

**SCHOOL OF ENGINEERING & TECHNOLOGY**  
**B. Tech. Computer Science & Technology (AI & ML)**

**Credit Definition**

Type	Duration (in Hour)	Credit
Lecture (L)	1	1
Tutorial (T)	1	1
Practical (P)	2	1

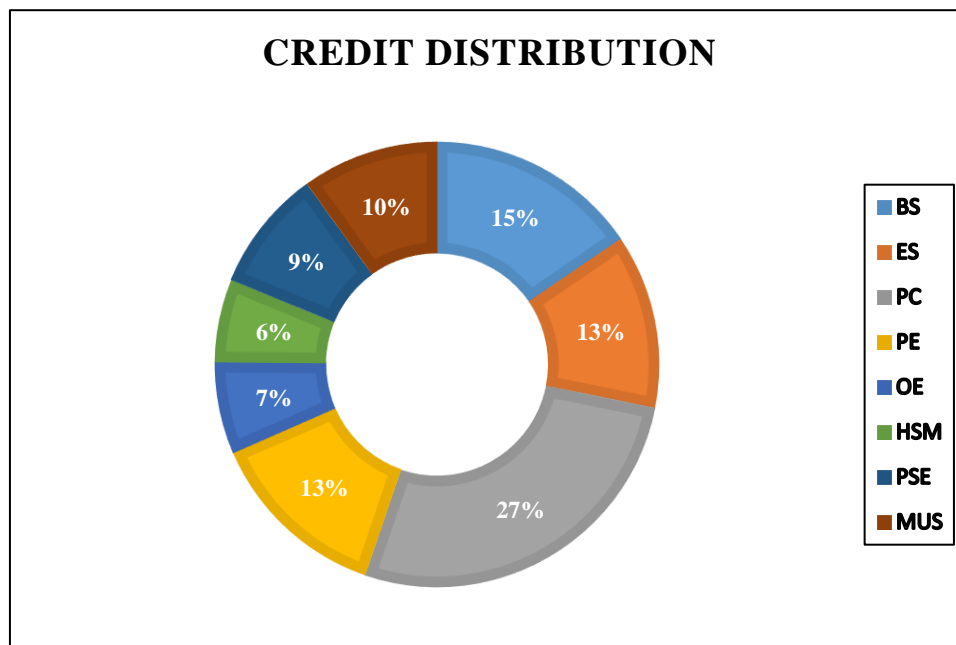
**Total Credit**

Year	Semester	Credit
1 <sup>st</sup>	1 <sup>st</sup>	23
	2 <sup>nd</sup>	24
2 <sup>nd</sup>	3 <sup>rd</sup>	24
	4 <sup>th</sup>	24
3 <sup>rd</sup>	5 <sup>th</sup>	22
	6 <sup>th</sup>	22
4 <sup>th</sup>	7 <sup>th</sup>	18
	8 <sup>th</sup>	11
<b>Total</b>		<b>168</b>

**Category Codification with Credit Break up**

Definition of Category	Code	No	Credit
Basic Science	BS	1	25
Engineering Science	ES	2	18
Professional Core	PC	3	56
Professional Elective (Discipline Specific)	PE	4	18
Open Elective (General Elective)	OE	5	16
Humanities & Social Science including Management	HSM	6	10
Project Work / Seminar / Internship / Entrepreneurship	PSE	7	17
Mandatory / University Specified (Environmental Sc. / Induction Training / Indian Constitution / Foreign language)	MUS	8	8
<b>Total</b>			<b>168</b>

**Category wise Credit Distribution**



### SEMESTER: I

**Mandatory Induction Program – Duration 3 weeks**

Sl. No.	Subject List	Category	Type	Credit	Contact hours/ Week
1.	Engineering Physics	BS	Theory	3	3
2.	Mathematical foundation of Computer Science	BS	Theory	4	4
3.	Principles of Electrical Engineering	ES	Theory	3	3
4.	Problem solving ability	ES	Theory	4	4
5.	Communicative English	HSM	Theory	2	2
6.	Environmental Science	HSM	Theory	2	2
7.	Engineering Physics Lab	BS	Practical	1	2
8.	Electrical Engineering Lab	ES	Practical	1	2
9.	Problem solving Lab	ES	Practical	1	2
10.	Foreign Language - I	MUS	Theory	2	2
<b>Total</b>				<b>23</b>	<b>26</b>

### SEMESTER: II

Sl. No.	Subject List	Category	Type	Credit	Contact hours/ Week
1.	Discrete Mathematics	BS	Theory	4	4
2.	Digital Electronics	ES	Theory	3	3
3.	Principle of functional programming	ES	Theory	4	4
4.	Introduction to Artificial Intelligence	PC	Theory	3	3

5.	Probability for Computer Science	BS	Theory	3	3
6.	Principle of functional programming Lab	ES	Practical	1	2
7.	Digital Electronics Lab	ES	Practical	1	2
8.	LBS-I: Python/ R	PC	Practical	1	2
9.	Design Thinking	HSM	Theory	2	2
10.	Foreign Language - II	MUS	Theory	2	2
<b>Total</b>				<b>24</b>	<b>27</b>

**SEMESTER: III**

Sl. No.	Subject List	Category	Type	Credit	Contact hours/ Week
1.	Computational Statistics	BS	Theory	3	3
2.	Data Structure & Algorithm	PC	Theory	4	4
3.	Computer Organization and Architecture	PC	Theory	3	3
4.	Object-Oriented Programming	PC	Theory	3	3
5.	Formal Language and Automata Theory	PC	Theory	3	3
6.	Introduction to Innovation & Entrepreneurship	HSM	Theory	2	2
7.	Data Structure & Algorithm Lab	PC	Practical	1	2
8.	Computer Organization and Architecture Lab	PC	Practical	1	2
9.	Object-Oriented Programming Lab	PC	Practical	1	2
10.	LBS-II: (Computational Statistics)	PC	Practical	1	2
11.	Foreign Language - III	MUS	Theory	2	2
<b>Total</b>				<b>24</b>	<b>28</b>

**SEMESTER: IV**

Sl. No.	Subject List	Category	Type	Credit	Contact hours/ Week
1.	Linear Algebra	BS	Theory	3	3
2.	Operating Systems	PC	Theory	3	3
3.	Database Management System	PC	Theory	3	3
4.	Machine Learning Foundations	PC	Theory	3	3
5.	Compiler Design	PC	Theory	2	2
6.	Open Elective-I	OE	Theory	4	4
7.	Operating Systems Lab	PC	Practical	1	2
8.	Database Management System Lab	PC	Practical	1	2
9.	Machine Learning Foundations Lab	PC	Practical	1	2

10.	LBS-III: (linear algebra)	PC	Practical	1	2
11.	Foreign Language - IV	MUS	Theory	2	2
<b>Total</b>				<b>24</b>	<b>28</b>

<b>Open Elective-I</b>	
SI No.	Paper Name
1.	Optimizations and Multi Valued Analysis
2.	Human Computer Interaction
3.	Cryptography

**SEMESTER: V**

Sl. No.	Subject List	Category	Type	Credit	Contact hours/ Week
1.	Design and Analysis of Algorithm	PC	Theory	3	3
2.	Artificial Intelligence: Representations and problem solving	PC	Theory	3	3
3.	Operations Research	BS	Theory	3	3
4.	Professional Elective-I	PE	Theory	3	3
5.	Open Elective-II	OE	Theory	4	4
6.	Design and Analysis of Algorithm Lab	PC	Practical	1	2
7.	Artificial Intelligence Applications Lab	PC	Practical	1	2
8.	Operations Research Lab	BS	Practical	1	2
9.	Professional Elective-I Lab	PE	Practical	1	2
10.	Ethics and Policy Issues in Computing	HSM	Theory	2	2
<b>Total</b>				<b>22</b>	<b>26</b>

<b>Open Elective-II</b>	
SI No.	Paper Name
1.	Internet of Things
2.	Bioinformatics
3.	Cognitive Robotics
<b>Professional Elective-I</b>	
SI No.	Paper Name
1.	Data Mining
2.	Soft Computing
3.	Pattern Recognition

**SEMESTER: VI**

Sl. No.	Subject List	Category	Type	Credit	Contact hours/ Week
1.	Design and Structured of Machine Learning	PC	Theory	4	4
2.	Neural Computation and Deep Learning	PC	Theory	3	3
3.	Computer Networks	PC	Theory	3	3
4.	Professional Elective-II	PE	Theory	3	3
5.	Open Elective-III	OE	Theory	4	4
6.	Machine Learning Lab	PC	Practical	1	2

7.	Neural Computation and Deep Learning Lab	PC	Practical	1	2
8.	Computer Networks Lab	PC	Practical	1	2
9.	Technical Seminar	PSE	Sessional	2	2
<b>Total</b>				<b>22</b>	<b>25</b>

<b>Open Elective-III</b>	
SI No.	Paper Name
1.	Fuzzy Set Theory
2.	Micro Electronics and VLSI
3.	Mobile Computing
<b>Professional Elective-II</b>	
SI No.	Paper Name
1.	Quantum Computing
2.	Information Theory and Coding
3.	Game Theory

### SEMESTER: VII

Sl. No.	Subject List	Category	Type	Credit	Contact hours/ Week
1.	Professional Elective-II	PE	Theory	3	3
2.	Professional Elective-IV	PE	Theory	3	3
3.	Professional Elective-V	PE	Theory	3	3
4.	Open Elective-IV	OE	Theory	4	4
5.	Professional Elective-III Lab	PE	Practical	1	2
6.	Project-I	PSE	Sessional	4	6
<b>Total</b>				<b>21</b>	<b>21</b>

<b>Open Elective-IV</b>	
SI No.	Paper Name
1.	Research Methodology
2.	Cognitive Psychology
3.	Soft Skill and interpersonal communication
<b>Professional Elective-III</b>	
SI No.	Paper Name
1.	Social Network Analysis
2.	Computer Vision
3.	Big Data Analytics
<b>Professional Elective-IV</b>	
SI No.	Paper Name
1.	Reinforcement Learning
2.	Multi agent System and Optimizations
3.	Software Engineering
<b>Professional Elective-V</b>	

<b>Sl No.</b>	<b>Paper Name</b>
1.	Machine Learning for Text mining
2.	Data Science
3.	Blockchain and Cryptocurrency

**SEMESTER: VIII**

<b>Sl. No.</b>	<b>Subject List</b>	<b>Category</b>	<b>Type</b>	<b>Credit</b>	<b>Contact hours/ Week</b>
1.	Industrial Training	PSE	Sessional	2	0
2.	Project-II	PSE	Sessional	6	12
3.	Grand Viva	PSE	Sessional	3	0
<b>Total</b>				<b>11</b>	<b>12</b>