

भारतीय सूचना प्रौद्योगिकी अभिकल्पना एवं विनिर्माण संस्थान कर्नूल  
**Indian Institute of Information Technology  
Design and Manufacturing Kurnool**



**CURRICULA AND SYLLABI**

**Bachelor of Technology**



**DEPARTMENT OF  
COMPUTER SCIENCE AND ENGINEERING**

**B. TECH.: COMPUTER SCIENCE AND ENGINEERING**

<b>FIRST SEMESTER</b>						
<b>S. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category Code</b>	<b>I</b>	<b>P</b>	<b>C</b>
1.	DS101	Differential and Integral Calculus	BSC	3	0	3
2.	DS102	Engineering Physics	BSC	3	0	3
3.	ME101	Engineering Mechanics	BEC	3	0	3
4.	EC101	Basic Electrical and Electronics Engineering	BEC	3	0	3
5.	CS101	Problem Solving and Computer Programming	BEC	3	0	3
6.	DS103	Technical and Professional Communication	HMC	2	2	3
7.	DS104	Engineering Physics Practice	BSC	0	3	2
8.	CS102	Problem Solving and Computer Programming Practice	BEC	0	3	2
9.	ME102	Engineering Skills Practice	BEC	0	3	2
10.	ID101	NSS/NSO/NCC	HMC	0	0	0
<b>Total No. of Credits</b>						<b>24</b>

<b>SECOND SEMESTER</b>						
<b>S. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category Code</b>	<b>I</b>	<b>P</b>	<b>C</b>
1.	DS151	Probability and Statistics	BSC	3	0	3
2.	DS152	Linear Algebra	BSC	3	0	3
3.	DS153	Modern Physics	BSC	3	0	3
4.	DSxxx	Design Elective	DES	2	0	2
5.	DSxxx	Humanities Elective	HMC	2	0	0
6.	ME151	Concepts in Engineering Design	DES	3	0	3
7.	ME152	Design Realization Practice	DES	0	3	2
8.	DS154	Modern Physics Practice	BSC	0	3	2
9.	CS151	Digital Logic Design	BEC	2	3	4
10.	CS152	Python Programming Practice	BEC	0	3	2
11.	ID101	NSS/NCC/NSO	HMC	0	0	0
<b>Total No. of Credits</b>						<b>24</b>

THIRD SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS201	Random Variables and Stochastic Processes	BSC	3	0	3
2.	CS201	Discrete Mathematics	PEC	3	0	3
3.	CS202	Data Structures	PEC	3	0	3
4.	CS203	Computer Organization and Architecture	PEC	3	0	3
5.	CS204	Design and Analysis of Algorithms	PEC	3	0	3
6.	CS205	Data Structures Practice	PEC	0	3	2
7.	CS206	Computer Organization and Architecture Practice	PEC	0	3	2
8.	CS207	Design and Analysis of Algorithms Practice	PEC	0	3	2
9.	IDxxx	Self-Improvement Course I	HMC	0	0	0
<b>Total No. of Credits</b>						<b>21</b>

FOURTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	CS251	Automata Theory and Compiler Design	PEC	3	0	3
2.	CS252	Artificial Intelligence	PEC	3	0	3
3.	CS253	Operating Systems	PEC	3	0	3
4.	CS254	Data Communication and Computer Networking	PEC	3	0	3
5.	CS255	Embedded Systems and IoT	PEC	2	2	3
6.	CS256	Automata and Compiler Design Practice	PEC	0	3	2
7.	CS257	Operating Systems Practice	PEC	0	3	2
8.	CS258	Computer Networks Practice	PEC	0	3	2
9.	XXxxx	Skill Development Course I	PCD	2	0	2
10.	IDxxx	Self-Improvement Course II	HMC	0	0	0
<b>Total No. of Credits</b>						<b>23</b>

FIFTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS301	Managerial Economics and Financial Accountancy	HMC	3	0	3
2.	CS301	Machine Learning	PEC	3	0	3
3.	CS302	Database Management Systems	PEC	3	0	3
4.	CS303	Software Engineering	PEC	3	0	3
5.	CS304	Data Mining	PEC	3	0	3
6.	CS305	Machine Learning Practice	PEC	0	3	2
7.	CS306	Database Management Systems Practice	PEC	0	3	2
8.	CS307	Software Engineering Practice	PEC	0	3	2
9.	IDxxx	Self-Improvement Course III	HMC	0	0	0
<b>Total No. of Credits</b>						<b>21</b>

SIXTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS351	Entrepreneurship and Management Functions	PEC	3	0	3
2.	CS351	High Performance and GPU Computing	PEC	3	0	3
3.	CS352	Computer Vision	PES	3	0	3
4.	CSxxx	Department Elective I	PEC	3	0	3
5.	XXxxx	Free Elective I	PEC	3	0	3
6.	CS353	High Performance and GPU Computing Practice	PEC	0	3	2
7.	CS354	Computer Vision Practice	PEC	0	3	2
8.	ID351	Product Design Practice	DES	0	3	2
9.	XXxxx	Skill Development Course II	PCD	2	0	2
9.	IDxxx	Self-Improvement Course IV	HMC	0	0	0
<b>Total No. of Credits</b>						<b>23</b>

SEVENTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	CS498	Project Phase I	PCD	-	-	3
2.	CSxxx	Department Elective II	PEC	3	0	3
3.	CSxxx	Department Elective III	PEC	3	0	3
4.	CSxxx	Department Elective IV	PEC	3	0	3
5.	XXxxx	Free Elective II	PEC	3	0	3
6.	CS496	Seminar	PCD	-	2	1
<b>Total No. of Credits</b>						<b>16</b>

EIGHTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	CS499	Project Phase II	PCD	-	-	8
2.	CS497	Internship	PCD	-	-	3
<b>Total No. of Credits</b>						<b>11</b>

## Elective Courses

List of Design Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS131	Design History	DES	2	0	2
2.	DS132	Sociology of Design	DES	2	0	2
3.	DS133	Earth, Environment and Design	DES	2	0	2

List of Humanities Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS136	Professional Ethics for Engineers	HMC	2	0	0
2.	DS137	Universal Human Values	HMC	2	0	0
3.	DS138	Constitution of India	HMC	2	0	0
4.	DS139	History of Science and Technology in India	HMC	2	0	0

List of Department Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1	CS401	Game Theory	PEC	3	0	3
2	CS402	Internet of Things	PEC	3	0	3
3	CS403	Natural Language Processing	PEC	3	0	3
4	CS404	Information Retrieval	PEC	3	0	3
5	CS405	Recommender Systems	PEC	3	0	3
6	CS406	Blockchain	PEC	3	0	3
7	CS407	Object Oriented Programming	PEC	3	0	3
8	CS408	Systems Engineering	PEC	3	0	3
9	CS409	Industry 4.0	PEC	3	0	3
10	CS410	Health Analytics	PEC	3	0	3
11	CS411	Social Network Analysis	PEC	3	0	3
12	CS412	Information Theory and Coding	PEC	3	0	3
13	CS413	Unmanned Aerial Vehicle	PEC	3	0	3
14	CS414	Robotics	PEC	3	0	3
15	CS415	Time Series Analysis	PEC	3	0	3
16	CS416	Information Security	PEC	3	0	3
17	CS417	Human Computer Interaction	PEC	3	0	3
18	CS418	Design Patterns	PEC	3	0	3
19	CS419	Modern Computational Algebra	PEC	3	0	3
20	CS420	Affective Computing	PEC	3	0	3
21	CS421	Genetic Algorithms	PEC	3	0	3

22	CS422	Simulation and Modelling	PEC	3	0	3
23	CS423	Decision Science	PEC	3	0	3
24	CS424	Quantum Computing	PEC	3	0	3
25	CS425	Software Testing	PEC	3	0	3
26	CS426	Soft Computing	PEC	3	0	3
27	CS427	Data Science	PEC	3	0	3
28	CS428	Advanced Data Structures and Algorithms	PEC	3	0	3
29	CS429	Graph Theory	PEC	3	0	3
30	CS430	Approximation and Randomized Algorithms	PEC	3	0	3
31	CS431	Digital Image Processing	PEC	3	0	3
32	CS432	Mobile Computing	PEC	3	0	3
33	CS433	Pattern Recognition	PEC	3	0	3
34	CS434	Cloud Computing	PEC	3	0	3
35	CS435	Parallel and Distributed Systems	PEC	3	0	3
36	CS436	Business Intelligence	PEC	3	0	3
37	CS437	Service Oriented Architecture	PEC	3	0	3
38	CS438	Real-time Systems	PEC	3	0	3
39	CS439	Big Data Analytics	PEC	3	0	3
40	CS440	Fault-Tolerant Systems	PEC	3	0	3
41	CS441	Computer Graphics and Multimedia	PEC	3	0	3
42	CS442	Scalable Data Science	PEC	3	0	3
43	CS443	Optimization Techniques	PEC	3	0	3
44	CS444	Embedded Systems	PEC	3	0	3
45	CS445	Data Privacy	PEC	3	0	3
46	CS446	Marketing Science and Predictive Analysis	PEC	3	0	3
47	CS447	Cyber Forensics	PEC	3	0	3
48	CS448	Statistical Learning	PEC	3	0	3
49	CS449	Financial Analytics	PEC	3	0	3
50	CS450	Data Analysis and Visualization	PEC	3	0	3
51	CS451	Tools and Data Management	PEC	3	0	3
52	CS452	Decision Support Systems	PEC	3	0	3
53	CS453	Immersive Technologies	PEC	3	0	3
54	CS454	Bio-Inspired Computing	PEC	3	0	3
55	CS455	Bioinformatics	PEC	3	0	3
56	CS456	Advanced Data Mining	PEC	3	0	3
57	CS457	Computational Learning Theory	PEC	3	0	3
58	CS458	Algorithmic Techniques for Big Data	PEC	3	0	3
59	CS459	Mining of Massive Datasets	PEC	3	0	3
60	CS460	Virtual Reality and Augmented Reality	PEC	3	0	3
61	CS461	Cluster Computing	PEC	3	0	3
62	CS462	Wireless Networked Systems	PEC	3	0	3
63	CS463	Post Quantum Cryptography	PEC	3	0	3
64	CS464	Modern Computational Algebra	PEC	3	0	3
65	CS465	Web Technologies	PEC	3	0	3

66	CS466	Cryptography and Network Security	PEC	3	0	3
67	CS467	Principles of Programming	PEC	3	0	3
68	CS468	Remote Sensing and GIS	PEC	3	0	3
69	CS469	Gen AI	PEC	3	0	3

<b>List of Free Electives</b>						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	CS470	Principles of Programming	PEC	3	0	3
2.	CS471	Artificial Intelligence and Machine Learning	PEC	3	0	3
3.	CS472	Introduction to Data Science	PEC	3	0	3
4.	CS473	Systems Engineering	PEC	3	0	3
5.	DS470	Differential Equations	PEC	3	0	3
6.	DS471	Materials and Devices for Quantum Technologies	PEC	3	0	3
7.	DS472	Numerical Methods	PEC	3	0	3
8.	DS473	Quantum Computing	PEC	3	0	3
9.	DS474	Sustainable Design	PEC	3	0	3

## Self-Improvement Courses

<b>List of Self Improvement Courses</b>						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	ID401	Physical (Sports, Dance, Body Building, etc.)	HMC	0	0	0
2.	ID402	Health and Nutrition (Medical) Awareness (Basics awareness on Medicine, Diseases, Remedies, Nutrition, etc.)	HMC	0	0	0
3.	ID403	Personality Enhancement/Character Building (emotional development, Reading biography of great personalities, Responsibility and ownership towards nation)	HMC	0	0	0
4.	ID404	Language and music (Learning new languages, poetry, public speaking, vocabulary enhancement, singing, Musical instrument, etc.)	HMC	0	0	0
5.	ID405	Passion (Any passion of the student not registered earlier)	HMC	0	0	0
6.	ID406	Financial Awareness (Awareness on Insurances, Investments, financial planning, Money Management, etc.)	HMC	0	0	0

## Skill Development Courses

<b>List of Skill Development Courses</b>						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	CS381	Linux Administration	PCD	2	0	2

2.	CS382	Full Stack Development	PCD	2	0	2
3.	CS383	DevOps Toolchain	PCD	2	0	2
4.	CS384	Digital Marketing	PCD	2	0	2
5.	CS385	Graphic Design and Editing	PCD	2	0	2
6.	CS386	Product Automation	PCD	2	0	2
7.	CS387	Systems Programming	PCD	2	0	2
8.	CS388	Software Toolbox	PCD	2	0	2
9.	CS389	Mobile app Development	PCD	2	0	2
10.	CS390	Ethical Hacking	PCD	2	0	2
11.	CS391	Low Code Development	PCD	2	0	2
12.	ME381	Data Science for Engineers	PCD	2	0	2
13.	ME382	Basics of Finite Element Analysis	PCD	2	0	2
14.	ME383	Fuzzy Logic and Neural Network	PCD	2	0	2
15.	ME384	Design, Technology and Innovation	PCD	2	0	2
16.	ME385	Manufacturing Guidelines for Product Design	PCD	2	0	2
17.	ME386	Artificial Intelligence for Mechanical Engineers	PCD	2	0	2
18.	ME387	Database Management System	PCD	2	0	2
19.	ME388	Failure Analysis and prevention	PCD	2	0	2
20.	EC381	Industry 4.0	PCD	2	0	2



## B. TECH.: ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

FIRST SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS101	Differential and Integral Calculus	BSC	3	0	3
2.	DS102	Engineering Physics	BSC	3	0	3
3.	ME101	Engineering Mechanics	BEC	3	0	3
4.	EC101	Basic Electrical and Electronics Engineering	BEC	3	0	3
5.	CS101	Problem Solving and Computer Programming	BEC	3	0	3
6.	DS103	Technical and Professional Communication	HMC	2	2	3
7.	DS104	Engineering Physics Practice	BSC	0	3	2
8.	CS102	Problem Solving and Computer Programming Practice	BEC	0	3	2
9.	ME102	Engineering Skills Practice	BEC	0	3	2
10.	ID101	NSS/NSO/NCC	HMC	0	0	0
<b>Total No. of Credits</b>						<b>24</b>

SECOND SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS151	Probability and Statistics	BSC	3	0	3
2.	DS152	Linear Algebra	BSC	3	0	3
3.	DS153	Modern Physics	BSC	3	0	3
4.	DSxxx	Design Elective	DES	2	0	2
5.	DSxxx	Humanities Elective	HMC	2	0	0
6.	ME151	Concepts in Engineering Design	DES	3	0	3
7.	ME152	Design Realization Practice	DES	0	3	2
8.	DS154	Modern Physics Practice	BSC	0	3	2
9.	AD151	Digital Logic Design	BEC	2	3	4
10.	AD152	Python Programming Practice	BEC	0	3	2
11.	ID101	NSS/NCC/NSO	HMC	0	0	0
<b>Total No. of Credits</b>						<b>24</b>

THIRD SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS201	Random Variables and Stochastic Processes	BSC	3	0	3
2.	AD201	Discrete Mathematics	PEC	3	0	3
3.	AD202	Data Structures	PEC	3	0	3
4.	AD203	Computer Organization and Architecture	PEC	3	0	3
5.	AD204	Design and Analysis of Algorithms	PEC	3	0	3
6.	AD205	Data Structures Practice	PEC	0	3	2
7.	AD206	Computer Organization and Architecture Practice	PEC	0	3	2
8.	AD207	Design and Analysis of Algorithms Practice	PEC	0	3	2
9.	IDxxx	Self-Improvement Course I	HMC	0	0	0
<b>Total No. of Credits</b>						<b>21</b>

FOURTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	AD251	Database Management Systems	PEC	3	0	3
2.	AD252	Operating Systems	PEC	3	0	3
3.	AD253	Automata Theory and Compiler Design	PEC	3	0	3
4.	AD254	Data Communication and Computer Networking	PEC	3	0	3
5.	AD255	Artificial Intelligence	PEC	2	2	3
6.	AD256	Database Management Systems Practice	PEC	0	3	2
7.	AD257	Operating Systems Practice	PEC	0	3	2
8.	AD258	Computer Networks Practice	PEC	0	3	2
9.	XXxxx	Skill Development Course I	PCD	2	0	2
10.	IDxxx	Self-Improvement Course II	HMC	0	0	0
<b>Total No. of Credits</b>						<b>23</b>

FIFTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS301	Managerial Economics and Financial Accountancy	HMC	3	0	3
2.	AD301	Machine Learning	PEC	3	0	3
3.	AD302	Data Analysis and Visualization	PEC	3	0	3
4.	AD303	Data Mining	PEC	3	0	3
5.	AD304	Artificial Intelligence in Software Engineering	PEC	3	0	3
6.	AD305	Machine Learning Practice	PEC	0	3	2
7.	AD306	Data Analysis and Visualization Practice	PEC	0	3	2
8.	AD307	Data Mining Practice	PEC	0	3	2
9.	IDxxx	Self-Improvement Course III	HMC	0	0	0
<b>Total No. of Credits</b>						<b>21</b>

SIXTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS351	Entrepreneurship and Management Functions	PEC	3	0	3
2.	AD351	Big Data Systems	PEC	3	0	3
3.	AD352	Natural Language Processing	PES	3	0	3
4.	ADxxx	Department Elective I	PEC	3	0	3
5.	XXxxx	Free Elective I	PEC	3	0	3
6.	AD353	Big Data Systems Practice	PEC	0	3	2
7.	AD354	Natural Language Processing Practice	PEC	0	3	2
8.	ID351	Product Design Practice	DES	0	3	2
9.	XXxxx	Skill Development Course II	PCD	2	0	2
10.	IDxxx	Self-Improvement Course IV	HMC	0	0	0
<b>Total No. of Credits</b>						<b>23</b>

SEVENTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	AD498	Project Phase I	PCD	-	-	3
2.	ADxxx	Department Elective II	PEC	3	0	3
3.	ADxxx	Department Elective III	PEC	3	0	3
4.	ADxxx	Department Elective IV	PEC	3	0	3
5.	XXxxx	Free Elective II	PEC	3	0	3
6.	CS496	Seminar	PCD	-	2	1
<b>Total No. of Credits</b>						<b>16</b>

EIGHTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	AD499	Project Phase II	PCD	-	-	8
2.	AD497	Internship	PCD	-	-	3
<b>Total No. of Credits</b>						<b>11</b>

## Elective Courses

List of Design Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS131	Design History	DES	2	0	2
2.	DS132	Sociology of Design	DES	2	0	2
3.	DS133	Earth, Environment and Design	DES	2	0	2

List of Humanities Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS136	Professional Ethics for Engineers	HMC	2	0	0
2.	DS137	Universal Human Values	HMC	2	0	0
3.	DS138	Constitution of India	HMC	2	0	0
4.	DS139	History of Science and Technology in India	HMC	2	0	0

List of Department Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1	AD401	Game Theory	PEC	3	0	3
2	AD402	AI in Internet of Things	PEC	3	0	3
3	AD403	Data Privacy	PEC	3	0	3
4	AD404	Information Retrieval	PEC	3	0	3
5	AD405	Recommender Systems	PEC	3	0	3
6	AD406	Distributed Systems	PEC	3	0	3
7	AD407	Object Oriented Programming	PEC	3	0	3
8	AD408	Systems Engineering	PEC	3	0	3
9	AD409	Industry 4.0	PEC	3	0	3
10	AD410	Health Analytics	PEC	3	0	3
11	AD411	Social Network Analysis	PEC	3	0	3
12	AD412	Information Theory and Coding	PEC	3	0	3
13	AD413	Unmanned Aerial Vehicle	PEC	3	0	3
14	AD414	Robotics	PEC	3	0	3
15	AD415	Time Series Analysis	PEC	3	0	3
16	AD416	Information Security	PEC	3	0	3
17	AD417	Human Computer Interaction	PEC	3	0	3
18	AD418	Design Patterns	PEC	3	0	3
19	AD419	Modern Computational Algebra	PEC	3	0	3
20	AD420	Affective Computing	PEC	3	0	3
21	AD421	Genetic Algorithms	PEC	3	0	3
22	AD422	Simulation and Modelling	PEC	3	0	3

23	AD423	Decision Science	PEC	3	0	3
24	AD424	Quantum Computing	PEC	3	0	3
25	AD425	Software Testing	PEC	3	0	3
26	AD426	Soft Computing	PEC	3	0	3
27	AD427	Data Science	PEC	3	0	3
28	AD428	Advanced Data Structures and Algorithms	PEC	3	0	3
29	AD429	Graph Theory	PEC	3	0	3
30	AD430	Approximation and Randomized Algorithms	PEC	3	0	3
31	AD431	Digital Image Processing	PEC	3	0	3
32	AD432	Mobile Computing	PEC	3	0	3
33	AD433	Pattern Recognition	PEC	3	0	3
34	AD434	Cloud Computing	PEC	3	0	3
35	AD435	Parallel and Distributed Systems	PEC	3	0	3
36	AD436	Business Intelligence	PEC	3	0	3
37	AD437	Service Oriented Architecture	PEC	3	0	3
38	AD438	Real-time Systems	PEC	3	0	3
39	AD439	Computer Vision	PEC	3	0	3
40	AD440	Fault-Tolerant Systems	PEC	3	0	3
41	AD441	Computer Graphics and Multimedia	PEC	3	0	3
42	AD442	Scalable Data Science	PEC	3	0	3
43	AD443	Optimization Techniques	PEC	3	0	3
44	AD444	Embedded Systems	PEC	3	0	3
45	AD445	HPC and GPU Computing	PEC	3	0	3
46	AD446	Marketing Science and Predictive Analysis	PEC	3	0	3
47	AD447	Artificial Intelligence in Forensics	PEC	3	0	3
48	AD448	Statistical Learning	PEC	3	0	3
49	AD449	Financial Analytics	PEC	3	0	3
50	AD450	Artificial Intelligence in Healthcare	PEC	3	0	3
51	AD451	Tools and Data Management	PEC	3	0	3
52	AD452	Decision Support Systems	PEC	3	0	3
53	AD453	Immersive Technologies	PEC	3	0	3
54	AD454	Bio-Inspired Computing	PEC	3	0	3
55	AD455	Bioinformatics	PEC	3	0	3
56	AD456	Advanced Data Mining	PEC	3	0	3
57	AD457	Computational Learning Theory	PEC	3	0	3
58	AD458	Algorithmic Techniques for Big Data	PEC	3	0	3
59	AD459	Mining of Massive Datasets	PEC	3	0	3
60	AD460	Cluster Computing	PEC	3	0	3
61	AD461	Wireless Networked Systems	PEC	3	0	3
62	AD462	Web Technologies	PEC	3	0	3
63	AD463	Artificial Intelligence in Manufacturing	PEC	3	0	3
64	AD464	Remote Sensing and GIS	PEC	3	0	3
65	AD465	Deep Learning	PEC	3	0	3
66	AD466	Reinforcement Learning	PEC	3	0	3

67	AD467	Artificial Intelligence in Agriculture	PEC	3	0	3
68	AD468	Artificial Intelligence in Agile Development	PEC	3	0	3
69	AD469	Artificial Intelligence in Additive Manufacturing	PEC	3	0	3
70	AD470	Gen AI	PEC	3	0	3

List of Free Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	CS470	Principles of Programming	PEC	3	0	3
2.	CS471	Artificial Intelligence and Machine Learning	PEC	3	0	3
3.	CS472	Introduction to Data Science	PEC	3	0	3
4.	CS473	Systems Engineering	PEC	3	0	3
5.	DS470	Differential Equations	PEC	3	0	3
6.	DS471	Materials and Devices for Quantum Technologies	PEC	3	0	3
7.	DS472	Numerical Methods	PEC	3	0	3
8.	DS473	Quantum Computing	PEC	3	0	3
9.	DS474	Sustainable Design	PEC	3	0	3

## Self-Improvement Courses

List of Self Improvement Courses						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	ID401	Physical (Sports, Dance, Body Building, etc.)	HMC	0	0	0
2.	ID402	Health and Nutrition (Medical) Awareness (Basics awareness on Medicine, Diseases, Remedies, Nutrition, etc.)	HMC	0	0	0
3.	ID403	Personality Enhancement/Character Building (emotional development, Reading biography of great personalities, Responsibility and ownership towards nation)	HMC	0	0	0
4.	ID404	Language and music (Learning new languages, poetry, public speaking, vocabulary enhancement, singing, Musical instrument, etc.)	HMC	0	0	0
5.	ID405	Passion (Any passion of the student not registered earlier)	HMC	0	0	0
6.	ID406	Financial Awareness (Awareness on Insurances, Investments, financial planning, Money Management, etc.)	HMC	0	0	0

## Skill Development Courses

List of Skill Development Courses						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	CS381	Linux Administration	PCD	2	0	2

2.	CS382	Full Stack Development	PCD	2	0	2
3.	CS383	DevOps Toolchain	PCD	2	0	2
4.	CS384	Digital Marketing	PCD	2	0	2
5.	CS385	Graphic Design and Editing	PCD	2	0	2
6.	CS386	Product Automation	PCD	2	0	2
7.	CS387	Systems Programming	PCD	2	0	2
8.	CS388	Software Toolbox	PCD	2	0	2
9.	CS389	Mobile app Development	PCD	2	0	2
10.	CS390	Ethical Hacking	PCD	2	0	2
11.	CS391	Low Code Development	PCD	2	0	2
12.	ME381	Data Science for Engineers	PCD	2	0	2
13.	ME382	Basics of Finite Element Analysis	PCD	2	0	2
14.	ME383	Fuzzy Logic and Neural Network	PCD	2	0	2
15.	ME384	Design, Technology and Innovation	PCD	2	0	2
16.	ME385	Manufacturing Guidelines for Product Design	PCD	2	0	2
17.	ME386	Artificial Intelligence for Mechanical Engineers	PCD	2	0	2
18.	ME387	Database Management System	PCD	2	0	2
19.	ME388	Failure Analysis and prevention	PCD	2	0	2
20.	EC381	Industry 4.0	PCD	2	0	2

**DEPARTMENT OF  
ELECTRONICS AND COMMUNICATION ENGINEERING**

**B. TECH.: ELECTRONICS AND COMMUNICATION ENGINEERING WITH  
SPECIALIZATION IN DESIGN AND MANUFACTURING**

FIRST SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS101	Differential and Integral Calculus	BSC	3	0	3
2.	DS102	Engineering Physics	BSC	3	0	3
3.	ME101	Engineering Mechanics	BEC	3	0	3
4.	EC101	Basic Electrical and Electronics Engineering	BEC	3	0	3
5.	CS101	Problem Solving and Computer Programming	BEC	3	0	3
6.	DS103	Technical and Professional Communication	HMC	2	2	3
7.	DS104	Engineering Physics Practice	BSC	0	3	2
8.	CS102	Problem Solving and Computer Programming Practice	BEC	0	3	2
9.	ME102	Engineering Skills Practice	BEC	0	3	2
10.	ID101	NSS/NSO/NCC	HMC	0	0	0
<b>Total No. of Credits</b>						<b>24</b>

SECOND SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS155	Differential Equations	BSC	3	0	3
2.	DS153	Modern Physics	BSC	3	0	3
3.	DSxxx	Design Elective	DES	2	0	2
4.	DSxxx	Humanities Elective	HMC	2	0	0
5.	ME151	Concepts in Engineering Design	DES	3	0	3
6.	ME152	Design Realization Practice	DES	0	3	2
7.	ME153	Engineering Graphics	DES	1	3	3
8.	DS154	Modern Physics Practice	BSC	0	3	2
9.	EC151	Electronic Devices and Circuits	BEC	3	0	3
10.	EC152	Signals and systems	BEC	3	0	3
11.	ID101	NSS/NCC/NSO	HMC	0	0	0
<b>Total No. of Credits</b>						<b>24</b>



THIRD SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS152	Linear Algebra	BSC	3	0	3
2.	EC201	Digital Logic Circuits	PEC	3	0	3
3.	EC202	Analog Electronics	PEC	3	0	3
4.	EC203	Fundamentals of Data structures and Algorithms	PEC	3	0	3
5.	EC204	Electromagnetic Waves and Transmission Lines	PEC	3	0	3
6.	EC205	Digital Logic Circuits Practice	PEC	0	3	2
7.	EC206	Analog Electronics Practice	PEC	0	3	2
8.	EC207	Fundamentals of Data structures and Algorithms Practice	PEC	0	3	2
9.	IDxxx	Self-Improvement Course I	HMC	0	0	0
<b>Total No. of Credits</b>						<b>21</b>

FOURTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS151	Probability and Statistics	BSC	3	0	3
2.	EC251	Microprocessors and Microcontrollers	PEC	3	0	3
3.	EC252	Analog and Digital Communications	PEC	3	0	3
4.	EC253	Digital Signal processing	PEC	3	0	3
5.	EC254	Control Systems	PEC	3	0	3
6.	EC255	Microprocessors and Microcontrollers Practice	PEC	0	3	2
7.	EC256	Analog and Digital Communications Practice	PEC	0	3	2
8.	EC257	Digital Signal Processing Practice	PEC	0	3	2
9.	XXxxx	Skill Development Course I	PCD	2	0	2
10.	IDxxx	Self-Improvement Course II	HMC	0	0	0
<b>Total No. of Credits</b>						<b>23</b>

FIFTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS301	Managerial Economics and Financial Accountancy	HMC	3	0	3
2.	EC301	Wireless Communication	PEC	3	0	3
3.	EC302	Electronic Manufacturing and Prototyping	PEC	3	0	3
4.	EC303	VLSI System Design	PEC	3	0	3
5.	EC304	Data Communication and Networking	PEC	3	0	3
6.	EC305	Wireless Communication Practice	PEC	0	3	2
7.	EC306	Electronic Manufacturing and Prototyping Practice	PEC	0	3	2
8.	EC307	VLSI System Design Practice	PEC	0	3	2
9.	IDxxx	Self-Improvement Course III	HMC	0	0	0
<b>Total No. of Credits</b>						<b>21</b>

SIXTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS351	Entrepreneurship and Management Functions	PEC	3	0	3
2.	EC351	Antenna and Microwave Circuits Design	PEC	3	0	3
3.	EC352	Information Theory and Coding	PES	3	0	3
4.	ECxxx	Department Elective I	PEC	3	0	3
5.	XXxxx	Free Elective I	PEC	3	0	3
6.	EC353	Antenna and Microwave Circuits Design Practice	PEC	0	3	2
7.	EC354	Information Theory and Coding Practice	PEC	0	3	2
8.	ID351	Product Design Practice	DES	0	3	2
9.	XXxxx	Skill Development Course II	PCD	2	0	2
10.	IDxxx	Self-Improvement Course IV	HMC	0	0	0
<b>Total No. of Credits</b>						<b>23</b>

SEVENTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	EC498	Project Phase I	PCD	-	-	3
2.	ECxxx	Department Elective II	PEC	3	0	3
3.	ECxxx	Department Elective III	PEC	3	0	3
4.	ECxxx	Department Elective IV	PEC	3	0	3
5.	XXxxx	Free Elective II	PEC	3	0	3
6.	EC496	Seminar	PCD	-	2	1
<b>Total No. of Credits</b>						<b>16</b>

EIGHTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	EC499	Project Phase II	PCD	-	-	8
2.	EC497	Internship	PCD	-	-	3
<b>Total No. of Credits</b>						<b>11</b>

## Elective Courses

<b>List of Design Electives</b>						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS131	Design History	DES	2	0	2
2.	DS132	Sociology of Design	DES	2	0	2
3.	DS133	Earth, Environment and Design	DES	2	0	2

<b>List of Humanities Electives</b>						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS136	Professional Ethics for Engineers	HMC	2	0	0
2.	DS137	Universal Human Values	HMC	2	0	0
3.	DS138	Constitution of India	HMC	2	0	0
4.	DS139	History of Science and Technology in India	HMC	2	0	0

<b>List of Department Electives</b>						
S. No.	Course Code	Course Name	Category Code	I	P	C
1	EC401	Analog and Mixed Signal Circuit Design	PEC	3	0	3
2	EC402	Artificial Intelligence and Machine Learning	PEC	3	0	3
3	EC403	Circuits for Electronics System Design	PEC	3	0	3
4	EC404	Cognitive Communication Networks	PEC	3	0	3
5	EC405	Communication Protocols for Electronic System Design	PEC	3	0	3
6	EC406	Design of Switched Mode Power Supply	PEC	3	0	3
7	EC407	Detection and Estimation Theory	PEC	3	0	3
8	EC408	Digital Image Processing	PEC	3	0	3
9	EC409	Electrical Drives	PEC	3	0	3
10	EC410	Electromagnetic Interference and Compatibility	PEC	3	0	3
11	EC411	MIMO Communication Systems	PEC	3	0	3
12	EC412	Numerical Techniques in Electromagnetics	PEC	3	0	3
13	EC413	Power Electronics	PEC	3	0	3
14	EC414	Reliable Digital Communication System Design	PEC	3	0	3
15	EC415	RF and Microwave Integrated Circuits	PEC	3	0	3
16	EC416	Satellite Communication	PEC	3	0	3
17	EC417	Sensing and Instrumentation	PEC	3	0	3
18	EC418	Signal and Power Integrity	PEC	3	0	3
19	EC419	Software Defined Radio	PEC	3	0	3
20	EC420	Testing and Testability	PEC	3	0	3
21	EC421	VLSI Technology	PEC	3	0	3

### List of Free Electives

S. No.	Course Code	Course Name	Category Code	I	P	C
1.	EC470	Design of IoT System	PEC	3	0	3
2.	EC471	Electric Vehicle Technology	PEC	3	0	3
3.	EC472	Navigation System	PEC	3	0	3
5.	DS471	Materials and Devices for Quantum Technologies	PEC	3	0	3
6.	DS472	Numerical Methods	PEC	3	0	3
7.	DS473	Quantum Computing	PEC	3	0	3
8.	DS474	Sustainable Design	PEC	3	0	3

### Self-Improvement Courses

#### List of Self Improvement Courses

S. No.	Course Code	Course Name	Category Code	I	P	C
1.	ID401	Physical (Sports, Dance, Body Building, etc.)	HMC	0	0	0
2.	ID402	Health and Nutrition (Medical) Awareness (Basics awareness on Medicine, Diseases, Remedies, Nutrition, etc.)	HMC	0	0	0
3.	ID403	Personality Enhancement/Character Building (emotional development, Reading biography of great personalities, Responsibility and ownership towards nation)	HMC	0	0	0
4.	ID404	Language and music (Learning new languages, poetry, public speaking, vocabulary enhancement, singing, Musical instrument, etc.)	HMC	0	0	0
5.	ID405	Passion (Any passion of the student not registered earlier)	HMC	0	0	0
6.	ID406	Financial Awareness (Awareness on Insurances, Investments, financial planning, Money Management, etc.)	HMC	0	0	0

### Skill Development Courses

#### List of Skill Development Courses

S. No.	Course Code	Course Name	Category Code	I	P	C
1.	CS381	Linux Administration	PCD	2	0	2
2.	CS382	Full Stack Development	PCD	2	0	2
3.	CS383	DevOps Toolchain	PCD	2	0	2
4.	CS384	Digital Marketing	PCD	2	0	2
5.	CS385	Graphic Design and Editing	PCD	2	0	2
6.	CS386	Product Automation	PCD	2	0	2
7.	CS387	Systems Programming	PCD	2	0	2
8.	CS388	Software Toolbox	PCD	2	0	2

9.	CS389	Mobile app Development	PCD	2	0	2
10.	CS390	Ethical Hacking	PCD	2	0	2
11.	CS391	Low Code Development	PCD	2	0	2
12.	ME381	Data Science for Engineers	PCD	2	0	2
13.	ME382	Basics of Finite Element Analysis	PCD	2	0	2
14.	ME383	Fuzzy Logic and Neural Network	PCD	2	0	2
15.	ME384	Design, Technology and Innovation	PCD	2	0	2
16.	ME385	Manufacturing Guidelines for Product Design	PCD	2	0	2
17.	ME386	Artificial Intelligence for Mechanical Engineers	PCD	2	0	2
18.	ME387	Database Management System	PCD	2	0	2
19.	ME388	Failure Analysis and prevention	PCD	2	0	2
20.	EC381	Industry 4.0	PCD	2	0	2

**DEPARTMENT OF  
MECHANICAL ENGINEERING**

**B. TECH.: MECHANICAL ENGINEERING WITH SPECIALIZATION  
IN DESIGN AND MANUFACTURING**

<b>FIRST SEMESTER</b>						
<b>S. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category Code</b>	<b>I</b>	<b>P</b>	<b>C</b>
1.	DS101	Differential and Integral Calculus	BSC	3	0	3
2.	DS102	Engineering Physics	BSC	3	0	3
3.	ME101	Engineering Mechanics	BEC	3	0	3
4.	EC101	Basic Electrical and Electronics Engineering	BEC	3	0	3
5.	CS101	Problem Solving and Computer Programming	BEC	3	0	3
6.	DS103	Technical and Professional Communication	HMC	2	2	3
7.	DS104	Engineering Physics Practice	BSC	0	3	2
8.	CS102	Problem Solving and Computer Programming Practice	BEC	0	3	2
9.	ME102	Engineering Skills Practice	BEC	0	3	2
10.	ID101	NSS/NSO/NCC	HMC	0	0	0
<b>Total No. of Credits</b>						<b>24</b>

<b>SECOND SEMESTER</b>						
<b>S. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category Code</b>	<b>I</b>	<b>P</b>	<b>C</b>
1.	DS155	Differential Equations	BSC	3	0	3
2.	DS153	Modern Physics	BSC	3	0	3
3.	DSxxx	Design Elective	DES	2	0	2
4.	DSxxx	Humanities Elective	HMC	2	0	0
5.	ME151	Concepts in Engineering Design	DES	3	0	3
6.	ME152	Design Realization Practice	DES	0	3	2
7.	ME153	Engineering Graphics	DES	1	3	3
8.	DS154	Modern Physics Practice	BSC	0	3	2
9.	ME154	Material Science and Metallurgy	BEC	3	0	3
10.	ME155	Thermodynamics	BEC	3	0	3
11.	ID101	NSS/NCC/NSO	HMC	0	0	0
<b>Total No. of Credits</b>						<b>24</b>

THIRD SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS152	Linear Algebra	BSC	3	0	3
2.	ME201	Mechanics of Materials	PEC	3	0	3
3.	ME202	Kinematics of Machines	PEC	3	0	3
4.	ME203	Fluid Mechanics and Hydraulic Machinery	PEC	3	0	3
5.	ME204	Electrical Drives, Sensors, and Microprocessor	PEC	3	0	3
6.	ME205	Materials and Mechanics Practice	PEC	0	3	2
7.	ME206	Electrical Drives, Sensors, and Microprocessor Practice	PEC	0	3	2
8.	ME207	Machine Drawing & Manufacturability Analysis Practice	PEC	0	3	2
9.	IDxxx	Self-Improvement Course I	HMC	0	0	0
<b>Total No. of Credits</b>						<b>21</b>

FOURTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS151	Probability and Statistics	BSC	3	0	3
2.	ME251	Basic Concepts in Manufacturing Processes	PEC	3	0	3
3.	ME252	Dynamics of Machines	PEC	3	0	3
4.	ME253	Design of Machine Elements	PEC	3	0	3
5.	ME254	Heat Transfer	PEC	3	0	3
6.	ME255	Basic Concepts in Manufacturing Processes Practice	PEC	0	3	2
7.	ME256	Dynamics of Machines Practice	PEC	0	3	2
8.	ME257	Fluid Mechanics and Heat Transfer Practice	PEC	0	3	2
9.	XXxxx	Skill Development Course I	PCD	2	0	2
10.	IDxxx	Self-Improvement Course II	HMC	0	0	0
<b>Total No. of Credits</b>						<b>23</b>

FIFTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS301	Managerial Economics and Financial Accountancy	HMC	3	0	3
2.	ME301	Quality Inspection and Product Validation	PEC	3	0	3
3.	ME302	Automation in Manufacturing	PEC	3	0	3
4.	ME303	Thermal Engineering	PEC	3	0	3
5.	ME304	Operation Research	PEC	3	0	3
6.	ME305	Quality Inspection and Product Validation Practice	PEC	0	3	2
7.	ME306	Automation in Manufacturing Practice	PEC	0	3	2
8.	ME307	Thermal Engineering Practice	PEC	0	3	2
9.	IDxxx	Self-Improvement Course III	HMC	0	0	0
<b>Total No. of Credits</b>						<b>21</b>

SIXTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS351	Entrepreneurship and Management Functions	PEC	3	0	3
2.	ME351	Computational Methods in Engineering	PEC	3	0	3
3.	ME352	Machine Tool Technology	PES	3	0	3
4.	MExxx	Department Elective I	PEC	3	0	3
5.	XXxxx	Free Elective I	PEC	3	0	3
6.	ME353	Computational Methods in Engineering Practice	PEC	0	3	2
7.	ME354	Machine Tool Technology Practice	PEC	0	3	2
8.	ID351	Product Design Practice	DES	0	3	2
9.	XXxxx	Skill Development Course II	PCD	2	0	2
10.	IDxxx	Self-Improvement Course IV	HMC	0	0	0
<b>Total No. of Credits</b>						<b>23</b>

SEVENTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	ME498	Project Phase I	PCD	-	-	3
2.	MExxx	Department Elective II	PEC	3	0	3
3.	MExxx	Department Elective III	PEC	3	0	3
4.	MExxx	Department Elective IV	PEC	3	0	3
5.	XXxxx	Free Elective II	PEC	3	0	3
6.	ME496	Seminar	PCD	0	2	1
<b>Total No. of Credits</b>						<b>16</b>

EIGHTH SEMESTER						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	ME499	Project Phase II	PCD	-	-	8
2.	ME497	Internship	PCD	-	-	3
<b>Total No. of Credits</b>						<b>11</b>



## Elective Courses

List of Design Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS131	Design History	DES	2	0	2
2.	DS132	Sociology of Design	DES	2	0	2
3.	DS133	Earth, Environment and Design	DES	2	0	2

List of Humanities Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	DS136	Professional Ethics for Engineers	HMC	2	0	0
2.	DS137	Universal Human Values	HMC	2	0	0
3.	DS138	Constitution of India	HMC	2	0	0
4.	DS139	History of Science and Technology in India	HMC	2	0	0

List of Department Electives						
S. No.	Course Code	Course Name	Category Code	I	P	C
1	ME521	Information Systems in Manufacturing	PEC	3	0	3
2	ME522	Inspection and Testing in Manufacturing	PEC	3	0	3
3	ME523	Lasers in Manufacturing	PEC	3	0	3
4	ME524	Digital Manufacturing	PEC	3	0	3
5	ME525	Smart Materials and Structures	PEC	3	0	3
6	ME526	Design for Manufacturing and Assembly	PEC	3	0	3
7	ME527	Additive Manufacturing	PEC	3	0	3
8	ME528	Materials Fabrication and Characterization	PEC	3	0	3
9	ME529	Introduction to Smart Manufacturing	PEC	3	0	3
10	ME530	Processing of Alloys and Composites	PEC	3	0	3
11	ME531	Computer Integrated Manufacturing Systems	PEC	3	0	3
12	ME532	Industrial Instrumentation and Metrology	PEC	3	0	3
13	ME533	MEMS / NEMS and Sensors	PEC	3	0	3
14	ME534	Metal Forming	PEC	3	0	3
15	ME535	Total Quality Management	PEC	3	0	3
16	ME536	Nano Finishing Science and Technology	PEC	3	0	3
17	ME537	Processing of Composites	PEC	3	0	3
18	ME538	Surface Engineering	PEC	3	0	3
19	ME539	Modern Manufacturing Technologies	PEC	3	0	3
20	ME540	Robotics and Intelligent Systems	PEC	3	0	3
21	ME541	Mechanical Vibration and Condition Monitoring	PEC	3	0	3
22	ME542	Mechanical Vibrations	PEC	3	0	3
23	ME543	Advanced Solid Mechanics	PEC	3	0	3

24	ME544	Finite Element Methods	PEC	3	0	3
25	ME545	IC Engines and Gas Turbines	PEC	3	0	3
26	ME546	Computational Fluid Dynamics	PEC	3	0	3
27	ME547	Optimization Techniques for Mechanical Engineers	PEC	3	0	3
28	ME548	Product Design and Development	PEC	3	0	3
29	ME549	Computational Tools for Engineers	PEC	3	0	3
30	ME550	Soft Computing Techniques	PEC	3	0	3
31	ME551	Big Data Analytics	PEC	3	0	3
32	ME552	Applied Operations Research	PEC	3	0	3
33	ME553	Digital Control for Automation	PEC	3	0	3
34	ME401	Computer-Aided Design and Manufacturing	PEC	3	0	3
35	ME402	Refrigeration and Air conditioning	PEC	3	0	3
36	ME403	Automobile Engineering Systems	PEC	3	0	3

<b>List of Free Electives</b>						
<b>S. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category Code</b>	<b>I</b>	<b>P</b>	<b>C</b>
1.	ME554	Non-linear Dynamics	PEC	3	0	3
2.	ME555	Operations and Supply Chain Management	PEC	3	0	3
3.	ME556	Industry 4.0	PEC	3	0	3
4.	ME557	Design and Analysis of Experiments	PEC	3	0	3
5.	ME404	Designing Intelligent Systems	PEC	3	0	3
6.	ME405	Design for Quality and Reliability	PEC	3	0	3
7.	ME406	System Thinking for Design	PEC	3	0	3
8.	DS471	Materials and Devices for Quantum Technologies	PEC	3	0	3
9.	DS472	Numerical Methods	PEC	3	0	3
10.	DS473	Quantum Computing	PEC	3	0	3
11.	DS474	Sustainable Design	PEC	3	0	3

## Self-Improvement Courses

<b>List of Self Improvement Courses</b>						
<b>S. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Category Code</b>	<b>I</b>	<b>P</b>	<b>C</b>
1.	ID401	Physical (Sports, Dance, Body Building, etc.)	HMC	0	0	0
2.	ID402	Health and Nutrition (Medical) Awareness (Basics awareness on Medicine, Diseases, Remedies, Nutrition, etc.)	HMC	0	0	0
3.	ID403	Personality Enhancement/Character Building (emotional development, Reading biography of great personalities, Responsibility and ownership towards nation)	HMC	0	0	0
4.	ID404	Language and music (Learning new languages, poetry, public speaking, vocabulary enhancement, singing, Musical instrument, etc.)	HMC	0	0	0

5.	ID405	Passion (Any passion of the student not registered earlier)	HMC	0	0	0
6.	ID406	Financial Awareness (Awareness on Insurances, Investments, financial planning, Money Management, etc.)	HMC	0	0	0

## Skill Development Courses

List of Skill Development Courses						
S. No.	Course Code	Course Name	Category Code	I	P	C
1.	CS381	Linux Administration	PCD	2	0	2
2.	CS382	Full Stack Development	PCD	2	0	2
3.	CS383	DevOps Toolchain	PCD	2	0	2
4.	CS384	Digital Marketing	PCD	2	0	2
5.	CS385	Graphic Design and Editing	PCD	2	0	2
6.	CS386	Product Automation	PCD	2	0	2
7.	CS387	Systems Programming	PCD	2	0	2
8.	CS388	Software Toolbox	PCD	2	0	2
9.	CS389	Mobile app Development	PCD	2	0	2
10.	CS390	Ethical Hacking	PCD	2	0	2
11.	CS391	Low Code Development	PCD	2	0	2
12.	ME381	Data Science for Engineers	PCD	2	0	2
13.	ME382	Basics of Finite Element Analysis	PCD	2	0	2
14.	ME383	Fuzzy Logic and Neural Network	PCD	2	0	2
15.	ME384	Design, Technology and Innovation	PCD	2	0	2
16.	ME385	Manufacturing Guidelines for Product Design	PCD	2	0	2
17.	ME386	Artificial Intelligence for Mechanical Engineers	PCD	2	0	2
18.	ME387	Database Management System	PCD	2	0	2
19.	ME388	Failure Analysis and prevention	PCD	2	0	2
20.	EC381	Industry 4.0	PCD	2	0	2