total
		-	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Outcomes:

CO1:ToExamine basic concepts of employee engagement and empowerment(K4)

CO2:ToUnderstand Theories of Employee engagement and empowerment (K2)

CO3:ToAnalyze key elements of employee empowerment(K4)

CO4:ToExaminebasic concepts of employee engagement (K4)

CO5:To evaluate Best practices in Employee engagement and empowerment(K6)

Unit - I	Introduction to employee engagement and empowerment	Classes: 10

Employee Engagement and Empowerment: An overview – Definition, objectives, Scope – Key Players in Engagement and Empowerment-, - HRM and Employee Engagement and Empowerment – Recent trends.

Unit - II	Theorising employee engagement and empowerment	Classes: 10

Theorising Employee Engagement and Empowerment: Maslow's Need Hierarchy, Herzberg's Two-Factor Theory, Theory 'X' & Theory 'Y', Achievement Motivation Theory, Vroom's Expectancy Theory, ERG Theory, Socio-Technical Theory, Job Characteristics Theory, LMX Theory, Theory Z, and Social Cognitive Theory – Recent trends.

Unit - III	Key elements of Employee empowerment	Classes: 10

Employee Empowerment: Key elements: Power, Information, Reward and Knowledge (PIRK) – Process of Employee Empowerment – Benefits of Employee empowerment - Levels of Employee Involvement: Enabling, Involving and Encouraging - Principles of Employee Empowerment- Recent Trends in Empowerment.

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Unit - IV	Elements of Engagement	Classes: 10

Employee Engagement: Meaning - Types of Employee- Components and Engagement - Elements of Engagement–Engagement framework: People, Reward, Company practices, Work, quality of life, Opportunities– Consequences of engagement – Roll of Top Managers in Employee Engagement - Employee Engagement using Social Media- Recent Trends in Engagement.

Unit - V	Best practices – Improvement of performance	Classes: 10

Employee Engagement and Empowerment: Basic Issues and concern- Best Practices - Key Improving Performance - Impact on Organisation Performance- Engagement Strategies – Drivers of Employee Engagement - Recent Trends

Reference:

1. C. Argyris, On Organisational Learning, Blackwell.
2. Christopher Rice& Fraser Marlow, The Engagement Equation: Leadership Strategies for an Inspired Workforce.
3. Cotton, J. L. – Employee Involvement: Methods for improving performance and work attitudes. CA: Sage.
4. Dale, H. Besterfield, Carol, Besterfield, Glen, H. Besterfield& Mary Besterfield – Total Quality Management. London: Prentice Hall.
5. DBM Fetterman, Foundation of Empowerment Evaluation, Sage.
6. E E Lawler III, The Ultimate Advantage: Creating High Involvement Organisation, Jossey Boss.
7. Gary Yukl – Leadership in Organisations. Singapore: Pearson.
8. Gerald, R. Ferris & Ronald, M. Buckley – Human Resource Management: Perspective, context, functions & outcomes. Prentice Hall Inc.
9. Ian Beardwell& Len Holden (Eds). - Human resource Management: A contemporary perspective. UK: Pitman Publishing.
10. J B Mondros and S M Wilson, Organising for Power and Empowerment, Columbia University Press.
11. Jim Haudan, The Art of Engagement: Bridging the Gap Between People and Possibilities.
12. John Storey (ED.) – Human Resource Management. USA: Routledge.
13. Kevin Kruse, Employee Engagement for Everyone: 4 Keys to Happiness and Fulfillment at Work.
14. Lawler, E. E. III - High Involvement Management. San Francisco: Jossey-Bass.
15. Lawler, E. E. III - Ultimate Advantage: Creating the High-Involvement Organisations. San Francisco: Jossey-Bass.
16. Mark Royal and Tom Agnew, The Enemy of Engagement: Put an End to Workplace Frustration--and Get the Most from Your Employees, Amacom.

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Legal Aspects of Business

		II MBA II Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
20CE00403	Foundation	L	T	P	C	Internal	External	Total
		3	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

COURSE OBJECTIVES:

To sensitize the students as also help they appreciate the overall legal framework within which business activities are carried out. To create awareness in respect of rules and regulations affecting various managerial functions.

COURSE OUTCOMES:

CO1: Analyze the Indian Contract Act. [K4]
CO2: Evaluate Sales of Goods Act and the machinery for redressal of consumer grievances. [K5]
CO3: Elaborate rights and duties of agent and principal, Principal's liability for the acts of agent and the procedure for termination of agency. [K6]
CO4: Examine the rights and duties of partners, dissolution of partnership firm and the formation of company, amendments act in 2013. [K4]
CO5: Explain the kinds of Negotiable Instruments and Goods and Services Act. [K5]

UNIT –I: THE INDIAN CONTRACT ACT, 1872

Nature of the Act - – Essentials of a Valid Contract – Classification of Contracts- Capacity – Free Consent —Performance of a Contract – Discharge of a Contract – Remedies for Breach of a Contract

UNIT –II: SALES OF GOODS ACT, 1930 & CONSUMER PROTECTION ACT, 1986
Distinction between Sales and Agreement to Sell –Conditions and Warranties – Performance of Contract of Sale – Rights of an Unpaid Seller.**Consumer Protection Act, 1986:** Consumer Rights–

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Machinery for Redressal of Consumer Grievances- District Consumer Forum – State Level Commission – National Level Commission.

UNIT –III: CONTRACT OF AGENCY ACT, 1872

Kinds of Agents –Creation of Agency-Rights and Duties of Principal – Rights and Duties of Agent - Principal's Liability for the Acts of the Agent-Liability of Agent –Termination of Agency.

UNIT-IV: INDIAN PARTNERSHIP ACT, 1932

Meaning and Essentials of Partnership Firm –Registration Deed – Tests of Partnership-Rights and Duties of Partners –Dissolution of Partnership.

UNIT –V: COMPANIES ACT 2013 & NEGOTIABLE INSTRUMENTS ACT, 1881

(i) Nature and Types of Companies – Formation of a Company –Memorandum of Association-Articles of Association–Kinds of Shares – Company Act amended in 2013 - Duties of Directors-Winding up Procedure.

(ii) Kinds of Negotiable Instruments and Endorsement- Presentation of a Negotiable Instrument Discharge of a Negotiable Instrument – Goods and Services Tax Act,2017

Relevant cases have to be discussed in each unit

TEXT BOOKS:

1. "Legal Aspects of Business" Ravindra Kumar: Cengage Learning, New Delhi, 2011
2. "Business Legislation for Management", Kuchhal M C, DeepaPrakash: Vikas Publishing House, New Delhi, 2012

REFERENCE BOOKS:

1. "Legal Aspects of Business", Pathak: Tata McGraw Hill, New Delhi, 2010
2. "A Manual of Business Laws", S.N.Maheshwari, S.K.Maheshwari: Himalaya Publishing House, 2013.
3. "Legal Aspects of Business", P.K.Padhi: PHI Learnings, New Delhi, 2013
4. "Business Law", S.S Gulshan: Excel Books, New Delhi, 2012.

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OBJECT ORIENTED PROGRAMMING THROUGH JAVA LAB

II Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CF00212	Core	-	-	4	2	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total Classes: 45		

Course Objectives:

- Practice object-oriented programs and build java applications.
- Implement java programs for establishing interfaces.
- Implement sample programs for developing reusable software components.

Course Outcomes:

- Create a software application using the Java programming language.
- Debug a software application written in the Java programming language.
- Test a software application written in the Java programming language.
- Create database connectivity in java and implement GUI applications.
- Students learn to implement sample programs for developing reusable software components.

List of Experiments

Week-1

a. Try debug step by step with small program of about 10 to 15 lines which contains at least one if else condition and a for loop.

b. Write a java program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read in a, b, c and use the quadratic formula.

c. The Fibonacci sequence is defined by the following rule. The first two values in the sequence are 1 and 1. Every subsequent value is the sum of the two values preceding it. Write a java program that uses both recursive and non-recursive functions.

Week-2

a. Write a java program to multiply two given matrices.

b. Write a java program to implement method overloading and constructors overloading.

c. Write a java program to implement method overriding.

Week-3

a. Write a java program to check whether a given string is palindrome.

b. Write a java program for sorting a given list of names in ascending order.

c. Write a java program to create an abstract class named Shape that contains two integers and an empty method named print Area (). Provide three classes named Rectangle, Triangle and Circle

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such that each one of the classes extends the class Shape. Each one of the classes contains only the method print Area () that prints the area of the given shape.
Week-4
Write a program that creates a user interface to perform integer division. The user enters two numbers in the text fields, Num1 and Num2. The division of Num1 and Num2 is displayed in the Result field when the Divide button is clicked. If Num1 and Num2 were not integers, the program would throw a Number Format Exception. If Num2 were zero, the program would throw an Arithmetic Exception Display the exception in a message dialog box.
Week-5
Write a java program that creates menu which appears similar to the menu of notepad application of the Microsoft windows or any editor of your choice.
Week-6
a. Write a java program that reads a file name from the user, and then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes. b. Write a java program that displays the number of characters, lines and words in a text file. c. Write a java program that reads a file and displays the file on the screen with line number before each line.
Week-7
a. Suppose that table named table.txt is stored in a text file. The first line in the file is the header, and the remaining lines correspond to rows in the table. The elements are separated by commas. Write a java program to display the table using labels in grid layout. b. Write a java program that connects to a database using JDBC and does add, delete, modify and retrieve operations.
Week-8
Write a java program to handle keyboard events
Week-9
a. Write a java program that takes tab separated data (one record per line) from a text file and insert them into a database. b. Write a java program that prints the metadata of a given table.
Week-10
Write a java program that simulates a traffic light. The program lets the user select one of three lights: Red, Yellow or Green with radio buttons. On selecting a button an appropriate message with "STOP" or "READY" or "GO" should appear above the buttons in selected color. Initially, there is no message shown.
Week-11
a. Write a java program that handles all mouse events and shows the event name at the center of the window when a mouse event is fired. Use adapter classes. b. Write a java program to demonstrate the key event handlers.

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INTERNET OF THINGS

II-Semester								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CD05203	Core	4	-	-	4	40	60	100
Contact Classes: 60	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 60		

Objectives:

The course should enable the students to:

- Understand the architecture of Internet of Things and connectedworld.
- Explore on use of various hardware and sensing technologies to build IoTapplications.
- Illustrate the real time IoT applications to make smartworld.

Outcomes:

- Interpret the vision of IoT from a globalcontext.
- Determine the Market perspective ofIoT.
- Compare and Contrast the use of Devices, Gateways and Data Management inIoT.
- Implement state of the art architecture inIoT.
- Illustrate the application of IoT in Industrial Automation and identify Real WorldDesign

UNIT-I	Introduction to Internet of Things(IoT)	Classes: 12

Definition and characteristics of IoT, physical design of IoT, logical design of IoT, IoT enabling technologies, IoT levels and deployment, domain specific IoTs.

UNIT-II	IoTand M2M	Classes: 12

Introduction, M2M, difference between IoT and M2M, software defined networking (SDN) and network function virtualization (NFV) for IoT, basics of IoT system management with NETCONF-YANG.

UNIT-III	IoT Architecture and Python	Classes: 12

IoT Architecture: State of the art introduction, state of the art; Architecture reference model: Introduction, reference model and architecture, IoT reference model.

Logical design using Python: Installing Python, Python data types and data structures, control flow, functions, modules, packages, file handling.

UNIT-IV	IoT Physical Devices and Endpoints	Classes: 12

Introduction to Raspberry Pi interfaces (Serial, SPI, I2C), programming Raspberry PI with Python, other IoT devices.

UNIT-V	IoT Physical Servers and Cloud Offerings	Classes: 12

Introduction to cloud storage models and communication APIs; WAMP: AutoBahn for IoT, Xively cloud for IoT; Case studies illustrating IoT design: Home automation, smart cities, smart environment.

Text Books:

1. ArshdeepBahga, Vijay Madisetti, "Internet of Things: A Hands-on-Approach", VPT, 1st Edition, 2014.
2.Matt Richardson, Shawn Wallace, "Getting Started with Raspberry Pi", O'Reilly (SPD), 3rd Edition, 2014.

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MOBILE APPLICATION DEVELOPMENT

II-Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CD05204	Core	4	-	-	4	40	60	100
Contact Classes: 60	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 60		

Objectives:

The course should enable the students to:

- Understand fundamentals of android operatingsystems.
- Illustrate the various components, layouts and views in creating androidapplications
- Understand fundamentals of androidprogramming.

Outcomes:

- Be exposed to technology and business trends impacting mobileapplications
- Be competent with the characterization and architecture of mobileapplications.
- Be competent with understanding enterprise scale requirements of mobileapplications.
- Be competent with designing and developing mobile applications using oneapplication development framework.

UNIT-I	Introduction to Android	Classes: 12

The Android 4.1 jelly Bean SDK, Understanding the Android Software Stack, installing the Android SDK, Creating Android Virtual Devices, Creating the First Android Project, Using the Text view Control, Using the Android Emulator, The Android Debug Bridge(ADB), Launching Android Applications on a Handset.

UNIT-II	Basic Widgets	Classes: 12

Understanding the Role of Android Application Components, Understanding the Utility of Android API, Overview of the Android Project Files, Understanding Activities, Role of the Android Manifest File, Creating the User Interface, Commonly Used Layouts and Controls, Event Handling, Displaying Messages Through Toast, Creating and Starting an Activity, Using the Edit Text Control, Choosing Options with Checkbox, Choosing Mutually Exclusive Items Using Radio Buttons

UNIT-III	Building Blocks for Android Application Design	Classes: 12

Introduction to Layouts, Linear Layout, Relative Layout, Absolute Layout, Using Image View, Frame Layout, Table Layout, Grid Layout, Adapting to Screen orientation.

Utilizing Resources and Media Resources, Creating Values Resources, Using Drawable Resources, Switching States with Toggle Buttons, Creating an Images Switcher Application, Scrolling Through Scroll View, playing Audio, Playing Video, Displaying Progress with Progress Bar, Using Assets.

UNIT-IV	Using Selection widgets and Debugging	Classes: 12

Using List View, Using the Spinner control, Using the GridView Control, Creating an Image Gallery Using the ViewPager Control, Using the Debugging Tool: Dalvik Debug Monitor Service(DDMS), Debugging Application, Using the Debug Perspective.

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COMMUNICATIVE ENGLISH I

I B. Tech - I Semester: Common for all branches								
Course code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA52101	Foundation	2	-	-	2	40	60	100
Contact Classes:32	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes:32		

OBJECTIVES:

- Facilitate effective listening skills for better comprehension of academic lectures and English spoken by native speakers
- Focus on appropriate reading strategies for comprehension of various academic texts and authentic materials
- Help improve speaking skills through participation in activities such as role plays,discussions and structured talks/oral presentations
- Impart effective strategies for good writing and demonstrate the same in summarizing, writing well organized essays, record and report useful information
- Provide knowledge of grammatical structures and vocabulary and encourage their appropriate use in speech and writing

UNIT-I **Classes:07**

Listening: Identifyingthe topic, the context and specific pieces of information by listening to short audio texts and answering a series of questions.

Speaking: Asking and answering general questions on familiar topics such as home, family, work, studies and interests; introducing oneself and others.

Reading: Skimming to get the main idea of a text; scanning to look for specific pieces of information.

Reading for Writing: Beginnings and endings of paragraphs - introducing the topic, summarizing the main idea and/or providing a transition to the next paragraph.

Grammar and Vocabulary: Content words and function words; word forms: verbs, nouns, adjectives and adverbs; nouns: countables and uncountables; singular and plural; basic sentence structures; simple question form - wh-questions; word order in sentences.

Learning Outcomes

At the end of the module, the learners will be able to

- Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information
- Ask and answer general questions on familiar topics and introduce oneself/others
- Employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information
- Recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs
- Form sentences using proper grammatical structures and correct word forms

UNIT-II **Classes:07**

Listening: Answering a series of questions about main idea and supporting ideas after listening to audio texts.

Speaking: Discussion in pairs/ small groups on specific topics followed by short structured talks.

Reading: Identifying sequence of ideas; recognizing verbal techniques that help to link the ideas in a paragraph together.

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Writing: Paragraph writing (specific topics) using suitable cohesive devices; mechanics of writing - punctuation, capital letters.
Grammar and Vocabulary: Cohesive devices - linkers, sign posts and transition signals; use of articles and zero article; prepositions.

Learning Outcomes

At the end of the module, the learners will be able to

- comprehend short talks on general topics
- participate in informal discussions and speak clearly on a specific topic using suitable discourse markers
- understand the use of cohesive devices for better reading comprehension
- write well structured paragraphs on specific topics
- identify basic errors of grammar/ usage and make necessary corrections in short texts

UNIT-III	Classes:06

Listening: Listening for global comprehension and summarizing what is listened to.
Speaking: Discussing specific topics in pairs or small groups and reporting what is discussed
Reading: Reading a text in detail by making basic inferences -recognizing and interpreting specific context clues; strategies to use text clues for comprehension.
Writing: Summarizing - identifying main idea/s and rephrasing what is read; avoiding redundancies and repetitions.
Grammar and Vocabulary: Verbs - tenses; subject-verb agreement; direct and indirect speech, reporting verbs for academic purposes.

Learning Outcomes

At the end of the module, the learners will be able to

- comprehend short talks and summarize the content with clarity and precision
- participate in informal discussions and report what is discussed
- infer meanings of unfamiliar words using contextual clues
- write summaries based on global comprehension of reading/listening texts
- use correct tense forms, appropriate structures and a range of reporting verbs in speech and writing.

UNIT-IV	Classes:06

Listening: Making predictions while listening to conversations/ transactional dialogues without video; listening with video.
Speaking: Role plays for practice of conversational English in academic contexts (formal and informal) - asking for and giving information/directions.
Reading: Studying the use of graphic elements in texts to convey information, reveal 46 trends/patterns/relationships, communicate processes or display complicated data.
Writing: Information transfer; describe, compare, contrast, identify significance/trendsbased on information provided in figures/charts/graphs/tables.
Grammar and Vocabulary:Quantifying expressions - adjectives and adverbs; comparing and contrasting; degrees of comparison; use of antonyms

Learning Outcomes

At the end of the module, the learners will be able to

- infer and predict about content of spoken discourse
- understand verbal and non-verbal features of communication and hold formal/informal conversations
- interpret graphic elements used in academic texts
- produce a coherent paragraph interpreting a figure/graph/chart/table

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• use language appropriate for description and interpretation of graphical elements

UNIT-V **Classes:06**

Listening: Identifying key terms, understanding concepts and answering a series of relevant questions that test comprehension.

Speaking: Formal oral presentations on topics from academic contexts - without the use of PPT slides.

Reading: Reading for comprehension.

Writing: Writing structured essays on specific topics using suitable claims and evidences

Grammar and Vocabulary: Editing short texts –identifying and correcting common errors in grammar and usage (articles, prepositions, tenses, subject verb agreement)

Learning Outcomes

At the end of the module, the learners will be able to

- take notes while listening to a talk/lecture and make use of them to answer questions
- make formal oral presentations using effective strategies
- comprehend, discuss and respond to academic texts orally and in writing
- produce a well-organized essay with adequate support and detail
- edit short texts by correcting common errors.

Text Books:

Reference Books:

1. Bailey, Stephen. Academic writing: A handbook for international students. Routledge, 2014.
2. Chase, Becky Tarver. Pathways: Listening, Speaking and Critical Thinking. Heinley ELT; 2nd Edition, 2018.
3. Skillful Level 2 Reading & Writing Student's Book Pack (B1) Macmillan Educational.
4. Hewings, Martin. Cambridge Academic English (B2). CUP, 2012.

Web References:

1Grammar/Listening/Writing 1-language.com
http://www.5minuteenglish.com/
https://www.englishpractice.com/

Grammar/Vocabulary

English Language Learning Online
http://www.bbc.co.uk/learningenglish/
http://www.better-english.com/
http://www.nonstopenglish.com/
https://www.vocabulary.com/
BBC Vocabulary Games
Free Rice Vocabulary Game

Reading

https://www.usingenglish.com/comprehension/
https://www.englishclub.com/reading/short-stories.htm
https://www.english-online.at/

Listening

https://learningenglish.voanews.com/z/3613
http://www.englishmedialab.com/listening.html

Speaking

https://www.talkenglish.com/
BBC Learning English – Pronunciation tips
Merriam-Webster – Perfect pronunciation Exercises

All Skills

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COMMUNICATIVE ENGLISH I LABORATORY

I B. Tech – I/II Semester : (Common to All Branches of Engineering)

Course code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
19A52102	Foundation	-	-	2	1	40	60	100
Contact Classes:Nil	**Tutorial Classes: Nil**	**Practical Classes:45**				**Total Classes:45**		

Objectives:

The course should enable the :

- students will be exposed to a variety of self instructional, learner friendly modes of language learning
- students will cultivate the habit of reading passages from the computer monitor. Thus providing them with the required facility to face computer based competitive exams like GRE, TOEFL, and GMAT etc.
- students will learn better pronunciation through stress, intonation and rhythm
- students will be trained to use language effectively to face interviews, group discussions, public speaking
- students will be initiated into greater use of the computer in resume preparation, report writing, format making etc

UNIT-I — Classes:09

- Phonetics for listening comprehension of various accents
- Reading comprehension
- Describing objects/places/persons

Learning Outcomes

At the end of the module, the learners will be able to

- understand different accents spoken by native speakers of English
- employ suitable strategies for skimming and scanning on monitor to get the general idea of a text and locate specific information
- learn different professional registers and specific vocabulary to describe different persons, places and objects

UNIT-II — Classes:09

- JAM
- Small talks on general topics
- Debates

Learning Outcomes

At the end of the module, the learners will be able to

- produce a structured talk extemporarily
- comprehend and produce short talks on general topics
- participate in debates and speak clearly on a specific topic using suitable discourse markers

UNIT-III — Classes:09

- Situational dialogues – Greeting and Introduction
- Summarizing and Note making
- Vocabulary Building

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Learning Outcomes

At the end of the module, the learners will be able to

- Learn different ways of greeting and introducing oneself/others
- summarize the content with clarity and precision and take notes while listening to a talk/lecture and make use of them to answer questions
- replenish vocabulary with one word substitutes, homonyms, homophones, homographs to reduce errors in speech and writing

UNIT-IV	Classes:09

- Asking for Information and Giving Directions
- Information Transfer
- Non-verbal Communication – Dumb Charade

Learning Outcomes

At the end of the module, the learners will be able to

- Learn different ways of asking information and giving directions
- Able to transfer information effectively
- understand non-verbal features of communication

UNIT-V	Classes:09

- Oral Presentations
- Précis Writing and Paraphrasing
- Reading Comprehension and spotting errors

Learning Outcomes

At the end of the module, the learners will be able to

- make formal oral presentations using effective strategies
- learn different techniques of précis writing and paraphrasing strategies
- comprehend while reading different texts and edit short texts by correcting common errors

Minimum Requirements for ELCS Lab:

The English Language Lab shall have two parts:

- Computer Assisted Language Learning (CALL) Lab: The Computer aided Language Lab for 60 students with 60 systems, one master console, LAN facility and English language software for self study by learners.
- The Communication Skills Lab with movable chairs and audio-visual aids with a P.A. system, Projector, a digital stereo-audio & video system and camcorder etc.

System Requirement (Hardware component):

Computer network with LAN with minimum 60 multimedia systems with the following specifications:

i) P – IV Processor
   a) Speed – 2.8 GHZ
   b) RAM – 512 MB Minimum
   c) Hard Disk – 80 GB
ii) Headphones of High quality

Suggested Software:

1. Clarity Pronunciation Power – Part I (Sky Pronunciation)
2. Clarity Pronunciation Power – part II
3. K-Van Advanced Communication Skills

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PROBLEM SOLVING AND PROGRAMMING

I B.Tech II- Semester : Common for All Branches

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA05102	Foundation	–	–	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 48				Total Classes:48		

Objectives:

- Learn C Programming language.
- To make the student solve problems, implement algorithms using C language.
- To write diversified solutions using C language.

Design an algorithm and construct a flow chart using Raptor tool and then write programs for the following problems.

LIST OF PROGRAMS

Week -1 BASIC C PROGRAMS

Write C program to

1. Find the Sum of three numbers.
2. Exchange (swap) of two numbers by using third variable.
3. Exchange (swap) of two numbers without using third variable.
4. Print the size of all data types.

Week - 2 BASIC C PROGRAMS

a). Develop a calculator to convert time, distance, area, volume and temperature from one unit to another.

b). Write a C program to find the Priority and associativity of operators using expressions. Take the expressions with different operators.

c). Write a C program to swap two numbers using bitwise operators.

Week - 3 CONTROL STATEMENTS

a) Write a C program to find whether the given number is odd or even.
b) Write a C program to find the Maximum and minimum of N numbers.
c) Write a C program to find the Maximum of three numbers.
d) Write a C program to print 'hello world' without using semicolon.
e) Write a C program to find whether the given number is odd or even using bitwise operator.
f) Write a C program to find the maximum of two numbers using Conditional operator.
g) Write a program which takes two integers and one arithmetic operator from the user, and performs the operation and then prints the result by using **switch-case**.(Operators : +, -, *, /, %)

Week -4 ITERATION STATEMENTS

a) Write a C program to generate the required multiplication table.
b) Write a C program to find the Factorial of a given number.
c) Write a C program to check whether the given number is prime or not.
d) Write a C program to find GCD

Week - 5 ITERATION STATEMENTS

a) Write a C program to find the sum of the digits of a number.
b) Write a C program to find whether the given integer is a Palindrome or not.
c) Write a C program to generate Fibonacci numbers in the given range.

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Week - 6	NESTED LOOPS

a) Write a C program to print the following pattern.

1
2 2
3 3 3

b) print multiplication tables upto the given table.

c) Write a C program to print Series of prime numbers in the given range.

Week - 7	NESTED LOOPS

a) Write a C program to check given number is strong number or not.

b) Write a C program to evaluate the sum of the following series up to 'n' terms

$e^x = 1 + x + x^2/2! + x^3/3! + x^4/4! +$ --------

Week - 8	ARRAYS

a).calculate the maximum, minimum and average of N numbers.

b).Write a C program to find the sum of positive and negative numbers in a given set(Array) of numbers.

c).Design a flowchart to perform Linear search on list of N unsorted numbers(Iterative and recursive)

d)Write a C program to read two matrices and find

i) Sum.

ii) Product and display the result in the matrix form.

Week -9	ARRAYS

a) Write a C program to read matrix and perform the following operations

i) Find the sum of Diagonal Elements of a matrix.

ii) Print Transpose of a matrix.

iii) Print sum of even and odd numbers in a given matrix.

Week - 10	STRINGS

a) Write a C program to read two strings and perform the following operations without using built-in string Library functions.

i) String length determination.

ii) Compare Two Strings.

iii) Concatenate Two Strings.

iv) String reversing

b) Write a C program to accept a line of characters and print the number of Vowels, Consonants, blank spaces, digits and special characters.

c) Write a C program to read a set of strings and sort them in alphabetical order.

Week -11	FUNCTIONS

a) Write a C program to illustrate the following types of functions

i) Function with no arguments and no return values

ii) Function with arguments and no return value

iii) Function without arguments and with return value

iv) Function with arguments and with return value

Week - 12	POINTERS

a) Write a C program to exchange two numbers using pointers.

b) Write a program to print the elements of an array in reverse order using pointers.

Week - 13	FUNCTIONS

a) Write a C program to express a four digit number in words. For example 1546 should be written as one thousand five hundred and forty six

b) Write a C program using recursion for finding Factorial of a number

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c). calculate the greatest common divisor using iteration and recursion for two numbers as specified by the user

d).Write a C program to illustrate the Dynamic Memory allocation function malloc( )

Week -14	STRUCTURES

a) Declare a structure time that has three fields hr, min, secs. Create two structure variables start_time and end_time. Input there values from the user. Then if start_time is not equal to end_time then display HELLO CREC on the screen.

b) Write a C program to read student roll no, name and marks in six subjects for n number of students and give class of each student by following the required conditions.

c) Write a C program to demonstrate self referential structures.

Week -15	FILES

a) Write a program to create a file and write some text data on the file. Then display the contents of the file and also print number of characters, number of words, number of lines in the file.

b) Write a C program to merge two files.

Week -16	FILES

a) Write a C program to create a text file and write data on it, then display every 5th character in that file.

b) Write a program to read student records into a file. Record consists of rollno, name and marks of a student in six subjects and class. Class field is empty initially. Compute the class of a student. The calculation of the class is as per CREC rules. Write the first class, second class, third class and failed students lists separately to another file.

REFERENCE BOOKS

1. How to Solve it by Computer, R.G. Dromey, Pearson.
2. The C Programming Language, Brian W. Kernighan, Dennis M. Ritchie, Pearson.
3. Let us C, Yeswant Kanetkar, BPB publications
4. Pointers in C, Yeswant Kanetkar, BPB publications.
5. Programming in C and Data Structures, J.R.Hanly, Ashok N. Kamthane and A.Ananda Rao,Pearson Education.

WEB REFERENCES

- https://www.programiz.com/
- https://www.programmingsimplified.com
- https://www.techcrashcourse.com
- https://www.sanfoundary.com/

OUTCOMES:

- Illustrate flowchart and algorithm to the given problem
- Understand basic Structure of the C-PROGRAMMING, declaration and usage of variables
- Write C programs using operators
- Exercise conditional and iterative statements to Write C programs
- Write C programs using Pointers to access arrays, strings and functions.
- Write C programs using pointers and allocate memory using dynamic memory management functions.
- Exercise user defined data types

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PROBLEM SOLVING AND PROGRAMMING

I B.Tech I/II Semester: Common for All Branches

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA05101	Foundation	3	1	-	4	40	60	100
Contact Classes:45	Tutorial Classes:15	Practical Classes: Nil				Total Classes:60		

Objectives:

- Understand problem solving techniques
- Understand representation of a solution to a problem
- Understand the syntax and semantics of C programming language
- Understand the significance of Control structures
- Learn the features of C language

UNIT - I	INTRODUCTION TO COMPUTERS AND C LANGUAGE	Classes:14

Introduction to Computers, Introduction to Programming, Algorithms, Flowcharts, Flow chart symbols, Input/Output, Assignment, operators, conditional if, repetition, function and sub charts. Example problems–Finding maximum of 3 numbers, Unit converters, Interest calculators, multiplication tables, GCD of 2 numbers.Example problems-Fibonacci generation, prime number generation. Minimum, Maximum and average of n numbers, Linear search, Binary Search. Introduction to C Language, C Language Elements, Variables, Data Types, Operators and Expressions, Constants, Declarations, Operators, Type Conversions, Precedence and Order of Evaluation.

UNIT - II	CONTROL STATEMENTS, LOOPS AND ARRAYS	Classes:13

Statements: Selection Statements, Iteration Statements, Jump statements: Break, Continue, goto, Arrays: Accessing Array Elements, Single & Multi Dimensional Arrays.

UNIT - III	STRINGS AND FUNCTIONS	Classes:13

Strings: Declaring, Initialization of a String, Reading and Writing Strings, String manipulation functions from the standard Library, String I/O Functions: gets(), puts().
Functions: Definition, Function Call- Call by Value, Storage Class Specifiers, Understanding the scope of Functions with its Types, the Return Statement, Recursion, Command Line Arguments.

UNIT - IV	POINTERS, STRUCTURES AND UNIONS	Classes:14

Pointers: Pointer Variables, Pointer Expressions, Pointers And Arrays, Pointers to Strings, Call by Reference, C's Dynamic Allocation Functions, Problems with Pointers.
Structures and Unions: Accessing structure members, Array of structures, Passing Structures to Functions, Structure Pointers, Structures within Structures, Bit Fields, Enumerations, Typedef.

UNIT –V	FILE I/O	Classes:14

Streams and File, File System Basics: File pointer, opening a file using fopen(), closing a file, getc(), putc(), fclose(), feof(), fputs, fgets(), ferror(), fread(), fwrite(), fseek(), Formatted Console I/O: fprintf, fscanf, the Preprocessor Directives: #define and #include.

Text Books:

- The Complete Reference C, Fourth Edition, Herbert Schildt, McGraw-Hill Education.
- The C Programming Language" Second Edition, Brain W. Kernighan, Dennis M.

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CODE: 19CA05201

PYTHON PROGRAMMING

II Semester: CSE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA05201	Foundation	3	-	-	3	30	70	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 45		

Objectives:

The course should enable the students to:

- To educate problem solving through python programming language.
- To train in development of solutions using modular concepts.
- To teach practical Pythonic solution patterns.
- To introduce function-oriented programming paradigm through python.

UNIT-I	INTRODUCTION TO PYTHON	Classes: 10

Introduction to Python: Python- Numbers, Strings, Variables, operators, expressions, statements, String Operations, Math function calls, Input/Output statements.

UNIT-II	CONTROL STATEMENTS	Classes: 09

Conditional If, while and for loops, User defined Functions, parameters to functions, recursive functions.

UNIT-III	DATA STRUCTURES AND IDIOMATIC PROGRAMMING IN PYTHON	Classes: 08

Lists, Tuples, Dictionaries, Strings, Files and their libraries, Beautiful Idiomatic approach to solve programming problems

UNIT-IV	PYTHON OBJECT ORIENTED PROGRAMMING	Classes: 08

Introduction to oops: Concept of class, object and instances, Method, Inheritance, Polymorphism, Data Abstraction, Encapsulation.

Oops through Python: Data hiding, Polymorphism, Inheritance, Class and static variables, Class methods and Static methods, Constructors and Destructors.

UNIT-V	EVENT DRIVEN PROGRAMMING	Classes: 10

Turtle bar Chart, Event Driven programming, Key press events, Mouse events, timer events.

Text Book:

1. http://www.ict.ru.ac.za/Resources/cspw/thinkcspy3/thinkcspy3.pdf
2. http://zhanxw.com/blog/wp-content/uploads/2013/03/BeautifulCode_2.pdf
3. Allen B. Downey," Think Python: How to like a computer scientist ", 2nd edition, Green Tea Press
4. Mark Lutz, "Programming Python," O'Reilly Publications, Fourth Edition, 2011.

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Managerial Economics

		I MBA I Semester						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
17CE00102	Foundation	L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Objective:

The objective of this course is to understand the pertinence of economics in business concepts. This will enable the students to study the various concepts related to functional areas of Demand of the products and services, Production, Market structures, Pricing and Costing from a broader perspective.

Unit - I	Introduction to Managerial Economics	Classes: 10

Introduction to Managerial Economics : Importance, Nature and scope of Managerial Economics -Role and responsibilities of Managerial Economist - revealed preference hypothesis theory - Theory of firms - Managerial theories - Basic economics concepts - opportunity cost - Scarcity - Marginalism- Equi - marginalism - discounting principle – Incremental concept – Risk and Uncertainty.

Unit - II	Demand Analysis	Classes: 10

Introduction to Demand, demand schedule, demand determinants - Elasticity of demand - types of elasticity - Demand forecasting - Types of techniques - Law of supply - supply elasticity.- Introduction to Production - Production function - Cobb-Douglas Production function - Law of variable proportions - Marginal Rate of Technical Substitution - Iso - quants - types of Iso-quants - Returns to scale and returns to variable – Iso-costs - Economies of scale.

Unit - III	Introduction to Cost	Classes: 10

Introduction to Cost - cost function - types of costs – short run cost functions - relationship between total cost and total revenue - Long run cost function (envelope curve) - concept of Break even-Analysis - Introduction to Pricing - objectives of pricing - Multiple product pricing - Pricing of new products - skimming and penetration - Pricing methods.

Unit - IV	Market structures	Classes: 10

Market structures - Monopoly - Duopoly - Oligopoly (Paul sweezy kinked demand curve) - Perfect competition - Monopolistic competition - Price discrimination - Introduction to game theory.

Unit - V	National Income	Classes: 10

National Income - Concepts-Gross Domestic Product, Gross National Product, Net National Product-Measurement of National Income - Business Cycles and Contra cyclical policies. Factors influencing International trade. Balance of payments - disequilibrium, methods to correct dis-equilibrium.

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BUSINESS COMMUNICATION

		I MBA I Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
17CE00106		L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Objectives:

The objective of this Course is to understand the communication concepts and to develop the students' competence in communication at an advanced level. Assuming that the students are fairly proficient in the basic communication skills of listening, speaking, reading and writing in English the course aims to train them in communicating efficiently in the workplace and professional contexts.

UNIT – I	Concept of Communication	Classes: 14

Significance, Scope and functions of Business Communication – Process and dimensions of communication – Essentials of good communication – Channels of communication – Formal, informal communication – Upward, Downward, Horizontal communication – Grapevine Phenomenon.

UNIT – II	Types of communication: Verbal – Oral Communication	Classes: 13

Verbal – Oral Communication: Advantages and limitations of oral communication, written communication – Characteristics, significance, advantages & Limitations of written communication. **Non verbal Communication:** Sign language – Body language – Kinesics – Proxemics – Time language and Haptics: Touch language

UNIT - III	Interpersonal communication	Classes: 14

Communication models: Johari window – Transactional analysis, Communication styles, Managing Motivation to Influence Interpersonal communication – Role of emotion in inter personal communication.

UNIT – IV	Barriers to communication	Classes: 14

Types of barriers – Technological – Socio-Psychological barriers – Overcoming barriers, Types of listening – Tips for effective listening.

UNIT – V	Report writing	Classes: 10

Formal reports – The elements of clear writing – Writing effective letters – different layouts of business letters – Informal reports – Writing good news and bad news – Meetings and oral presentations, Interview techniques – Communication etiquettes.

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Business Comunication Lab - I

		II MBA III Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
14CE00108	Foundation	L	T	P	C	Internal	External	Total
		3	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Description: Aim is to enable students understand how to write business letters and improve written communication.

Course Objectives:

- ✓ English language skills for effective written business communication ('s).
- ✓ Will be able to understand how to write project report.

Unit – I	Business Writing	Classes: 9

Introduction, Importance of Written Business Communication, Direct and Indirect Approached to Business Messages, Five Main Stages of Writing

Unit – II	Business Correspondence	Classes: 9

Introduction, Business Letter Writing, Effective Business Correspondence, Common Components of Business Letters, Strategies for Writing the Body of a Letter, Kinds of Business Letters, Writing Effective Memos. Practice Exercises.

Unit – III	Instructions	Classes: 9

Instructions: Introduction, Written Instructions, General Warning, Caution and Danger, Format in Instructions, Oral Instructions, Audience Analysis, Product Instructions. Practice Exercises.

Unit – IV	Business Reports and Proposals	Classes: 9

Business Reports and Proposals: Introduction, What is a Report, Steps in Writing a Routine Business Report, Parts of a Report, Corporate Reports, Business Proposals.

Unit – V	Careers and Resumes	Classes: 9

Careers and Resumes : Introduction, Career Building, Understanding yourself, setting a career goal, job search / looking at various options, preparing your resume, resume formats, traditional, electronic and video resumes,online recruitment process. Write your resume to market yourself.

Reference:

1. Lesikar: Basic Business Communication, TMH.
2. Stephen Bailey, Academic Writing for International Students of Business, Routledge.
3. David Irwin: Effective Business Communications, Viva-Thorogood.
4. Rajendra Pal, J S KorlahaHi: Essentials of BusinessCommunication:Sultanchand
5. Sailesh Sengupta, Business and Managerial Communications, PHI.

Mode of evaluation: Assignments, Lab, Mid Examinations.

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Information Technology Lab

		I MBA I Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
17CE00109		L	T	P	C	Internal	External	Total
		-	-	4	2	40	60	100
Contact classes: 31	Tutorial Classes: 0	Practical classes: Nil				Total classes: 31		

Course Description: This course is to provide basic understanding of applications of information technology and hands on experience to students in using computers for data organization and addressing business needs.

Course Objectives:

To understand the evolution of computers
To practical knowledge of MS Word
To learn knowledge of MS Excel and powerpoint

UNIT – I	Study of Evolution of Computers	Classes: 5

Generations – Assembling & Dissembling of Computer Components, Computer Networks – Applications of computers in Management –Internet, E-Commerce, E-Business.

UNIT – II	Ms-Word	Classes: 8

Creation of Document- Format Document-Text editing and saving-Organizing information with tables and outlines-Inserting tables – clip art – borders/shadings -Mail merge, Macros.

UNIT - III	Ms Excel	Classes: 6

Creating and editing worksheets-Cell formatting-Creating and using formulas and functions-Use of Macros –Sorting and querying data-Working with graphs and charts. Data Analysis with Statistical Tools - Mean, Median, Average, Skewness, Correlation, Regression, Chi-Test -Use of Financial Tools-Use of other functions in Excel for data analysis.

UNIT – IV	Ms Power Point	Classes: 6

MS Power Point-Creation of slides-Use of templates and slide designs for creating power point slides- use of drawings and graphics. Developing a Professional presentation on Business Plans, Institutions, Products, People etc,

UNIT – V	MS ACCESS	Classes: 6

Create Databases, Tables, and Relationships- Create forms to enter data-filter data-use of queries in data manipulation-Generating reports.

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Business Analytics Lab

		I MBA II Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
17CE00208	Foundation	L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: nil				Total classes:65		

Course Description:

The course is designed to understand the providing conceptual understanding of Business analytics under various functions of management. This will enable the students to study the various concepts related to applications of analytics and enabling them to apply the concepts in the management organization.

Course Objectives:

- ✓ To understand the basic concepts of business analytics
- ✓ To learn financial, marketing experiments
- ✓ To learn HRM, systemes experiments
- ✓ To understand the concepts of Information Technology

UNIT - I	**Introduction to Business Analytics – Accounting experiments**	**Classes: 10**

Introduction to Business Analytics – functions – concepts. Creation of company – Preparation of Ledger - Posting Trial Balance – Profit and Loss Account – Balance sheet sole traders.

UNIT - II	**Financial Experiments**	**Classes: 10**

Capital budgeting decisions – Calculations of NPV – Calculations of IRR – Calculations of Profitable Index

UNIT - III	**Marketing Experiments**	**Classes: 10**

Storing and retrieving of data of customers - Storing and retrieving of data of sales - Storing and retrieving of data of dealers - products and geographical areas (Tables and Graphs)

UNIT - IV	**HRM Experiments**	**Classes: 10**

Creation of Employees data base - Demonstrating the salary administration

UNIT - V	**Systems Experiments**	**Classes: 10**

Understanding the Information Systems – Design of MIS - Overview of Internet and Internet tools.

Reference:

1. Ms Office-Sanjay Saxena
2. Ms Office Excel-Frye, PHI publications
3. Ms Office Access- Step by step, PHI publications

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Entrepreneurship Development

		II MBA III Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
17CE00301	Foundation	L	T	P	C	Internal	External	Total
		3	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Description:

This course presents the concepts, characteristics of entrepreneurship in India and various institutions that are promoting entrepreneurship at national level and state level. Further, it also represents the importance of women entrepreneurship in the globalization scenario. It also describes the project management and processes of project management.

Course Objectives :

- ✓ To provide theoretical concepts of entrepreneurship.
- ✓ To give an overview of various organizations that promotes entrepreneurship in India.
- ✓ To learn the concept of women entrepreneurship in India.
- ✓ To provide awareness on Role of Government both in centre and state level in executing various entrepreneurial activities.

Unit - I	Introduction to Entrepreneurship	Classes: 10

Introduction to Entrepreneurship: Characteristics, qualities and skills of an Entrepreneur, functions of entrepreneur, entrepreneur scenario in India and abroad, forms of entrepreneurship, small business enterprises - importance of Indian economy, first mover – advantages and disadvantages, risk reduction strategies - market scope strategies, imitation strategies and managing newness.

Unit - II	Promotional Strategies	Classes: 15

Promotional strategies: Generation of new entry opportunities, SWOT analysis, technological competitiveness, legal regulatory system, patents and trademarks, intellectual property rights, project planning and feasibility studies, major steps in product development. Financial aspects,

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sources of rating capital, debt-equity, financing by commercial banks, government grants and subsidies, entrepreneurship promotion, schemes of department of industries - DICs, KVIC, SIDBI, NABARD, NSIC, APSFC, IFCI and IDBI.

Unit - III	Corporate governance	Classes: 15

Corporate governance: Corporate governance, capitalism at crossroads historical perspective of corporate governance, issues of corporate governance, theoretical basis of corporate governance, corporate governance mechanisms, Indian model of governance good corporate governance, corporate governance committees, OECD principles, Indian committee and guidelines, the confederation of Indian industry's initiative, corporate governance models.

Unit - IV	Role of government	Classes: 15

Role of Central Government and State Government in promoting Entrepreneurship with various incentives, subsidies, grants etc. – with special reference to 'Export oriented units' Role of the following agencies in the Entrepreneurship Development. District Industrial Centre (DIC), Small Industries Services Institute (SISI), Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship and Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB).

Unit - V	Process of project management	Classes: 10

Project management: Concept of project and classification of project identification, project formulation - project design, project planning, and social cost benefit analysis, financial analysis. PROJECT APPRAISAL: Project report and guidelines for preparing a project report, project Appraisal, Significance of project appraisal, Profitability appraisal, and project financing.

References:

1. Robert D. Hisrich, Michael P. Peters, Decin A. Shephered(2009), *Entrepreneurship*, TMH.
2. Vasanth Desai, Dynamics of Entrepreneurship Development – Himalaya Publishing
3. David H. Holt, Entrepreneurship: New Venture Creation – PHI, 2009
4. H. Nandan, Fundamentals of Entrepreneurship, PHI, First/e, New Delhi, 2009.
5. Satish Taneja, S.L.Gupta, Entrepreneurship Development New Venture Creation, Galgotia
6. Bholanath Dutta (2009), *Entrepreneurship*, Excel Publication, New Delhi, India.
7. Mathew, J. Manimala (2009), *Entrepreneurship Theory at the Crossroads*, Wiley India,
8. N. Venkat Rao (2011), *Entrepreneurship and good governance*, Students Helpline Publishing
9. Tabarrok (2009), *Entrepreneurial Economics*, Oxford University Press, New Delhi.
10. Jain (2009), *Hand Book of Entrepreneurs, Oxford University* Press, New Delhi.
11. Dr. S.S. Khanka, *Entrepreneurial Development*, - S. Chand & Co. Ltd., Ram Nagar,
12. Ki Shankar, *Entrepreneurship Theory and practice*,- Vijay Nicole and Tata McGraw Hill,

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JAVA PROGRAMMING (17CAO5405)

Unit-I	Overview Of Java, Data Types, Arrays and Variables	Classes: 13

Introduction: The Creation of java, how java changed the internet, Java's magic: The byte code, Servlets: java on the server side, java Buzzwords.**An Overview of Java:** Two control statements, Using blocks of codes, Lexical issues, The java class Libraries. **Data Types, Arrays and Variables:** Primitive Types, Integers, Floating-point Types, Characters, Booleans, literals, variables, Type conversion and casting, Automatic Type Promotion in Expressions, Arrays.

Unit-II	Operators, Control Statements, Classes	Classes: 14

Operators: Arithmetic Operators, The Bitwise Operators, Relational Operators, Boolean Logic operators, The assignment operator, The ?: Operator, Operator Precedence, Using Parentheses. **Control Statements:** Java's selection Statements, Iteration statements, Jump Statements.

Introducing Classes: Class Fundamentals, Declaring Objects, Assuming Object reference Variables, Introducing Methods, Constructors, The this Keyword, Garbage Collection, The Finalize() method, A Stack class. Overloading Methods, Using Object as Parameter, Argument Passing, Returning Objects, Recursion, Introducing Access control, Understanding static, Introducing Nested and Inner classes, Exploring the String class, Using Command line Arguments, Varargs: variable-Length Arguments.

Unit-III	Inheritance, Packages and Interfaces, Exception Handling	Classes: 14

Inheritance: Basics, Using super, creating a multi level hierarchy, when constructors are executed, method overriding, dynamic method dispatch, using abstract class, using final with inheritance, the object class. **Packages and Interfaces:** Packages, Access protection, Importing Packages, Interfaces, Default Interfaces, Default interface methods, Use static methods in an Interface, Final thoughts on Packages and interfaces. **Exception Handling:** Exception handling Fundamentals, Exception Types, Uncaught Exceptions, Using try and catch, Multiple catch clauses, Nested try statements, throw, throws, finally, Java Built-in Exceptions, Creating your own exception subclasses, Chained Exceptions, Three Recently added Exceptions features, Using Exceptions.

Unit-IV	I/O, Applets, and Generics	Classes: 13

I/O, Applets, and Other Topics: I/O basics, Reading Console input, Writing console Output, The Print Writer class, Reading and writing files, Automatically closing a file, Applet fundamentals, enumerations type wrappers auto boxing annotations. **Generics**: What Are Generics? The general form of a generic class, Bounded Types,Using Wildcard Arguments, creating a generic method, generics interfaces.

Unit-V	Introduction to Awt, Using Awt Controls, Layout Managers, and Menus	Classes: 14

Introduction to AWT: Working with windows, graphics and Text:

AWT classes, window fundamentals, working with frame windows, creating a frame window in an AWT Based applet, creating a window program, displaying information within a window, Graphics, working with color, setting the paint mode, working with fonts, managing text output using font metrics.

Using AWT controls, Layout Mangers, and Menus:

AWT control fundamentals, Labels,using buttons, applying check boxes, check box group, choice controls, using lists, Managing scroll bars, using a Text field, Using a Text area, understanding layout managers, Menu bars and Menus, dialog boxes, file dialog, Overriding paint().

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Text Books

Note : Sample data may be considered as student details are employee data
Reference Books:
1. The Art of R Programming, A K Verma, Cengage Learning. 2. R for Everyone, Lander, Pearson
Web References:
1. http://www.mayin.org/ajayshah/KB/R/ 2. https://www.datamentor.io/r-programming/examples

JAVA PROGRAMING LABORATORY

II B.Tech II Semester: CSE

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA05408	Core	-	-	4	2	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 45				Total Classes: 45		

Objectives:

The course will enable the students to:

- Practice object-oriented programs and build java applications.
- Implement java programs for establishing interfaces.
- Implement sample programs for developing reusable software components.
- Create database connectivity in java and implement GUI applications.

Week-1 Basic Programs

a. Write a java program that prints all real solutions to the quadratic equation $ax^2+bx+c=0$. Read in a, b, c and use the quadratic formula.

b. The Fibonacci sequence is defined by the following rule. The first two values in the sequence are 1 and 1. Every subsequent value is the sum of the two values preceding it. Write a java program that uses both recursive and non-recursive functions.

Week-2 Matrices, Overloading, Overriding

a. Write a java program to multiply two given matrices.

b. Write a java program to implement method overloading and constructor overloading.

c. Write a java program to implement method overriding.

Week-3 Palindrome, Abstract Class

a. Write a java program to check whether a given string is palindrome.

b. Write a java program for sorting a given list of names in ascending order.

c. Write a java program to create an abstract class named Shape that contains two integers and an empty method named print Area(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contains only the method printArea() that prints the area of the given shape.

Week-4 User Interface

Write a program that creates a user interface to perform integer division. The user enters two numbers in the text fields, Num1 and Num2. The division of Num1 and Num2 is displayed in the Result field when the Divide button is clicked. If Num1 and Num2 were not integers, the program would throw a Number Format Exception. If Num2 were zero, the program would throw an Arithmetic Exception Display the exception in a message dialog box.

Week-5 AWT

Write a java program that creates menu which appears similar to the menu of notepad application of the Microsoft windows.

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Week-6	FILES
a. Write a java program that reads a file name from the user, and then displays information about whether the file exists, whether the file is readable, whether the file is writable, the type of file and the length of the file in bytes. b. Write a java program that displays the number of characters, lines and words in a text file. c. Write a java program that reads a file and displays the file on the screen with line number before each line.	
Week-7	**Lay Out mangers**
a. Suppose that table named table.txt is stored in a text file. The first line in the file is the header, and the remaining lines correspond to rows in the table. The elements are separated by commas. Write a java program to display the table using labels in grid layout.	
Week-8	**Keyboard Events**
Write a java program to handle keyboard events	
Week-9	**Traffic Light**
Write a java program that simulates a traffic light. The program lets the user select one of three lights: Red, Yellow or Green with radio buttons. On selecting a button an appropriate message with "STOP" or "READY" or "GO" should appear above the buttons in selected color. Initially, there is no message shown.	
Week-10	**Mouse Events**
a. Write a java program that handles all mouse events and shows the event name at the center of the window when a mouse event is fired. Use adapter classes. b. Write a java program to demonstrate the key event handlers.	
Week-11	**Calculator**
Write a java program that works as a simple calculator. Use a grid layout to arrange buttons for the digits and for the +,-,*, % operations. Add a text field to display the result. Handle any possible exception like divided by zero.	
Week-12	**APPLET**
a Develop an applet that displays a simple message. b Develop an applet that receives an integer in one text field and computes its factorial value and returns it in another text field, when the button named "compute" is clicked.	
Week-13	**Mini Project-1**
Develop library management system	
Week-14	**Mini Project-2**
Develop CMS system for CREC college	
Reference Books:	
1P. J. Deitel, H. M. Deitel, "Java for Programmers", Pearson Education, PHI, 4th Edition, 2007. 2.P. Radha Krishna, "Object Oriented Programming through Java"Universities Press, 2nd Edition,2007 3 Bruce Eckel, "Thinking in Java", Pearson Education, 4th Edition, 2006. 4 Sachin Malhotra, Saurabh Chaudhary, "Programming in Java", Oxford University Press, 5th Edition.	
Web References:	
1.www.niecdelhi.ac.in 2.https://www.linkedin.com/in/achin-jain-85061412 3.www.rank1infotech.com	

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SOFT SKILLS LABORATORY

III B.Tech I Semester: ME

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA52501	Foundation	-	-	4	2	30	70	100
Contact Classes: NIL	Tutorial Classes: NIL	Practical Classes: Nil				Total Classes: 68		

OBJECTIVES:

1. This Lab focuses on using multi-media instruction for language development to meet the following targets:
2. To improve the students' fluency in English, through a well-developed vocabulary and enable them to listen the English spoken at normal conversational speed by educated English speakers and respond appropriately in different socio-cultural and professional contexts.
3. Further, they would be required to communicate their ideas relevantly and coherently in writing.
4. To prepare all the students for their placements.

UNIT-I	COMMUNICATIVE COMPETENCE

1. Reading Comprehension
2. Listening Comprehension
3. Vocabulary Development
4. Communication Styles and Competencies

UNIT-II	WRITING SKILLS

1. Report Writing
2. Resume Preparation
3. E-mail Writing

UNIT-III	PRESENTATION SKILLS

1. Oral presentation
2. Power point presentation
3. Informative presentation

UNIT-IV	GETTING READY FOR JOB

1.SWOT/C Analysis
2.Group Discussions
3.Interview skills

UNIT-V	INTERPERSONAL SKILLS

1. Time Management
2. Problem Solving & Decision Making
3. Etiquettes

Minimum Requirements for SOFT SKILLS Lab:

The Advanced English Communication Skills (AECS) Laboratory shall have the following infra-structural facilities to accommodate at least 60 students in the lab:

1. Spacious room with appropriate acoustics.
2. Round Tables with movable chairs
3. Audio visual aids

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CAE LABORATORY

III B.Tech II Semester: ME								
Course Code	**Category**	**Hours / Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
17CA03610	**Core**	-	-	4	2	30	70	100
Contact Classes: Nil	**Tutorial Classes: Nil**	**Practical Classes: 68**				**Total Classes: 68**		

LIST OF EXPERIMENTS

1. Introduction to Analysis Software Package

2. Structural analysis: (Any Six exercises)

Expt. 1	Analysis of a rectangular plate with a hole
Expt. 2	Analysis of a truss member under loading.
Expt. 3	Analysis of a bracket plate with axial loading
Expt. 4	Analysis of a bracket plate with eccentric loading
Expt. 5	Static Analysis of Prismatic bar
Expt. 6	Static Analysis of a Corner Bracket
Expt. 7	Static Analysis of beam
Expt. 8	Analysis of Thermally Loaded support Structure
Expt. 9	Analysis of Hinged support member
Expt. 10	Analysis of Tapered plate under transverse load

3. Thermal analysis (Any two exercises)

Expt. 1	Analysis of a square plate considering conduction.
Expt. 2	Analysis of a square plate considering conduction and convection.
Expt. 3	Analysis of a compound bodies considering conduction and convection.

4. Computational Fluid Dynamics (Any four exercises)

Expt. 1	Determine the flow of incompressible gas through an S-bend for laminar flow.
Expt. 2	Determine the flow of incompressible gas through an S-bend for turbulent flow
Expt. 3	Determine that of incompressible water flowing over a cylinder.
Expt. 4	Determine air flow over a simple geometry (aerofoil) in a wind tunnel (2-D).
Expt. 5	Determine heat transfer from the heated fin within a rectangular enclose containing air.
Expt. 6	Determine how to solve a natural convection problem (in an infinitely long concentric cylinder).
Expt. 7	Determine liquid enters through two inlets with different temperatures (multiphase flow) and leaves one outlet.

Software can be used: ANSYS, ALG NASTRAN, Star-CCM+, Fluent, FIRE, CFX

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CODE: 17CA05507

SOFTWARE TESTING METHODOLOGY

PROFESSIONAL ELECTIVE-I

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA05507	Core	3	1	-	3	30	70	100
Contact Classes: 45	Tutorial Classes: 15	Practical Classes: Nil				Total Classes: 60		

Objectives:

The course should enable the students to:

- Understand the concept of software testing objectives, process criteria, strategies and methods.
- Demonstrate various software testing issues and solutions in software like unit test, integration, Regression and system testing.
- Demonstrate the techniques and skills on how to use modern software testing tools to support Software testing projects.
- Understand important concepts of complexity metrics and object oriented metrics.

UNIT-I	INTRODUCTION TO TESTING	Classes: 10

Introduction: Purpose of testing, dichotomies, model for testing, consequences of bugs, taxonomy of bugs. **Flow graphs and path testing**: Basics concepts of path testing, predicates, path predicates and achievable paths, path sensitizing, path instrumentation, application of path testing.

UNIT-II	TRANSACTION FLOW TESTING	Classes: 08

Transaction flow testing: Transaction flows, transaction flow testing techniques, dataflow testing, basics of dataflow testing, strategies in dataflow testing, application of dataflow testing.

UNIT-III	DOMAIN TESTING	Classes: 09

Domain testing: Domains and paths, nice and ugly domains, domain testing, domains and interfaces testing, domain and interface testing, domains and testability.

Logic based testing: Overview, decision tables, path expressions, kv charts, and specifications.

UNIT-IV	PATH ,PATH PRODUCTS AND REGULAR EXPRESSION	Classes: 08

Paths, path products and regular expressions: Path products and path expression, reduction procedure, applications, regular expressions and flow anomaly detection.

UNIT-V	TRANSITION TESTING	Classes: 10

State, state graphs and transition testing: State graphs, good and bad state graphs, state testing, testability tips.

Text Book:

- Boris Beizer, "Software Testing Techniques", Dream Tech Press, 2nd Edition, 2003.

Reference Books:

- P. C. Jorgenson, "Software Testing: A Craftmen's Approach", Auerbach Publications, 3rd Edition, 2013.
- Perry, "Effective Methods of Software Testing", John Wiley, 2nd Edition, 1999.
- Nageswara Rao, "Software Testing Concepts and Tools",DreamTech Press, 2nd Edition, 2007.

Web References:

- http://www.tutorial.com/?q=Software_Test_Metrics
- http://softwaretestingfundamentals.com/unit-testing/

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Draw a state chart diagram for
- Passport Automation System
- Book bank management system
- Online course reservation system

Exp-7	STATE CHART DIAGRAM

- Foreign trading system
- Conference Management System
- BPO Management System

Exp-8	ARCHITECTURE DIAGRAM

Identify the User Interface, Domain objects, and Technical services.

Exp-9	ARCHITECTURE DIAGRAM

Draw the partial layered, logical architecture diagram with UML package diagram notation

Exp-10	COMPONENT DIAGRAM

Draw a Component diagram for
- Passport Automation System
- Book bank management system
- Online course reservation system

Exp-11	COMPONENT DIAGRAM

Draw a Component diagram for
- Foreign trading system
- Conference Management System
- BPO Management System

Exp-12	DEPLOYMENT DIAGRAMS

Draw a Component diagram for
- Passport Automation System
- Book bank management system
- Online course reservation system

Exp-13	DEPLOYMENT DIAGRAMS

Draw a Deployment diagram for
- Foreign trading system
- Conference Management System
- BPO Management System

REFERENCE BOOKS

- Simon Bennett, Steve Mc Robb and Ray Farmer, "Object Oriented Systems Analysis and Design Using UML", Mc Graw Hill Education, 4th Edition, 2010
- Pascal Roques, "Modeling Software Systems Using UML 2", WILEY- Dreamtech India Pvt. Ltd, 2nd

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Edition, 2007.

WEB REFERENCES

- https://www.tutorialspoint.com/uml/uml_overview.html
- https://www.utdallas.edu/~chung/OOAD/M03_1_StructuralDiagrams.ppt
- https://onedrive.live.com/download?cid=99CBBF765926367

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR

B. Tech IV-II Sem. (CSE)

L	T	P	C
3	1	0	3

15A05804 BUILDING LARGE SCALE SOFTWARE SYSTEMS
(MOOCS-III)

Course Objectives:

- To introduce the architecture of large c programs.
- To introduce the concept Case study for design of large C programs using Linux kernel.
- To introduce the tools, technologies & programming languages.

Course Outcomes:

- Student able to understand coupling and cohesion
- Student able to design large c and c++ programs using Linux kernel
- Student able to understand how to design Linux kernel
- Ability to solve various problems related to Object Oriented Software using patterns

Unit I: Architecture of Large C Programs : Coupling and Cohesion concepts , types of cohesion functional, sequential, procedural, temporal, logical and coincidental; types of coupling – data,stamp, control, common, content coupling.

Unit II: Designing Large C programs having good cohesion and coupling; C modules- notion of separate compilation; Case study for design of large C programs using linux kernel.

Unit III: Tools for building large programs – version control using git and building large programs using make – bug tracking systems – bugzilla.

Unit IV: Building Large C++ programs – Architecture of Large C ++ programs – Coupling and Cohesion of C++ programs, Metrics for measuring the quality of C++ programs, Chidamber and Krammer. Metric suite- MOOD metrics – improving the design of C++ programs; Case study of redesigning Linux kernel into Minimalistic Object Oriented Linux (MOOL).

Unit V: Pattern Oriented Software Architecture: Building object oriented programs using design patterns identification of design patterns in source code- refactoring existing programs into design pattern based programs- case studies of building software with design patterns.

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I B. Tech – II Semester: ME

ENGINEERING DRAWING

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA03201	Core	1	-	4	3	30	70	100
Contact Classes:17	Tutorial Classes: Nil			Practical Classes: 51		Total Classes: 68		

OBJECTIVES:

1. To know the basics of Engineering Drawing and its applications
2. To understand the projection of solids
3. To understand the Isometric Projections of Regular Solids
4. To analyze the orthographic projections

UNIT – I	INTRODUCTION ENGINEERING GRAPHICS & SCALES	Classes: 12

Introduction to drawing instruments & principles of Engineering Drawing - Conventions in Drawing-Lettering – BIS Conventions. Curves used in Engineering Practice. a) Parabola, Ellipse, Hyperbola and Rectangular Hyperbola (General method only) b) Cycloid, Epicycloid and Hypocycloid. Involute curves (Circle & Polygon).
Scales: Diagonal & Vernier Scales.

UNIT – II	PROJECTION OF POINTS & LINES	Classes: 12

Projection of points, Projection of Lines: Projection of lines parallel to one plane and perpendicular to the other, parallel to both planes, inclined to one plane or both planes, Traces.

UNIT – III	PROJECTIONS OF PLANES	Classes: 14

Projection of planes: Parallel to on plane and perpendicular to the other, perpendicular to both planes, inclined to one or both planes.

UNIT – IV	PROJECTIONS & SECTIONS OF SOLIDS	Classes: 15

Projection of solids: Projections of regular solids inclined to one or both planes by rotational or auxiliary views method.
Sections of Solids: Projections of Section of Cylinder, Prism & Pyramids.

UNIT – V	ISOMETRIC PROJECTIONS	Classes: 15

Principles of isometric projection- Isometric scale; Isometric views: planes, simple solids. Conversion of orthographic to isometric view Vice Versa.

Text Books:

- D.M Kulkarni, A.P. Rastogi and A.M. Sarkar, Engineering Graphics with Auto CAD, PHI learning Private Limited, New Delhi 2009.
- K.L.Narayana & P.Kannaiah, Engineering Drawing, 3/e, Scitech Publishers, Chennai, 2012.
- N.D.Bhatt, Engineering Drawing, 53/e, Charotar Publishers, 2016.

References

- Dhanajay A Jolhe, Engineering Drawing: with an introduction to Auto CAD, Tata McGraw-Hill, 2008
- Shah and Rana, Engineering Drawing, 2/e, Pearson Education, 2009
- Venugopal, Engineering Drawing and Graphics, 3/e, New Age Publishers, 2000
- K.C.John, Engineering Graphics, 2/e, PHI, 2013

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PYTHON PROGRAMMING LAB

II - Semester

Course Code	Category	Hours / Week			Credits	Maximum Ma	
		L	T	P	C	CIA	SEE
17CP00206	Core	-	-	3	2	40	60
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 39				Total Classes:	

OBJECTIVES:

- To write, test, and debug simple Python programs.
- To implement Python programs with conditionals and loops.
- Use functions for structuring Python programs.
- Represent compound data using Python lists, tuple, dictionaries.
- Read and write data from/to files in Python.

OUTCOMES:

- Write, test, and debug simple Python programs.
- Implement Python programs with conditionals and loops.
- Develop Python programs step-wise by defining functions and calling them.
- Use Python lists, tuple, dictionaries for representing compound data.
  Read and write data from/to files in Python.

Week-1	Basic Programs	Classes

1. Write a program to compute the GCD of two numbers.
2. Write a program to find the factorial of given number.

Week-2	Basic Programs	Classes

1. Write a program to find the square root of a number (Newton's method).
2. Write a program to find the whether the given number is prime or not.

Week-3	Basic Programs	Classes

1. Write a program to find the sum of the digits of a number.
2. Write a program to find the sum of positive and negative numbers in a given set of numbers.

Week-4	Basic Programs	Classes

1. Write a program to find the maximum of a list of numbers

Week-5	Searching	Classes

1. Write a program to implement Linear search.
2. Write a program to implement Binary search.

Week-6	Sorting	Classes

1. Write a program to implement Selection sort.
2. Write a program to implement Insertion sort.

Week-7	Sorting	Classes

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1. Write a program to implement Merge sort.		
Week-8	**Functions**	**Classes: 03**
1. Write a program to display Fibonacci numbers using functions.		
Week-9	**Matrix**	**Classes: 03**
1. Write a program to multiply two matrices.		
Week-10	**Files**	**Classes: 03**
1. Write a program to create a file and write some text data on the file. Then display the contents of the file.		
Week- 11	**Files**	**Classes: 03**
1. Find the most frequent words in a text read from a file.		
Week- 12	**Graphics**	**Classes: 03**
1. Simulate elliptical orbits in Pygame.		
Week-13	**Graphics**	**Classes: 03**
1. Simulate bouncing ball using Pygame PLATFORM NEEDED Python 3 interpreter for Windows/Linux		

Text Books:

1. Allen B. Downey, Think Python: How to Think Like a Computer Scientist'', 2nd edition, Updated for Python 3, Shroff /O'Reilly Publishers, 2016
2. Guido van Rossum and Fred L. Drake Jr, "An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2011.

Reference Books:

1. Charles Dierbach, "Introduction to Computer Science using Python: A Computational Problem-Solving Focus, Wiley India Edition, 2013.
2. John V Guttag, "Introduction to Computation and Programming Using Python'', Revised and expanded Edition, MIT Press , 2013.
3. Kenneth A. Lambert, "Fundamentals of Python: First Programs", CENGAGE Learning, 2012.

Web References:

- https://www.tutorialspoint.com/python/
- https://www.codecademy.com/learn/learn-python
- https://www.programiz.com/python-programming

E-Text Books:

- **http://do1.dr-chuck.com/pythonlearn/EN_us/pythonlearn.pdf**
- **http://www.eecs.wsu.edu/~schneidj/PyBook/swan.pdf**

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING								
II M.Tech (CSE), II- SEMESTER – 2021-22								
COURSE : BIG DATA ANALYTICS								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
						CIA	SEE	Total
		L	T	P	C			
21CD05202	Core	4	-	-	4	40	60	100
Classes : 60	Tutorial: Nil	Practical Classes: Nil				Total Classes: 60Hrs		

Objectives:

1. Optimize business decisions and create competitive advantage with Big Data analytics
2. Introducing Java concepts required for developing map reduce programs
3. Derive business benefit from unstructured data
4. Imparting the architectural concepts of Hadoop and introducing map reduce paradigm
5. To introduce programming tools PIG & HIVE in Hadoop echo system.

Outcomes:

1. Understand what Big Data is and why classical data analysis techniques are no longer adequate.
2. Understand the benefits that Big Data can offer to businesses and organizations.
3. Understand conceptually how Big Data is stored.
4. Understand how Big Data can be analyzed to extract knowledge.

UNIT-I Big Data **10Hrs**

What is Big Data , Characteristics of Big data, Introduction to Hadoop, Brief History ,Why Hadoop,Working with Big Data: Google File System, Hadoop Distributed File System (HDFS) .

UNIT-II HDFS **14Hrs**

The Design of HDFS,HDFS Concepts, Blocks, Name nodes and Data nodes HDFS Federation HDFS High-Availability, The Command-Line Interface ,Basic File system Operations, Hadoop File systems, Interfaces, The Java Interface, Reading Data from a Hadoop URL, Reading Data Using the File System API ,Writing Data, Directories, Querying the File System, Deleting Data Data Flow, Anatomy of a File Read ,Anatomy of a File Write ,Coherency Model.

UNIT-III MapReduce **12Hrs**

Writing MapReduce Programs: A Weather Dataset, Understanding Hadoop API for MapReduce Framework, Basic programs of Hadoop MapReduce: Driver code, Mapper code, Reducer code, RecordReader, Combiner, Partitioner.

UNIT-IV HIVE **12Hrs**

The Hive Shell, Running Hive, Configuring Hive, Hive Services, The Metastore, Comparison with Traditional Databases, Schema on Read Versus Schema on Write, HBasics, Implementation, Java and MapReduce clients, Loading data, web queries.

UNIT-V PIG **12Hrs**

Installing and Running Pig, Execution Types, Running Pig Programs, Grunt, Pig Latin Editors An Example, Generating Examples, Comparison with Databases, Pig Latin, Structure, Statements Expressions, Types, Schemas, Functions, Macros, User-Defined Functions, A Filter UDF, An Eval UDF, A Load UDF

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING								
II M.Tech (CSE), II- SEMESTER – 2021-22								
COURSE : INTERNET OF THINGS								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
						CIA	SEE	Total
21CD05203	Core	L	T	P	C			
		4	-	-	4	40	60	100
Classes : 60	Tutorial: Nil	Practical Classes: Nil				Total Classes: 60Hrs		

Objectives:

The course should enable the students to:

1. Understand the architecture of Internet of Things and connected world.
2. Explore on use of various hardware and sensing technologies to build IoT applications.
3. Illustrate the real time IoT applications to make smart world.

Outcomes:

1. Interpret the vision of IoT from a global context.
2. Determine the Market perspective of IoT.
3. Compare and Contrast the use of Devices, Gateways and Data Management in IoT.
4. Implement state of the art architecture in IoT.
5. Illustrate the application of IoT in Industrial Automation and identify Real World Design

UNIT-I Introduction to Internet of Things(IoT) **12Hrs**

Definition and characteristics of IoT, physical design of IoT, logical design of IoT, IoT enabling technologies, IoT levels and deployment, domain specific IoTs.

UNIT-II IoTand M2M **12Hrs**

Introduction, M2M, difference between IoT and M2M, software defined networking (SDN) and network function virtualization (NFV) for IoT, basics of IoT system management with NETCONF-YANG.

UNIT-III IoT Architecture and Python **12Hrs**

IoT Architecture: State of the art introduction, state of the art; Architecture reference model: Introduction, reference model and architecture, IoT reference model.
Logical design using Python: Installing Python, Python data types and data structures, control flow, functions, modules, packages, file handling.

UNIT-IV IoT Physical Devices and Endpoints **12Hrs**

Introduction to Raspberry Pi interfaces (Serial, SPI, I2C), programming Raspberry PI with Python, other IoT devices.

UNIT-V IoT Physical Servers and Cloud Offerings **12Hrs**

Introduction to cloud storage models and communication APIs; WAMP: AutoBahn for IoT, Xively cloud for IoT; Case studies illustrating IoT design: Home automation, smart cities, smart environment.

Text Books:

1. Arshdeep Bahga, Vijay Madisetti, "Internet of Things: A Hands-on-Approach", VPT, 1st Edition, 2014. 2.Matt Richardson, Shawn Wallace, "Getting Started with Raspberry Pi", O"Reilly (SPD), 2nd Edition, 2014.

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MAP REDUCE PROGRAMMING LAB

II Semester								
Course Code	**Category**	**Hours/Week**			**Credits**	**Maximum Marks**		
17CD05213	Core	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
		-	-	4	2	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 48				Total Classes:48		

Objectives:

- Introduce students the concept and challenge of big data (3 V's: volume, velocity, and variety).
- Teach students in applying skills and tools to manage and analyze the big data

Outcomes:

- Understand the concept and challenge of big data and why existing technology is inadequate to analyze the big data;
- Collect, manage, store, query, and analyze various form of big data; and
- Gain hands-on experience on large-scale analytics tools to solve some open big data problems;
- Understand the impact of big data for business decisions and strategy.

Week-1	**Getting Started with MapReduce and Hadoop**

Loading an existing Eclipse project,

Week-2	**Examining a simple MapReduce Class: Word Counting**

During operation, multiple instances of the Map and Reduce classes will be made, where each can be run on different machines are to be created.

Week-3	**Compiling the Word Counting Example and running it Locally**

The word counting example translates into a map and reduce tasks, we will now compile the Word Counting example and run it on your local machine.

Week-4	**Running Word Counting on a Remote Cluster**

Running a MapReduce job on Amazon.

Week-5	**Top Hashtag Identification**

To modify a MapReduce job and how to use the configure and close methods to make use of stateful tasks. In particular, you will take the code of the word counting example from the previous task and modify it to find the top 10 hashtags from the input corpus.

Week-6	**Indexing English Tweets**

You will learn how to use external .jar files with a project, use additional resources and change the output format of a MapReduce job. In particular, this exercise is focused on using a MapReduce job to build an index of English tweets from a generic tweet sample. You will create a map task that will classify incoming tweets as English or not and create a new output format for Hadoop that will write the classified documents in a format that a search engine(the Terrier IR Platform) can understand.

References:

- http://wireless.ictp.it/school_2015/labs/Lab1.pdf
- https://cs.calvin.edu/courses/cs/374/exercises/12/lab/
- http://cecs.wright.edu/~pmateti/Courses/7380/Lectures/Hadoop/hadoop-lab.html

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ENGLISH FOR PROFESSIONAL COMMUNICATION

I B.Tech II Semester: Common to all branches								
Course code	Category	Hours/week			Credits	Maximum Marks		
17CA52201	Foundation	L	T	P	C	CIA	SEE	TOTAL
		3	1	-	3	30	70	100
Contact Classes:45	Tutorial Classes: 15	Practical Classes: Nil			Total Classes:60			

OBJECTIVES:

The course should enable the students to :

I. Communication in an intelligible English accent and pronunciation.
II. Introduce students' elements of Grammar and Composition of English language.
III. Maintain linguistic competence through training in Vocabulary, sentence structures.

UNIT-I	LESSONS FROM THE PAST	Classes:08

TEXT: Importance of History-Differing perspectives-Modern Corporatism-Lessons from the past.
GRAMMAR: Active and Passive voice – Adjectives-Degrees of Comparison.
VOCABULARY: Phrasal Verbs.

UNIT-II	ENERGY	Classes:10

TEXT: Renewable and Non-Renewable sources-Alternative Sources-Conservation-Nuclear Energy.
GRAMMAR: Direct and Indirect Speech
VOCABULARY: Idioms.

UNIT-III	TRAVEL AND TOURISM	Classes:09

TEXT: Advantages and disadvantages of Travel-Tourism-Atithi Devo Bhava-Tourism in India
GRAMMAR: Conditional Sentences.
COMPOSITION: Report Writing

UNIT-IV	GETTING JOB-READY	Classes:08

TEXT: SWOT analysis-Companies and Ways of Powering Growth-Preparing for Interviews
GRAMMAR: Connectives-Simple, Compound and Complex.
COMPOSITION: Curriculum Vitae with Covering Letter.

UNIT-V	GERTRUDE ELION	Classes:10

TEXT: Birth-Childhood-Education-Achievements-Awards.
GRAMMAR: Common Errors in English
COMPOSITION: Note-making and Note-taking.

Text Books:

1.MIND SCAPES- ORIENT BLACK SWAN 2014
2. INSPIRING LIVES- MARUTHI PUBLICATIONS 2010

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FUNCTIONAL ENGLISH

I B. Tech - I Semester: Common for all branches								
Course code	**Category**	**Hours/week**			**Credits**	**Maximum Marks**		
17CA52101	Foundation	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**TOTAL**
		3	-	-	3	30	70	100
Contact Classes:51	**Tutorial Classes: -**	**Practical Classes: Nil**			**Total Classes:51**			

OBJECTIVES:

The course should enable the students to :

I. Communication in an intelligible English accent and pronunciation.
II. Introduce students" elements of Grammar and Composition of English language.
III. Maintain linguistic competence through training in vocabulary, sentence structures.

UNIT-I	EMERGING TECHNOLOGIES	Classes:10

TEXT: Solar Thermal Power-Cloud Computing-Nano Technology
GRAMMAR: Introduction to Parts of Speech, Types of Nouns and Pronouns
VOCABULARY: Synonyms and Antonyms

UNIT-II	SPACE TREK	Classes:10

TEXT: Hubble Telescope-Chandrayan II-Anusat-Living Quarters-Tourism
GRAMMAR: Adjectives-Kinds of verbs and adverbs
VOCABULARY: Affixes

UNIT-III	GLOBAL ISSUES	Classes:10

TEXT: Child labour-Food crises-Genetic modifications-E waste-Assistive Technology
GRAMMAR: Articles, Prepositions
VOCABULARY: Homographs, Homophones, Homonyms

UNIT-IV	MEDIA MATTERS	Classes:10

TEXT: History of Media-Language and media-Mile stone in media-Manipulation by media-Entertainment media-Interviews
GRAMMAR: Tenses
COMPOSITION: Official letter

UNIT-V	MOKSHAGUNDAM VISVESVARAYA	Classes:11

TEXT: Birth-Childhood-Education-Achievements-Awards-Diwan of Mysore
GRAMMAR: Modals, Subject – Verb Agreement
COMPOSITION: Paragraph writing and Essay writing

Text Books:

1.MIND SCAPES- ORIENT BLACK SWAN 2014
2. INSPIRING LIVES, MARUTHI PUBLICATIONS 2010

Reference Books:

1. English Grammar in use -Raymond Murphy.
2. Word power made Easy- Norman Lewis.

Web References:

1.https://www.edufind.com
2.https://www.myenglishpages.com
3. http://www. onestopenglish.com

E-Text Books;

1. https://www.e-bookboon.com/en/communication-ebooks-zip.
2. https://www. learningenglishvocabularygrammar.com/ filesidiomsphrasalverbswithmeaningsandexamplespdf.pdf

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ENGINEERING & I.T. WORKSHOP

I B. Tech - II Semester: Common to all								
Course Code	**Category**	**Hours/Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
17CA03203	**Foundation**	-	-	4	2	30	70	100
Contact Classes: Nil	**Tutorial Classes: Nil**			**Practical Classes: 68**		**Total Classes: 68**		

OBJECTIVES:

1. Identify and use of tools, types of joints in carpentry, fitting, tin smithy welding and foundry operations.
2. Understand of electrical wiring and components.

Any 10 of the following experiments has to be performed during the I year II Sem.

CARPENTRY	
Expt. 1	Preparation of dove tail joint as per given taper angle.
Expt. 2	Preparation of lap joint as per given dimensions.
Expt. 3	Preparation of Cross Lap joint as per given taper angle.
FITTING	
Expt. 4	Make a square fit for given sizes.
Expt. 5	Make a V Joint for given dimensions.
Expt. 6	Make a half round fit for given dimensions.
TIN SMITHY	
Expt. 7	Prepare the development of a surface and make a rectangular tray.
Expt. 8	Prepare the development of a surface and make a round tin.
FOUNDRY	
Expt. 9	Prepare a single pattern pattern.
Expt. 10	Prepare a double pattern pattern.
WELDING	
Expt. 11	Preparation of V butt joint
Expt. 12	Preparation of Lap joint
Expt. 13	Preparation of T fillet joint

References:

1. K. C. John, "Mechanical Workshop Practice", PHI, 2nd Edition, 2010.
2. H.S. Bawa, "Workshop Practice ", Tata McGraw Hill Publishing Company Limited, 2nd Edition 2009.
3. S. K. Hajra Choudhury, A. K. Hajra Choudhury, "Elements of Workshop Technology", Media Promoters, 1st Edition, 2009.
4. Engineering Work shop practice for JNTU, V. Ramesh Babu, VRB Publishers Pvt. Ltd., 2009
5. Work shop Manual / P.Kannaiah/ K.L.Narayana/ SciTech Publishers.

I.T. WORKSHOP

OBJECTIVES:

1. Learning about the Computer internal components.
2. Practice on operating system installation and configuration settings.
3. Prepare productivity tools like word processors, spreadsheets, presentations.

Task 1	Learn about computer internal parts & Peripherals.
Task 2	Assembling & Disassembling a Computer.

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Business Comunication Lab - I

		II MBA III Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
14CE00108	Foundation	L	T	P	C	Internal	External	Total
		3	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Description: Aim is to enable students understand how to write business letters and improve written communication.

Course Objectives:

- ✓ English language skills for effective written business communication ('s).
- ✓ Will be able to understand how to write project report.

Unit – I	Business Writing	Classes: 9

Introduction, Importance of Written Business Communication, Direct and Indirect Approached to Business Messages, Five Main Stages of Writing

Unit – II	Business Correspondence	Classes: 9

Introduction, Business Letter Writing, Effective Business Correspondence, Common Components of Business Letters, Strategies for Writing the Body of a Letter, Kinds of Business Letters, Writing Effective Memos. Practice Exercises.

Unit – III	Instructions	Classes: 9

Instructions: Introduction, Written Instructions, General Warning, Caution and Danger, Format in Instructions, Oral Instructions, Audience Analysis, Product Instructions. Practice Exercises.

Unit – IV	Business Reports and Proposals	Classes: 9

Business Reports and Proposals: Introduction, What is a Report, Steps in Writing a Routine Business Report, Parts of a Report, Corporate Reports, Business Proposals.

Unit – V	Careers and Resumes	Classes: 9

Careers and Resumes : Introduction, Career Building, Understanding yourself, setting a career goal, job search / looking at various options, preparing your resume, resume formats, traditional, electronic and video resumes,online recruitment process. Write your resume to market yourself.

Reference:

1. Lesikar: Basic Business Communication, TMH.
2. Stephen Bailey, Academic Writing for International Students of Business, Routledge.
3. David Irwin: Effective Business Communications, Viva-Thorogood.
4. Rajendra Pal, J S KorlahaHi: Essentials of BusinessCommunication:Sultanchand
5. Sailesh Sengupta, Business and Managerial Communications, PHI.

Mode of evaluation: Assignments, Lab, Mid Examinations.

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Business Analytics Lab

		I MBA II Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
17CE00208	Foundation	L	T	P	C	Internal	External	Total
		4	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: nil				Total classes:65		

Course Description:

The course is designed to understand the providing conceptual understanding of Business analytics under various functions of management. This will enable the students to study the various concepts related to applications of analytics and enabling them to apply the concepts in the management organization.

Course Objectives:

- ✓ To understand the basic concepts of business analytics
- ✓ To learn financial, marketing experiments
- ✓ To learn HRM, systemes experiments
- ✓ To understand the concepts of Information Technology

UNIT - I	**Introduction to Business Analytics – Accounting experiments**	**Classes: 10**

Introduction to Business Analytics – functions – concepts. Creation of company – Preparation of Ledger - Posting Trial Balance – Profit and Loss Account – Balance sheet sole traders.

UNIT - II	**Financial Experiments**	**Classes: 10**

Capital budgeting decisions – Calculations of NPV – Calculations of IRR – Calculations of Profitable Index

UNIT - III	**Marketing Experiments**	**Classes: 10**

Storing and retrieving of data of customers - Storing and retrieving of data of sales - Storing and retrieving of data of dealers - products and geographical areas (Tables and Graphs)

UNIT - IV	**HRM Experiments**	**Classes: 10**

Creation of Employees data base - Demonstrating the salary administration

UNIT - V	**Systems Experiments**	**Classes: 10**

Understanding the Information Systems – Design of MIS - Overview of Internet and Internet tools.

Reference:

1. Ms Office-Sanjay Saxena
2. Ms Office Excel-Frye, PHI publications
3. Ms Office Access- Step by step, PHI publications

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TECHNICAL COMMUNICATION SKILLS

I - Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CF52101	Foundation	4	-	-	4	40	60	100
Contact Classes: 45	Tutorial Classes: 15	Practical Classes: Nil				Total Classes: 60		

Course Objectives:

- To develop awareness in students of the relevance and importance of technical communication and presentation skills.
- To prepare the students for placements
- To sensitize the students to the appropriate use of non-verbal communication
- To train students to use language appropriately for presentations and interviews
- To enhance the documentation skills of the students with emphasis on formal and informal writing

COURSE OUTCOMES

- Become effective technical communicators
- Be job-ready and able to face interviews confidently
- Sensitive use of non-verbal language suitable to different situations in professional life
- Learn and use keys words, phrases and sentence structures making a mark in interviews and presentation skills
- Effective writing skills with the ability to use different styles for different situations

Unit-I		Classes: 08

Basics of Technical Communication – Introduction – Objectives & Characteristics of Technical Communication – Importance and need for Technical communication - LSRW Skills – Barriers to effective communication

Unit-II		Classes: 10

Informal and Formal Conversation - Verbal and Non-verbal communication –Kinesics, Proxemics, Chronemics, Haptics, Paralanguage

Unit-III		Classes: 08

Written communication – Differences between spoken and written communication – Features of effective writing –Advantages and disadvantages of spoken and written communication- Art of condensation-summarizing and paraphrasing

Unit-IV		Classes: 10

Presentation Skills – Nature and importance of oral presentation – Defining the purpose – Analyzing the audience - Planning and preparing the presentation, organizing and rehearsing the presentation – Individual and group presentations - Handling stage fright

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INTERNET OF THINGS

PROFESSIONAL ELECTIVES III								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CD04205	Core	4	0	-	4	40	60	100
Contact Classes: 60	Tutorial Classes: Nil	Practical Classes: Nil			Total Classes: 60			

OUTCOMES:

- Able to understand the application areas of IOT
- Able to realize the revolution of Internet in Mobile Devices, Cloud &Sensor Networks
- Able to understand building blocks of Internet of Things and characteristics

UNIT - I	INTRODUCTION & CONCEPTS	Classes: 10

Introduction to Internet of Things, Physical Design of IOT, Logical Design of IOT, IOT Enabling Technologies, IOT Levels

UNIT - II	DOMAIN SPECIFIC IOTS	Classes: 15

Home Automation, Cities, Environment, Energy, Retail, Logistics, Agriculture, Industry, Health & Life Style

UNIT - III	M2M & SYSTEM MANAGEMENT WITH NETCONF-YANG	Classes: 10

M2M, Difference between IOT and M2M, SDN and NFV for IOT, Software defined Networking, Network Function Virtualization, Need for IOT Systems Management, Simple Network Management Protocol, Limitations of SNMP, Network Operator Requirements, NETCONF, YANG, IOT Systems management with NETCONF-YANG

UNIT - IV	DEVELOPING INTERNET OF THINGS & LOGICAL DESIGN USING PYTHON	Classes: 10

Introduction, IOT Design Methodology, Installing Python, Python Data Types & Data Structures, Control Flow, Functions, Modules, Packages, File Handling, Date/ Time Operations, Classes, Python Packages

UNIT - V	IOT PHYSICAL DEVICES & ENDPOINTS	Classes: 15

What is an IOT Device, Exemplary Device, Board, Linux on Raspberry Pi, Interfaces, and Programming& IOT Devices

Text Books:

VijayMadisetti, ArshdeepBahga," Internet of ThingsA Hands-On- Approach",2014, ISBN:978 0996025515

Reference Books:

1. AdrianMcEwen, "Designing the Internet of Things", Wiley Publishers, 2013, ISBN:978-1-118-43062-0
2. Daniel Kellmereit, "The Silent Intelligence: The Internet of Things", 2013, ISBN0989973700

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CNC TECHNOLOGY & PROGRAMMING

I M.Tech. II SEMESTER: CAD/CAM

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
21CD03203	Core	4	-	-	4	40	60	100
Contact Classes: 64	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 64		

UNIT-I	Introduction to CNC Machine tools	Classes : 14

Introduction to CNC Machine tools: Evolution of Computerized control in manufacturing, Components, Working principle of CNC, DNC and Machining centers.
Constructional features of CNC machine tools: Introduction, Spindle drives, Transmission belting, axes feed drives, Slide ways, Ball screws.
Accessories: Work tables, Spindles, Spindle heads, Beds and Columns, Tooling – Automatic Tool changer (ATC).

UNIT-II	FEEDBACK DEVICES	Classes : 14

Feedback devices: Introduction, Digital incremental displacement measuring systems, Incremental rotary encoders, Moire fringes, Digital absolute measuring system.
Electro-magnetic analogue position transducers: Principle, advantages, characteristics, Synchros, Synchro-Resolvers, Inductors, Laser interferometer.

UNIT-III	CONTROL SYSTEMS AND INTERFACE	Classes : 14

CONTROL SYSTEMS AND INTERFACE : Open and closed loop systems, Micro processor based CNC systems, block diagram of typical CNC system, description of hard ware and soft interpolation systems, Standard and optional features of CNC control systems.

UNIT-IV	APT Programming	Classes : 14

APT programming: APT language structure, APT geometry, Definition of point, time, vector, circle, plane, patterns and matrices. APT motion commands: setup commands, point-to point motion commands, continuous path motion commands, post processor commands, control commands, Macro subroutines, Part programming preparation for typical examples.

UNIT-V	ECONOMICS AND MAINTENANCE OF CNC MACHINE TOOLS	Classes : 12

Economics and Maintenance of CNC machine tools: Introduction, factors influencing selection of CNC machines, Cost of operation of CNC machines, Maintenance features of CNC machines, Preventive maintenance, Documentation, Spare parts, Training in Maintenance.

Text Books:

1.Computer Numerical Control Machines – Dr.Radha Krishnanan, New Central Book Agency
2.Computer Numerical Control Machines – Hans B.Keif and T. Frederick Waters Macmillan/McGraw Hill

Reference Books:

1. CNC Machines – B.S. Aditahn and Pabla
2.CNC Machining technology – Springer – Verlag 3.Computer Numerical Machine tools - G.E. Thyer, NEWNES

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MAP REDUCE PROGRAMMING LAB

II Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CD05213	Core	-	-	4	2	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 48				Total Classes:48		

Objectives:

- Introduce students the concept and challenge of big data (3 V's: volume, velocity, and variety).
- Teach students in applying skills and tools to manage and analyze the big data

Outcomes:

- Understand the concept and challenge of big data and why existing technology is inadequate to analyze the big data;
- Collect, manage, store, query, and analyze various form of big data; and
- Gain hands-on experience on large-scale analytics tools to solve some open big data problems;
- Understand the impact of big data for business decisions and strategy.

Week-1	Getting Started with MapReduce and Hadoop

Loading an existing Eclipse project,

Week-2	Examining a simple MapReduce Class: Word Counting

During operation, multiple instances of the Map and Reduce classes will be made, where each can be run on different machines are to be created.

Week-3	Compiling the Word Counting Example and running it Locally

The word counting example translates into a map and reduce tasks, we will now compile the Word Counting example and run it on your local machine.

Week-4	Running Word Counting on a Remote Cluster

Running a MapReduce job on Amazon.

Week-5	Top Hashtag Identification

To modify a MapReduce job and how to use the configure and close methods to make use of stateful tasks. In particular, you will take the code of the word counting example from the previous task and modify it to find the top 10 hashtags from the input corpus.

Week-6	Indexing English Tweets

You will learn how to use external .jar files with a project, use additional resources and change the output format of a MapReduce job. In particular, this exercise is focused on using a MapReduce job to build an index of English tweets from a generic tweet sample. You will create a map task that will classify incoming tweets as English or not and create a new output format for Hadoop that will write the classified documents in a format that a search engine(the Terrier IR Platform) can understand.

References:

- http://wireless.ictp.it/school_2015/labs/Lab1.pdf
- https://cs.calvin.edu/courses/cs/374/exercises/12/lab/
- http://cecs.wright.edu/~pmateti/Courses/7380/Lectures/Hadoop/hadoop-lab.html

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MANUFACTURING TECHNOLOGY LABORATORY

II B.Tech III Semester: ME								
Course Code	**Category**	**Hours / Week**			**Credits**	**Maximum Marks**		
		L	T	P	C	CIA	SEE	Total
17CA03306	Core	-	-	4	2	30	70	100
Contact Classes: Nil	**Tutorial Classes: Nil**	**Practical Classes: 68**				**Total Classes: 68**		

OBJECTIVES:

The course should enable students to

The students shall also introduce the basic concepts of casting, pattern preparation, gating system and knowledge on basic features of various welding and cutting processes.

LIST OF EXERCISES

S.No.1	**METAL CASTING LAB**
	a. Pattern Design and making - for one casting drawing. b. Sand properties testing - Exercise -for strengths, and permeability – 1 c. Moulding: Melting and Casting - 1 Exercise
S.No.2	**WELDING LAB**
	a. Arc Welding: Lap & Butt Joint - 2 Exercises b. Spot Welding - 1 Exercise c. GTAW Welding - 1 Exercise d. Brazing & Soldering – 2 Exercises
S.No.3	**MECHANICAL PRESS WORKING**
	a. Blanking & Piercing operation and study of simple, compound and progressive press tool. b. Hydraulic Press: Deep drawing and extrusion operation. c. Bending and other operations
S.No.4	**PROCESSING OF PLASTICS**
	a. Injection Moulding b. Blow Moulding

Note: Minimum of 12 Exercises need to be performed

TEXT BOOKS:

1. P. N. Rao, "Manufacturing Technology", Vol:1, Tata Mc Graw Hill, 2nd Edition, 2013.
2. Hajra Chowdhary, "Workshop Technology", Asia Publishing House, 2nd Edition, 2008.

REFERENCE BOOKS:

1. Sarma P C, "Production Technology", S.Chand & CO, New Delhi, 7th Edition, 2006.
2. R. K. Jain, "Production Technology", Khanna Publishers, 18th Edition, 2013.
3. T. V. Ramana Rao, "Metal Casting", New Age, 1st Edition, 2010.
4. Philips Rosenthal, "Principles of Metal Castings", Tata McGraw Hill, 2nd Edition, 2001.
5. B. S. Raghuwamshi, "A Course in Workshop Technology", Dhanpat Rai & Sons, 2014.
6. Kalpakjain S, "Manufacturing Engineering and Technology", Pearson Education, 7th Edition,

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B. Tech III-I Sem. (ME)

L	T	P	C
3	1	0	3

15A03506 NANO TECHNOLOGY
(MOOCS-I)

Course objective

On successful completion of the course, students should be able to: Understand the basic cientific concepts of nanoscience. Understand the properties of nano materials, characterization of materials, synthesis and fabrication. Understand the applications of nano technology in various science, engineering and technology fields.

UNIT-I

INTRODUCTION: History of nano science, definition of nano meter, nano materials, nano technology. Classification of nano materials. Crystal symmetries, crystal directions, crystal planes. Band structure.

PROPERTIES OF MATERIALS:

Mechanical properties, electrical properties, dielectric properties, thermal properties, magnetic properties, opto electronic properties. Effect of size reduction on properties, electronic structure of nano materials.

UNIT-II

SYNTHESIS AND FABRICATION: Synthesis of bulk polycrystalline samples, growth of single crystals. Synthesis techniques for preparation of nano particle – Bottom Up Approach – sol gel synthesis, hydro thermal growth, thin film growth, PVD and CVD; Top Down Approach – Ball milling, micro fabrication, lithography. Requirements for realizing semiconductor nano structures, growth techniques for nano structures.

UNIT-III

CHARECTERIZATION TECHNIQUES: X-Ray diffraction and Scherrer method, scanning electron microscopy, transmission electron microscopy, scanning probe microscopy, atomic force microscopy, piezoresponse microscopy, X-ray photoelectron spectroscopy, XANES and XAFS, angle resolved photoemission spectroscopy, diffuse reflectance spectra, photoluminescence spectra, Raman spectroscopy.

UNIT-IV

CARBON NANO TECHNOLOGY:

Characterization of carbon allotropes, synthesis of diamond – nucleation of diamond, growth and morphology. Applications of nano crystalling diamond films, grapheme, applications of carbon nano tubes.

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B. Tech III-II Sem. (ME)

L	T	P	C
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15A52602 ADVANCED ENGLISH LANGUAGE COMMUNICATION SKILLS (AELCS) LAB (Audit Course)

1. INTRODUCTION

With increased globalization and rapidly changing industry expectations, employers are looking for the wide cluster of skills to cater to the changing demand. The introduction of the Advanced Communication Skills Lab is considered essential at 3rd year level. At this stage, the students need to prepare themselves for their careers which may require them to listen to, read, speak and write in English both for their professional and interpersonal communication in the globalised context.

The proposed course should be a laboratory course to enable students to use 'good' English and perform the following:

- Gathering ideas and information and to organise ideas relevantly and coherently.
- Engaging in debates.
- Participating in group discussions.
- Facing interviews.
- Writing project/research reports/technical reports.
- Making oral presentations.
- Taking part in social and professional communication.

2. OBJECTIVES:

This Lab focuses on using multi-media instruction for language development to meet the following targets:

- To improve the students' fluency in English, through a well-developed vocabulary and enable them to listen to English spoken at normal conversational speed by educated English speakers and respond appropriately in different socio-cultural and professional contexts.
- Further, they would be required to communicate their ideas relevantly and coherently in writing.
- To prepare all the students for their placements.

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3. SYLLABUS:

The following course content to conduct the activities is prescribed for the Advanced English Communication Skills (AECS) Lab:

UNIT-I: COMMUNICATION SKILLS

1. Reading Comprehension
2. Listening comprehension
3. Vocabulary Development
4. Common Errors

UNIT-II: WRITING SKILLS

1. Report writing
2. Resume Preparation
3. E-mail Writing

UNIT-III: PRESENTATION SKILLS

1. Oral presentation
2. Power point presentation
3. Poster presentation

UNIT-IV: GETTING READY FOR JOB

1. Debates
2. Group discussions
3. Job Interviews

UNIT-V: INTERPERSONAL SKILLS

1. Time Management
2. Problem Solving & Decision Making
3. Etiquettes

4. LEARNING OUTCOMES:

- Accomplishment of sound vocabulary and its proper use contextually
- Flair in Writing and felicity in written expression.
- Enhanced job prospects.
- Effective Speaking Abilities

5. MINIMUM REQUIREMENT:

The Advanced English Communication Skills (AECS) Laboratory shall have the following infra-structural facilities to accommodate at least 60 students in the lab:

- Spacious room with appropriate acoustics.
- Round Tables with movable chairs
- Audio-visual aids
- LCD Projector
- Public Address system

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- P – IV Processor, Hard Disk – 80 GB, RAM–512 MB Minimum, Speed – 2.8 GHZ
- T. V, a digital stereo & Camcorder
- Headphones of High quality

6. SUGGESTED SOFTWARE:

The software consisting of the prescribed topics elaborated above should be procured and G

1. **Walden Infotech: Advanced English Communication Skills Lab**
2. **K-VAN SOLUTIONS-Advanced English Language Communication Skills lab**
3. **DELTA's key to the Next Generation TOEFL Test: Advanced Skills Practice.**
4. **TOEFL & GRE**(KAPLAN, AARCO & BARRONS, USA, Cracking GRE by CLIFFS)
5. **Train2success.com**

7. BOOKS RECOMMENDED:

1. **Objective English for Competitive Exams**, Hari Mohana Prasad, 4th edition, Tata Mc Graw Hill.
2. **Technical Communication** by Meenakshi Raman & Sangeeta Sharma, O U Press 3rd Edn. 2015.
3. **Essay Writing for Exams, Audrone Raskauskiene, Irena Ragaisience & Ramute Zemaitience,OUP, 2016**
4. **Soft Skills for Everyone,** Butterfield Jeff, Cengage Publications, 2011.
5. **Management Shapers Series** by Universities Press (India) Pvt Ltd., Himayatnagar, Hyderabad 2008.
6. **Campus to Corporate,** Gangadhar Joshi, Sage Publications, 2015
7. **Communicative English,**E Suresh Kumar & P.Sreehari, Orient Blackswan, 2009.
8. **English for Success in Competitive Exams**, Philip Sunil Solomon OUP, 2015

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	L	T	P	C
B. Tech IV-I Sem. (CSE)	3	1	0	3

15A05703 MOBILE APPLICATION DEVELOPMENT

Course Objectives:

- To understand fundamentals of android operating systems.
- Illustrate the various components, layouts and views in creating android applications
- To understand fundamentals of android programming.

Course Outcomes:

- Create data sharing with different applications and sending and intercepting SMS.
- Develop applications using services and publishing android applications.
- To demonstrate their skills of using Android software development tools

Unit 1: Introduction to Android:
The Android 4.1 jelly Bean SDK, Understanding the Android Software Stack, Installing the Android SDK, Creating Android Virtual Devices, Creating the First Android Project, Using the Text view Control, Using the Android Emulator, The Android Debug Bridge(ADB), Launching Android Applications on a Handset.

Unit 2: Basic Widgets:
Understanding the Role of Android Application Components, Understanding the Utility of Android API, Overview of the Android Project Files, Understanding Activities, Role of the Android Manifest File, Creating the User Interface, Commonly Used Layouts and Controls, Event Handling, Displaying Messages Through Toast, Creating and Starting an Activity, Using the Edit Text Control, Choosing Options with Checkbox, Choosing Mutually Exclusive Items Using Radio Buttons

Unit 3: Building Blocks for Android Application Design:
Introduction to Layouts, Linear Layout, Relative Layout, Absolute Layout, Using Image View, Frame Layout, Table Layout, Grid Layout, Adapting to Screen orientation.

Utilizing Resources and Media Resources, Creating Values Resources, Using Drawable Resources, Switching States with Toggle Buttons, Creating an Images Switcher Application, Scrolling Through Scroll View, playing Audio, Playing Video, Displaying Progress with Progress Bar, Using Assets.

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Unit 4: Using Selection widgets and Debugging:
Using List View, Using the Spinner control, Using the GridView Control, Creating an Image Gallery Using the ViewPager Control, Using the Debugging Tool: Dalvik Debug Monitor Service(DDMS), Debugging Application, Using the Debug Perspective.

Displaying And Fetching Information Using Dialogs and Fragments: What Are Dialogs?, Selecting the Date and Time in One Application, Fragments, Creating Fragments with java Code, Creating Special Fragments

Unit 5: Building Menus and Storing Data:
Creating Interface Menus and Action Bars, Menus and Their Types, Creating Menus Through XML, Creating Menus Through Coding, Applying a Context Menu to a List View, Using the Action Bar, Replacing a Menu with the Action Bar, Creating a Tabbed Action Bar, Creating a Drop-Down List Action Bar

Using Databases:
Using the SQLiteOpenHelperclasss, Accessing Databases with the ADB, Creating a Data Entry Form,

Communicating with SMS and Emails:
Understanding Broadcast Receivers, Using the Notification System, Sending SMS Messages with Java Code, Receiving SMS Messages, Sending Email, Working With Telephony Manager.

Text Books
1. Android Programming by B.M Harwani, Pearson Education, 2013.

References Text Books:

1. Android application Development for Java Programmers, James C Sheusi, Cengage Learning
2. Android In Action by w.Frank Ableson, Robi Sen, Chris King, C. Enrique Ortiz., Dreamtech.
3. Professional Android 4 applications development, Reto Meier, Wiley India, 2012.
4. Beginning Android 4 applications development, Wei- Meng Lee, Wiley India,2013

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B. Tech IV-II Sem. (CSE)

L	T	P	C
3	1	0	3

15A05802 MOBILE COMPUTING
(MOOCS-II)

Course Objectives:

- Understand mobile ad hoc networks, design and implementation issues, and available solutions.
- Acquire knowledge of sensor networks and their characteristics.

Course Outcomes:

- Students able to use mobile computing more effectively
- Students gain understanding of the current topics in MANETs and WSNs, both from an industry and research point of views.
- Acquire skills to design and implement a basic mobile ad hoc or wireless sensor network via simulations.

UNIT-I:

Wireless LANS and PANS: Introduction, Fundamentals of WLANS, IEEE 802.11 Standards, HIPERLAN Standard, Bluetooth, Home RF.

Wireless Internet:

Wireless Internet, Mobile IP, TCP in Wireless Domain, WAP, Optimizing Web over Wireless.

UNIT-II:

AD HOC Wireless Networks: Introduction, Issues in Ad Hoc Wireless Networks, AD Hoc Wireless Internet.

MAC Protocols for Ad Hoc Wireless Networks: Introduction, Issues in Designing a MAC protocol for Ad Hoc Wireless Networks, Design goals of a MAC Protocol for Ad Hoc Wireless Networks, Classifications of MAC Protocols, Contention - Based Protocols, Contention - Based Protocols with reservation Mechanisms, Contention – Based MAC Protocols with Scheduling Mechanisms, MAC Protocols that use Directional Antennas, Other MAC Protocols.

UNIT -III:

Routing Protocols: Introduction, Issues in Designing a Routing Protocol for Ad Hoc Wireless Networks, Classification of Routing Protocols, Table –Driven Routing Protocols, On – Demand

Routing Protocols, Hybrid Routing Protocols, Routing Protocols with Efficient Flooding Mechanisms, Hierarchical Routing Protocols, Power – Aware Routing Protocols.

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Transport Layer and Security Protocols: Introduction, Issues in Designing a Transport Layer Protocol for Ad Hoc Wireless Networks, Design Goals of a Transport Layer Protocol for Ad Hoc Wireless Networks, Classification of Transport Layer Solutions, TCP Over Ad Hoc Wireless Networks, Other Transport Layer Protocol for Ad Hoc Wireless Networks, Security in Ad Hoc Wireless Networks, Network Security Requirements, Issues and Challenges in Security Provisioning, Network Security Attacks, Key Management, Secure Routing in Ad Hoc Wireless Networks.

UNIT –IV:

Quality of Service: Introduction, Issues and Challenges in Providing QoS in Ad Hoc Wireless Networks, Classification of QoS Solutions, MAC Layer Solutions, Network Layer Solutions, QoS Frameworks for Ad Hoc Wireless Networks.

Energy Management: Introduction, Need for Energy Management in Ad Hoc Wireless Networks, Classification of Ad Hoc Wireless Networks, Battery Management Schemes, Transmission Power Management Schemes, System Power Management Schemes.

UNIT –V:

Wireless Sensor Networks: Introduction, Sensor Network Architecture, Data Dissemination, Data Gathering, MAC Protocols for Sensor Networks, Location Discovery, Quality of a Sensor Network, Evolving Standards, Other Issues.

TEXT BOOKS:

1. Ad Hoc Wireless Networks: Architectures and Protocols - C. Siva Ram Murthy and B.S.Manoj, PHI, 2004.
2. Wireless Ad- hoc and Sensor Networks: Protocols, Performance and Control - Jagannathan Sarangapani, CRC Press

REFERENCE BOOKS:

1. Ad hoc Mobile Wireless Networks – Subir Kumar sarkar, T G Basvaraju, C Puttamadappa, Auerbach Publications,2012.
2. Wireless Sensor Networks - C. S. Raghavendra, Krishna M. Sivalingam, 2004, Springer.
3. Ad- Hoc Mobile Wireless Networks: Protocols & Systems, C.K. Toh , Pearson Education.

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	L	T	P	C
B. Tech III-II Sem. (CSE)	3	1	0	3

15A05605 WEB AND INTERNET TECHNOLOGIES

Course Objectives:

- To introduce client side scripting with Javascript and DHTML
- To introduce server side programming with Java servlets, JSP and PHP.
- To learn the basic web concepts and Internet protocols

Course Outcomes:

- Ability to create dynamic and interactive web sites
- Gain knowledge of client side scripting using java sript and DHTML.
- Demonstrate understanding of what is XML and how to parse and use XML data
- Able to do server side programming with Java Servelets, JSP and PHP.
- Able to design rich client presentation using AJAX.

UNIT I

Introduction to Web Technologies: Introduction to Web servers like Apache 1.1, IIS XAMPP(Bundle Server), WAMP(Bundle Server),Handling HTTP Request and Response, installations of above servers, HTML and CSS: HTML 5.0 , XHTML, CSS 3.

UNIT II

Java Script: An introduction to JavaScript–JavaScript DOM Model-Date and Objects,-Regular Expressions- Exception Handling-Validation-Built-in objects-Event Handling-DHTML with JavaScript. **Servlets**: Java Servlet Architecture- Servlet Life Cycle- Form GET and POST actions- Session Handling- Understanding Cookies.

Installing and Configuring Apache Tomcat Web Server;- DATABASE CONNECTIVITY: JDBC perspectives, JDBC program example - **JSP**: Understanding Java Server Pages-JSP Standard Tag Library(JSTL)-Creating HTML forms by embedding JSP code.

UNIT III

Introduction to PHP: The problem with other Technologies (Servelets and JSP), Downloading, installing, configuring PHP, Programming in a Web environment and The anatomy of a PHP Page.

Overview of PHP Data types and Concepts: Variables and data types, Operators, Expressions and Statements, Strings, Arrays and Functions.

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PHP Advanced Concepts: Using Cookies, Using HTTP Headers, Using Sessions, Authenticating users, Using Environment and Configuration variables, Working with Date and Time.

UNIT IV

Creating and Using Forms: Understanding Common Form Issues, GET vs. POST, Validating form input, Working with multiple forms, and Preventing Multiple Submissions ofa form.
XML: Basic XML- Document Type Definition XML Schema DOM and Presenting XML, XML Parsers and Validation, XSL and XSLT Transformation, News Feed (RSS and ATOM).

UNIT V

AJAX: Ajax Client Server Architecture-XML Http Request Object-Call Back Methods; Web Services: Introduction- Java web services Basics – Creating, Publishing, Testing and Describing a Web services (WSDL)-Consuming a web service, Database Driven web service from an application – SOAP.

TEXT BOOKS:

1. Beginning PHP and MySQL, 3rd Edition , Jason Gilmore, Apress Publications (Dream tech.).
2. PHP 5 Recipes A problem Solution Approach Lee Babin, Nathan A Good, Frank M.Kromann and Jon Stephens.
3. Deitel and Deitel and Nieto, "Internet and World Wide Web - How to Program", Prentice Hall, 5 th Edition, 2011.
4. Herbert Schildt, "Java-The Complete Reference", Eighth Edition, Mc Graw Hill Professional, 2011.

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MOOC COURSE

HUMAN VALUES & PROFESSIONAL ETHICS

M.Tech I Semester: VLSI SYSTEM DESIGN								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
21CD04111	Core	0	0	0	4	40	60	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: Nil			Total Classes: Nil			

UNIT - I	HUMAN VALUES

Morals, Values and Ethics-Integrity-Work Ethic-Service learning – Civic Virtue – Respect for others – Living Peacefully – Caring – Sharing – Honesty - Courage- Co Operation – Commitment – Empathy –Self Confidence Character – Spirituality.

UNIT - II	ENGINEERING ETHICS

Senses of Engineering Ethics- Variety of moral issues – Types of inquiry – Moral dilemmas – Moral autonomy – Kohlberg"s theory- Gilligan"s theory- Consensus and controversy – Models of professional roles- Theories about right action- Self interest - Customs and religion –Uses of Ethical theories – Valuing time –Co operation – Commitment.

UNIT - III	ENGINEERING AS SOCIAL EXPERIMENTATION

Engineering As Social Experimentation– Framing the problem – Determining the facts – Codes of Ethics – Clarifying Concepts – Application issues – Common Ground - General Principles – Utilitarian thinking respect for persons.

UNIT - IV	ENGINEERS RESPONSIBILITY FOR SAFETY AND RISK

Safety and risk – Assessment of safety and risk – Risk benefit analysis and reducing riskSafety and the Engineer-Designing for the safety- Intellectual Property rights (IPR).

UNIT - V	GLOBAL ISSUES

Globalization – Cross culture issues- Environmental Ethics – Computer Ethics – Computers as the instrument of Unethical behavior – Computers as the object of Unethical acts – Autonomous Computers- Computer codes of Ethics – Weapons Development - Ethics

Text Books:

1. "Engineering Ethics includes Human Values" by M.Govindarajan, S.Natarajan and V.S.SenthilKumar-PHI Learning Pvt. Ltd-2009.
2. "Engineering Ethics" by Harris, Pritchard and Rabins, CENGAGE Learning, India Edition, 2009.
3. "Ethics in Engineering" by Mike W. Martin and Roland Schinzinger – Tata McGrawHill– 2003.

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Entrepreneurship Development

		II MBA III Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
17CE00301	Foundation	L	T	P	C	Internal	External	Total
		3	-	-	4	40	60	100
Contact classes:50	Tutorial Classes:15	Practical classes: Nil				Total classes:65		

Course Description:

This course presents the concepts, characteristics of entrepreneurship in India and various institutions that are promoting entrepreneurship at national level and state level. Further, it also represents the importance of women entrepreneurship in the globalization scenario. It also describes the project management and processes of project management.

Course Objectives :

- ✓ To provide theoretical concepts of entrepreneurship.
- ✓ To give an overview of various organizations that promotes entrepreneurship in India.
- ✓ To learn the concept of women entrepreneurship in India.
- ✓ To provide awareness on Role of Government both in centre and state level in executing various entrepreneurial activities.

Unit - I	Introduction to Entrepreneurship	Classes: 10

Introduction to Entrepreneurship: Characteristics, qualities and skills of an Entrepreneur, functions of entrepreneur, entrepreneur scenario in India and abroad, forms of entrepreneurship, small business enterprises - importance of Indian economy, first mover – advantages and disadvantages, risk reduction strategies - market scope strategies, imitation strategies and managing newness.

Unit - II	Promotional Strategies	Classes: 15

Promotional strategies: Generation of new entry opportunities, SWOT analysis, technological competitiveness, legal regulatory system, patents and trademarks, intellectual property rights, project planning and feasibility studies, major steps in product development. Financial aspects, sources of rating capital, debt-equity, financing by commercial banks, government grants and

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subsidies, entrepreneurship promotion, schemes of department of industries - DICs, KVIC, SIDBI, NABARD, NSIC, APSFC, IFCI and IDBI.

Unit - III	Corporate Governance	Classes: 15

Corporate governance: Corporate governance, capitalism at crossroads historical perspective of corporate governance, issues of corporate governance, theoretical basis of corporate governance, corporate governance mechanisms, Indian model of governance good corporate governance, corporate governance committees, OECD principles, Indian committee and guidelines, the confederation of Indian industry's initiative, corporate governance models.

Unit - IV	Role of Government	Classes: 15

Role of Central Government and State Government in promoting Entrepreneurship with various incentives, subsidies, grants etc. – with special reference to 'Export oriented units' Role of the following agencies in the Entrepreneurship Development. District Industrial Centre (DIC), Small Industries Services Institute (SISI), Entrepreneurship Development Institute of India (EDII), National Institute of Entrepreneurship and Small Business Development (NIESBUD), National Entrepreneurship Development Board (NEDB).

Unit - V	Process of Project Management	Classes: 10

Project management: Concept of project and classification of project identification, project formulation - project design, project planning, and social cost benefit analysis, financial analysis. PROJECT APPRAISAL: Project report and guidelines for preparing a project report, project Appraisal, Significance of project appraisal, Profitability appraisal, and project financing.

References:

1. Robert D. Hisrich, Michael P. Peters, Decin A. Shephered(2009), *Entrepreneurship*, TMH.
2. Vasanth Desai, Dynamics of Entrepreneurship Development – Himalaya Publishing
3. David H. Holt, Entrepreneurship: New Venture Creation – PHI, 2009
4. H. Nandan, Fundamentals of Entrepreneurship, PHI, First/e, New Delhi, 2009.
5. Satish Taneja, S.L.Gupta, Entrepreneurship Development New Venture Creation, Galgotia
6. Bholanath Dutta (2009), *Entrepreneurship*, Excel Publication, New Delhi, India.
7. Mathew, J. Manimala (2009), *Entrepreneurship Theory at the Crossroads*, Wiley India,
8. N. Venkat Rao (2011), *Entrepreneurship and good governance*, Students Helpline Publishing
9. Tabarrok (2009), *Entrepreneurial Economics*, Oxford University Press, New Delhi.
10. Jain (2009), *Hand Book of Entrepreneurs, Oxford University* Press, New Delhi.
11. Dr. S.S. Khanka, *Entrepreneurial Development*, - S. Chand & Co. Ltd., Ram Nagar,
12. Raj Shankar, *Entrepreneurship Theory and practice*,- Vijay Nicole and Tata McGraw Hill,
13. *A. Sahay, M.S.Chhikara, New Vistas of Entrepreneurship: Challenges & Opportunities*,

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Business Simulation Laboratory

		II MBA III Semester :						
Course Code	Category	Hours/Week			Credits	Maximum Marks		
17CE00303	Foundation	L	T	P	C	Internal	External	Total
		-	-	3	2	40	60	100
Contact classes:Nil	Tutorial Classes:Nil	Practical classes: 42				Total classes:42		

Course Description:

This course presents the knowledge of various MS office softwares like Excel sheets and usage of the computer tools etc. further it also gives the knowledge of using Statistical tools and techniques.

Course Objectives:

- ✓ The main aim is to understand statistical tools learning in ms-excel and spss.
- ✓ The learning outcome is that the students will be able to:
  a) analyse the data to draw inference for decision making.
  b) understand the application of statistical measures of central tendency.
  c) understand the application of anova, analyse trends and test hypotheses

Unit - I	Introduction MS Excel – Working with data	Classes: 10

Customizing the quick access toolbar - Creating and using templates - Entering, editing, copy, cut, paste, paste special - Formatting data - Using the right mouse click – Saving - Page setup and printing..

Unit - II	Excel Lessons	Classes: 15

Using headers and footers -. Manipulating data:.- Using data names and ranges - Filters - Sort - .Validation lists . . Data from external sources - Using and formatting tables -. Basic formulas -. Use of functions.- Data analysis using charts and graphs - Managing, inserting, and copying worksheets -. Securing the excel document (protect cells and workbook).

Unit - III	Advanced Excel Lessons	Classes: 15

Advanced formulas and functions - Advanced worksheet features - Advanced data analysis using - Pivottables - Pivot charts

Unit - IV	Over view of SPSS and Simulation of frequency distribution	Classes: 15

Uses - Data analysis - Making students/learn familiar with main menu and other features of spss package – Binomial - Poisson – Exponential.- Weibull - Normal distributions.

Unit - V	Statistical tools for execution using excel	Classes: 10

Tabulation - Bar diagram - Multiple bar diagram - Pie diagram - measure of central tendency - Mean Median -. Mode.- Measure of dispersion – Variance - Standard deviation -. Coefficient of-variation Correlation - Regression lines - T- test - F-test - Anova one way classification, - Chi square test - Independence of attributes.

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AI TOOLS, TECHNIQUES AND APPLICATIONS LABORATORY

B.Tech III Year II Semester								
Course Code	Category	Hours/ Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA05511	Core	0	0	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 48				Total Classes: 48		

COURSE OBJECTIVES:

The course should enable the students to:

1. Implement the basic knowledge of Study of Prolog.
2. Construct Problem solving Techniques.
3. Apply Different Search Techniques.
4. Practice various Traversal Problems.

LISTOF EXPERIMENTS

Exp. 1	Study of PROLOG. Write the following programs using PROLOG.
Exp. 2	Program to show how integer variable is used in prolog program.
Exp. 3	Write a program to solve 8 queens problem
Exp. 4	Program to add two numbers
Exp. 5	Program to delete an integer from the list .
Exp. 6	Solve any problem using depth first search.
Exp. 7	Program to categorize animal characteristics.
Exp. 8	Program to show concept of list.
Exp. 9	Solve any problem using best first search.
Exp. 10	Program to read address of a person using compound variable
Exp. 11	Program to demonstrate family relationship
Exp. 12	Solve 8-puzzle problem using best first search
Exp. 13	Program of fun to show concept of cut operator .
Exp. 14	Solve Robot (traversal) problem using means End Analysis.
Exp. 15	Program to count number of elements in a list .
Exp. 16	Solve traveling salesman problem.
Exp. 17	Program to reverse the list.
Exp. 18	Program to append an integer into the list.
Exp. 19	Program to replace an integer from the list.

Equipment/Software required for Laboratories: PROLOG

Reference Books:

1. Artificial Intelligence: A Modern Approach,. Russell & Norvig. 1995, Prentice Hall.
2. Artificial Intelligence, Elain Rich and Kevin Knight, 1991, TMH.
3. Artificial Intelligence-A modern approach, Staurt Russel and peter norvig, 1998, PHI.
4. Artificial intelligence, Patrick Henry Winston:, 1992, Addition Wesley 3 Ed.,

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Demonstrate the knowledge on prolog Programming and Analyze the PROLOG programming through SWI

CO2: Analyze the various problem solving techniques

CO3: Design and develop prolog program to add variables

CO4: Conduct investigation and test the functionality on implementation of prolog programming

CO5: Select appropriate techniques or algorithm tool kit to analyze and implement DFS,BFS

CO6: Follow **ethical** principles in designing and programming AI problems.

CO7: Do experiments effectively as an **individual** and as a member in a **group**.

CO8: **Communicate** verbally and in written form, the understandings about the programming.

CO9: Continue updating their skill related to implementation for various applications during

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SOFT SKILLS

B.Tech III Year II Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA052601	Elective	3	0	0	3	3	70	100
Contact Classes: 48	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 48		

COURSE OBJECTIVES:

1. To enhance employability skills through Group discussions and Mock Interviews.
2. To enable the students collectively in organizational skills.
3. To train the students to meet communicative competence.

UNIT-I	VERBAL ABILITY & COMMUNICATION SKILLS	Classes: 10

Communication: Verbal and Non-Verbal Communication, Barriers to effective Communication, Types of Communication - Oral, Aural, Writing and Reading

Grammar:- usage of Articles, Preposition, Verb, Tenses, Adverbs, If-Conditionals, Adjectives, Degrees of Comparison, Conjunction, Simple, Compound & Complex, Active & Passive voice, Reported Speech and Common Errors in English.

Word Power: - Synonyms, Antonyms, Affixes, One word substitutions and Idioms & Phrases.

UNIT-II	EMPLOYABILITY SKILLS	Classes: 10

COMPREHENSIONS:-Listening Comprehension, Reading Comprehension, Technical Reports, Resume Writing, E-mail Writing and Essay Writing

SVAR (Accent): Phonetics, Inflections, Stress and Intonation.

GROUP ACTIVITIES: Just-A-Minute (JAM), Debate, Group Discussion and Interview Skills

UNIT-III	Arithmetic III	Classes: 10

Number System, Averages, Percentages, Simple Interest & Compound Interest, Problems on Ages, Profit & Loss, Probability, Permutation & Combinations, Logarithms

UNIT-IV	Arithmetic IV	Classes: 09

Time & work, Time and Distance, Allegation and Mixtures, Mesuration2D, Mensuration3D, Data Interpretation.

UNIT- V	Reasoning II	Classes: 09

Analogy, Classification, Number series, Coding Decoding, Direction & Distance, Blood Relation. Critical Reasoning – Syllogism, Statements & Assumptions, Statements & Arguments, Data sufficiency, Seating Arrangement, Puzzles.

Text Books:

1. Rizvi M. Ashraf Effective Technical Communication, Tata McGraw-Hill Publishing Company Limited, 2006.
2. R.S Aggarwal, Quantitative Aptitude for Competitive Examinations, S. Chand Publications
3. R.S.Aggarwal, Verbal and Non Verbal Reasoning, S.Chand Publications.

Reference Books:

1. Bovee Courtland and Throill John, Business Communication Essentials: A skills-Based Approach to Vital Business English. Pearson Education Inc., 2011. 106 CS-Engg&Tech-SRM-2013
2. Dhanavel, S.P., English & Communication Skills for Students of Science and Engineering. Orient Black Swan, 2009.

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Apply grammatical structures to formulate correct sentences and communicate fluently

CO2: Analyze the correct production of sounds and LSRW skills to perform any situation in their career.

CO3: Exhibit the knowledge on Simple Arithmetic Calculations for real time Applications

CO4: Investigate the Complex Arithmetic Operations in real time Applications

CO5: Analyze on Reasoning, Analytical and Logical thinking methods.

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AI TOOLS, TECHNIQUES AND APPLICATIONS

B.Tech III Year II Semester								
Course Code	Category	Hours / Week			Credit	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA05505	Core	2	1	0	3	30	70	100
Contact Classes: 32	Tutorial Classes: 16	Practical Classes: Nil				Total Classes: 48		

COURSE OBJECTIVES:

The course should enable the students to:

1. Study the concepts of artificial intelligence in problem solving.
2. Explore the methods of agents and reasoning patterns.
3. Introduce the concepts of knowledge representation and learning.
4. IV. Analyze and solve statistical learning methods using AI techniques.

UNIT-I	INTRODUCTION	Classes:10

The AI problems, what is an AI technique, the levels of the model, the underlying assumption, problems; Problem spaces and search: Defining the problem as a state space search, production systems, problem characteristics and production system characteristics; Problem-solving: Uninformed search strategies; Informed search strategies: Heuristic search strategies, local search algorithms and optimization problems, backtracking search for CSP.

UNIT-II	KNOWLEDGE AND REASONING	Classes: 10

Logical agents, knowledge-based agents, the wumpus world and propositional logic, reasoning patterns in propositional logic and agents based on propositional logic; First-order logic: Syntax and semantic of first-order logic, knowledge engineering in first-order logic; Inference in first-order logic: Propositional vs first-order inference, unification and lifting, forward chaining, backward chaining, resolution.

UNIT-III	KNOWLEDGE REPRESENTATION	Classes: 09

Categories and objects, actions, situations and events, mental events and mental objects: The internet shopping world, truth maintenance systems. Uncertain knowledge and reasoning: Uncertainty, acting under uncertainty, basic probability notation, the axioms of probability, inference using full joint distributions, independence, Baye's rule and its use.

UNIT-IV	LEARNING	Classes: 10

Learning from observations, forms of learning, Inductive learning: Learning decision trees, ensemble learning; Why learning works: Computational learning theory.

UNIT- V	STATISTICAL LEARNING METHODS	Classes: 09

Knowledge in learning: A logical formulation of learning, knowledge in learning; Neural networks; Fuzzy logic systems: Introduction, crisp sets, fuzzy sets, some fuzzy terminology, fuzzy logic control, sugeno style of fuzzy inference processing, fuzzy hedges, α cut threshold.

Text Books:

1. Stuart J. Russell, Peter Norving, "Artificial Intelligence A Modern Approach", Pearson Education, 3rd Edition, 2013.
2. Elaine Rich, Kevin Knight , Shiva Shankar B Nair, "Artificial Intelligence", Tata McGraw Hill, 3 rd Edition, 2008.

Reference Books:

1. George F. Luther, "Artificial Intelligence: Structures and Strategies for Complex Problem Solving", Pearson Education, 5th Edition, 2005.
2. Eugene Charniak , Drew McDermott, "Introduction to Artificial Intelligence", Addison – Wesley Series in Computer Science, Revised Edition,1985.

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INTERNET OF THINGS (IOT)

B.Tech III Year II Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA05604	Core	3	0	0	3	30	70	100
Contact Classes: 48	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 48		

COURSE OBJECTIVES:

The course should enable the students to:

1. Introduce the fundamental concepts of IoT and physical computing.
2. Expose the student to a variety of embedded boards and IoT Platforms.
3. Create a basic understanding of the communication protocols in IoT communications.
4. Familiarize the student with application program interfaces for IoT.
5. Enable students to create simple IoT applications.

UNIT-I — **Classes: 09**

Overview of IoT: The Internet of Things: An Overview, The Flavour of the Internet of Things, The "Internet" of "Things", The Technology of the Internet of Things, Enchanted Objects, Who is Making the Internet of Things? Design Principles for Connected Devices: Calm and Ambient Technology, Privacy, Web Thinking for Connected Devices, Affordances. Prototyping: Sketching, Familiarity, Costs Vs Ease of Prototyping, Prototypes and Production, Open source Vs Close source, Tapping into the community.

UNIT-II — **Classes: 10**

Embedded Devices: Electronics, Embedded Computing Basics, Arduino, Raspberry Pi, Mobile phones and tablets, Plug Computing: Always-on Internet of Things.

UNIT-III — **Classes: 10**

Communication in the IoT: Internet Communications: An Overview, IP Addresses, MAC Addresses, TCP and UDP Ports, Application Layer Protocols Prototyping Online Components: Getting Started with an API, Writing a New API, Real-Time Reactions, Other Protocols Protocol.

UNIT-IV — **Classes: 10**

Business Models: A short history of business models, The business model canvas, Who is the business model for, Models, Funding an Internet of Things startup, Lean Startups. Manufacturing: What are you producing, Designing kits, Designing printed circuit boards.

UNIT- V — **Classes: 09**

Manufacturing continued: Manufacturing printed circuit boards, Mass-producing the case and other fixtures, Certification, Costs, Scaling up software. Ethics: Characterizing the Internet of Things, Privacy, Control, Environment, Solutions.

Text Books:

1. Internet of Things - A Hands-on Approach, Arshdeep Bahga and Vijay Madisetti, Universities Press, 2015, ISBN: 9788173719547 R16 B.TECH ECM.
2. Getting Started with Raspberry Pi, Matt Richardson & Shawn Wallace, O'Reilly (SPD), 2014, ISBN: 9789350239759.

Web References:

1. https://www.arduino.cc/
2. https://www.raspberrypi.org/

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Choose the sensors and actuators for an IoT application.
CO2: Select protocols for a specific IoT application.
CO3: Utilize the cloud platform and APIs for IoT applications.
CO4: Experiment with embedded boards for creating IoT prototypes.
CO5: Design a solution for a given IoT application.

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ADVANCE COMMUNICATIVE ENGLISH LABORATORY

B.Tech II Year II Semester

Course code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
20CA52401	Foundation	0	0	3	1.5	30	70	100
Contact Classes:Nil	Tutorial Classes: Nil	Practical Classes:48				Total Classes:48		

OBJECTIVES:

The course should enable the students to :

1. The course allows the students to use multi-media instruction for language development
2. To improve the students' fluency in English and enable them to listen the English spoken at normal conversational speed by educated English speakers and respond appropriately in different socio-cultural and Professional contexts.
3. Further, they would be required to communicate their ideas relevantly and coherently in writing and placing MNCs.

List of Topics

1. Syllables, stress & Intonation
2. Listening Skills
3. Report writing
4. Book review
5. Film review
6. Grooming
7. Non-verbal skills(Body Language)
8. Power Point Presentation(Ppt)
9. Group Discussion II
10. Time management
11. Stress management
12. Problem solving & Decision Making
13. Corporate Etiquettes
14. SWOT Analysis
15. Interview Skills II

Minimum Requirements for SOFT SKILLS Lab:

Soft Skills Laboratory shall have the following infra-structural facilities to accommodate at least 60 students in the lab:

1. Spacious room with appropriate acoustics.
2. Round Tables with movable chairs
3. Audio-visual aids
4. LCD Projector
5. Public Address system
6. P – IV Processor, Hard Disk – 80 GB, RAM–512 MB Minimum, Speed – 2.8 GHZ
7. T. V, a digital stereo & Camcorder
8. Headphones of High quality

Suggested Software:

1. **Walden Info tech: Advanced English Communication Skills Lab**
2. **K-VAN SOLUTIONS-Advanced English Language Communication Skills lab**
3. **DELTA's key to the Next Generation TOEFL Test: Advanced Skills Practice.**
4. **TOEFL & GRE**(KAPLAN, AARCO & BARRONS, USA, Cracking GRE by CLIFFS)
5. **Train2success.com**

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COMMUNICATIVE ENGLISH LABORATORY

B.Tech I Year I Semester

Course Code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
20CA52102	Foundation	0	0	3	1.5	30	70	100
Contact classes: 0	Tutorial Classes:0	Practical Classes:48				Total Classes:48		

COURSE OBJECTIVES:

The course should enable the

1. Students will be exposed to a variety of self instructional, learner friendly modes of language learning.
2. Students will learn better pronunciation through stress, intonation and rhythm.
3. Students will be trained to use language effectively to face interviews, group discussions, public speaking.
4. Students will be initiated into greater use of the computer in resume preparation, report writing, format making etc.

List of Topics

1. Phonetics
2. Reading comprehension
3. Describing objects/places/persons
4. Role Play or Conversational Practice
5. JAM
6. Etiquettes of Telephonic Communication
7. Information Transfer
8. Note Making and Note Taking
9. E-mail Writing
10. Group Discussions-1
11. Resume Writing
12. Debates
13. Oral Presentations
14. Poster Presentation
15. Interviews Skills-1

Minimum Requirements for ELCS Lab:

The English Language Lab shall have two parts:

1. Computer Assisted Language Learning (CALL) Lab: The Computer aided Language Lab for 60 students with 60 systems, one master console, LAN facility and English language software for self study by learners.
2. The Communication Skills Lab with movable chairs and audio-visual aids with a P.A. system, Projector, a digital stereo-audio & video system and camcorder etc.

System Requirement (Hardware component):

Computer network with LAN with minimum 60 multimedia systems with the following specifications:

i) P – IV Processor
   a) Speed – 2.8 GHZ
   b) RAM – 512 MB Minimum
   c) Hard Disk – 80 GB
ii) Headphones of High quality

Suggested Software:

1. Clarity Pronunciation Power – Part I (Sky Pronunciation)
2. Clarity Pronunciation Power – part II
3. Van Advanced Communication Skills
4. Walden InfoTech Software.
5. Orel
6. Young India Films

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C PROGRAMMING LANGUAGE

B.Tech I Year II Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA05101	Foundation	3	0	0	3	30	70	100
Contact Classes:48	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes:48		

COURSE OBJECTIVES:

1. To acquire problem solving skills.
2. To be able to develop flowcharts and algorithms for the given problem.
3. To learn how to write modular programs in C.
4. To enable them to use arrays, pointers, strings and structures in solving problems.

UNIT - I	INTRODUCTION	Classes:10

Introduction to C Language Elements, Variables, Data Types, Operators and Expressions, Constants, Declarations, Operators, Type Conversions, Operator Precedence and Order of Evaluation. Statements: Selection Statements, Iteration Statements, Jump statements: Break, Continue, go to.

UNIT - II	ARRAYS	Classes:10

Accessing Array Elements, Single & Multi Dimensional Arrays. Strings: Declaring, Initialization of a String, Reading and Writing Strings, String manipulation functions from the standard Library, String I/O Functions: gets(), puts().

UNIT - III	FUNCTIONS	Classes:10

Definition, Function Call- Call by Value, Storage Class Specifiers, Understanding the scope of Functions with its Types, the Return Statement, Recursion, Command Line Arguments.

UNIT - IV	POINTERS	Classes:9

Pointer Variables, Pointer Expressions, Pointers And Arrays, Pointers to Strings, Call by Reference, Dynamic Memory Allocation Functions, Problems with Pointers, Dangling pointers.

UNIT –V	STRUCTURES AND UNIONS	Classes:9

Accessing structure members, Array of structures, Passing Structures to Functions, Structure Pointers, Self Referential Structures, Structures within Structures, Bit Fields, Enumerations, Typedef.
Files handling in C, File oriented operations.

Text Books:

1. C Programming-A Problem Solving Approach, Forouzan, Gilberg, Cengage.

References:

1. The Complete Reference C, Fourth Edition, Herbert Schildt, McGraw-Hill Education.
2. Programming with C, Second Edition, Byron Gottfried, Schaum's outline, McGraw-Hill Education.
3. Computer Fundamentals and C programming, B. L Juneja, A Seth, Cengage Learning India.
4. Programming in C and Data Structures", Hanly, Koffman, Kamthane, Ananda Rao, Pearson.
5. Programming in ANSI C, 8/e , by E Balagurusamy
6. The C Programming Language" Second Edition, Brain W. Kernighan, Dennis M. Ritchie, Prentice Hall, India.

Web References

1. https://www.tutorialspoint.com/cprogramming/
2. www.studytonight.com/c/
3. fresh2refresh.com/c-programming/
4. www.cprogramming.com/tutorial/c/

E-Text Books:

1. bookboon.com/en/c-cpp-csharp-ebooks

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C PROGRAMMING LAB

B.Tech I Year II Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA05102	Foundation	0	0	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 48				Total Classes:48		

COURSE OBJECTIVES:

1. Learn C Programming language.
2. To make the student solve problems, implement algorithms using C language.
3. To write diversified solutions using C language.

LIST OF PROGRAMS

Week -1

Write C program to

a) Print the size of all data types.
b) Find the Sum of three numbers
c) Exchange (swap) of two numbers by using third variable.
d) Exchange (swap) of two numbers without using third variable.

Week - 2

a) Develop a calculator to convert time, distance, area, volume and temperature from one unit to another.
b) Write a C program to find the Priority and associativity of operators using expressions. Take the expressions with different operators.
c) Write a C program to swap two numbers using bitwise operators.

Week - 3

a) Write a C program to find whether the given integer is odd or even.
b) Write a C program to find the Maximum of three numbers.
c) Write a C program to print 'hello world' without using semicolon.
d) Write a C program to find whether the given number is odd or even using bitwise operator.
e) Write a C program to find the maximum of two numbers using Conditional operator.
f) Write a program which takes two integers and one arithmetic operator from the user, and performs the operation and then prints the result by using **switch-case**.(Operators : +, -, *, /, %)

Week -4

a) Write a C program to generate the required multiplication table.
b) Write a C program to find the Factorial of a given integer.
c) Write a C program to compute x power of n (x^n) without using built in functions.
d) Write a C program to check whether the given integer is prime or not.
e) Write a C program to find GCD

Week - 5

a) Write a C program to find the sum of the digits of an integer.
b) Write a C program to find whether the given integer is a Palindrome or not.
c) Write a C program to generate Fibonacci numbers in the given range.

Week - 6

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a) Write a C program to print the following pattern.

1
2 2
3 3 3

b) Print multiplication tables up to the given table.

c) Write a C program to print series of prime numbers in the given range.

Week - 7

a) Write a C program to check whether the given integer is strong number or not.

b) Write a C program to evaluate the sum of the following series up to 'n' terms

$e^x = 1 + x + x^2/2! + x^3/3! + x^4/4! +$ --------

Week - 8

a) Compute the maximum, minimum and average of N numbers.

b) Write a C program to find the sum of positive and negative numbers in a given set(Array) of numbers.

c) Write a program to implement linear search technique

d) Write a C program to read two matrices and find

i) Sum. ii) Product and display the result in the matrix form.

Week -9

a) Write a C program to read a matrix and perform the following operations

i) Find the sum of Diagonal Elements of a matrix.

ii) Print Transpose of a matrix.

iii) Print sum of even and odd numbers in a given matrix.

Week - 10

a) Write a C program to read two strings and perform the following operations without using built-in string library functions.

i) String length determination.

ii) Compare Two Strings.

iii) Concatenate Two Strings.

iv) String reversing

v) Determining whether a string is a palindrome or not

b) Write a C program to accept a line of characters and print the number of Vowels, Consonants, blank spaces, digits and special characters.

c) Write a C program to read a set of strings and sort them in alphabetical order.

Week -11

a) Write a C program to illustrate the following types of functions

i) Function with no arguments and no return values

ii) Function with arguments and no return value

iii) Function without arguments and with return value

iv) Function with arguments and with return value

Week - 12

a) Write a C program to exchange two numbers using pointers.

b) Write a program to print the elements of an array in reverse order using pointers.

Week - 13

a) Write a C program to express a four digit number in words. For example 1546 should be written as one thousand five hundred and forty six

b) Write a C program using recursion for finding Factorial of a number

c) Calculate the greatest common divisor using recursion for two numbers as specified by

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COMMUNICATIVE ENGLISH

B.Tech I Year I Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
20CA52101	Foundation	3	0	0	3	30	70	100
Contact Classes: 48	Tutorial Classes:Nil	Practical Classes: Nil				Total Classes: 48		

COURSE OBJECTIVES:

1. Facilitate effective listening skills for better comprehension of academic lectures and English spoken by native speakers.
2. Focus on appropriate reading strategies for comprehension of various academic texts and authentic materials.
3. Help improve speaking skills through participation in activities such as role plays, discussions and structured talks/oral presentations.
4. Impart effective strategies for good writing and demonstrate the same in summarizing, writing well organized essays, record and report useful information.
5. Provide knowledge of grammatical structures and vocabulary and encourage their appropriate use in speech and writing.

UNIT-I	Lesson: On the Conduct of Life: William Hazlitt	Classes:10

Listening: Identifying the topic, the context and specific pieces of information by listening to short audio texts and answering a series of questions.
Speaking: Asking and answering general questions on familiar topics such as home, family, work, studies and interests; introducing oneself and others.
Reading: Skimming to get the main idea of a text; scanning to look for specific pieces of information.
Reading for Writing: Beginnings and endings of paragraphs - introducing the topic, summarizing the main idea and/or providing a transition to the next paragraph.
Grammar and Vocabulary: Content words and function words; word forms: verbs, nouns, adjectives and adverbs; nouns: countables and uncountables; singular and plural; basic sentence structures; simple question form - wh-questions; word order in sentences.

Learning Outcomes
At the end of the module, the learners will be able to

- Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information
- Ask and answer general questions on familiar topics and introduce oneself/others
- Employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information
- Recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs
- Form sentences using proper grammatical structures and correct word forms

UNIT-II	Lesson: The Brook: Alfred Tennyson	Classes:10

Listening: Answering a series of questions about main idea and supporting ideas after listening to audio texts.
Speaking: Discussion in pairs/ small groups on specific topics followed by short structured talks.
Reading: Identifying sequence of ideas; recognizing verbal techniques that help to link the ideas in a paragraph together.
Writing: Paragraph writing (specific topics) using suitable cohesive devices; mechanics of writing - punctuation, capital letters.
Grammar and Vocabulary: Cohesive devices - linkers, sign posts and transition signals; use of articles and zero article; prepositions.
Learning Outcomes

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At the end of the module, the learners will be able to

- Comprehend short talks on general topics
- Participate in informal discussions and speak clearly on a specific topic using suitable discourse markers
- Understand the use of cohesive devices for better reading comprehension
- Write well structured paragraphs on specific topics
- Identify basic errors of grammar/ usage and make necessary corrections in short texts

UNIT-III	Lesson: The Death Trap: Saki	Classes:10

Listening: Listening for global comprehension and summarizing what is listened to.
Speaking: Discussing specific topics in pairs or small groups and reporting what is discussed **Reading:** Reading a text in detail by making basic inferences -recognizing and interpreting specific context clues; strategies to use text clues for comprehension.
Writing: Summarizing - identifying main idea/s and rephrasing what is read; avoiding redundancies and repetitions.
Grammar and Vocabulary: Verbs - tenses; subject-verb agreement; direct and indirect speech, reporting verbs for academic purposes.
Learning Outcomes
At the end of the module, the learners will be able to

- Comprehend short talks and summarize the content with clarity and precision
- Participate in informal discussions and report what is discussed
- Infer meanings of unfamiliar words using contextual clues
- Write summaries based on global comprehension of reading/listening texts
- Use correct tense forms, appropriate structures and a range of reporting verbs in speech and writing

UNIT-IV	Lesson: Innovation: Muhammad Yunus	Classes:09

Listening: Making predictions while listening to conversations/ transactional dialogues without video; listening with video.
Speaking: Role plays for practice of conversational English in academic contexts (formal and informal) - asking for and giving information/directions.
Reading: Studying the use of graphic elements in texts to convey information, reveal 46 trends/patterns/relationships, communicate processes or display complicated data.
Writing: Letter Writing: Official Letters/Report Writing

Grammar and Vocabulary: Quantifying expressions - adjectives and adverbs; comparing and contrasting; Voice - Active & Passive Voice
Learning Outcomes
At the end of the module, the learners will be able to

- Infer and predict about content of spoken discourse
- Understand verbal and non-verbal features of communication and hold formal/informal conversations
- Interpret graphic elements used in academic texts
- Produce a coherent paragraph interpreting a figure/graph/chart/table
- Use language appropriate for description and interpretation of graphical elements

UNIT-V	Lesson: Politics and the English Language: George Orwell	Classes:09

Listening: Identifying key terms, understanding concepts and answering a series of relevant questions that test comprehension.
Speaking: Formal oral presentations on topics from academic contexts - without the use of PPT slides.
Reading: Reading for comprehension.
Writing: Writing structured essays on specific topics using suitable claims and evidences
Grammar and Vocabulary: Editing short texts –identifying and correcting common errors in grammar and usage (articles, prepositions, tenses, subject verb agreement)
Learning Outcomes
At the end of the module, the learners will be able to

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- Take notes while listening to a talk/lecture and make use of them to answer questions
- Make formal oral presentations using effective strategies
- Comprehend, discuss and respond to academic texts orally and in writing
- Produce a well-organized essay with adequate support and detail
- Edit short texts by correcting common errors

Text Books:

1. Language and Life: A Skills Approach – 1 Edition 2019, Orient Black Swan

Web References:

1. www.englishclub.com
2. www.easyworldofenglish.com
3. www.languageguide.org/english/
4. www.bbc.co.uk/learningenglish
5. www.eslpod.com/index.html
6. www.myenglishpages.com

Reference Books:

1. Bailey, Stephen. Academic writing: A handbook for international students. Routledge, 2014.
2. Chase, Becky Tarver. Pathways: Listening, Speaking and Critical Thinking. Heinley ELT; 2nd Edition, 2018.
3. Raymond Murphy's English Grammar in Use Fourth Edition (2012) E-book.
4. Hewings, Martin. Cambridge Academic English (B2). CUP, 2012.
5. Oxford Learners Dictionary, 12th Edition, 2011.
6. Norman Lewis Word Power Made Easy- The Complete Handbook for Building a Superior Vocabulary (2014).
7. Speed Reading with the Right Brain: Learn to Read Ideas Instead of Just Words by David Butler.

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Demonstrate to overcome the barriers in communication process using non-verbal language suitable to different situations in professional life to become effective technical communicator.

CO2: Apply the knowledge on social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information.

CO3: Exhibit the knowledge on cohesive devices for better conversation in informal discussions and speak clearly on a specific topic using suitable discourse markers.

CO4: Apply the concepts of Entrepreneurship Skills and Analyze discourse markers to speak clearly on a specific topic in informal discussions and create coherent paragraph writing.

CO5: Apply the Knowledge to recognize the need of ability to engage in independent and life-long learning communication effectively in English over speech.

CO-PO/PSO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	-	-	-	-	-	-	-	2	3	-	-	3	3
CO2	3	2	-	-	-	-	-	-	3	3	-	-	3	3
CO3	3	-	-	-	-	-	-	-	2	3	-	-	3	3
CO4	3	2	-	-	-	-	-	-	3	3	-	-	3	3
CO5	3	-	-	-	-	-	-	-	-	3	-	2	3	3
CO	**3**	**2**	-	-	-	-	-	-	**2.5**	**3**	-	**2**	3	3

CHADALAWADA RAMANAMMA ENGINEERING COLLEGE AUTONOMOUS TIRUPATI

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C PROGRAMMING LANGUAGE

B.Tech I Year II Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA05101	Foundation	3	0	0	3	30	70	100
Contact Classes:48	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes:48		

COURSE OBJECTIVES:

1. To acquire problem solving skills.
2. To be able to develop flowcharts and algorithms for the given problem.
3. To learn how to write modular programs in C.
4. To enable them to use arrays, pointers, strings and structures in solving problems.

UNIT - I	INTRODUCTION	Classes:10

Introduction to C Language Elements, Variables, Data Types, Operators and Expressions, Constants, Declarations, Operators, Type Conversions, Operator Precedence and Order of Evaluation. Statements: Selection Statements, Iteration Statements, Jump statements: Break, Continue, go to.

UNIT - II	ARRAYS	Classes:10

Accessing Array Elements, Single & Multi Dimensional Arrays. Strings: Declaring, Initialization of a String, Reading and Writing Strings, String manipulation functions from the standard Library, String I/O Functions: gets(), puts().

UNIT - III	FUNCTIONS	Classes:10

Definition, Function Call- Call by Value, Storage Class Specifiers, Understanding the scope of Functions with its Types, the Return Statement, Recursion, Command Line Arguments.

UNIT - IV	POINTERS	Classes:9

Pointer Variables, Pointer Expressions, Pointers And Arrays, Pointers to Strings, Call by Reference, Dynamic Memory Allocation Functions, Problems with Pointers, Dangling pointers.

UNIT –V	STRUCTURES AND UNIONS	Classes:9

Accessing structure members, Array of structures, Passing Structures to Functions, Structure Pointers, Self Referential Structures, Structures within Structures, Bit Fields, Enumerations, Typedef.
Files handling in C, File oriented operations.

Text Books:

1. C Programming-A Problem Solving Approach, Forouzan, Gilberg, Cengage.

References:

1. The Complete Reference C, Fourth Edition, Herbert Schildt, McGraw-Hill Education.
2. Programming with C, Second Edition, Byron Gottfried, Schaum's outline, McGraw-Hill Education.
3. Computer Fundamentals and C programming, B. L Juneja, A Seth, Cengage Learning India.
4. Programming in C and Data Structures", Hanly, Koffman, Kamthane, Ananda Rao, Pearson.
5. Programming in ANSI C, 8/e , by E Balagurusamy
6. The C Programming Language" Second Edition, Brain W. Kernighan, Dennis M. Ritchie, Prentice Hall, India.

Web References

1. https://www.tutorialspoint.com/cprogramming/
2. www.studytonight.com/c/
3. freshrefresh.com/c-programming/
4. www.cprogramming.com/tutorial/c/

E-Text Books:

1. bookboon.com/en/c-cpp-csharp-ebooks

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C PROGRAMMING LAB								
B.Tech I Year II Semester								
Course Code	**Category**	**Hours/Week**			**Credits**	**Maximum Marks**		
		L	**T**	**P**	**C**	**CIA**	**SEE**	**Total**
20CA05102	**Foundation**	**0**	**0**	**3**	**1.5**	**30**	**70**	**100**
Contact Classes: Nil	**Tutorial Classes: Nil**	**Practical Classes: 48**				**Total Classes:48**		

COURSE OBJECTIVES:

1. Learn C Programming language.
2. To make the student solve problems, implement algorithms using C language.
3. To write diversified solutions using C language.

LIST OF PROGRAMS

Week -1

Write C program to

a) Print the size of all data types.
b) Find the Sum of three numbers
c) Exchange (swap) of two numbers by using third variable.
d) Exchange (swap) of two numbers without using third variable.

Week - 2

a) Develop a calculator to convert time, distance, area, volume and temperature from one unit to another.
b) Write a C program to find the Priority and associativity of operators using expressions. Take the expressions with different operators.
c) Write a C program to swap two numbers using bitwise operators.

Week - 3

a) Write a C program to find whether the given integer is odd or even.
b) Write a C program to find the Maximum of three numbers.
c) Write a C program to print 'hello world' without using semicolon.
d) Write a C program to find whether the given number is odd or even using bitwise operator.
e) Write a C program to find the maximum of two numbers using Conditional operator.
f) Write a program which takes two integers and one arithmetic operator from the user, and performs the operation and then prints the result by using **switch-case**.(Operators : +, -, *, /, %)

Week -4

a) Write a C program to generate the required multiplication table.
b) Write a C program to find the Factorial of a given integer.
c) Write a C program to compute x power of n (x^n) without using built in functions.
d) Write a C program to check whether the given integer is prime or not.
e) Write a C program to find GCD

Week - 5

a) Write a C program to find the sum of the digits of an integer.
b) Write a C program to find whether the given integer is a Palindrome or not.
c) Write a C program to generate Fibonacci numbers in the given range.

Week - 6

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a) Write a C program to print the following pattern.

1
2 2
3 3 3

b) Print multiplication tables up to the given table.

c) Write a C program to print series of prime numbers in the given range.

Week - 7

a) Write a C program to check whether the given integer is strong number or not.

b) Write a C program to evaluate the sum of the following series up to 'n' terms

$e^x = 1 + x + x^2/2! + x^3/3! + x^4/4! +$ --------

Week - 8

a) Compute the maximum, minimum and average of N numbers.

b) Write a C program to find the sum of positive and negative numbers in a given set(Array) of numbers.

c) Write a program to implement linear search technique

d) Write a C program to read two matrices and find

i) Sum. ii) Product and display the result in the matrix form.

Week -9

a) Write a C program to read a matrix and perform the following operations

i) Find the sum of Diagonal Elements of a matrix.

ii) Print Transpose of a matrix.

iii) Print sum of even and odd numbers in a given matrix.

Week - 10

a) Write a C program to read two strings and perform the following operations without using built-in string library functions.

i) String length determination.

ii) Compare Two Strings.

iii) Concatenate Two Strings.

iv) String reversing

v) Determining whether a string is a palindrome or not

b) Write a C program to accept a line of characters and print the number of Vowels, Consonants, blank spaces, digits and special characters.

c) Write a C program to read a set of strings and sort them in alphabetical order.

Week -11

a) Write a C program to illustrate the following types of functions

i) Function with no arguments and no return values

ii) Function with arguments and no return value

iii) Function without arguments and with return value

iv) Function with arguments and with return value

Week - 12

a) Write a C program to exchange two numbers using pointers.

b) Write a program to print the elements of an array in reverse order using pointers.

Week - 13

a) Write a C program to express a four digit number in words. For example 1546 should be written as one thousand five hundred and forty six

b) Write a C program using recursion for finding Factorial of a number

c) Calculate the greatest common divisor using recursion for two numbers as specified by

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COMMUNICATIVE ENGLISH LABORATORY

B.Tech I Year I Semester

Course Code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
20CA52102	Foundation	0	0	3	1.5	30	70	100
Contact classes: 0	Tutorial Classes:0	Practical Classes:48				Total Classes:48		

COURSE OBJECTIVES:

The course should enable the

1. Students will be exposed to a variety of self instructional, learner friendly modes of language learning.
2. Students will learn better pronunciation through stress, intonation and rhythm.
3. Students will be trained to use language effectively to face interviews, group discussions, public speaking.
4. Students will be initiated into greater use of the computer in resume preparation, report writing, format making etc.

List of Topics

1. Phonetics
2. Reading comprehension
3. Describing objects/places/persons
4. Role Play or Conversational Practice
5. JAM
6. Etiquettes of Telephonic Communication
7. Information Transfer
8. Note Making and Note Taking
9. E-mail Writing
10. Group Discussions-I
11. Resume Writing
12. Debates
13. Oral Presentations
14. Poster Presentation
15. Interviews Skills-I

Minimum Requirements for ELCS Lab:

The English Language Lab shall have two parts:

1. Computer Assisted Language Learning (CALL) Lab: The Computer aided Language Lab for 60 students with 60 systems, one master console, LAN facility and English language software for self study by learners.
2. The Communication Skills Lab with movable chairs and audio-visual aids with a P.A. system, Projector, a digital stereo-audio & video system and camcorder etc.

System Requirement (Hardware component):

Computer network with LAN with minimum 60 multimedia systems with the following specifications:

i) P – IV Processor
   a) Speed – 2.8 GHZ
   b) RAM – 512 MB Minimum
   c) Hard Disk – 80 GB
ii) Headphones of High quality

Suggested Software:

1. Clarity Pronunciation Power – Part I (Sky Pronunciation)
2. Clarity Pronunciation Power – part II
3. K-Van Advanced Communication Skills
4. Walden InfoTech Software.
5. Orel
6. Young India Films

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C PROGRAMMING LAB

B.Tech I Year II Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA05102	Foundation	0	0	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 48				Total Classes:48		

COURSE OBJECTIVES:

1. Learn C Programming language.
2. To make the student solve problems, implement algorithms using C language.
3. To write diversified solutions using C language.

LIST OF PROGRAMS

Week -I

Write C program to

a) Print the size of all data types.
b) Find the Sum of three numbers
c) Exchange (swap) of two numbers by using third variable.
d) Exchange (swap) of two numbers without using third variable.

Week - 2

a) Develop a calculator to convert time, distance, area, volume and temperature from one unit to another.
b) Write a C program to find the Priority and associativity of operators using expressions. Take the expressions with different operators.
c) Write a C program to swap two numbers using bitwise operators.

Week - 3

a) Write a C program to find whether the given integer is odd or even.
b) Write a C program to find the Maximum of three numbers.
c) Write a C program to print 'hello world' without using semicolon.
d) Write a C program to find whether the given number is odd or even using bitwise operator.
e) Write a C program to find the maximum of two numbers using Conditional operator.
f) Write a program which takes two integers and one arithmetic operator from the user, and performs the operation and then prints the result by using **switch-case**.(Operators : +, -, *, /, %)

Week -4

a) Write a C program to generate the required multiplication table.
b) Write a C program to find the Factorial of a given integer.
c) Write a C program to compute x power of n (x^n) without using built in functions.
d) Write a C program to check whether the given integer is prime or not.
e) Write a C program to find GCD

Week - 5

a) Write a C program to find the sum of the digits of an integer.
b) Write a C program to find whether the given integer is a Palindrome or not.
c) Write a C program to generate Fibonacci numbers in the given range.

Week - 6

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a) Write a C program to print the following pattern. 1 2 2 3 3 3 b) Print multiplication tables up to the given table. c) Write a C program to print series of prime numbers in the given range.	
Week - 7	
a) Write a C program to check whether the given integer is strong number or not. b) Write a C program to evaluate the sum of the following series up to 'n' terms $e^x = 1 + x + x^2/2! + x^3/3! + x^4/4! +$ --------	
Week - 8	
a) Compute the maximum, minimum and average of N numbers. b) Write a C program to find the sum of positive and negative numbers in a given set(Array) of numbers. c) Write a program to implement linear search technique d) Write a C program to read two matrices and find i) Sum. ii) Product and display the result in the matrix form.	
Week -9	
a) Write a C program to read a matrix and perform the following operations i) Find the sum of Diagonal Elements of a matrix. ii) Print Transpose of a matrix. iii) Print sum of even and odd numbers in a given matrix.	
Week - 10	
a) Write a C program to read two strings and perform the following operations without using built-in string library functions. i) String length determination. ii) Compare Two Strings. iii) Concatenate Two Strings. iv) String reversing v) Determining whether a string is a palindrome or not b) Write a C program to accept a line of characters and print the number of Vowels, Consonants, blank spaces, digits and special characters. c) Write a C program to read a set of strings and sort them in alphabetical order.	
Week -11	
a) Write a C program to illustrate the following types of functions i) Function with no arguments and no return values ii) Function with arguments and no return value iii) Function without arguments and with return value iv) Function with arguments and with return value	
Week - 12	
a) Write a C program to exchange two numbers using pointers. b) Write a program to print the elements of an array in reverse order using pointers.	
Week - 13	
a) Write a C program to express a four digit number in words. For example 1546 should be written as one thousand five hundred and forty six b) Write a C program using recursion for finding Factorial of a number c) Calculate the greatest common divisor using recursion for two numbers as specified by.	

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COMMUNICATIVE ENGLISH

B.Tech I Year I Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
20CA52101	Foundation	3	0	0	3	30	70	100
Contact Classes: 48	Tutorial Classes:Nil	Practical Classes: Nil				Total Classes: 48		

COURSE OBJECTIVES:

1. Facilitate effective listening skills for better comprehension of academic lectures and English spoken by native speakers.
2. Focus on appropriate reading strategies for comprehension of various academic texts and authentic materials.
3. Help improve speaking skills through participation in activities such as role plays, discussions and structured talks/oral presentations.
4. Impart effective strategies for good writing and demonstrate the same in summarizing, writing well organized essays, record and report useful information.
5. Provide knowledge of grammatical structures and vocabulary and encourage their appropriate use in speech and writing.

UNIT-I	Lesson: On the Conduct of Life: William Hazlitt	Classes:10

Listening: Identifying the topic, the context and specific pieces of information by listening to short audio texts and answering a series of questions.
Speaking: Asking and answering general questions on familiar topics such as home, family, work, studies and interests; introducing oneself and others.
Reading: Skimming to get the main idea of a text; scanning to look for specific pieces of information.
Reading for Writing: Beginnings and endings of paragraphs - introducing the topic, summarizing the main idea and/or providing a transition to the next paragraph.
Grammar and Vocabulary: Content words and function words; word forms: verbs, nouns, adjectives and adverbs; nouns: countables and uncountables; singular and plural; basic sentence structures; simple question form - wh-questions; word order in sentences.

Learning Outcomes
At the end of the module, the learners will be able to

- Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information
- Ask and answer general questions on familiar topics and introduce oneself/others
- Employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information
- Recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs
- Form sentences using proper grammatical structures and correct word forms

UNIT-II	Lesson: The Brook: Alfred Tennyson	Classes:10

Listening: Answering a series of questions about main idea and supporting ideas after listening to audio texts.
Speaking: Discussion in pairs/ small groups on specific topics followed by short structured talks.
Reading: Identifying sequence of ideas; recognizing verbal techniques that help to link the ideas in a paragraph together.
Writing: Paragraph writing (specific topics) using suitable cohesive devices; mechanics of writing - punctuation, capital letters.
Grammar and Vocabulary: Cohesive devices - linkers, sign posts and transition signals; use of articles and zero article; prepositions.
Learning Outcomes

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At the end of the module, the learners will be able to

- Comprehend short talks on general topics
- Participate in informal discussions and speak clearly on a specific topic using suitable discourse markers
- Understand the use of cohesive devices for better reading comprehension
- Write well structured paragraphs on specific topics
- Identify basic errors of grammar/ usage and make necessary corrections in short texts

UNIT-III	Lesson: The Death Trap: Saki	Classes:10

Listening: Listening for global comprehension and summarizing what is listened to.
Speaking: Discussing specific topics in pairs or small groups and reporting what is discussed **Reading:** Reading a text in detail by making basic inferences -recognizing and interpreting specific context clues; strategies to use text clues for comprehension.
Writing: Summarizing - identifying main idea/s and rephrasing what is read; avoiding redundancies and repetitions.
Grammar and Vocabulary: Verbs - tenses; subject-verb agreement; direct and indirect speech, reporting verbs for academic purposes.
Learning Outcomes
At the end of the module, the learners will be able to

- Comprehend short talks and summarize the content with clarity and precision
- Participate in informal discussions and report what is discussed
- Infer meanings of unfamiliar words using contextual clues
- Write summaries based on global comprehension of reading/listening texts
- Use correct tense forms, appropriate structures and a range of reporting verbs in speech and writing

UNIT-IV	Lesson: Innovation: Muhammad Yunus	Classes:09

Listening: Making predictions while listening to conversations/ transactional dialogues without video; listening with video
Speaking: Role plays for practice of conversational English in academic contexts (formal and informal) - asking for and giving information/directions.
Reading: Studying use of graphic elements in texts to convey information, reveal 46 trends/patterns/relationships, communicate processes or display complicated data.
Writing: Letter Writing: Official Letters/Report Writing

Grammar and Vocabulary: Quantifying expressions - adjectives and adverbs; comparing and contrasting; Voice - Active & Passive Voice
Learning Outcomes
At the end of the module, the learners will be able to

- Infer and predict about content of spoken discourse
- Understand verbal and non-verbal features of communication and hold formal/informal conversations
- Interpret graphic elements used in academic texts
- Produce a coherent paragraph interpreting a figure/graph/chart/table
- Use language appropriate for description and interpretation of graphical elements

UNIT-V	Lesson: Politics and the English Language: George Orwell	Classes:09

Listening: Identifying key terms, understanding concepts and answering a series of relevant questions that test comprehension.
Speaking: Formal presentations on topics from academic contexts - without the use of PPT slides.
Reading: Reading comprehension.
Writing: Structured essays on specific topics using suitable claims and evidences
Grammar and Vocabulary: Editing short texts –identifying and correcting common errors in grammar and usage (articles, prepositions, tenses, subject verb agreement)
Learning Outcomes
At the end of the module, the learners will be able to

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COMMUNICATIVE ENGLISH LABORATORY								
B.Tech I Year I Semester								
Course Code	**Category**	**Hours/week**			**Credits**	**Maximum Marks**		
20CA52102	**Foundation**	**L**	**T**	**P**	**C**	**CIA**	**SEE**	**TOTAL**
		0	**0**	**3**	**1.5**	**30**	**70**	**100**
Contact classes: 0	**Tutorial Classes:0**	**Practical Classes:48**				**Total Classes:48**		

COURSE OBJECTIVES:

The course should enable the

1. Students will be exposed to a variety of self instructional, learner friendly modes of language learning.
2. Students will learn better pronunciation through stress, intonation and rhythm.
3. Students will be trained to use language effectively to face interviews, group discussions, public speaking.
4. Students will be initiated into greater use of the computer in resume preparation, report writing, format making etc.

List of Topics

1. Phonetics
2. Reading comprehension
3. Describing objects/places/persons
4. Role Play or Conversational Practice
5. JAM
6. Etiquettes of Telephonic Communication
7. Information Transfer
8. Note Making and Note Taking
9. E-mail Writing
10. Group Discussions-I
11. Resume Writing
12. Debates
13. Oral Presentations
14. Poster Presentation
15. Interview Skills-I

Minimum [illegible]s for ELCS Lab:

The English [illegible] Lab shall have two parts:

1. Computer Aided Language Learning (CALL) Lab: The Computer aided Language Lab for 60 stu[illegible] systems, one master console, LAN facility and English language software for self [illegible]ners.
2. The [illegible]ion Skills Lab with movable chairs and audio-visual aids with a P.A. sy[illegible], a digital stereo-audio & video system and camcorder etc.

System R[illegible]t (Hardware component):

Computer [illegible] with LAN with minimum 60 multimedia systems with the following specifications:

i) P – [illegible]

a [illegible] GHZ

b RA[illegible] MB Minimum

c Hard[illegible] 0 GB

ii) H[illegible]dpho[illegible]gh quality

Suggested [illegible]oft

1. C[illegible]y I[illegible]ion Power – Part I (Sky Pronunciation)
2. C[illegible]ion Power – part II
3. K[illegible] Communication Skills
4. [illegible] Software.
5. [illegible]
6. [illegible]

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BASIC SIMULATION LABORATORY

B.Tech II Year I Semester								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA04305	Core	0	0	2	1	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 32				Total Classes: 32		

COURSE OBJECTIVES:

The course should enable the students to:

1. Apply knowledge of mathematics, science, and engineering for the analysis and processing of signals and to generate various continuous and discrete time signals using MATLAB tool.
2. Apply the convolution theorem and correlation for continuous time signals.
3. Analyze a continuous time LTI/LTV systems using convolution.
4. Design and conduct experiments on modulation techniques to analyze and interpret results.

ANY TEN EXPERIMENTS

EXP. 1	Basic operations on Matrices.
EXP. 2	Generation of various signals and sequences such as unit impulse, unit step, triangular, sawtooth, sinusoidal, sinc.
EXP. 3	Operations on signals and sequences such as addition, multiplication, scaling, shifting, folding.
EXP. 4	Finding the even and odd parts of signal or sequence and real and imaginary parts of signal.
EXP. 5	Convolution between signals and sequences.
EXP. 6	Autocorrelation and cross correlation between signals and sequences.
EXP. 7	Finding the Fourier Transforms of given signal and plotting its magnitude and phase spectrum.
EXP. 8	Verification of linearity and time invariance property of a given continuous/discrete system.
EXP. 9	Verification of Sampling Theorem.
EXP. 10	Removal of noise by Autocorrelation/Cross correlation in a given signal corrupted by noise.
EXP. 11	Waveform synthesis using Laplace Transform.
EXP. 12	Locating Zero's and Pole's, and plotting the pole-zero maps in S-Plane and Z-Plane for given transfer functions.

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Demonstrate the knowledge on the basic concepts of matrices, signals and systems.
CO2: Analyze different signal generations and operations.
CO3: Develop a MATLAB program to analyze various systems with different signals.
CO4: Investigate and analyze different MATLAB programs on signal analysis.
CO5: Follow the ethical values in developing the programs with MATLAB.
CO6: Do experiments effectively as an individual and as a member in a group.
CO7: Communicate verbally and in written form, the understandings about the MATLAB Programs.
CO8: Continue updating their analysis and design skills related to various programs based on application during their life time.

LIST OF EQUIPMENT REQUIRED FOR A BATCH

HARDWARE	Desktop Computer Systems 36 Nos
SOFTWARE	MATLAB

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COMMUNICATIVE ENGLISH II

B.Tech II Year II Semester

Course Code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
19CA52401	Foundation	2	0	0	2	30	70	100
Contact Classes:32	Tutorial Classes: NIL	Practical Classes: NIL				Total Classes:32		

COURSE OBJECTIVES:

The course should enable the students to:

1. Help improve speaking skills through participation in activities.
2. Impart effective strategies for good writing and demonstrate the same in summarizing, writing well useful information.
3. Provide knowledge of presentations structures and vocabulary and encourage their appropriate use in speech and writing.

UNIT-I — **Classes:06**

1. Features of Communication and Forms of Communication.
2. Non-Verbal Communication and Types of Non-verbal Communication.
3. Barriers to Communication and Remedies.

Learning Outcomes

At the end of the module, the learners will be able to

- Become effective technical communicators.
- Sensitive use of non-verbal language suitable to different situations in professional life.
- Understand how to overcome the barriers in Communication process.

UNIT-II — **Classes:06**

1. Self Introduction-about you
2. English for Etiquette- Greetings-Introducing a person-Congratulating-Complimenting-
3. English for Etiquette - Requesting-Accepting/Declining an invitation-Expressing Gratitude.

Learning Outcomes

At the end of the module, the learners will be able to

- Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information
- Ask and answer general questions on familiar topics and introduce oneself/others

Form sentences using proper grammatical structures and correct word forms

UNIT-III — **Classes:06**

1. Effective usage of Modal Auxiliaries in framing Coversations.
2. Dialogue building-Formal conversation-Semi formal-Informal Conversation.
3. Asking/Giving directions-Asking some for directions-Giving directions

Learning Outcomes

At the end of the module, the learners will be able to

- comprehend short talks on general topics
- participate in informal discussions and speak clearly on a specific topic using suitable discourse markers
- understand the use of cohesive devices for better conversation

UNIT-IV — **Classes:07**

1. Writing Stories from outline-Developing the hints-How to write stories from the outline given.
2. Letter writing-Informal letter-Formal letter (Business and order)-Official letter.
3. Abstract Writing-Book Review-Film Review

Learning Outcomes

At the end of the module, the learners will be able to

- Infer meanings of unfamiliar words using contextual clues
- write summaries based on global comprehension of reading/listening texts
- Use appropriate format for writing memos and produce a coherent paragraph for notice
- use language appropriate for description elements

UNIT-V — **Classes:07**

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1. Designing a Resume-Guidelines for a better presentations-Purpose of the Resume-Designing and formatting your Resume with covering letter- Difference between CV & Resume
2. Welcome Speech and Vote of Thanks-Charesteristics of Welcome Speech-Some common welcome quotes-How to write Vote of thanks-The order of speech for vote of thanks.
3. Report Writing- Types of Reports-Project Report

Learning Outcomes

At the end of the module, the learners will be able to

- make formal oral presentations using effective strategies
- write his/her winning Resume
- produce a well-organized speech

Text Books:

1. **Advanced Skills for Communication in English: Book I** by V.JEYA SANTHI Dr.R.SELVAM M.A., M.Phil., Ph.D. - December 2015 *with*200 Reads, Publisher: 978-81-2343-101-7, Publisher: New Century Book House
2. Effective Technical Communication, M Ashraf Rizvi, Tata Mc.Graw-Hill Pub,company Ltd

Reference Books:

1. Business Etiquette : A Guide For The Indian Professional (English, Paperback, Shital Kakkar Mehra) Publisher: HarperCollins Publishers India Genre: Business & Economics ISBN: 9789350291085, 9350291088
2. Resume: The Secrets to Writing a Resume that is guaranteed to Get You the Job (Resume Writing, CV, Interview, Career Planning, Cover Letter, Negotiating Book 1) Kindle Edition Publisher: Lifestyle Initiative, Inc. (23 June 2016)

How to Write and Give a Speech: A Practical Guide for Anyone Who Has to Make Every Word Count 3rd Edition, Kindle Edition Publisher: St. Martin's Griffin; 3 edition (4 March 2014)

Web References:

Speaking
https://www.talkenglish.com/
BBC Learning English – Pronunciation tips
Merriam-Webster – Perfect pronunciation Exercises

All Skills
https://www.englishclub.com/
http://www.world-english.org/
http://learnenglish.britishcouncil.org/

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Demonstrate to overcome the barriers in communication process using non-verbal language suitable to different situations in professional life to become effective technical communicator.

CO2: Apply the knowledge on social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information.

CO3: Exhibit the knowledge on cohesive devices for better conversation in informal discussions and speak clearly on a specific topic using suitable discourse markers.

CO4: Apply the concepts of Entrepreneurship Skills and Analyze discourse markers to speak clearly on a specific topic in informal discussions and create a coherent paragraph writing.

CO5: Apply the Knowledge to recognize the need of ability to engage in independent and life-long learning communication effectively in English over speech.

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DESIGN THINKING & PRODUCT INNOVATION

B.Tech II Year II Semester

Course Code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
19CA53301	Foundation	2	1	0	3	30	70	100
Contact Classes:32	Tutorial Classes: 16	Practical Classes: Nil			Total Classes:48			

COURSE OBJECTIVES:

The course should enable the students to:

1. Understand the concepts of design thinking approaches.
2. Create design thinking teams and conduct design thinking sessions.
3. Apply both critical thinking and design thinking in parallel to solve problems.
4. Apply some design thinking concepts to their daily work.

UNIT-I	INTRODUCTION TO DESIGN THINKING	Classes:09

Introduction to Design thinking: Concept and its role within new product development and Innovation, Frame work of design thinking, Non linear process, principles and mindset.
Inspirational Design Briefing: Nine Criteria, Writing, Research findings, pitfalls to avoid, Keys to success.

UNIT-II	CUSTOMER EXPERIENCE MAPPING	Classes:10

Customer Experience Mapping: Inputs to experience mapping, Experience mapping process, Experience map as spring board to innovative solutions.

UNIT-III	BRIDGE RESEARCH AND CONCEPT DESIGN	Classes:10

Bridge research and concept design: Challenges in idea generation, Need for systematic method to connect to the user, The Visualize, Empathize and Ideate method, applying the method.

UNIT-IV	CREATIVITY IN IDEA GENERATION	Classes:10

Boosting creativity in idea generation using Design heuristics: Design Heuristics, The evidence base, Design heuristics for idea generation, Using Design heuristics to generate design concepts, Evidence of the value of design heuristics tools.
The role of design in early stage ventures: An emerging start up culture, Basics, Process, and Troubleshooting common mistakes.

UNIT-V	CORPORATE CULTURE OF DESIGN THINKING	Classes:09

Leading for Corporate culture of design thinking: What is corporate culture, Impact of corporate culture, Corporate forces that undermine the design thinking, Four pillars of innovation for enabling design thinking, Four stages of transforming to a culture of design thinking.

Text Books:

1. Philip Kosky, Robert T. Balmer, William D. Keat, George Wise, "Exploring Engineering: An Introduction to Engineering and Design", 4th edition, Elsevier, 2016.
2. David Ralzman, "History of Modern Design", 2nd edition, Laurence King Publishing Ltd., 2010
3. An AVA Book, "Design Thinking", AVA Publishing, 2010.

Reference Books:

1. G. Pahl, W.Beitz, J. Feldhusen, KH Grote, "Engineering Design: A Systematic Approach", 3rd edition, Springer, 2007.
2. Tom Kelley, Jonathan Littman, "Ten Faces in Innovation", Currency Books, 2006.

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Demonstrate and analyze the concepts and principles of Design Thinking.
CO2: Formulate the methods, processes, and tools of Design Thinking.
CO3: Apply the basic knowledge on Design Thinking approach and model to real world situations
CO4: Analyze and Design the Design heuristics to generate the design concepts.
CO5: Analyze and Design the role of primary and secondary research in the discovery stage of Design Thinking.

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COMMUNICATIVE ENGLISH II LABORATORY

B.Tech II Year II Semester

Course Code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
19CA52402	Foundation	0	0	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes:48				Total Classes:48		

COURSE OBJECTIVES:

The course should enable the students to :

1. Use multi-media instruction for language development
2. Improve the students' fluency in English, through a well-developed vocabulary and enable them to listen the English spoken at normal conversational speed by educated English speakers and respond appropriately in different socio-cultural and Professional contexts.
3. Communicate their ideas relevantly and coherently in writing and placing MNCs.

UNIT-I	COMMUNICATIVE COMPETENCE	Classes:10

1. Syllables
2. Stress & Intonations
3. Listening Comprehension, Listening to the News and Understand

UNIT-II	WRITING SKILLS	Classes:09

1. Precise Writing
2. Resume Preparation
3. E-mail Writing

UNIT-III	PRESENTATION SKILLS	Classes:09

1. Oral presentation
2. Power point presentation
3. Poster presentation

UNIT-IV	GETTING READY FOR JOB	Classes:10

1. SWOT Analysis
2. Group Discussions
3. Interview skills

UNIT-V	INTERPERSONAL SKILLS	Classes:10

1. Time Management
2. Problem Solving & Decision Making
3. Etiquettes-Telephonic Etiquettes

Minimum Requirements for SOFT SKILLS Lab:

Soft Skills Laboratory shall have the following infra-structural facilities to accommodate at least 60 students in the lab:

1. Spacious room with appropriate acoustics.
2. Round Tables with movable chairs
3. Audio-visual aids
4. LCD Projector
5. Public Address system
6. P – IV Processor, Hard Disk – 80 GB, RAM–512 MB Minimum, Speed – 2.8 GHZ
7. T. V, a digital stereo & Camcorder
8. Headphones of High quality

Suggested Software:

1. Wren Info tech Advanced English Communication Skills Lab
2. K-VAN SOLUTIONS Advanced English Language Communication Skills lab
3. DELTA's key to the Next Generation TOEFL Test: Advanced Skills Practice.
4. TOEFL & GRE(KAPLAN, AARCO & BARRONS, USA, Cracking GRE by CLIFFS)
5. Train2success.com

References:

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ARTIFICIAL NEURAL NETWORKS AND FUZZY LOGIC
(OPEN ELECTIVE)

B. Tech III Year II Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA04506	Elective	3	0	-	3	30	70	100
Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes: 45		

Course Objectives:

The course should enable the students to:

V. Meliorate the knowledge of fundamentals and types of neural networks.
VI. Develop the different Algorithms for neural networks.
VII. Meliorate the knowledge in Fuzzy logic principles.
VIII. Correlate the principles with applications of neural networks and fuzzy logic.

UNIT-I	INTRODUCTION TO ARTIFICIAL NEURAL NETWORKS AND LEARNING LAWS	Classes: 11

Artificial neural networks and their biological motivation, terminology, models of neuron, topology, characteristics of artificial neural networks, types of activation functions,
Learning methods: Error correction learning, Hebbian learning, perception, XOR problem, perceptron learning rule convergence theorem, adaline.

UNIT-II	FEEDFORWARD AND RECURRENT NEURAL NETWORKS	Classes: 08

Multilayer perception, back propagation learning algorithm, universal function approximation, associative memory, auto association, hetero association, recall and cross talk, linear auto associator, bi-directional associative memory, Hopfield neural network.

UNIT-III	UNSUPERVISED LEARNING AND SELF ORGANISING NETWORKS	Classes: 09

Competitive learning neural networks, max net, mexican hat, hamming net.
Kohonen self-organizing feature map, counter propagation, learning vector quantization, applications of neural networks in image processing, signal processing, modeling and control.

UNIT-IV	FUZZY SETS AND FUZZY RELATIONS	Classes: 08

Introduction, classical sets and fuzzy sets, classical relations and fuzzy relations, Fuzzy set theory and operations, Properties of fuzzy sets, membership functions, fuzzy to crisp conversion, fuzzy arithmetic

UNIT-V	FUZZY SYSTEMS	Classes: 09

Fuzzy Logic - Fuzzy Membership, Rules: Membership functions, interference in fuzzy logic, fuzzy if-then rules, Fuzzy implications and Fuzzy algorithms, Fuzzyfications & Defuzzificataions, Fuzzy Controller, Industrial applications.

Text Books:

4. LaureneFausett, "Fundamentals of Neural Networks-Architectures, algorithms and applications, Pearson Education Inc., 2004.
5. Timothy J.Ross, Fuzzy Logic with Engineering Applications, John Wiley and sons, 2004
6. S.Haykin, "Neural Networks,A Comprehensive Foundation", Pearson Education Inc., 2004.

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SOFT SKILLS LAB

B. Tech III Year I Semester								
Course code	Category	Hours/week		Credits	Maximum Marks			
17CA52501	Foundation	L	T	P	C	CIA	SEE	TOTAL
		-	-	3	2	-	-	-
Contact Classes: Nil	Tutorial Classes: Nil		Practical Classes:45		Total Classes:45			

Course Objectives:

The course should enable the students to :

1. This Lab focuses on using multi-media instruction for language development to meet the following targets:
2. To improve the students' fluency in English, through a well-developed vocabulary and enable them to listen the English spoken at normal conversational speed by educated English speakers and respond appropriately in different socio-cultural and professional contexts.
3. Further, they would be required to communicate their ideas relevantly and coherently in writing.
4. To prepare all the students for their placements.

UNIT-I	COMMUNICATIVE COMPETENCE	Classes:09

1. Reading Comprehension
2. Listening Comprehension
3. Vocabulary Development
4. Communication Styles and Competencies

UNIT-II	WRITING SKILLS	Classes:09

1. Report Writing
2. Resume Preparation
3. E-mail Writing

UNIT-III	PRESENTATION SKILLS	Classes:12

1. Oral presentation
2. Power point presentation
3. Informative presentation

UNIT-IV	GETTING READY FOR JOB	Classes:09

1. SWOT/C Analysis
2. Group Discussions
3. Interview skills

UNIT-V	INTERPERSONAL SKILLS	Classes:06

1. Time Management
2. Problem Solving & Decision Making
3. Etiquettes

Minimum Requirements for SOFT SKILLS Lab:

The Advanced English Communication Skills (AECS) Laboratory shall have the following infra-structural facilities to accommodate at least 60 students in the lab:

1. Spacious room with appropriate acoustics.
2. Round Tables with movable chairs
3. Audio-visual aids
4. LCD Projector
5. Public Address system
6. P – IV Processor, Hard Disk – 80 GB, RAM–512 MB Minimum, Speed – 2.8 GHZ
7. T[illegible] a digital stereo & Camcorder
8. Headphones of High quality

Suggested Software:

The software consisting of the prescribed topics elaborated above should be procured and G[illegible]

1. Walden Infotech: Advanced English Communication Skills Lab
2. K-VAN SOLUTIONS-Advanced English Language Communication Skills lab

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SOFT SKILLS-II (OPEN ELECTIVE)

B. Tech III Year II Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CA052601	Foundation	3	1	-	3	30	70	100

Contact Classes: 45	Tutorial Classes: Nil	Practical Classes: Nil	Total Classes: 45

Course Objectives:

- To enhance employability skills through Group discussions and Mock Interviews.
- To enable the students collectively in organizational skills.
- To train the students to meet communicative competence.

UNIT – I	VERBAL ABILITY & COMMUNICATION SKILLS	Classes:09

Communication: Verbal and Non-Verbal Communication, Barriers to effective Communication, Types of Communication - Oral, Aural, Writing and Reading

Grammar:- usage of Articles, Preposition, Verb, Tenses, Adverbs, If-Conditionals, Adjectives, Degrees of Comparison, Conjunction, Simple, Compound & Complex, Active & Passive voice, Reported Speech and Common Errors in English.

Word Power: - Synonyms, Antonyms, Affixes, One word substitutions and Idioms & Phrases.

UNIT- II	EMPLOYABILITY SKILLS	Classes:09

COMPREHENSIONS:-Listening Comprehension, Reading Comprehension, Technical Reports, Resume Writing, E-mail Writing and Essay Writing

SVAR (Accent):Phonetics, Inflections, Stress and Intonation.

GROUP ACTIVITIES: Just-A-Minute (JAM), Debate, Group Discussion and Interview Skills

UNIT - III	Arithmetic III	Classes:09

Number System, Averages, Percentages, Simple Interest & Compound Interest, Problems on Ages, Profit & Loss, Probability, Permutation & Combinations, Logarithms

UNIT - IV	Arithmetic IV	Classes:10

Time & work, Time and Distance, Allegation and Mixtures, Mesuration2D, Mensuration3D, Data Interpretation.

UNIT –V	Reasoning II	Classes:08

Analogy, Classification, Number series, Coding Decoding, Direction & Distance, Blood Relation.
Critical Reasoning – Syllogism, Statements & Assumptions, Statements & Arguments, Data sufficiency, Seating Arrangement, Puzzles.

Text Books:

1. Rizvi M. Ashraf Effective Technical Communication, Tata McGraw-Hill Publishing Company Limited, 2006.
2. R.S Aggarwal, Quantitative Aptitude for Competitive Examinations, S. Chand Publications
3. R.S.Aggarwal, Verbal and Non Verbal Reasoning, S.Chand Publications.

References:

1. Bovee Courtland and Thrill John, Business Communication Essentials: A skills-Based Approach to Vital Business English, Pearson Education Inc., 2011. 106 CS-Engg&Tech-SRM-2013
2. Dhanavel S.P, English & Communication Skills for Students of Science and Engineering. Orient Black Swan, 2009.

Web Reference:

https://www.[illegible].com/
https://www.[illegible].com/
https://www.[illegible].org/

E-Text Books:

Campus Recruitment Guide Reference by Praxis groups

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COMMUNICATIVE ENGLISH

B.Tech I Year I Semester

Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
20CA52101	Foundation	3	0	0	3	30	70	100
Contact Classes: 48	Tutorial Classes:Nil	Practical Classes: Nil				Total Classes: 48		

COURSE OBJECTIVES:

1. Facilitate effective listening skills for better comprehension of academic lectures and English spoken by native speakers.
2. Focus on appropriate reading strategies for comprehension of various academic texts and authentic materials.
3. Help improve speaking skills through participation in activities such as role plays, discussions and structured talks/oral presentations.
4. Impart effective strategies for good writing and demonstrate the same in summarizing, writing well organized essays, record and report useful information.
5. Provide knowledge of grammatical structures and vocabulary and encourage their appropriate use in speech and writing.

UNIT-I	Lesson: On the Conduct of Life: William Hazlitt	Classes:10

Listening: Identifying the topic, the context and specific pieces of information by listening to short audio texts and answering a series of questions.
Speaking: Asking and answering general questions on familiar topics such as home, family, work, studies and interests; introducing oneself and others.
Reading: Skimming to get the main idea of a text; scanning to look for specific pieces of information.
Reading for Writing: Beginnings and endings of paragraphs - introducing the topic, summarizing the main idea and/or providing a transition to the next paragraph.
Grammar and Vocabulary: Content words and function words; word forms: verbs, nouns, adjectives and adverbs; nouns: countables and uncountables; singular and plural; basic sentence structures; simple question form - wh-questions; word order in sentences.

Learning Outcomes
At the end of the module, the learners will be able to

- Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information
- Ask and answer general questions on familiar topics and introduce oneself/others
- Employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information
- Recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs
- Form sentences using proper grammatical structures and correct word forms

UNIT-II	Lesson: The Brook: Alfred Tennyson	Classes:10

Listening: Answering a series of questions about main idea and supporting ideas after listening to audio texts.
Speaking: Discussion in pairs/ small groups on specific topics followed by short structured talks.
Reading: Identifying sequence of ideas; recognizing verbal techniques that help to link the ideas in a paragraph together.
Writing: Paragraph writing (specific topics) using suitable cohesive devices; mechanics of writing - punctuation, capital letters.
Grammar and Vocabulary: Cohesive devices - linkers, sign posts and transition signals; use of articles and zero article; prepositions.
Learning Outcomes

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At the end of the module, the learners will be able to

- Comprehend short talks on general topics
- Participate in informal discussions and speak clearly on a specific topic using suitable discourse markers
- Understand the use of cohesive devices for better reading comprehension
- Write well structured paragraphs on specific topics
- Identify basic errors of grammar/ usage and make necessary corrections in short texts

UNIT-III	Lesson: The Death Trap: Saki	Classes:10

Listening: Listening for global comprehension and summarizing what is listened to.
Speaking: Discussing specific topics in pairs or small groups and reporting what is discussed **Reading:** Reading a text in detail by making basic inferences -recognizing and interpreting specific context clues; strategies to use text clues for comprehension.
Writing: Summarizing - identifying main idea/s and rephrasing what is read; avoiding redundancies and repetitions.
Grammar and Vocabulary: Verbs - tenses; subject-verb agreement; direct and indirect speech, reporting verbs for academic purposes.
Learning Outcomes
At the end of the module, the learners will be able to

- Comprehend short talks and summarize the content with clarity and precision
- Participate in informal discussions and report what is discussed
- Infer meanings of unfamiliar words using contextual clues
- Write summaries based on global comprehension of reading/listening texts
- Use correct tense forms, appropriate structures and a range of reporting verbs in speech and writing

UNIT-IV	Lesson: Innovation: Muhammad Yunus	Classes:09

Listening: Making predictions while listening to conversations/ transactional dialogues without video; listening with video.
Speaking: Role plays for practice of conversational English in academic contexts (formal and informal) - asking for and giving information/directions.
Reading: Studying the use of graphic elements in texts to convey information, reveal 46 trends/patterns/relationships, communicate processes or display complicated data.
Writing: Letter Writing: Official Letters/Report Writing

Grammar and Vocabulary: Quantifying expressions - adjectives and adverbs; comparing and contrasting; Voice - Active & Passive Voice
Learning Outcomes
At the end of the module, the learners will be able to

- Infer and predict about content of spoken discourse
- Understand verbal and non-verbal features of communication and hold formal/informal conversations
- Interpret graphic elements used in academic texts
- Produce a coherent paragraph interpreting a figure/graph/chart/table
- Use language appropriate for description and interpretation of graphical elements

UNIT-V	Lesson: Politics and the English Language: George Orwell	Classes:09

Listening: Identifying key terms, understanding concepts and answering a series of relevant questions that test comprehension.
Speaking: Formal oral presentations on topics from academic contexts - without the use of PPT slides.
Reading: Reading for comprehension.
Writing: Writing structured essays on specific topics using suitable claims and evidences
Grammar and Vocabulary: Editing short texts –identifying and correcting common errors in grammar and usage (articles, prepositions, tenses, subject verb agreement)
Learning Outcomes
At the end of the module, the learners will be able to

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C PROGRAMMING LANGUAGE

B.Tech I Year II Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA05101	Foundation	3	0	0	3	30	70	100
Contact Classes:48	Tutorial Classes: Nil	Practical Classes: Nil				Total Classes:48		

COURSE OBJECTIVES:

1. To acquire problem solving skills.
2. To be able to develop flowcharts and algorithms for the given problem.
3. To learn how to write modular programs in C.
4. To enable them to use arrays, pointers, strings and structures in solving problems.

UNIT - I	INTRODUCTION	Classes:10

Introduction to C Language Elements, Variables, Data Types, Operators and Expressions, Constants, Declarations, Operators, Type Conversions, Operator Precedence and Order of Evaluation. Statements: Selection Statements, Iteration Statements, Jump statements: Break, Continue, go to.

UNIT - II	ARRAYS	Classes:10

Accessing Array Elements, Single & Multi Dimensional Arrays. Strings: Declaring, Initialization of a String, Reading and Writing Strings, String manipulation functions from the standard Library, String I/O Functions: gets(), puts().

UNIT - III	FUNCTIONS	Classes:10

Definition, Function Call- Call by Value, Storage Class Specifiers, Understanding the scope of Functions with its Types, the Return Statement, Recursion, Command Line Arguments.

UNIT - IV	POINTERS	Classes:9

Pointer Variables, Pointer Expressions, Pointers And Arrays, Pointers to Strings, Call by Reference, Dynamic Memory Allocation Functions, Problems with Pointers, Dangling pointers.

UNIT –V	STRUCTURES AND UNIONS	Classes:9

Accessing structure members, Array of structures, Passing Structures to Functions, Structure Pointers, Self Referential Structures, Structures within Structures, Bit Fields, Enumerations, Typedef.
Files handling in C, File oriented operations.

Text Books:

1. C Programming-A Problem Solving Approach, Forouzan, Gilberg, Cengage.

References:

1. The Complete Reference C, Fourth Edition, Herbert Schildt, McGraw-Hill Education.
2. Programming with C, Second Edition, Byron Gottfried, Schaum's outline, McGraw-Hill Education.
3. Computer Fundamentals and C programming, B. L Juneja, A Seth, Cengage Learning India.
4. Programming in C and Data Structures", Hanly, Koffman, Kamthane, Ananda Rao, Pearson.
5. Programming in ANSI C, 8/e , by E Balagurusamy
6. The C Programming Language" Second Edition, Brain W. Kernighan, Dennis M. Ritchie, Prentice Hall, India.

Web References

1. https://www.tutorialspoint.com/cprogramming/
2. www.studytonight.com/c/
3. fresh2refresh.com/c-programming/
4. www.cprogramming.com/tutorial/c/

E-Text Books:

1. bookboon.com/en/c-cpp-csharp-ebooks

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COMMUNICATIVE ENGLISH LABORATORY

B.Tech I Year I Semester

Course Code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
20CA52102	Foundation	0	0	3	1.5	30	70	100
Contact classes: 0	Tutorial Classes:0	Practical Classes:48				Total Classes:48		

COURSE OBJECTIVES:

The course should enable the

1. Students will be exposed to a variety of self instructional, learner friendly modes of language learning.
2. Students will learn better pronunciation through stress, intonation and rhythm.
3. Students will be trained to use language effectively to face interviews, group discussions, public speaking.
4. Students will be initiated into greater use of the computer in resume preparation, report writing, format making etc.

List of Topics

1. Phonetics
2. Reading comprehension
3. Describing objects/places/persons
4. Role Play or Conversational Practice
5. JAM
6. Etiquettes of Telephonic Communication
7. Information Transfer
8. Note Making and Note Taking
9. E-mail Writing
10. Group Discussions-1
11. Resume Writing
12. Debates
13. Oral Presentations
14. Poster Presentation
15. Interviews Skills-1

Minimum Requirements for ELCS Lab:

The English Language Lab shall have two parts:

1. Computer Assisted Language Learning (CALL) Lab: The Computer aided Language Lab for 60 students with 60 systems, one master console, LAN facility and English language software for self study by learners.
2. The Communication Skills Lab with movable chairs and audio-visual aids with a P.A. system, Projector, a digital stereo-audio & video system and camcorder etc.

System Requirement (Hardware component):

Computer network with LAN with minimum 60 multimedia systems with the following specifications:

i) P – IV Processor
   a) Speed – 2.8 GHZ
   b) RAM – 512 MB Minimum
   c) Hard Disk – 80 GB
ii) Headphones of High quality

Suggested Software:

1. Clarity Pronunciation Power – Part I (Sky Pronunciation)
2. Clarity-Pronunciation Power – part II
3. K-Van Advanced Communication Skills
4. Walden InfoTech Software.
5. Orell
6. Young India Films

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C PROGRAMMING LAB

B.Tech I Year II Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA05102	Foundation	0	0	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes: 48				Total Classes:48		

COURSE OBJECTIVES:

1. Learn C Programming language.
2. To make the student solve problems, implement algorithms using C language.
3. To write diversified solutions using C language.

LIST OF PROGRAMS

Week -1

Write C program to

a) Print the size of all data types.
b) Find the Sum of three numbers
c) Exchange (swap) of two numbers by using third variable.
d) Exchange (swap) of two numbers without using third variable.

Week - 2

a) Develop a calculator to convert time, distance, area, volume and temperature from one unit to another.
b) Write a C program to find the Priority and associativity of operators using expressions. Take the expressions with different operators.
c) Write a C program to swap two numbers using bitwise operators.

Week - 3

a) Write a C program to find whether the given integer is odd or even.
b) Write a C program to find the Maximum of three numbers.
c) Write a C program to print 'hello world' without using semicolon.
d) Write a C program to find whether the given number is odd or even using bitwise operator.
e) Write a C program to find the maximum of two numbers using Conditional operator.
f) Write a program which takes two integers and one arithmetic operator from the user, and performs the operation and then prints the result by using **switch-case**.(Operators : +, -, *, /, %)

Week -4

a) Write a C program to generate the required multiplication table.
b) Write a C program to find the Factorial of a given integer.
c) Write a C program to compute x power of n (x^n) without using built in functions.
d) Write a C program to check whether the given integer is prime or not.
e) Write a C program to find GCD

Week - 5

a) Write a C program to find the sum of the digits of an integer.
b) Write a C program to find whether the given integer is a Palindrome or not.
c) Write a C program to generate Fibonacci numbers in the given range.

Week- 6

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a) Write a C program to print the following pattern.

1
2 2
3 3 3

b) Print multiplication tables up to the given table.

c) Write a C program to print series of prime numbers in the given range.

Week - 7

a) Write a C program to check whether the given integer is strong number or not.

b) Write a C program to evaluate the sum of the following series up to 'n' terms

$e^x = 1 + x + x^2/2! + x^3/3! + x^4/4! +$ --------

Week - 8

a) Compute the maximum, minimum and average of N numbers.

b) Write a C program to find the sum of positive and negative numbers in a given set(Array) of numbers.

c) Write a program to implement linear search technique

d) Write a C program to read two matrices and find

i) Sum. ii) Product and display the result in the matrix form.

Week -9

a) Write a C program to read a matrix and perform the following operations

i) Find the sum of Diagonal Elements of a matrix.

ii) Print Transpose of a matrix.

iii) Print sum of even and odd numbers in a given matrix.

Week - 10

a) Write a C program to read two strings and perform the following operations without using built-in string library functions.

i) String length determination.

ii) Compare Two Strings.

iii) Concatenate Two Strings.

iv) String reversing

v) Determining whether a string is a palindrome or not

b) Write a C program to accept a line of characters and print the number of Vowels, Consonants, blank spaces, digits and special characters.

c) Write a C program to read a set of strings and sort them in alphabetical order.

Week -11

a) Write a C program to illustrate the following types of functions

i) Function with no arguments and no return values

ii) Function with arguments and no return value

iii) Function without arguments and with return value

iv) Function with arguments and with return value

Week - 12

a) Write a C program to exchange two numbers using pointers.

b) Write a program to print the elements of an array in reverse order using pointers.

Week - 13

a) Write a C program to express a four digit number in words. For example 1546 should be written as one thousand five hundred and forty six

b) Write a C program using recursion for finding Factorial of a number

c) Calculate the greatest common divisor using recursion for two numbers as specified by

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ENGINEERING WORKSHOP

B.Tech I Year I Semester

Course Code	Category	Hours/Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
20CA03102	Foundation	0	0	3	1.5	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil			Practical Classes:48		Total Classes: 48		

COURSE OBJECTIVES:

1. Identify and use of tools, types of joints in carpentry, fitting, tin smithy welding and foundry operations.
2. Understand of electrical wiring and components.

LIST OF EXPERIMENTS (Any 10 of the following experiments has to be performed)

S. No	Name of the Experiment
	CARPENTRY
Exp. 1	Preparation of dove tail joint as per given taper angle.
Exp. 2	Preparation of lap joint as per given dimensions.
Exp. 3	Preparation of Cross Lap joint as per given taper angle.
	FITTING
Exp. 4	Make a square fit for given sizes.
Exp. 5	Make a V Joint for given dimensions.
Exp. 6	Make a half round fit for given dimensions.
	TIN SMITHY
Exp. 7	Prepare the development of a surface and make a rectangular tray.
Exp. 8	Prepare the development of a surface and make a round tin.
	FOUNDRY
Exp. 9	Prepare a single Piece pattern.
Exp. 10	Prepare a Split pattern.
	WELDING
Exp. 11	Preparation of V butt joint
Exp. 12	Preparation of Lap joint
Exp. 13	Preparation of T fillet joint

References:

1. K. C. John, "Mechanical Workshop Practice", PHI, 2nd Edition, 2010.
2. H.S. Bawa, "Workshop Practice ", Tata McGraw Hill Publishing Company Limited, 2nd Edition 2009.
3. S. K. Hajra Choudhury, A. K. Hajra Choudhury, "Elements of Workshop Technology", Media promoters, 1st Edition, 2009.
4. Engineering Work shop practice for JNTU, V. Ramesh Babu, VRB Publishers Pvt. Ltd., 2009
5. Work shop Manual / P.Kannaiah/ K.L.Narayana/ SciTech Publishers.

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Demonstrate the knowledge on differ tools used in carpentry, fitting, sheet metal, basic machining process, foundry and welding.

CO2: Analyze the basic principle of carpentry, fitting, sheet metal, basic machining process, foundry and welding.

CO3: Design small components using different materials include wood, GI sheet, MS plates, foundry and welding.

CO4: Apply basic carpentry, fitting, sheet metal, basic machining process, foundry and welding.

CO5: Follow the ethical principles in while doing the exercises.

CO6: Do the exercises effectively as an individual and as a team member in a group.

CO7: Communicate verbally among team members and in written form, the understanding about the trade exercises.

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COMMUNICATIVE ENGLISH I

B.Tech I Year I Semester								
Course code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
19CA52101	Foundation	2	0	0	2	30	70	100
Contact Classes:32	Tutorial Classes: Nil	Practical Classes: Nil			Total Classes:32			

Course Objectives:

The course should enable the students to:

1. Facilitate effective listening skills for better comprehension of academic lectures and English spoken by native speakers.
2. Focus on appropriate reading strategies for comprehension of various academic texts and authentic materials.
3. Help improve speaking skills through participation in activities such as role plays, discussions and structured talks/oral presentations.
4. Impart effective strategies for good writing and demonstrate the same in summarizing, writing well organized essays, record and report useful information.
5. Provide knowledge of grammatical structures and vocabulary and encourage their appropriate use in speech and writing.

UNIT-I — **Classes:07**

Listening: Identifyingthe topic, the context and specific pieces of information by listening to short audio texts and answering a series of questions.

Speaking: Asking and answering general questions on familiar topics such as home, family, work, studies and interests; introducing oneself and others.

Reading: Skimming to get the main idea of a text; scanning to look for specific pieces of information.

Reading for Writing: Beginnings and endings of paragraphs - introducing the topic, summarizing the main idea and/or providing a transition to the next paragraph.

Grammar and Vocabulary: Content words and function words; word forms: verbs, nouns, adjectives and adverbs; nouns: countables and uncountables; singular and plural; basic sentence structures; simple question form - wh-questions; word order in sentences.

Learning Outcomes

At the end of the module, the learners will be able to

- Understand social or transactional dialogues spoken by native speakers of English and identify the context, topic, and pieces of specific information
- Ask and answer general questions on familiar topics and introduce oneself/others
- Employ suitable strategies for skimming and scanning to get the general idea of a text and locate specific information
- Recognize paragraph structure and be able to match beginnings/endings/headings with paragraphs
- Form sentences using proper grammatical structures and correct word forms

UNIT-II — **Classes:07**

Listening: Answering a series of questions about main idea and supporting ideas after listening to audio texts.

Speaking: Discussion in pairs/ small groups on specific topics followed by short structured talks.

Reading: Identifying sequence of ideas; recognizing verbal techniques that help to link the ideas in a paragraph together.

Writing: Paragraph writing (specific topics) using suitable cohesive devices; mechanics of writing - punctuation, capital letters.

Grammar and Vocabulary: Cohesive devices - linkers, sign posts and transition signals; use of articles and zero article; prepositions.

Learning Outcomes

At the end of the module, the learners will be able to

- comprehend short talks on general topics
- participate in informal discussions and speak clearly on a specific topic using suitable discourse

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markers

- understand the use of cohesive devices for better reading comprehension
- write well structured paragraphs on specific topics
- identify basic errors of grammar/ usage and make necessary corrections in short texts

UNIT-III **Classes:06**

Listening: Listening for global comprehension and summarizing what is listened to.
Speaking: Discussing specific topics in pairs or small groups and reporting what is discussed **Reading:** Reading a text in detail by making basic inferences -recognizing and interpreting specific context clues; strategies to use text clues for comprehension.
Writing: Summarizing - identifying main idea/s and rephrasing what is read; avoiding redundancies and repetitions.
Grammar and Vocabulary: Verbs - tenses; subject-verb agreement; direct and indirect speech, reporting verbs for academic purposes.

Learning Outcomes

At the end of the module, the learners will be able to

- comprehend short talks and summarize the content with clarity and precision
- participate in informal discussions and report what is discussed
- infer meanings of unfamiliar words using contextual clues
- write summaries based on global comprehension of reading/listening texts
- use correct tense forms, appropriate structures and a range of reporting verbs in speech and writing.

UNIT-IV **Classes:06**

Listening: Making predictions while listening to conversations/ transactional dialogues without video; listening with video.
Speaking: Role plays for practice of conversational English in academic contexts (formal and informal) - asking for and giving information/directions.
Reading: Studying the use of graphic elements in texts to convey information, reveal 46 trends/patterns/relationships, communicate processes or display complicated data.
Writing: Information transfer; describe, compare, contrast, identify significance/trendsbased on information provided in figures/charts/graphs/tables.
Grammar and Vocabulary:Quantifying expressions - adjectives and adverbs; comparing and contrasting; degrees of comparison; use of antonyms

Learning Outcomes

At the end of the module, the learners will be able to

- infer and predict about content of spoken discourse
- understand verbal and non-verbal features of communication and hold formal/informal conversations
- interpret graphic elements used in academic texts
- produce a coherent paragraph interpreting a figure/graph/chart/table
- use language appropriate for description and interpretation of graphical elements

UNIT-V **Classes:06**

Listening: Identifying key terms, understanding concepts and answering a series of relevant questions that test comprehension.
Speaking: Formal oral presentations on topics from academic contexts - without the use of PPT slides.
Reading: Reading for comprehension.
Writing: Writing structured essays on specific topics using suitable claims and evidences
Grammar and Vocabulary: Editing short texts –identifying and correcting common errors in grammar and usage (articles, prepositions, tenses, subject verb agreement)

Learning Outcomes

At the end of the module, the learners will be able to

- take notes while listening to a talk/lecture and make use of them to answer questions
- make formal oral presentations using effective strategies
- comprehend, discuss and respond to academic texts orally and in writing

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COMMUNICATIVE ENGLISH - I LAB

B.Tech I Year I Semester

Course Code	Category	Hours/week		Credits		Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
19CA52102	Foundation	0	0	2	1	30	70	100
Contact Classes: Nil	Tutorial Classes: Nil	Practical Classes:32				Total Classes:32		

OBJECTIVES:

The course should enable the :

1. students will be exposed to a variety of self instructional, learner friendly modes of language learning.
2. students will cultivate the habit of reading passages from the computer monitor. Thus providing them with the required facility to face computer based competitive exams like GRE, TOEFL, and GMAT etc.
3. students will learn better pronunciation through stress, intonation and rhythm.
4. students will be trained to use language effectively to face interviews, group discussions, public speaking.
5. students will be initiated into greater use of the computer in resume preparation, report writing, format making etc.

UNIT-I — **Classes:07**

1. Phonetics for listening comprehension of various accents
2. Reading comprehension
3. Describing objects/places/persons

Learning Outcomes

At the end of the module, the learners will be able to

- understand different accents spoken by native speakers of English
- employ suitable strategies for skimming and scanning on monitor to get the general idea of a text and locate specific information
- learn different professional registers and specific vocabulary to describe different persons, places and objects.

UNIT-II — **Classes:07**

1. JAM
2. Small talks on general topics
3. Debates

Learning Outcomes

At the end of the module, the learners will be able to

- produce a structured talk extemporarily
- comprehend and produce short talks on general topics
- participate in debates and speak clearly on a specific topic using suitable discourse markers.

UNIT-III — **Classes:07**

1. Situational dialogues – Greeting and Introduction
2. Summarizing and Note making
3. Vocabulary Building

Learning Outcomes

At the end of the module, the learners will be able to

- Learn different ways of greeting and introducing oneself/others
- summarize the content with clarity and precision and take notes while listening to a talk/lecture and make use of them to answer questions
- replenish vocabulary with one word substitutes, homonyms, homophones, homographs to reduce errors in speech and writing.

UNIT-IV — **Classes:07**

1. Asking for Information and Giving Directions

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2. Information Transfer
3. Non-verbal Communication – Dumb Charade

Learning Outcomes

At the end of the module, the learners will be able to

- Learn different ways of asking information and giving directions
- Able to transfer information effectively
- understand non-verbal features of communication.

UNIT-V		Classes:06

1. Oral Presentations
2. Précis Writing and Paraphrasing
3. Reading Comprehension and spotting errors

Learning Outcomes

At the end of the module, the learners will be able to

- make formal oral presentations using effective strategies
- learn different techniques of précis writing and paraphrasing strategies
- comprehend while reading different texts and edit short texts by correcting common errors

Minimum Requirements for ELCS Lab:

The English Language Lab shall have two parts:

1. Computer Assisted Language Learning (CALL) Lab: The Computer aided Language Lab for 60 students with 60 systems, one master console, LAN facility and English language software for self study by learners.
2. The Communication Skills Lab with movable chairs and audio-visual aids with a P.A. system, Projector, a digital stereo-audio & video system and camcorder etc.

System Requirement (Hardware component):
Computer network with LAN with minimum 60 multimedia systems with the following specifications:

i) P – IV Processor
   a) Speed – 2.8 GHZ
   b) RAM – 512 MB Minimum
   c) Hard Disk – 80 GB
ii) Headphones of High quality

Suggested Software:

1. Clarity Pronunciation Power – Part I (Sky Pronunciation)
2. Clarity Pronunciation Power – part II
3. K-Van Advanced Communication Skills
4. Walden InfoTech Software.

References:

1. A Textbook of English Phonetics for Indian Students 2nd Ed T. Balasubramanian. (Macmillian),2012.
2. A Course in Phonetics and Spoken English, Dhamija Sethi, Prentice-Hall of India Pvt .Ltd
3. Speaking English Effectively, 2nd Edition Krishna Mohan & NP Singh, 2011. (Mc Millan).
4. A Hand book for English Laboratories, E. Suresh Kumar, P. Sreehari, Foundation Books, 2011
5. Spring Board Succes, Sharada Kouhik, Bindu Bajwa, Orient Blackswan, Hyderabad, 2010.

COURSE OUTCOMES:

Upon the successful completion of the course, the student will be able to

CO1: Exhibit the skills on the different aspects of the English Language proficiency with emphasis

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II SEMESTER

ENGLISH FOR PROFESSIONAL COMMUNICATION

B. Tech I Year II Semester

Course code	Category	Hours/week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	TOTAL
17CA52201	Foundation	3	-	-	3	30	70	100
Contact Classes:51	Tutorial Classes: -	Practical Classes: Nil			Total Classes:51			

Course Objectives:

The course should enable the students to :

I. Communication in an intelligible English accent and pronunciation.
II. Introduce students" elements of Grammar and Composition of English language.
III. Maintain linguistic competence through training in Vocabulary, sentence structures.

UNIT-I	LESSONS FROM THE PAST	Classes:10

TEXT: Importance of History-Differing perspectives-Modern Corporatism-Lessons from the past.
GRAMMAR: Active and Passive voice – Adjectives-Degrees of Comparison.
VOCABULARY: Phrasal Verbs.

UNIT-II	ENERGY	Classes:11

TEXT: Renewable and Non-Renewable sources-Alternative Sources-Conservation-Nuclear Energy.
GRAMMAR: Direct and Indirect Speech
VOCABULARY: Idioms.

UNIT-III	TRAVEL AND TOURISM	Classes:10

TEXT: Advantages and disadvantages of Travel-Tourism-Atithi Devo Bhava-Tourism in India
GRAMMAR: Conditional Sentences.
COMPOSITION: Report Writing

UNIT-IV	GETTING JOB-READY	Classes:10

TEXT: SWOT analysis-Companies and Ways of Powering Growth-Preparing for Interviews
GRAMMAR: Connectives-Simple, Compound and Complex.
COMPOSITION: Curriculum Vitae with Covering Letter.

UNIT-V	GERTRUDE ELION	Classes:10

TEXT: Birth-Childhood-Education-Achievements-Awards.
GRAMMAR: Common Errors in English
COMPOSITION: Note-making and Note-taking.

Text Books:

1.MIND SCAPES- ORIENT BLACK SWAN 2014
2. INSPIRING LIVES, MARUTHI PUBLICATIONS 2010

Reference Books:

1. English Grammar in use - Raymond Murphy.
2. Word Power Made Easy- Norman Lewis

Web References:

1.https://www.edufind.com
2.https://www.myenglishpages.com
3. https://www.onestopenglish.com

E-Text Books:

1. https://www.e-bookboon.com/en/communication-ebooks-zip.

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INTERNET OF THINGS

PROFESSIONAL ELECTIVES III								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
		L	T	P	C	CIA	SEE	Total
17CD04205	Core	4	0	-	4	40	60	100
Contact Classes: 60	Tutorial Classes: Nil	Practical Classes: Nil			Total Classes: 60			

OUTCOMES:

- Able to understand the application areas of IOT
- Able to realize the revolution of Internet in Mobile Devices, Cloud &Sensor Networks
- Able to understand building blocks of Internet of Things and characteristics

UNIT - I	INTRODUCTION & CONCEPTS	Classes: 10

Introduction to Internet of Things, Physical Design of IOT, Logical Design of IOT, IOT Enabling Technologies, IOT Levels

UNIT - II	DOMAIN SPECIFIC IOTS	Classes: 15

Home Automation, Cities, Environment, Energy, Retail, Logistics, Agriculture, Industry, Health & Life Style

UNIT - III	M2M & SYSTEM MANAGEMENT WITH NETCONF-YANG	Classes: 10

M2M, Difference between IOT and M2M, SDN and NFV for IOT, Software defined Networking, Network Function Virtualization, Need for IOT Systems Management, Simple Network Management Protocol, Limitations of SNMP, Network Operator Requirements, NETCONF, YANG, IOT Systems management with NETCONF-YANG

UNIT - IV	DEVELOPING INTERNET OF THINGS & LOGICAL DESIGN USING PYTHON	Classes: 10

Introduction, IOT Design Methodology, Installing Python, Python Data Types & Data Structures, Control Flow, Functions, Modules, Packages, File Handling, Date/ Time Operations, Classes, Python Packages

UNIT - V	IOT PHYSICAL DEVICES & ENDPOINTS	Classes: 15

What is an IOT Device, Exemplary Device, Board, Linux on Raspberry Pi, Interfaces, and Programming& IOT Devices

Text Books:

VijayMadisetti, ArshdeepBahga," Internet of ThingsA Hands-On- Approach",2014, ISBN:978 0996025515

Reference Books:

1. AdrianMcEwen, "Designing the Internet of Things", Wiley Publishers, 2013, ISBN:978-1-118-43062-0
2. Daniel Kellmereit, "The Silent Intelligence: The Internet of Things". 2013, ISBN0989973700

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B. Tech III-ISem. (ECE)

L	T	P	C
0	0	4	2

15A04507 **IC APPLICATIONS LABORATORY**

All experiments are based upon 741 / TL 082/ASLK Kits.

1. Study the characteristics of negative feedback amplifier
2. Design of an instrumentation amplifier
3. Study the characteristics of regenerative feedback system with extension to design an astablemultivibrator
4. Study the characteristics of integrator circuit
5. Design of Analog filters – I
6. Design of Analog filters – II
7. Design of a self-tuned Filter
8. Design of a function generator
9. Design of a Voltage Controlled Oscillator
10. Design of a Phase Locked Loop(PLL)
11. Automatic Gain Control (AGC) Automatic Volume Control (AVC)
12. Design of a low drop out regulator
13. DC-DC Converter

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L	T	P	C
3	1	0	3

15A04605 MATLAB PROGRAMMING (CBCC-I)

Objectives:

- Understand the MATLAB Desktop, Command window and the Graph Window
- Be able to do simple and complex calculation using MATLAB
- Be able to carry out numerical computations and analyses
- Understand the mathematical concepts upon which numerical methods rely
- Ensure you can competently use the MATLAB programming environment
- Understand the tools that are essential in solving engineering problems

1. **UNIT-I:Introduction to MATLAB**
   MATLAB Interactive Sessions, Menus and the toolbar, computing with MATLAB, Script files and the Editor Debugger, MATLAB Help System, Programming in MATLAB.

2. **UNIT-II:Arrays**
   Arrays, Multidimensional Arrays, Element by Element Operations, Polynomial Operations Using Arrays, Cell Arrays, Structure Arrays.

3. **UNIT-III:Functions & Files**
   Elementary Mathematical Functions, User Defined Functions, Advanced Function Programming, Working with Data Files.

4. **UNIT-IV:Programming Techniques**
   Program Design and Development, Relational Operators and Logical Variables, Logical Operators and Functions, Conditional Statements, Loops, the Switch Structure, Debugging Mat Lab Programs.

Plotting :XY- plotting functions, Subplots and Overlay plots, Special Plot types, Interactive plotting, Function Discovery, Regression, 3-D plots.

5. **UNIT-V:Linear Algebraic Equations**
   Elementary Solution Methods, Matrix Methods for (Linear Equations), Cramer's Method, Undet- ermined Systems, Order Systems.

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L	T	P	C
3	1	0	3

15A04506 **MEMS & MICRO SYSTEMS**
(MOOCS-I)

UNIT I

Introduction: Introduction to MEMS & Microsystems, Introduction to Microsensors, Evaluation of MEMS, Microsensors, Market Survey, Application of MEMS, MEMS Materials, MEMS Materials Properties, MEMS Materials Properties.

UNIT II

Microelectronic Technology for MEMS: Microelectronic Technology for MEMS,Micromachining Technology for MEMS, Micromachining Process, Etch Stop Techniques and Microstructure, Surface and Quartz Micromachining, Fabrication of Micromachined Microstructure, Microstereolithography,

UNIT III

Micro Sensors: MEMS Microsensors, ThermalMicrosensors, Mechanical MicromachinedMicrosensors, MEMS Pressure Sensor, MEMS Flow Sensor, Micromachined Flow Sensors, MEMS Inertial Sensors, MEMS Gyro Sensor

UNIT IV

MEMS Accelerometers: Micromachined Micro accelerometers for MEMS, MEMS Accelerometers for Avionics, Temperature Drift and Damping Analysis, Piezoresistive Accelerometer Technology, MEMS Capacitive Accelerometer, MEMS Capacitive Accelerometer Process, MEMS for Space Application.

UNIT V

MEMS Applications: Polymer MEMS & Carbon Nano Tubes CNT, Wafer Bonding & Packaging of MEMS, Interface Electronics for MEMS, Introduction to BioMEMS and Micro Fluidics, Introduction to Bio Nano Technology, Bio Sensors, Fluidics, MEMS for Biomedical Applications (Bio-MEMS)

Text Books:

1. NadimMalufKirt Williams "An Introduction to Microelectromechanical Systems Engineering", Second Edition, Artech House, Inc. Boston London, International Standard Book Number: 1-58053-590-9.
2. Varadan, V KandVaradan "Microsensors, actuators, MEMS, and electronics for smart structures" Rai-Choudhury P (ed.) Handbook of Microlithography, Micromachining, and Microfabrication, SPIE OpticalEngineeringPress

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L	T	P	C
0	0	4	2

15A04507 **IC APPLICATIONS LABORATORY**

All experiments are based upon 741 / TL 082/ASLK Kits.

1. Study the characteristics of negative feedback amplifier
2. Design of an instrumentation amplifier
3. Study the characteristics of regenerative feedback system with extension to design an astablemultivibrator
4. Study the characteristics of integrator circuit
5. Design of Analog filters – I
6. Design of Analog filters – II
7. Design of a self-tuned Filter
8. Design of a function generator
9. Design of a Voltage Controlled Oscillator
10. Design of a Phase Locked Loop(PLL)
11. Automatic Gain Control (AGC) Automatic Volume Control (AVC)
12. Design of a low drop out regulator
13. DC-DC Converter

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