

HINDUSTHAN INSTITUTE OF TECHNOLOGY

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai,
Accredited with "A" Grade by NAAC and Accredited by NBA (Aero, CSE, ECE & Mech., IT MBA)
Valley Campus, Pollachi Main Road, Coimbatore 641 032.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

B.E. COMPUTER SCIENCE AND ENGINEERING

REGULATIONS - 2022

CHOICE BASED CREDIT SYSTEM

Course Code	Course Title	Course Category	Course Type	Assessment			L	P	T	J	Credit
				CIA	ESE	Total					
SEMESTER I											
22MC801	Universal Human Values I- Student Induction Program	MC	T								3 weeks
22EN101	Professional English	HSC	TP	50	50	100	2	2	0	0	3
22MA201	Matrices and Calculus	BSC	T	40	60	100	3	0	1	0	4
22PH201	Engineering Physics	BSC	T	40	60	100	3	0	0	0	3
22CY201	Engineering Chemistry	BSC	T	40	60	100	3	0	0	0	3
22CS301	Programming for Problem Solving in C	ESC	TP	50	50	100	3	2	0	0	4
22PC201	Physics and Chemistry Laboratory	BSC	P	60	40	100	0	4	0	0	2
22TP701	Soft Skills & Aptitude - I	EEC	TP	100	0	100	0	2	0	0	1
Total											20
SEMESTER II											
22UH101	Universal Human ValuesII – Understanding Harmony	HSC	T	40	60	100	3	0	0	0	3

22EN103	Design Thinking	HSC	PT	50	50	100	0	2	0	0	1
22MA202	Numerical Methods and Statistics	BSC	T	40	60	100	3	0	1	0	4
22PH203	Physics for Information science	BSC	T	40	60	100	3	0	0	0	3
22ME301	Engineering Graphics	ESC	T	40	60	100	3	0	0	0	3
22EC304	Basic Electrical & Electronics Engineering	ESC	TP	50	50	100	2	2	0	0	3
22AD301	Introduction to Artificial Intelligence and Data Science	PCC	T	40	60	100	3	0	0	0	3
22ME302	Engineering Practice Laboratory	ESC	P	60	40	100	0	4	0	0	2
22TP702	Soft Skills & Aptitude - II	EEC	TP	50	50	100	0	2	0	0	1
22 MC805	தமிழர் மரபு /Heritage of Tamils	T	MC	40	60	100	1	0	0	0	1
22NC101	NCC General and National Integration	NCC	TP	50	50	100	1	0	0	0	1*
Total											24

SEMESTER III											
22MA204	Discrete Mathematics	BSC	T	40	60	100	3	0	0	0	3
22EC308	Applied Digital LogicDesign	ESC	TP	50	50	100	3	2	0	0	4
22CS302	Java Programming	PCC	TP	50	50	100	3	2	0	0	4
22CS401	Data Structures	PCC	TP	50	50	100	3	2	0	0	4
22CS402	Computer Architecture	PCC	T	40	60	100	3	0	0	0	3
22CS403	Clean Coding and Devops	PCC	TP	50	50	100	2	2	0	0	3
22MC806	தமிழரும் தொழில்நுட்பமும் Tamils and Technology	MC	T	40	60	100	1	0	0	0	1
22TP703	Soft Skills & Aptitude -III	EEC	TP	50	50	100	0	2	0	0	1

22NC102	Social Services and Community Development	NCC	TP	50	50	100	1	0	0	0	1*
Total											23

SEMESTER IV

22MA207	Probability and Queuing Theory	BSC	T	40	60	100	3	0	0	0	3
22IT401	Database Management Systems	PCC	TP	50	50	100	3	2	0	0	4
22CS404	Analysis of Algorithms	PCC	T	40	60	100	3	0	0	0	3
22AD402	Python Programming for Data Science	PCC	TP	50	50	100	2	4	0	0	4
22CS405	Operating Systems	PCC	TP	50	50	100	3	2	0	0	4
22AD403	Data Visualization	PCC	TP	50	50	100	2	2	0	0	3
22TP704	Soft Skills & Aptitude -IV	EEC	TP	50	50	100	0	2	0	0	1
22TP709	Internship/Inplant Training	EEC	P	100	0	100	0	0	0	0	2#
22MC802	Environmental Scienceand Engineering	MC	T	0	100	100	3	0	0	0	0
22NC103	Leadership Qualities and Camp Activities	NCC	TP	50	50	100	1	0	0	0	1*
#- 4 weeks of Industry Training											
Total											24

SEMESTER V

22CS406	Automata and Compiler Design	PCC	T	40	60	100	3	0	1	0	4
22IT403	Computer Networks	PCC	TP	50	50	100	3	2	0	0	4
22AD405	Machine Learning	PCC	TP	40	60	100	3	2	0	0	4
22IT405	Web Programming	PCC	TP	50	50	100	1	4	0	0	3
22CS5XX	Professional Elective-I	PEC	T	40	60	100	3	0	0	0	3
22CS6XX	Open Elective-I/Foreign	OEC	T	40	60	100	3	0	0	0	3

	Languages/NCC Credit Course										
22TP705	Programming Aspects and Technical Aptitude – I	EEC	TP	50	50	100	0	2	0	0	1
22MC8XX	Mandatory Course III	MC	T	0	100	100	3	0	0	0	0
22NC904	General Awareness Communication andAero Engines	NCC	TP	50	50	100	1	0	0	0	1*
Total											22

SEMESTER VI

22EN102	Effective Technical Communication	HSC	TP	50	50	100	2	2	0	0	3
22AD406	Artificial Intelligence	PCC	TP	50	50	100	3	2	0	0	4
22IT402	Software Engineering	PCC	T	40	60	100	3	0	0	0	3
22EC501	Introduction to IOT and Embedded Programming	PCC	TP	50	50	100	3	2	0	0	4
22CS5XX	Professional Elective-II/ NCC Credit course	PEC	T	40	60	100	3	0	0	0	3

22TP706	Programming Aspects and Technical Aptitude – II	EEC	TP	50	50	100	0	2	0	0	1
22TP708	Experimental Project Based Learning	EEC	PW	50	50	100	0	0	0	6	3
22MC8XX	Mandatory Course IV	MC	T	0	100	100	2	0	0	0	0
Total											21

SEMESTER VII

22CS5XX	Professional Elective-III	PEC	T	40	60	100	3	0	0	0	3
22CS5XX	Professional Elective-IV	PEC	T	40	60	100	3	0	0	0	3
22CS5XX	Professional Elective –V	PEC	T	40	60	100	3	0	0	0	3
22CS5XX	Professional Elective –VI	PEC	T	40	60	100	3	0	0	0	3
22CS6XX	Open Elective-II/Foreign Languages / NCC	OEC	T	40	60	100	3	0	0	0	3

	Credit Course										
22ED101	Entrepreneurship IPR Start Up	EEC	T	40	60	100	3	0	0	0	3
22TP707	General studies for Competitive Exam	EEC	T	40	60	100	2	0	0	0	2
Total											20
SEMESTER VIII											
22TP710	Project Work	EEC	PW	60	40	100	0	0	0	20	10
Total											10
Total Credit											164

CURRICULUM COMPONENTS

HUMANITIES AND SOCIALSCIENCES (HSMC)

S. No	Course Code	Course Title	Course Category	Course Type	L	P	T	J	Credit
1	22EN101	Professional English	HSC	TP	2	2	0	0	3
2	22UH101	Universal Human ValuesII – Understanding Harmony	HSC	T	3	0	0	0	3
3	22EN103	Design Thinking	HSC	PT	0	2	0	0	1
4	22EN102	Effective Technical Communication	HSC	TP	2	2	0	0	3

BASIC SCIENCES (BSC)

S. No	Course Code	Course Title	Course Category	Course Type	L	P	T	J	Credit
1	22MA201	Matrices and Calculus	BSC	T	3	0	1	0	4
2	22PH201	Engineering Physics	BSC	T	3	0	0	0	3

3	22CY201	Engineering Chemistry	BSC	T	3	0	0	0	3
4	22PC201	Physics and Chemistry Laboratory	BSC	P	0	4	0	0	2
5	22MA202	Numerical Methods and Statistics	BSC	T	3	1	0	0	4
6	22PH203	Physics for Information science	BSC	T	3	0	0	0	3
7	22MA204	Discrete Mathematics	BSC	T	3	0	0	0	3
8	22MA207	Probability and Queuing Theory	BSC	T	3	0	0	0	3

ENGINEERING SCIENCES (ESC)

S. No	Course Code	Course Title	Course Category	Course Type	L	P	T	J	Credit
1	22CS301	Programming for Problem Solving in C	ESC	TP	3	2	0	0	4
2	22ME301	Engineering Graphics	ESC	T	3	0	0	0	3
3	22EC304	Basic Electrical & Electronics Engineering	ESC	TP	2	2	0	0	3
4	22ME302	Engineering Practice Laboratory	ESC	P	0	4	0	0	2
5	22EC308	Applied Digital Logic Design	ESC	TP	3	2	0	0	4

PROFESSIONAL CORE (PCC)

S. No	Course Code	Course Title	Course Category	Course Type	L	P	T	J	Credit
1	22CS303	Introduction to Artificial Intelligence and Data Science	PCC	T	3	0	0	0	3
2	22CS302	Java Programming	PCC	TP	3	2	0	0	4
3	22CS401	Data Structures	PCC	TP	3	2	0	0	4
4	22CS402	Computer Architecture	PCC	T	3	0	0	0	3

5	22CS403	Clean Coding and Devops	PCC	TP	2	2	0	0	3
6	22IT401	Database Management Systems	PCC	TP	3	2	0	0	4
7	22CS404	Analysis of Algorithms	PCC	T	3	0	0	0	3
8	22AD402	Python Programming for Data Science	PCC	TP	2	4	0	0	4
9	22CS405	Operating Systems	PCC	TP	3	2	0	0	4
10	22AD403	Data Visualization	PCC	TP	2	2	0	0	3
11	22CS406	Automata and Compiler Design	PCC	T	3	0	1	0	4
12	22IT403	Computer Networks	PCC	TP	3	2	0	0	4
13	22AD405	Machine Learning	PCC	TP	3	2	0	0	4
14	22IT405	Web Programming	PCC	TP	1	4	0	0	3
15	22AD406	Artificial Intelligence	PCC	TP	3	2	0	0	4
16	22IT402	Software Engineering	PCC	T	3	0	0	0	3
17	22EC501	Introduction to IOT and Embedded Programming	PCC	TP	3	2	0	0	4

EMPLOYABILITY ENHANCEMENT COURSES (EEC)

S. No	Course Code	Course Title	Course Category	Course Type	L	P	T	J	Credit
1	22TP701	Soft Skills & Aptitude - I	EEC	TP	0	0	2	0	1
2	22TP702	Soft Skills & Aptitude - II	EEC	TP	0	0	2	0	1
3	22TP703	Soft Skills & Aptitude -III	EEC	TP	0	0	2	0	1
4	22TP704	Soft Skills & Aptitude -IV	EEC	TP	0	0	2	0	1
5	22TP709	Internship/Inplant Training	EEC	P	0	0	0	0	2#
6	22TP705	Programming Aspects and Technical Aptitude - I	EEC	TP	0	0	2	0	1

7	22TP706	Programming Aspects and Technical Aptitude – II	EEC	TP	0	2	0	0	1
8	22TP708	Experimental Project Based Learning	EEC	PW	0	0	0	6	3
9	22ED101	Entrepreneurship IPR Start Up	EEC	T	3	0	0	0	3
10	22TP707	General studies for Competitive Exam	EEC	T	2	0	0	0	2
11	22TP710	Project Work	EEC	PW	0	0	0	20	10

Professional Elective Courses: Verticals

Vertical 1: Data Science

S. No	Course Code	Course Title	Contact Periods	Category	L	P	T	C
1.	22AD502	Recommender Systems	4	PEC	2	0	2	3
2.	22AD503	Neural Networks and Deep Learning	4	PEC	2	0	2	3
3.	22AD504	Text and Speech Analysis	4	PEC	2	0	2	3
4.	22AD505	Business Analytics	4	PEC	2	0	2	3
5.	22AD506	Image and video analytics	4	PEC	2	0	2	3
6.	22AD507	Computer Vision	4	PEC	2	0	2	3
7.	22AD520	Big Data Analytics	4	PEC	2	0	2	3
8.	22AD508	Health care Analytics	4	PEC	2	0	2	3

Vertical 2: Full Stack Development

S. No	Course Code	Course Title	Contact Periods	Category	L	P	T	C
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1.	22CS501	Mobile Application Development	5	PEC	1	0	4	3
2.	22CS502	Cloud services management	4	PEC	2	0	2	3
3.	22CS503	UI and UX Design	4	PEC	2	0	2	3
4.	22CS504	Software Testing and Automation	4	PEC	2	0	2	3
5.	22CS505	Web Application Security	4	PEC	2	0	2	3
6	22CS506	Full stack development with Node and React	4	PEC	2	0	2	3
7	22CS507	Java full stack with angular	4	PEC	2	0	2	3

Vertical 3: Cloud Computing and Data Centre Technologies

S. No	Course Code	Course Title	Contact Periods	Category	L	P	T	C
1.	22CS508	Virtualization	4	PEC	3	0	0	3
2.	22CS502	Cloud Services Management	4	PEC	2	0	2	3
3.	22CS509	Data warehousing	4	PEC	2	0	2	3
4.	22CS510	Storage technologies	4	PEC	3	0	0	3
5.	22CS511	Software defined networks	4	PEC	3	0	0	3
6.	22CS512	Security and privacy in cloud	4	PEC	3	0	0	3

Vertical 4: Cyber Security and Data Privacy

S. No	Course Code	Course Title	Contact Periods	Category	L	P	T	C
1.	22CS513	Ethical Hacking	4	PEC	2	0	2	3
2.	22CS514	Digital and Mobile Forensics	4	PEC	2	0	2	3
3.	22CS515	Social Network Security	4	PEC	2	0	2	3

4.	22CS516	Engineering Secure software systems	4	PEC	2	0	2	3
5.	22CS517	Cryptocurrency and Blockchain Technologies	4	PEC	3	0	0	3
6.	22CS518	Network Security	4	PEC	2	0	2	3
7.	22CS512	Security and Privacy in Cloud	4	PEC	2	0	2	3
8.	22CS519	Data and Internet Security	4	PEC	3	0	0	3

Vertical 5: Artificial Intelligence and Machine Learning

S. No	Course Code	Course Title	Contact Periods	Category	L	P	T	C
1.	22AD501	Knowledge Engineering	4	PEC	2	0	2	3
2.	22AD509	Soft Computing	4	PEC	2	0	2	3
3.	22AD503	Neural Networks and Deep Learning	4	PEC	2	0	2	3
4.	22AD504	Text and Speech Analysis	4	PEC	2	0	2	3
5.	22AD510	Optimization Techniques	4	PEC	2	0	2	3
6.	22AD511	Game Theory	4	PEC	2	0	2	3
7.	22AD512	Cognitive Science	4	PEC	2	0	2	3
8.	22AD513	Ethics And AI	4	PEC	2	0	2	3

Mandatory Courses

S. No	Course Code	Course Title	Contact Periods	Category	L	P	T	C
1	22MC801	Student Induction Programme	T	MC	2	0	0	0
2.	22MC802	Environmental Science and Engineering	T	MC	2	0	0	0
3.	22MC803	Indian Constitution	T	MC	2	0	0	0

4.	22MC804	Essence of Indian Traditional Knowledge	T	MC	2	0	0	0
5.	22 MC805	தமிழர் மரபு /Heritage of Tamils	T	MC	1	0	0	1
6.	22MC806	தமிழரும் தொழில்நுட்பமும் Tamils and Technology	T	MC	1	0	0	1

CREDIT DISTRIBUTION

S. No	Category	Credits as per Semester								Credits Total	Percentage
		I	II	III	IV	V	VI	VII	VIII		
1	HS	3	4				3			10	6.1
2	BS	12	7	3	3					25	15.24
3	ES	4	8	4						16	9.76
4	PC		3	14	18	15	11			61	37.2
5	PE					3	3	12		18	10.98
6	OE					3		3		6	3.66
7	EEC	1	1	1	3	1	4	5	10	26	15.85
8	Credit - Mandatory		1	1						2	1.22

		Total	20	24	23	24	22	21	20	10	164	
8	Non Credit / Mandatory		Yes			Yes	Yes	Yes				