



Course Name: Bachelor of Technology (B. Tech.) in Computer Science and engineering (CSE) with Specialization (Hons.) in Blockchain

Course Structure

First Year Semester – I

| S. No | Course Title | L | T | P | Contact Hrs/wk | Credits |
|-------|--|---|---|---|----------------|---------|
| 1. | Engineering Mathematics-I | 3 | 1 | 0 | 4 | 4 |
| 2. | Applied Science | 3 | 0 | 0 | 3 | 3 |
| 3. | Introduction to Programming /Electrical and Electronics Technology | 3 | 0 | 0 | 3 | 3 |
| 4. | HSSM –I (English Communication-I) | 3 | 0 | 0 | 3 | 3 |
| 5. | HSSM –II (Human Values & Ethics and Psychology) / Life Sciences | 3 | 0 | 0 | 3 | 3 |
| 6. | Applied Science Lab | 0 | 0 | 3 | 3 | 2 |
| 7. | Programming Lab/ Electrical and Electronics Technology Lab | 0 | 0 | 3 | 3 | 2 |
| 8. | Engineering Drawing and CAD/ Engineering Workshop | 0 | 0 | 3 | 3 | 2 |
| 9. | Communication and Collaboration Skill -I | 0 | 0 | 2 | 2 | 1 |
| 10. | Avant Grade Project-I | 0 | 0 | 2 | 2 | 1 |

Semester – II

| S. No | Course Title | L | T | P | Contact Hrs/wk | Credits |
|-------|---|---|---|---|----------------|---------|
| 1. | Engineering Mathematics– II | 3 | 1 | 0 | 4 | 4 |
| 2. | Electrical and Electronics Technology / Introduction to Programming | 3 | 0 | 0 | 3 | 3 |
| 3. | Life Sciences/ (Human Values & Ethics and Psychology) | 3 | 0 | 0 | 3 | 3 |
| 4. | Engineering Mechanics | 3 | 1 | 0 | 4 | 4 |
| 5. | Environmental Science | 3 | 0 | 0 | 3 | 3 |
| 6. | Electrical and Electronics Technology Lab / Programming Lab | 0 | 0 | 3 | 3 | 2 |
| 7. | Engineering Workshop/ Engineering Drawing and CAD | 0 | 0 | 3 | 3 | 2 |

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|----|---|---|---|---|---|---|
| 8. | Communication and Collaboration Skill -II | 0 | 0 | 2 | 2 | 1 |
| 9. | Avant Grade Project-II | 0 | 0 | 2 | 2 | 1 |

Total Credit (First Year): 47

Second Year
Semester – III

| S. No | Subject Name | L | T | P | Contact Hrs/week | Credits |
|-------|--|----|----|---|------------------|---------|
| 1. | Probability, Statistics and Numerical Methods | 3 | 1 | 0 | 4 | 4 |
| 2. | HSSM –IV (Economics for Engineers) | 3 | 0 | 0 | 3 | 3 |
| 3. | Data Structures and Algorithms (Prof. Core- I) | 3 | 0 | 0 | 3 | 3 |
| 4. | Switching Circuits and Logic Design (Prof. Core-II) | 3 | 0 | 0 | 3 | 3 |
| 5. | Formal Languages and Automata Theory (Prof. Core- III) | 3 | 0 | 0 | 3 | 3 |
| 6. | Data Structures and Algorithms Lab (Prof. Core-I Lab) | 0 | 0 | 3 | 3 | 2 |
| 7. | Interdisciplinary Project AU | 1 | 0 | 2 | 3 | 3 |
| 8. | Design Thinking-I | 0 | 0 | 3 | 3 | 2 |
| 9. | Avant Grade Project-III | 0 | 0 | 2 | 2 | 1 |
| 10. | #Adamas Foundation (CSR Activity) | -- | -- | - | -- | 1 |

Semester – IV

| S. No | Subject Name | L | T | P | Contact Hrs/week | Credits |
|-------|---|---|---|---|------------------|---------|
| 1. | Operations Research | 3 | 0 | 0 | 3 | 3 |
| 2. | Design & Analysis of Algorithm (Prof. Core- IV) | 3 | 0 | 0 | 3 | 3 |
| 3. | Object Oriented Programming (Prof. Core- V) | 3 | 0 | 0 | 3 | 3 |
| 4. | Software Engineering (Prof. Core- VI) | 3 | 0 | 0 | 3 | 3 |
| 5. | Computer Architecture (Prof. Core- VII) | 3 | 0 | 0 | 3 | 3 |
| 6. | Numerical Techniques Lab | 0 | 0 | 3 | 3 | 2 |
| 7. | Design & Analysis of Algorithm Lab (Prof. Core- IV Lab) | 0 | 0 | 3 | 3 | 2 |
| 8. | Object Oriented Programming Lab (Prof. Core- V Lab) | 0 | 0 | 3 | 3 | 2 |

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|-----|------------------------|---|---|---|---|---|
| 9. | Design Thinking-II | 0 | 0 | 3 | 3 | 2 |
| 10. | Avant Grade Project-IV | 0 | 0 | 2 | 2 | 1 |

Total Credit (Second Year): 49

Third Year
Semester - V

| S. No | Subject Name | L | T | P | Contact Hrs/week | Credits |
|-------|---|---|---|---|------------------|---------|
| 1. | Computer Networks (Prof. Core- VIII) | 3 | 0 | 0 | 3 | 3 |
| 2. | Database Management Systems (Prof. Core- IX) | 3 | 0 | 0 | 3 | 3 |
| 3. | Operating Systems (Prof. Core- X) | 3 | 0 | 0 | 3 | 3 |
| 4. | Blockchain Components and Architecture (Specialization Course –I) | 3 | 1 | 0 | 4 | 4 |
| 5. | Prof. Elective- I | 3 | 0 | 0 | 3 | 3 |
| 6. | Computer Networks Lab (Prof. Core- VIII Lab) | 0 | 0 | 3 | 3 | 2 |
| 7. | Database Management Systems Lab (Prof. Core- IX Lab) | 0 | 0 | 3 | 3 | 2 |
| 8. | Operating Systems Lab (Prof. Core- X Lab) | 0 | 0 | 3 | 3 | 2 |
| 9. | Blockchain Components and Architecture Lab (Specialization Course –I Lab) | 0 | 0 | 3 | 3 | 2 |
| 10. | Venture Ideation | 0 | 0 | 2 | 2 | 1 |
| 11. | Avant Grade Project-V | 0 | 0 | 2 | 2 | 1 |

Semester – VI

| S. No | Subject Name | L | T | P | Contact Hrs/week | Credits |
|-------|--|---|---|---|------------------|---------|
| 1. | Compiler Design (Prof. Core- XI) | 3 | 0 | 0 | 3 | 3 |
| 2. | Artificial Intelligence and Machine Learning (Prof. Core- XII) | 3 | 0 | 0 | 3 | 3 |
| 3. | Prof. Elective- II | 3 | 0 | 0 | 3 | 3 |
| 4. | Open Elective- I | 2 | 0 | 0 | 2 | 2 |
| 5. | Permission Blockchain-Ethereum (Specialization Course –II) | 3 | 1 | 0 | 4 | 4 |
| 6. | Blockchain Applications for Cognitive | 3 | 0 | 0 | 3 | 3 |

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|-----|--|---|---|---|---|---|
| | (Specialization Course - III) | | | | | |
| 7. | Compiler Design Lab (Prof. Core- XI Lab) | 0 | 0 | 3 | 3 | 2 |
| 8. | Artificial Intelligence and Machine Learning Lab (Prof. Core- XII Lab) | 0 | 0 | 3 | 3 | 2 |
| 9. | Prof. Elective- II Lab | 0 | 0 | 3 | 3 | 2 |
| 10. | Permission Blockchain-Ethereum Lab (Specialization Course – II Lab) | 0 | 0 | 3 | 3 | 2 |

Total Credit (Third Year): 52

Fourth Year
Semester - VII

| S. No | Subject Name | L | T | P | Contact Hrs/week | Credits |
|-------|--|----|----|----|------------------|---------|
| 1. | HSSM –V (Industrial Management) | 3 | 0 | 0 | 3 | 3 |
| 2. | Prof. Elective- III | 3 | 0 | 0 | 3 | 3 |
| 3. | Prof. Elective- IV | 3 | 0 | 0 | 3 | 3 |
| 4. | Open Elective- II | 3 | 0 | 0 | 3 | 3 |
| 5. | Open Elective- III | 3 | 0 | 0 | 3 | 3 |
| 6. | Industry Use Cases using Blockchain (Specialization Course –IV) | 3 | 0 | 0 | 3 | 3 |
| 7. | Prof. Elective- IV Lab | 0 | 0 | 3 | 3 | 2 |
| 8. | Industry Use Cases using Blockchain Lab (Specialization Course-IV Lab) | 0 | 0 | 3 | 3 | 2 |
| 9. | #Summer Internship | -- | -- | -- | -- | 2 |
| 10. | Minor Project | 0 | 0 | 6 | 6 | 3 |

Summer Internship for 30 days will be taken at the end of 6th semester, and will be evaluated in the 7th semester.

Semester – VIII

| S. No | Subject Name | L | T | P | Contact Hrs/week | Credits |
|-------|--|---|---|---|---------------------------|---------|
| 1. | Emerging areas in Blockchain (Specialization Course –V) (Online/Offline mode) | 3 | 0 | 0 | 3 (For Offline mode only) | 3 |

| | | | | | | |
|----|--|-------|-------|-------|-----------------------------|---|
| 2. | Industry Work Experience / SIRE* / Major Project | 0 | 0 | 0 | 12 (For Major Project only) | 5 |
| 3. | Comprehensive Viva Voce | ----- | ----- | ----- | ----- | 2 |
| 4. | Specialization Viva Voce | ----- | ----- | ----- | ----- | 2 |

***SIRE: Scientific Investigation & Research Experience**

Total Credits (Fourth Year): 39

Total Credits (Over four years): $47+49+52+39 = 187 = 162 + 25$ (Specialization / Hons.)

Total Credits (Over four years): 180

List of Electives: -

**PE I (Theory): Applied Graph Theory (ECS43111)
Communication Network (ECS43113)
Big Data Analytics (ECS43115)**

**PE II (Theory): High Performance Computer Architecture (ECS43110)
Pattern Recognition (ECS43112)
Computational Geometry (ECS43114)**

**PE III (Theory): Image Processing (ECS44101)
Cloud Computing (ECS44103)
Information Retrieval (ECS44105)
Computer Graphics (ECS44107)
Artificial Neural Network and Deep Learning (ECS44109)**

**PE III (Lab): Image Processing Lab (ECS44201)
Cloud Computing Lab (ECS44203)
Information Retrieval Lab (ECS44205)
Computer Graphics Lab (ECS44207)
Artificial Neural Network and Deep Learning Lab (ECS44209)**

**PE IV (Theory): Cryptography & Cyber Security (ECS44111)
Internet of Things (IoT) (ECS44113)
5G Wireless Communication Network (ECS44115)**

OE I (Theory): Artificial Intelligence (ECS43116)/ Computational Geometry (ECS43114)

OE II (Theory): Machine Learning (ECS44117)

OE III (Theory): Internet of Things (IoT) (ECS44113)

OE IV (Theory): Computer Graphics (ECS44121)