



**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA**  
**KAKINADA – 533 003, Andhra Pradesh, India**

**DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING**

**III Year – I SEMESTER**

S.No	Course Code	Courses	L	T	P	Credits
1	CS3101	Data Warehousing and Data Mining	3	0	0	3
2	CS3102	Computer Networks	3	0	0	3
3	CS3103	Compiler Design	3	0	0	3
4	CS3104	Artificial Intelligence	3	0	0	3
5	PE3101	<b>Professional Elective- I</b> 1. Computer Graphics 2. Principles of Programming Languages 3. Advanced Data Structures 4. Software Testing Methodologies 5. Advanced Computer Architecture	3	0	0	3
6	CS3105	Computer Networks Lab	0	0	2	1
7	CS3106	AI Tools & Techniques Lab	0	0	3	1.5
8	CS3107	Data Mining Lab	0	0	3	1.5
9	MC3101	<b>Employability Skills -II*</b>	2	0	0	0
Total			17	0	8	19
<b>*Internal Evaluation through Seminar / Test for 50 marks</b>						

**III Year – II SEMESTER**

S.No	Course Code	Courses	L	T	P	Credits
1	CS3201	Web Technologies	3	0	0	3
2	CS3202	Distributed Systems	3	0	0	3
3	CS3203	Design and Analysis of Algorithms	3	0	0	3
4	PE3201	<b>Professional Elective -II</b> (NPTEL/SWAYAM) <b>Duration: 12 Weeks Minimum</b> <b>*Course/subject title can't be repeated</b>	3	0	0	3
5	OE3201	<b>Open Elective- I</b> (Inter Disciplinary)	3	0	0	3
6	HS3201	Managerial Economics and Financial Accountancy	3	0	0	3
7	CS3204	Web Technologies Lab	0	0	4	2
9	PR3201	<b>Industrial Training / Skill Development Programmes / Research Project in higher learning institutes</b>	0	0	0	1
Total			18	0	4	21



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**IV Year – I SEMESTER**

S.No	Course Code	Courses	L	T	P	Credits
1	CS4101	Cryptography and Network Security	3	0	0	3
2	CS4102	UML & Design Patterns	3	0	0	3
3	CS4103	Machine Learning	3	0	0	3
4	OE4101	<b>Open Elective -II (Inter Disciplinary)</b>	3	0	0	3
5	PE4101	<b>Professional Elective- III</b> 1. Mobile Computing 2. Data Science 3. NoSQL Databases 4. Internet of Things 5. Software Project Management	3	0	0	3
6	PE4102	<b>Professional Elective- IV</b> 1. Web Services 2. Cloud Computing 3. Mean Stack Technologies 4. Ad-hoc and Sensor Networks 5. Cyber Security & Forensics	3	0	0	3
7	CS4104	UML Lab #	0	0	2	1
8	PR4101	<b>Project- I</b>	0	0	0	2
9	MC4101	<b>IPR &amp; Patents</b>	3	0	0	0
<b>Total</b>			21	0	2	21
# Relevant theory to be taught in the lab						

**IV Year – II SEMESTER**

S.No	Course Code	Courses	L	T	P	Credits
1	HS4201	Management and Organizational Behavior	3	0	0	3
2	OE4201	<b>Open Elective- III (Inter Disciplinary)</b>	3	0	0	3
3	PE4201	<b>Professional Elective-V</b> 1. Deep Learning 2. Quantum Computing 3. DevOps 4. Blockchain Technologies 5. Big Data Analytics	3	0	0	3
4	PR4201	<b>Project- II</b>	0	0	0	7
<b>Total</b>			9	0	0	16



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**Open Electives to be offered by CSE for Other Branches:**

<b>Open Elective I:</b> <ol style="list-style-type: none"><li>1. Data Structures</li><li>2. Java Programming</li><li>3. Data Base Management Systems</li><li>4. C++ Programming</li><li>5. Operating Systems</li><li>6. Internet of Things</li></ol>	<b>Open Elective II:</b> <ol style="list-style-type: none"><li>1. Problem Solving using Python</li><li>2. Web Technologies</li><li>3. Machine Learning</li><li>4. Distributed Computing</li><li>5. AI Tools &amp; Techniques</li><li>6. Data Science</li></ol>
<b>Open Elective III:</b> <ol style="list-style-type: none"><li>1. Big Data</li><li>2. Image Processing</li><li>3. Mobile Application Development</li><li>4. Cyber Security</li><li>5. Deep Learning</li><li>6. Blockchain Technologies</li></ol>	