



# HINDUSTHAN INSTITUTE OF TECHNOLOGY

(An Autonomous Institution)

(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai,  
Accredited with "A" Grade by NAAC)  
Valley Campus, Pollachi Main Road, Coimbatore 641 032.



## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Regulation 2024 - Curriculum

*Choice Based Credit System (CBCS)  
Outcome-Based Education (OBE)*

### UNDERGRADUATE PROGRAMMES

**Programme:** B.E.

**Branch:** Computer Science and Engineering

Course Code	Course Title	Course Category	Course Type	Assessment			L	P	T	J	Credit	SDG Mapping				
				CIA	ESE	Total										
<b>SEMESTER I</b>																
24UH101	Universal Human Values I- Students Induction Program	MC	T	3 WEEKS						0	4, 10, 16					
24EN101	Professional English	HSC	T	40	60	100	2	2	0	0	3	4, 8, 10				
24MA201	Matrices and Calculus	BSC	T	40	60	100	3	0	1	0	4	4, 9, 11				
24PH201	Engineering Physics	BSC	T	40	60	100	3	0	0	0	3	7, 9, 13				
24CY201	Engineering Chemistry	BSC	T	40	60	100	3	0	0	0	3	9, 12, 13				
24ME301	Engineering Graphics	ESC	T	40	60	100	3	0	0	0	3	9, 11, 12				
24CS301	Problem Solving and Programming in C	ESC	TP	50	50	100	2	2	0	0	3	4, 8, 9				
24MC801	Heritage of Tamil	MC	T	40	60	100	1	0	0	0	1	4, 11, 16				
24TP701	Soft skills & Aptitude – I	EEC	P	50	50	100	0	2	0	0	1	4, 8, 10				
24PC201	Physics and Chemistry Laboratory	BSC	P	60	40	100	0	4	0	0	2	9, 12, 13				
Total										23						
<b>SEMESTER II</b>																
24UH102	Universal Human Values II – Understanding Harmony	HSC	T	40	60	100	3	0	0	0	3	4, 10, 16				
24EN102	Design Thinking	HSC	TP	60	40	100	1	2	0	0	2	9, 11, 12				
24MA202	Numerical Methods and Statistics	BSC	T	40	60	100	3	0	1	0	4	4, 9, 11				



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24PH203	Physics for Information science	BSC	T	40	60	100	3	0	0	0	3	7, 9, 11
24EC304	Basic Electrical & Electronics Engineering	ESC	TP	50	50	100	2	2	0	0	3	7, 9, 12
24CS303	Advanced C Programming and Data Structures I	ESC	TP	50	50	100	3	2	0	0	4	4, 8, 9
24ME302	Engineering Practice Laboratory	ESC	P	60	40	100	0	4	0	0	2	9, 11, 12
24TP702	Soft Skills & Aptitude – II	EEC	P	50	50	100	0	2	0	0	1	4, 8, 10
24MC802	Tamils and Technology	MC	T	40	60	100	1	0	0	0	1	4, 9, 11
<b>Total</b>											<b>23</b>	

## SEMESTER III

24MA204	Discrete Mathematics	BSC	T	40	60	100	3	0	0	0	3	4, 9, 11
24EC303	Digital Principles and Computer Organization	ESC	TP	50	50	100	3	2	0	0	4	9, 11, 12
24IT401	Java Programming	PCC	T	40	60	100	3	0	0	0	3	4, 8, 9
24CS401	Data Structures II	PCC	TP	50	50	100	3	2	0	0	4	4, 9, 11
24AD401	Clean Coding and Devops	PCC	TP	50	50	100	2	2	0	0	3	9, 12, 13
24MC804	Essence of Indian traditional knowledge.	MC	T	40	60	100	3	0	0	0	3	4, 11, 16
24IT402	Java Programming Laboratory	PCC	P	60	40	100	0	4	0	0	2	4, 9, 12
24CS402	Web Programming I	PCC	P	100	0	100	0	2	0	0	1	8, 9, 11
24TP703	Soft Skills & Aptitude – III	EEC	P	50	50	100	0	2	0	0	1	4, 8, 10
24NCC02	Career Development and Aviation Skills	NCC	T	50	50	100	1	0	0	0	1*	8, 11, 16
<b>Total</b>											<b>24</b>	



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### SEMESTER IV

24MA207	Probability and Queuing Theory	BSC	T	40	60	100	3	0	0	0	3	4, 9, 11
24IT404	Database Management Systems	PCC	T	40	60	100	3	0	0	0	3	9, 11, 12
24CS403	Analysis of Algorithms	PCC	T	40	60	100	3	0	0	0	3	4, 9, 12
24AD402	Foundations of Data Science	PCC	T	40	60	100	3	0	0	0	3	9, 11, 13
24CS404	Operating Systems	PCC	TP	50	50	100	3	2	0	0	4	9, 11, 12
24CS405	Web Programming –II	PCC	P	100	0	100	0	2	0	0	1	8, 9, 11
24TP704	Soft Skills & Aptitude – IV	EEC	P	50	50	100	0	2	0	0	1	4, 8, 10
24MC806	Environmental Science and Engineering	MC	T	0	100	100	3	0	0	0	0	6, 12, 13
24CS701	Mini Project I	EEC	PW	50	50	100	0	4	0	0	2	9, 11, 13
24IT406	Database Management Systems Laboratory	PCC	P	60	40	100	0	4	0	0	2	9, 11, 12
24NCC0	Personal Development and Aviation Leadership	NCC	T	50	50	100	1	0	0	0	1*	8, 11, 16
<b>Total</b>											<b>22</b>	

### SEMESTER V

24CS406	Automata and Compiler Design	PCC	T	40	60	100	3	0	1	0	4	4, 9, 11
24IT407	Computer Networks	PCC	TP	50	50	100	3	2	0	0	4	9, 11, 16
24AD403	Machine Learning	PCC	TP	60	40	100	3	0	0	0	3	9, 11, 13
24AD404	Programming for Data Science	PCC	TP	50	50	100	2	2	0	0	3	9, 11, 12
24CSXXX	Professional Elective-I	PEC	T	40	60	100	3	0	0	0	3	
24CS407	Web Programming –III	PCC	P	100	0	100	0	2	0	0	1	8, 9, 11
24CS6XX	Open Elective-I/Foreign	OEC	T	40	60	100	3	0	0	0	3	4, 8, 10



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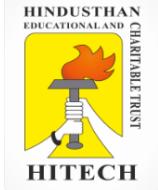


## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

	Languages/NCC Credit Course															
24MC805	Indian Constitution	MC	T	0	100	100	3	0	0	0	0	0	10, 16, 17			
24AD405	Machine Learning Laboratory	PCC	P	40	60	100	0	4	0	0	0	2	9, 11, 12			
24TP705	Internship/Inplant Training	EEC	P	100	0	100	0	0	0	0	0	1	8, 9, 10			
24NCC04	Community Development and Aviation Navigation	NCC	T	50	50	100	1	0	0	0	0	1*	11, 16, 17			
<b>Total</b>															<b>24</b>	

## SEMESTER VI

24CS408	Software Engineering Principles	PCC	T	40	60	100	3	0	0	0	3	9, 12, 13			
24IT409	Network Security	PCC	T	40	60	100	3	0	0	0	3	9, 16, 17			
24EC418	Introduction to IOT and Embedded Programming	ESC	TP	50	50	100	3	2	0	0	4	9, 11, 13			
24CSXXX	Professional Elective-II	PEC	T	40	60	100	3	0	0	0	3				
24CSXXX	Professional Elective-III	PEC	T	40	60	100	3	0	0	0	3				
24CS409	Web Programming –IV	PCC	P	100	0	100	0	2	0	0	1	8, 9, 11			
24CS702	Mini Project II	EEC	PW	50	50	100	0	4	0	0	2	9, 11, 13			
24RM101	Research methodology	MC	T	0	100	100	2	0	0	0	2	4, 9, 17			
<b>Total</b>															<b>21</b>



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### SEMESTER VII

24IT412	Cloud Storage Infrastructure	PCC	TP	50	50	100	2	2	0	0	3	9, 11, 12
24CSXXX	Professional Elective-IV	PEC	T	40	60	100	3	0	0	0	3	
24CSXXX	Professional Elective –V	PEC	T	40	60	100	3	0	0	0	3	
24CSXXX	Professional Elective –VI	PEC	T	40	60	100	3	0	0	0	3	
24CS6XX	Open Elective-II/Foreign Languages / NCC Credit Course	OEC	T	40	60	100	3	0	0	0	3	
24ED101	Entrepreneurship IPR StartUp	EEC	T	40	60	100	3	0	0	0	3	8, 9, 17
24TP801	General studies for Competitive Exam	EEC	T	40	60	100	2	0	0	0	2	4, 8, 16
<b>Total</b>												<b>17</b>

### SEMESTER VIII

24CS703	Project Work	EEC	PW	60	40	100	0	2	4	0	0	12	9, 11, 13, 17
<b>Total</b>													<b>12</b>

**Total Credits: 166**



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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### CURRICULUM COMPONENTS

#### HUMANITIES AND SOCIAL SCIENCES (HSC)

Course Code	Course Title	Course Category	Course Type	Assessment			L	P	T	J	Credit	SDG Mapping
				CIA	ESE	Total						
24EN101	Professional English	HSC	T	40	60	100	2	2	0	0	3	4, 8, 10
24UH102	Universal Human Values II–Understanding Harmony	HSC	T	40	60	100	3	0	0	0	3	4, 10, 16
24EN102	Design Thinking	HSC	TP	60	40	100	1	2	0	0	2	9, 11, 12

#### BASIC SCIENCE COURSES (BSC)

Course Code	Course Title	Course Category	Course Type	Assessment			L	P	T	J	Credit	SDG Mapping
				CIA	ESE	Total						
24MA201	Matrices and Calculus	BSC	T	40	60	100	3	0	1	0	4	4, 9, 11
24PH201	Engineering Physics	BSC	T	40	60	100	3	0	0	0	3	7, 9, 13
24CY201	Engineering Chemistry	BSC	T	40	60	100	3	0	0	0	3	9, 12, 13
24PC201	Physics and Chemistry Laboratory	BSC	P	60	40	100	0	4	0	0	2	9, 12, 13
24MA202	Numerical Methods and Statistics	BSC	T	40	60	100	3	0	1	0	4	4, 9, 11
24PH203	Physics for Information science	BSC	T	40	60	100	3	0	0	0	3	7, 9, 11
24MA204	Discrete Mathematics	BSC	T	40	60	100	3	0	0	0	3	4, 9, 11
24MA207	Probability and Queuing Theory	BSC	T	40	60	100	3	0	0	0	3	4, 9, 11



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### ENGINEERING SCIENCE COURSES (ESC)

Course Code	Course Title	Course Category	Course Type	Assessment			L	P	T	J	Credit	SDG Mapping
				CIA	ESE	Total						
24ME301	Engineering Graphics	ESC	T	40	60	100	3	0	0	0	3	9, 11, 12
24CS301	Problem Solving and Programming in C	ESC	TP	50	50	100	2	2	0	0	3	4, 8, 9
24EC304	Basic Electrical & Electronics Engineering	ESC	TP	50	50	100	2	2	0	0	3	7, 9, 12
24CS303	Advanced C Programming and Data Structures I	ESC	TP	50	50	100	3	2	0	0	4	4, 8, 9
24ME302	Engineering Practice Laboratory	ESC	P	60	40	100	0	4	0	0	2	9, 11, 12
24EC308	Digital Principles and Computer Organization	ESC	TP	50	50	100	3	2	0	0	4	9, 11, 12
24EC501	Introduction to IOT and Embedded Programming	ESC	TP	50	50	100	3	2	0	0	4	9, 11, 13

### PROFESSIONAL CORE COURSES(PC)

Course Code	Course Title	Course Category	Course Type	Assessment			L	P	T	J	Credit	SDG Mapping
				CIA	ESE	Total						
24IT401	Java Programming	PCC	T	40	60	100	3	0	0	0	3	4, 8, 9
24CS401	Data Structures II	PCC	TP	50	50	100	3	2	0	0	4	4, 9, 11
24AD401	Clean Coding and Devops	PCC	TP	50	50	100	2	2	0	0	3	9, 12, 13
24IT402	Java Programming Laboratory	PCC	P	60	40	100	0	4	0	0	2	4, 9, 12
24CS402	Web Programming I	PCC	P	100	0	100	0	2	0	0	1	8, 9, 11
24IT404	Database Management Systems	PCC	T	40	60	100	3	0	0	0	3	9, 11, 12
24CS403	Analysis of Algorithms	PCC	T	40	60	100	3	0	0	0	3	4, 9, 12
24AD402	Foundations of Data Science	PCC	T	40	60	100	3	0	0	0	3	9, 11, 13
24CS404	Operating Systems	PCC	TP	50	50	100	3	2	0	0	4	9, 11, 12
24CS405	Web Programming – II	PCC	P	100	0	100	0	2	0	0	1	8, 9, 11



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24IT406	Database Management Systems Laboratory	PCC	P	60	40	100	0	4	0	0	2	9, 11, 12
24CS406	Automata and Compiler Design	PCC	T	40	60	100	3	0	1	0	4	4, 9, 11
24IT407	Computer Networks	PCC	TP	50	50	100	3	2	0	0	4	9, 11, 16
24AD403	Machine Learning	PCC	TP	60	40	100	3	0	0	0	3	9, 11, 13
24AD404	Programming for Data Science	PCC	TP	50	50	100	2	2	0	0	3	9, 11, 12
24CS407	Web Programming – III	PCC	P	100	0	100	0	2	0	0	1	8, 9, 11
24AD405	Machine Learning Laboratory	PCC	P	40	60	100	0	4	0	0	2	9, 11, 12
24CS408	Software Engineering Principles	PCC	T	40	60	100	3	0	0	0	3	9, 12, 13
24IT409	Network Security	PCC	T	40	60	100	3	0	0	0	3	9, 16, 17
24CS409	Web Programming – IV	PCC	P	100	0	100	0	2	0	0	1	8, 9, 11
24IT412	Cloud Storage Infrastructure	PCC	TP	50	50	100	2	2	0	0	3	9, 11, 12

## EMPLOYABILITY ENHANCEMENT COURSES (EEC)

Course Code	Course Title	Course Category	Course Type	Assessment			L	P	T	J	Credit	SDG Mapping
				CIA	ESE	Total						
24TP701	Soft skills & Aptitude – I	EEC	P	50	50	100	0	2	0	0	1	4, 8, 10
24TP702	Soft Skills & Aptitude-II	EEC	P	50	50	100	0	2	0	0	1	4, 8, 10
24TP703	Soft Skills & Aptitude– III	EEC	P	50	50	100	0	2	0	0	1	4, 8, 10
24TP704	Soft Skills & Aptitude– IV	EEC	P	50	50	100	0	0	2	0	1	4, 8, 10
24CS701	Mini Project I	EEC	PW	50	50	100	0	4	0	0	2	9, 11, 13
24TP705	Internship/Inplant Training	EEC	P	100	0	100	0	0	0	0	1	8, 9, 10
24CS702	Mini Project II	EEC	PW	50	50	100	0	4	0	0	2	9, 11, 13
24ED101	Entrepreneurship IPR Start Up	EEC	T	40	60	100	3	0	0	0	3	8, 9, 17



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24TP801	General studies for Competitive Exam	EEC	T	40	60	100	2	0	0	0	2	4, 8, 16
24CS703	Project Work	EEC	PW	60	40	100	0	24	0	0	12	9, 11, 13, 17

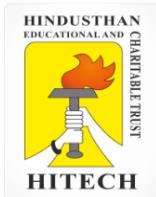
### MANDATORY COURSES (MC)

Course Code	Course Title	Course Category	Course Type	Assessment			L	P	T	J	Credit	SDG Mapping
				CIA	ESE	Total						
24MC801	Heritage of Tamil	MC	T	40	60	100	1	0	0	0	1	4, 11, 16
24MC802	Tamils and Technology	MC	T	40	60	100	1	0	0	0	1	4, 9, 11
24MC803	Essence of Indian traditional knowledge.	MC	T	40	60	100	3	0	0	0	0	4, 11, 16
24MC804	Environmental Science and Engineering	MC	T	0	100	100	3	0	0	0	0	6, 12, 13
24MC805	Indian Constitution	MC	T	0	100	100	3	0	0	0	0	10, 16, 17
24RM101	Research methodology	MC	T	0	100	100	2	0	0	0	2	4, 9, 17

### PROFESSIONAL ELECTIVE COURSES: VERTICALS

#### Vertical 1: Data Science & Artificial Intelligence and Machine Learning

Sl. No.	Course Code	Course Title	Contact Periods	Category	L	T	P	C	SDG Mapping
1.	24AD501	Recommender Systems	4	PEC	2	0	2	3	9, 11, 12
2.	24AD502	Neural Networks and Deep Learning	4	PEC	2	0	2	3	9, 11, 13
3.	24AD503	Text and Speech Analysis	4	PEC	2	0	2	3	9, 10, 11
4.	24AD504	Business Analytics	4	PEC	2	0	2	3	8, 9, 12
5.	24AD505	Image and video analytics	4	PEC	2	0	2	3	9, 11, 13
6.	24AD506	Optimization Techniques	4	PEC	2	0	2	3	9, 11, 12
7.	24AD507	Knowledge Engineering	4	PEC	2	0	2	3	9, 11, 17
8.	24AD508	Soft Computing	4	PEC	2	0	2	3	9, 11, 13



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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Vertical 2: Full Stack Development

Sl. No.	Course Code	Course Title	Contact Periods	Category	L	T	P	C	SDG Mapping
1.	24CS501	Mobile Application Development	4	PEC	1	0	4	3	8, 9, 11
2.	24CS502	Cloud services management	4	PEC	2	0	2	3	9, 11, 12
3.	24CS503	UI and UX Design	4	PEC	2	0	2	3	9, 10, 11
4.	24CS504	Software Testing and Automation	4	PEC	2	0	2	3	9, 11, 12
5.	24CS505	Web Application Security	4	PEC	2	0	2	3	9, 16, 17
6.	24CS506	Full stack development with Node and React	4	PEC	2	0	2	3	8, 9, 11
7.	24CS507	Java full stack with angular	4	PEC	2	0	2	3	8, 9, 11
8.	24CS508	Principles of programming Language	4	PEC	2	0	2	3	4, 9, 11

### Vertical 3: Cloud Computing and Data Centre Technologies

Sl. No.	Course Code	Course Title	Contact Periods	Category	L	T	P	C	SDG Mapping
1.	24CS509	Virtualization	4	PEC	2	0	2	3	9, 11, 12
2.	24CS510	Data warehousing	4	PEC	2	0	2	3	9, 11, 12
3.	24CS511	Storage technologies	4	PEC	2	0	2	3	9, 11, 12
4.	24CS512	Software defined networks	4	PEC	2	0	2	3	9, 11, 16
5.	24CS513	Security and privacy in cloud	4	PEC	2	0	2	3	9, 16, 17
6.	24CS514	GPU Architecture and Programming	4	PEC	2	0	2	3	9, 11, 13
7.	24CS515	Information Retrieval Techniques	4	PEC	2	0	2	3	9, 10, 11
8.	24CS516	Cloud Services Management	4	PEC	2	0	2	3	9, 11, 12



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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

### Vertical 4: Cyber Security and Data Privacy

Sl. No.	Course Code	Course Title	Contact Periods	Category	L	T	P	C	SDG Mapping
1.	24CS517	Ethical Hacking	4	PEC	2	0	2	3	9, 16, 17
2.	24CS518	Digital and Mobile Forensics	4	PEC	2	0	2	3	9, 16, 17
3.	24CS519	Social Network Security	4	PEC	2	0	2	3	9, 16, 17
4.	24CS520	Engineering Secure software systems	4	PEC	2	0	2	3	9, 16, 17
5.	24CS521	Cryptocurrency and Blockchain Technologies	4	PEC	3	0	0	3	9, 16, 17
6.	24CS522	Network Security	4	PEC	2	0	2	3	9, 16, 17
7.	24CS523	Data and Internet Security	4	PEC	2	0	2	3	9, 16, 17
8.	24CS524	Security and Privacy in Cloud	4	PEC	2	0	2	3	9, 16, 17

### CREDIT DISTRIBUTION

S.No	Subject Area	Credits per Semester								Total Credits
		I	II	III	IV	V	VI	VII	VIII	
1	HSC	3	5							8
2	BSC	12	7	3	3					25
3	ESC	6	9	4	0		4			23
4	PCC		0	13	15	17	7	3		54
5	PEC					3	6	9		18
6	OEC					3		3		6
7	EEC	1	1	1	4	1	2	5	12	27
8	Credit / (Mandatory)	1	1				2			4
<b>TOTAL</b>		<b>23</b>	<b>23</b>	<b>21</b>	<b>22</b>	<b>24</b>	<b>21</b>	<b>20</b>	<b>12</b>	<b>166</b>