

STUDY & EVALUATION SCHEME
B.TECH: COMPUTER SCIENCE & ENGINEERING (LATERAL)
II YEAR: III SEMESTER

| S. NO. | SUBJECT CODE | SUBJECT | L | T | P | CIE | ESE | TOTAL | C |
|---------------|--------------|---|-----------|----------|----------|------------|------------|-------------|-----------|
| THEORY | | | | | | | | | |
| 1 | UCS3011 | Data Structures and Algorithms | 3 | 1 | - | 40 | 60 | 100 | 4 |
| 2 | UCS3209 | Data Structures and Algorithms Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 3 | UCS3012 | Software Engineering | 3 | - | - | 40 | 60 | 100 | 3 |
| 4 | UCS3210 | Software Engineering Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 5 | UMA3007 | Discrete Mathematics | 3 | 1 | - | 40 | 60 | 100 | 4 |
| 6 | UEC3001 | Digital Electronics | 3 | - | - | 40 | 60 | 100 | 3 |
| 7 | UEC3201 | Digital Electronics Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 8 | UCS3018 | Python Programming | 3 | - | - | 40 | 60 | 100 | 3 |
| 9 | UCS3215 | Python Programming Lab | - | - | 2 | 80 | 20 | 100 | 1 |
| 10 | UEG3005 | Effective Technical Communication | 3 | - | - | 40 | 60 | 100 | 3 |
| TOTAL | | | 18 | 2 | 8 | 560 | 440 | 1000 | 24 |
| 11 | UCS3001BD | *Computational Mathematics for Data Analytics | 2 | 1 | - | 40 | 60 | 100 | 3 |
| | UCS3001SE | **Object Oriented Analysis and Design | 2 | 1 | - | 40 | 60 | 100 | 3 |
| | UCS3001IO | ***IOT Development Boards and Sensors | 2 | - | - | 40 | 60 | 100 | 2 |
| | UCS3201IO | ***IOT Development Boards and Sensors Lab | - | - | 2 | 80 | 20 | 100 | 1 |
| | UCS3001ML | ****Applied Python and Data Science | 2 | 1 | - | 40 | 60 | 100 | 3 |
| | UCS3002BD | *Big Data Fundamentals | 2 | 1 | - | 40 | 60 | 100 | 3 |
| | UCS3002ML | ****Clean Coding | 2 | 1 | - | 40 | 60 | 100 | 3 |

L - Lecture

T - Tutorial

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ESE-End Semester Exam

C - Credit

Specialization Stream

*Big Data Analytics-BD

**Software Engineering-SE

***Internet of Things-IOT

****Machine Learning-ML

STUDY & EVALUATION SCHEME
B.TECH: COMPUTER SCIENCE & ENGINEERING (LATERAL)
II YEAR: IV SEMESTER

| S. NO. | SUBJECT CODE | SUBJECT | L | T | P | CIE | ESE | TOTAL | C |
|---------------|--------------|---|-----------|----------|----------|---------------------------------|------------|------------|-----------|
| THEORY | | | | | | | | | |
| 1 | UCS4012 | Computer Organization and Architecture | 3 | 1 | - | 40 | 60 | 100 | 4 |
| 2 | UCS4210 | Computer Organization and Architecture Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 3 | UCS4013 | Operating System | 3 | 1 | - | 40 | 60 | 100 | 4 |
| 4 | UCS4211 | Operating System Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 5 | UCS4014 | Formal Language and Automata Theory | 3 | 1 | - | 40 | 60 | 100 | 4 |
| 6 | UCS4019 | Unix and Shell Programming | 3 | - | - | 40 | 60 | 100 | 3 |
| 7 | UCS4212 | Unix and Shell Programming Lab | - | - | 2 | 80 | 20 | 100 | 1 |
| 8 | UMG4008 | Organizational Behavior | 3 | - | - | 40 | 60 | 100 | 3 |
| 9 | ULA4401 | Constitution of India | 2 | - | - | Satisfactory/ Unsatisfactory | | | 0 |
| 10 | UCS4602IV | Industrial Visit-I | - | - | - | Satisfactory/Unsatisfactory | | | 0 |
| TOTAL | | | 17 | 3 | 6 | 440 | 360 | 800 | 21 |
| 11 | UCS4001BD | *Programming for Data Analytics | 2 | 1 | - | 40 | 60 | 100 | 3 |
| | UCS4201BD | *Programming for Data Analytics Lab | - | - | 2 | 80 | 20 | 100 | 1 |
| | UCS4001SE | **Software Project Management | 3 | 1 | - | 40 | 60 | 100 | 4 |
| | UCS4001IO | ***IOT Board and Communication Modules | 1 | 1 | - | 40 | 60 | 100 | 2 |
| | UCS4001IO | ***IOT Board and Communication Modules Lab | - | - | 4 | 80 | 20 | 100 | 2 |
| | UCS4001ML | ****Basic of AI and Machine Learning | 3 | 1 | - | 40 | 60 | 100 | 4 |
| | UCS4002BD | *Predictive Analytics | 3 | 1 | - | 40 | 60 | 100 | 4 |
| | UCS4002ML | ****Machine Intelligence | 3 | 1 | - | 40 | 60 | 100 | 4 |

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III YEAR: V SEMESTER

| S. NO. | SUBJECT CODE | SUBJECT | L | T | P | CIE | ESE | TOTAL | C |
|---------------|--------------|---|-----------|----------|----------|---------------------------------|------------|------------|-----------|
| THEORY | | | | | | | | | |
| 1 | UCS5012 | Database Management System | 3 | 1 | - | 40 | 60 | 100 | 4 |
| 2 | UCS5208 | Database Management System Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 3 | UCS5013 | Design and Analysis of Algorithms | 3 | 1 | - | 40 | 60 | 100 | 4 |
| 4 | UCS5209 | Design and Analysis of Algorithms Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 5 | UCS5014 | Object Oriented Programming | 2 | 1 | - | 40 | 60 | 100 | 3 |
| 6 | UCC5210 | Object Oriented Programming Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 7 | UEC5002 | Signal & System | 3 | - | - | 40 | 60 | 100 | 3 |
| 8 | - | Open Elective-I | 3 | - | - | 40 | 60 | 100 | 3 |
| 9 | - | Elective-I | 3 | - | - | 40 | 60 | 100 | 3 |
| 10 | ULA5402 | Essence of Indian Traditional Knowledge | 2 | - | - | Satisfactory/ Unsatisfactory | | | 0 |
| 11 | UAP5403 | Aptitude and Reasoning and online Test | - | - | 2 | Satisfactory/ Unsatisfactory | | | 0 |
| TOTAL | | | 19 | 3 | 8 | 480 | 420 | 900 | 23 |
| 11 | UCS5001BD | *Advanced Algorithms for Data Analytics | 2 | 1 | - | 40 | 60 | 100 | 3 |
| | UCS5201BD | *Advanced Algorithms for Data Analytics lab | - | - | 2 | 80 | 20 | 100 | 1 |
| | UCS5001SE | **Advance Software Engineering | 2 | 1 | - | 40 | 60 | 100 | 3 |
| | UCS5201SE | **Advance Software Engineering Lab | - | - | 2 | 80 | 20 | 100 | 1 |
| | UCS5001IO | ***Advance Practices In IoT-I | 1 | 1 | - | 40 | 60 | 100 | 2 |
| | UCS5201IO | ***Advance Practices In IoT-I Lab | - | - | 2 | 80 | 20 | 100 | 2 |
| | UCS5001ML | ****Neural Network and Deep Learning | 3 | 1 | - | 40 | 60 | 100 | 4 |

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III YEAR: VI SEMESTER

| S. NO. | SUBJECT CODE | SUBJECT | L | T | P | CIE | ESE | TOTAL | C |
|---------------|--------------|--|-----------|----------|-----------|---------------------------------|------------|------------|-----------|
| THEORY | | | | | | | | | |
| 1 | UCS6006 | Compiler Design | 3 | 1 | - | 40 | 60 | 100 | 4 |
| 2 | UCS6205 | Compiler Design Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 3 | UCS6007 | Computer Networks | 3 | 1 | - | 40 | 60 | 100 | 4 |
| 4 | UCS6206 | Computer Networks Labs | - | - | 2 | 80 | 20 | 100 | 1 |
| 5 | - | Elective-II | 3 | - | - | 40 | 60 | 100 | 3 |
| 6 | - | Elective-III | 3 | - | - | 40 | 60 | 100 | 3 |
| 7 | USS6402 | Soft-Skill and Interpersonal Communication | 2 | - | - | 100 | - | 100 | 2 |
| 8 | UCS6702 PJ | Project-I | - | - | 4 | 100 | - | 100 | 1 |
| 9 | UCS6703SM | Seminar | - | - | 2 | 100 | - | 100 | 1 |
| 10 | UAP6403 | Aptitude and Reasoning and online Test | - | - | 2 | Satisfactory/ Unsatisfactory | | | 0 |
| TOTAL | | | 14 | 2 | 12 | 620 | 280 | 900 | 21 |
| 11 | UCS6001BD | *Big Data Security | 2 | 1 | - | 40 | 60 | 100 | 3 |
| | UCS6201BD | Big Data Security Lab | - | - | 2 | 80 | 20 | 100 | 1 |
| | UCS6001SE | Software Quality Management | 3 | 1 | - | 40 | 60 | 100 | 4 |
| | UCS6001IO | ***Advance Practices In IOT-II | 1 | 1 | - | 40 | 60 | 100 | 2 |
| | UCS6201IO | ***Advance Practices In IOT-II Lab | - | - | 4 | 80 | 20 | 100 | 2 |
| | UCS6001ML | ****Advanced Deep Learning | 3 | 1 | - | 40 | 60 | 100 | 4 |

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IV YEAR: VII SEMESTER

| S. NO. | SUBJECT CODE | SUBJECT | L | T | P | CIE | ESE | TOTAL | C |
|---------------|--------------|--------------------------------------|-----------|----------|-----------|------------|------------|------------|-----------|
| THEORY | | | | | | | | | |
| 1 | - | Elective-IV | 3 | - | - | 40 | 60 | 100 | 3 |
| 2 | - | Elective-V | 3 | - | - | 40 | 60 | 100 | 3 |
| 3 | - | Open Elective-II | 3 | - | - | 40 | 60 | 100 | 3 |
| 4 | UBS7012 | Biology | 2 | - | - | 40 | 60 | 100 | 2 |
| 5 | UCS7702 PJ | Project-II | - | - | 10 | 100 | - | 100 | 5 |
| 6 | UCS7601 ST | Summer Training | - | - | 2 | 100 | - | 100 | 1 |
| TOTAL | | | 11 | 0 | 12 | 360 | 240 | 600 | 17 |
| 7 | UCS7001BD | *Hadoop Framework | 3 | 1 | - | 40 | 60 | 100 | 4 |
| | UCS7201BD | *Hadoop Framework Lab | - | - | 2 | 80 | 20 | 100 | 1 |
| | UCS7001SE | **Software Testing | 3 | 1 | - | 40 | 60 | 100 | 4 |
| | UCS7201SE | **Software Testing Lab | - | - | 2 | 80 | 20 | 100 | 1 |
| | UCS7001IO | ***Research Project in IOT | - | - | 10 | 80 | 20 | 100 | 5 |
| | UCS7201ML | Research Project in Machine Learning | - | - | 10 | 80 | 20 | 100 | 5 |

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STUDY & EVALUATION SCHEME
B.TECH: COMPUTER SCIENCE & ENGINEERING (LATERAL)
IV YEAR: VIII SEMESTER

| S. NO. | SUBJECT CODE | SUBJECT | L | T | P | CIE | ESE | TOTAL | C |
|---------------|--------------|-------------------|----------|----------|-----------|------------|------------|------------|-----------|
| THEORY | | | | | | | | | |
| 1 | - | Elective-VI | 3 | - | - | 40 | 60 | 100 | 3 |
| 2 | - | Open Elective-III | 3 | - | - | 40 | 60 | 100 | 3 |
| 3 | - | Open Elective-IV | 3 | - | - | 40 | 60 | 100 | 3 |
| 4 | UCS8702 PJ | Project-III | - | - | 12 | 80 | 20 | 100 | 6 |
| TOTAL | | | 9 | 0 | 12 | 200 | 200 | 400 | 15 |

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T - Tutorial

P - Practical

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STUDY & EVALUATION SCHEME
B.TECH: COMPUTER SCIENCE & ENGINEERING (LATERAL)

LIST OF ELECTIVES

| ELECTIVE-I | | | |
|---------------------|---------------------|---|-----------------|
| S. NO. | SUBJECT CODE | SUBJECT | SEMESTER |
| 1 | UCS5107 | Ecommerce | V |
| 2 | UCS5108 | Graph Theory | V |
| 3 | UCS5109 | Management Information System | V |
| 4 | UCS5110 | Computer Graphics | V |
| ELECTIVE-II | | | |
| 1 | UCS6107 | MOOC: Operations Research | VI |
| 2 | UCS6108 | Computer Based Numerical and Statistical Techniques | VI |
| 3 | UCS6109 | Geographical Information System | VI |
| 4 | UCS6110 | Artificial Intelligence | VI |
| ELECTIVE-III | | | |
| 1 | UCS6111 | Digital Image Processing | VI |
| 2 | UCS6112 | Information Security and Cyber Law | VI |
| 3 | UCS6113 | Cryptography and Network Security | VI |
| 4 | UCS6114 | MOOC: Cloud Computing | VI |
| 5 | UCS6115 | Machine Learning | VI |
| ELECTIVE-IV | | | |
| 1 | UCS7101 | Mobile Application Development | VII |
| 2 | UCS7102 | Parallel Algorithm | VII |
| 3 | UCS7103 | Microprocessor | VII |
| 4 | UCS7104 | MOOC: Real Time System | VII |
| 5 | UCS7105 | Distributed System | VII |
| ELECTIVE-V | | | |
| 1 | UCS7106 | Data Mining and Data Warehousing | VII |
| 2 | UCS7107 | MOOC: Soft Computing | VII |
| 3 | UCS7108 | Semantic Web and Web Service | VII |
| 4 | UCS7109 | Data Compression | VII |
| 5 | UCS7110 | Mobile Computing | VII |
| 6 | UCS7111 | Pattern Recognition | VII |

ELECTIVE-VI

| | | | |
|---|---------|--------------------------------|------|
| 1 | UCS8101 | Embedded System | VIII |
| 2 | UCS8102 | Neural Networks | VIII |
| 3 | UCS8103 | Simulation and Modeling | VIII |
| 4 | UCS8104 | MOOC: Big Data Computing | VIII |
| 5 | UCS8102 | Information storage Management | VIII |

LIST OF OPEN ELECTIVES**OPEN ELECTIVE-I**

| S. NO. | SUBJECT CODE | SUBJECT | DEPARTMENT | SEMESTER |
|---------------|---------------------|--------------------------|-------------------|-----------------|
| 1 | UMG5301 | Principles of Management | MGMT | V |
| 2 | UEM5301 | Economics | MGMT | V |

OPEN ELECTIVE-II

| | | | | |
|---|---------|------------------------------|----|-----|
| 1 | UEC7301 | Satellite Communication | EC | VII |
| 2 | UME7301 | Total Quality Management | ME | VII |
| 3 | UCS7301 | MOOC: Block chain Arthecture | CS | VII |

OPEN ELECTIVE-III

| | | | | |
|---|---------|-----------------------------------|------|------|
| 1 | UME8305 | Six Sigma | ME | VIII |
| 2 | UEE8301 | Fuzzy Systems and Its application | EE | VIII |
| 3 | UBS8303 | Bioinformatics | IBST | VIII |

OPEN ELECTIVE-IV

| | | | | |
|---|---------|----------------------------------|----|------|
| 1 | UEC8301 | Mobile Communication and Network | EC | VIII |
| 2 | UCS8301 | Green Computing | CS | VIII |
| 3 | UMG8301 | Digital Marketing | CS | VIII |