



# **USHARAMA**

## **COLLEGE OF ENGINEERING AND TECHNOLOGY**

### **AUTONOMOUS**



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EAPCET, ECET, PGCET, POLYCET CODE : URCE WEBSITE: [www.usharama.edu.in](http://www.usharama.edu.in)

## **COURSE STRUCTURE**

For

**UG – UR20 Regulation**

**B.TECH**

## **ARTIFICIAL INTELLIGENCE**

*(Applicable for batches admitted from the academic year 2020-2021)*

**DEPARTMENT OF ARTIFICIAL INTELLIGENCE**

## COURSE STRUCTURE

I SEMESTER							
S.No	Course Category	Subjects	L	T	P	Contact Hrs./Wk	Credits
1	ESC	Problem Solving and Programming using C	3	0	0	3	3
2	BSC	Applied Physics	3	0	0	3	3
3	HSC	Professional Communicative English	3	0	0	3	3
4	BSC	Linear Algebra & Calculus	3	0	0	3	3
5	ESC	Problem Solving and Programming using C Lab	0	0	3	3	1.5
6	BSC	Applied Physics Lab	0	0	3	3	1.5
7	HSC	Professional Communicate English Lab	0	0	3	3	1.5
8	ESC	Computer Engineering Workshop	1	0	4	3	3
<b>Total</b>			<b>13</b>	<b>0</b>	<b>13</b>	<b>24</b>	<b>19.5</b>

I SEMESTER							
S.No	Course Category	Subjects	L	T	P	Contact Hrs./Wk	Credits
1	ESC	Python Programming	3	0	0	3	3
2	ESC	Digital Logic Design	3	0	0	3	3
3	BSC	Chemistry	3	0	0	3	3
4	BSC	Differential Equations & Vector Calculus	3	0	0	3	3
5	PCC	Data Structures	3	0	0	3	3
6	ESC	Python Programming Lab	0	0	3	3	1.5
7	PCC	Data Structures Lab	0	0	3	3	1.5
8	BSC	ChemistryLab	0	0	3	3	1.5
<b>TOTAL</b>			<b>15</b>	<b>0</b>	<b>9</b>	<b>24</b>	<b>19.5</b>
Mandatory Course							
9	MC	Science, Technology & Society	0	0	0	3	0
10	MC	Social Service Activity NCC/NSS/Social service club	0	0	0	2	0

III SEMESTER							
S. No	Course Category	Subjects	L	T	P	Contact Hrs./wk	Credits
1	BSC	Numerical Methods & Transforms (Mathematics III)	3	0	0	3	3
2	PCC	Mathematical Foundations of Computer Science	3	0	0	3	3
3	PCC	Introduction to Artificial Intelligence and Machine Learning	3	0	0	3	3
4	PCC	Object Oriented Programming with Java	3	0	0	3	3
5	PCC	Database Management Systems	3	0	0	3	3
6	PCC	Introduction to Artificial Intelligence and Machine Learning Lab	0	0	3	3	1.5
7	PCC	Object Oriented Programming with Java Lab	0	0	3	3	1.5
8	PCC	Database Management Systems Lab	0	0	3	3	1.5
9	SOC	Mobile App Development	0	0	4	4	2
<b>Total</b>			<b>15</b>	<b>0</b>	<b>13</b>	<b>28</b>	<b>21.5</b>
Mandatory Course							
10	MCC	Essence of Indian Traditional Knowledge	0	0	0	2	0
11	MCC	Social Service Activity -II NCC/NSS/Social service club	0	0	0	2	0

IV SEMESTER							
S. No	Course Category	Subjects	L	T	P	Contact Hrs./wk	Credits
1	BSC	Probability and Statistics	3	0	0	3	3
2	PCC	Computer Organization	3	0	0	3	3
3	PCC	Data warehousing and Mining	3	0	0	3	3
4	ESC	Formal Languages and Automata Theory	3	0	0	3	3
5	HSC	Managerial Economics and Financial Accountancy	3	0	0	3	3
6	PCC	R Programming Lab	0	0	3	3	1.5
7	PCC	Data Mining using Python Lab	0	0	3	3	1.5
8	ESC	Web Application Development Lab	0	0	3	3	1.5
9	SOC	Natural Language Processing with Python	0	0	4	4	2
10	PROJ	Community Service Project	0	0	0	0	4
<b>Total</b>			<b>15</b>	<b>0</b>	<b>13</b>	<b>28</b>	<b>25.5</b>
<b>Minor Course</b>			<b>3</b>	<b>0</b>	<b>2</b>	<b>5</b>	<b>4</b>
<b>Internship 2 Months (Mandatory) during summer vacation</b>							

**V SEMESTER**

S. No	Course Category	Subjects	L	T	P	Contact Hrs./wk	Credits
1	PCC	Compiler Design	3	0	0	3	3
2	PCC	Operating Systems	3	0	0	3	3
3	PCC	Machine Learning	3	0	0	3	3
4	OEC	<b>Open Elective-I</b> Open Electives offered by other departments/ Optimization in Operations Research (Job Oriented Course)	3	0	0	3	3
5	PEC	<b>Professional Elective-I</b> 1. Software Engineering 2. Object Oriented Analysis and Design 3. DevOps 4. Machine Learning for Engineering and Science Applications (NPTEL) 5. Data Visualization	3	0	0	3	3
6	PCC	Operating Systems & Compiler Design Lab	0	0	3	3	1.5
7	PCC	Machine Learning Lab	0	0	3	3	1.5
8	SOC	<b>Skill Oriented Course-III</b> 1. Continuous Integration and Continuous Delivery using DevOps	0	0	4	4	2
9	PROJ	Summer Internship 2 Months (Mandatory) after second year (to be evaluated during V Semester)	0	0	3	3	1.5
<b>Total</b>			15	0	13	28	21.5
<b>Mandatory Course</b>							
10	MCC	Environmental Science	0	0	0	2	0
<b>Minor Course</b>							
11	MINOR	Machine Learning	3	0	2	2	4

**VI SEMESTER**

S. No	Course Category	Subjects	L	T	P	Contact Hrs./wk	Credits
1	PCC	Computer Networks	3	0	0	3	3
2	PCC	Deep Learning	3	0	0	3	3
3	PCC	Design and Analysis of Algorithms	3	0	0	3	3
4	PEC	<b>Professional Elective-II</b> 1. Software Project Management 2. Distributed Systems 3. Snow Flake Cloud Analytics 4. Network Programming	3	0	0	3	3
5	OEC	<b>Open Elective-II</b> Open Electives offered by other departments/ MEAN Stack Development (Job Oriented Course)	3	0	0	3	3
6	PCC	Computer Networks Lab	0	0	3	3	1.5
7	PCC	Algorithms for Efficient Coding Lab	0	0	3	3	1.5
8	PCC	Deep Learning with Tensor flow	0	0	3	3	1.5
9	SOC	<b>Skill Oriented Course - IV</b> 1.MEAN Stack Technologies-Module I- HTML 5, JavaScript, Node.js, Express.js and Type Script <b>OR</b> 2.Big Data : Apache Spark	0	0	4	4	2
<b>Total</b>			15	0	13	28	21.5
<b>Industrial/Research Internship (Mandatory) 2 Months during summer vacation</b>							
<b>Mandatory Course</b>							
10	MCC	Constitution Of India	0	0	0	2	0
<b>Minor Course</b>							
11	MINOR	Deep Learning	3	0	2	2	4

**VII SEMESTER**

S. No	Course Category	Subjects	L	T	P	Contact Hrs./wk	Credits
1	PEC	<b>Professional Elective-III</b> 1. Reinforcement Learning 2. Soft Computing 3. Social Media Analytics 4. Block Chain Technologies 5. Cryptography and Network Security	3	0	0	3	3
2	PEC	<b>Professional Elective-IV</b> 1. Computer Vision 2. Cloud Computing 3. Robotic Process Automation 4. NOSQL Databases 5. Video Analytics	3	0	0	3	3
3	PEC	<b>Professional Elective-V</b> 1. Social Network Analysis 2. Recommender Systems 3. AI Chatbots 4. Semantic Web	3	0	0	3	3
4	OEC	<b>Open Elective-III</b> Open Electives offered by other departments/ API and Micro services (Job Oriented Course)	3	0	0	3	3
5	OEC	<b>Open Elective-IV</b> Open Electives offered by other departments/ Secure Coding Techniques (Job Oriented Course)	3	0	0	3	3
6	HSC	Universal Human Values2: Understanding Harmony	0	0	3	3	1.5
7	SOC	<b>Skill Oriented Course - V</b> 1. Machine Learning with Go(Infosys Spring Board) <b>OR</b> 2. MEAN Stack Technologies –Module II – Angular JS and Mongo DB	0	0	4	4	2
8	PROJ	Industrial/ Research Internship 2 months (Mandatory) after third year (to be Evaluated during VII Semester)	0	0	3	3	1.5
<b>Total</b>			15	0	13	28	21.5
<b>Mandatory Course</b>							
10	MCC	Research Methodology	0	0	0	2	0
<b>Minor Course</b>							
11	MINOR	Reinforcement Learning	3	0	2	2	4

**VIII SEMESTER**

<b>S. No</b>	<b>Course Category</b>	<b>Subjects</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Contact Hrs./wk</b>	<b>Credits</b>
1	PROJ	Major Project Work, Seminar, Internship	0	0	0	0	8
<b>Total</b>			0	0	0	0	8