

Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly West Bengal University of Technology)

Syllabus for B. Tech in Information Technology
(Applicable from the academic session 2018-2019)

Curriculum Structure

| Semester III (Second year) | | | | | | | |
|----------------------------|---|------------|---|----------------|---|---|---------|
| Sl. No. | Type of course | Code | Course Title | Hours per week | | | Credits |
| | | | | L | T | P | |
| Theory | | | | | | | |
| 1 | Engineering Science Course | ESC 301 | Analog and Digital Electronics | 3 | 0 | 0 | 3 |
| 2 | Professional Core Courses | PCC-CS301 | Data Structure & Algorithms | 3 | 0 | 0 | 3 |
| 3 | Professional Core Courses | PCC-CS302 | Computer Organisation | 3 | 0 | 0 | 3 |
| 4 | Basic Science course | BSC 301 | Mathematics-III (Differential Calculus) | 2 | 0 | 0 | 2 |
| 5 | Humanities & Social Sciences including Management courses | HSMC 301 | Economics for Engineers (Humanities-II) | 3 | 0 | 0 | 3 |
| Practical | | | | | | | |
| 6 | Professional Core Courses | PCC-CS393 | IT Workshop (Sci Lab/MATLAB/Python/R) | 0 | 0 | 4 | 2 |
| 7 | Engineering Science Course | ESC 391 | Analog and Digital Electronics | 0 | 0 | 4 | 2 |
| 8 | Professional Core Courses | PCC-CS391 | Data Structure & Algorithms | 0 | 0 | 4 | 2 |
| 9 | Professional Core Courses | PCC-CS392 | Computer Organisation | 0 | 0 | 4 | 2 |
| | | | Total credits | | | | 22 |
| Semester IV (Second year) | | | | | | | |
| Sl. No. | Type of course | Code | Course Title | Hours per week | | | Credits |
| | | | | L | T | P | |
| Theory | | | | | | | |
| 1 | Professional Core Courses | PCC-CS401 | Discrete Mathematics | 3 | 1 | 0 | 4 |
| 2 | Professional Core Courses | PCC-CS 402 | Computer Architecture | 3 | 0 | 0 | 3 |
| 3 | Professional Core Courses | PCC-CS403 | Formal Language & Automata Theory | 3 | 0 | 0 | 3 |

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| 4 | Professional Core Courses | PCC-CS404 | Design & Analysis of Algorithms | 3 | 0 | 0 | 3 |
| 5 | Basic Science courses | BSC 401 | Biology | 2 | 1 | 0 | 3 |
| 6 | Mandatory Courses | MC401 | Environmental Sciences | 1 | - | - | 1 |
| Practical | | | | | | | |
| 7 | Engineering Science Course | PCC-CS 492 | Computer Architecture | 0 | 0 | 4 | 2 |
| 8 | Professional Core Courses | PCC-CS494 | Design & Analysis of Algorithms | 0 | 0 | 4 | 2 |
| | | | | | | Total credits | 20 |

| Semester V (Third year) | | | | | | | |
|--------------------------------|---|-------------------|--|-----------------------|----------|----------|----------------|
| Sl. No. | Type of course | Code | Course Title | Hours per week | | | Credits |
| | | | | L | T | P | |
| 1 | Engineering Science Course | ESC501 | Software Engineering | 3 | 0 | 0 | 3 |
| 2 | Professional Core Courses | PCC-CS501 | Compiler Design | 3 | 0 | 0 | 3 |
| 3 | Professional Core Courses | PCC-CS502 | Operating Systems | 3 | 0 | 0 | 3 |
| 4 | Professional Core Courses | PCC-CS503 | Object Oriented Programming | 3 | 0 | 0 | 3 |
| 5 | Humanities & Social Sciences including Management courses | HSMC-501 | Introduction to Industrial Management (Humanities III) | 3 | 0 | 0 | 3 |
| 6 | Professional Elective | PEC-IT 501A/B/C/D | (Elective-I) Theory of | 3 | 0 | 0 | 3 |

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| | courses | | Computation/Artificial Intelligence/ Advanced Computer Architecture/ Computer Graphics | | | | |
| 7 | Mandatory Courses | MC- CS501 | Constitution of India/ Essence of Indian Knowledge Tradition | - | - | - | 0 |
| Practical | | | | | | | |
| 8 | Professional Core Courses | ESC- 591 | Software Engineering | | 0 | 4 | 2 |
| 9 | Professional Core Courses | PCC- CS592 | Operating Systems | | 0 | 4 | 2 |
| 10 | Professional Core Courses | PCC- CS593 | Object Oriented Programming | | 0 | 4 | 2 |
| Total credits | | | | | | | 24 |

| Semester VI (Third year) | | | | | | | |
|---------------------------------|-------------------------------|-------------------|---|-----------------------|----------|----------|----------------|
| Sl. No. | Type of course | Code | Course Title | Hours per week | | | Credits |
| | | | | L | T | P | |
| 1 | Professional Core Courses | PCC- CS601 | Database Management Systems | 3 | 0 | 0 | 3 |
| 2 | Professional Core Courses | PCC- CS602 | Computer Networks | 3 | 0 | 0 | 3 |
| 3 | Professional Elective courses | PEC- IT601A/B/C/D | (Elective-II) Advanced Algorithms/ Distributed Systems/ Signals & Systems / Image Processing | 3 | 0 | 0 | 3 |
| 4 | Professional Elective courses | PEC- IT602A/B/C/D | (Elective-III) Parallel and Distributed Algorithms/ Data Warehousing & Data Mining/Human Computer Interaction/Pattern | 3 | 0 | 0 | 3 |

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| | | | | | | | |
|------------------|---------------------------|--------------|--|---|---|---|-----------|
| | | | Recognition | | | | |
| 5 | Open Elective courses | OEC-IT601A/B | (Open Elective-) Numerical Methods/ Human Resource Development and Organizational Behavior | 3 | 0 | 0 | 3 |
| 6 | Project | PROJ-CS601 | Research Methodology | 3 | 0 | 0 | 3 |
| Practical | | | | | | | |
| 7 | Professional Core Courses | PCC-CS691 | Database Management Systems | 0 | 0 | 4 | 2 |
| 8 | Professional Core Courses | PCC-CS692 | Computer Networks | 0 | 0 | 4 | 2 |
| | | | Total credits | | | | 22 |

Semester VII (Fourth year)

| Sl. No. | Type of course | Code | Course Title | Hours per week | | | Credits |
|---------|--|----------------------|--|----------------|---|---|---------|
| | | | | L | T | P | |
| 1 | Professional Elective courses | PEC-IT701A/B/C/D | (Elective-IV) Internet Technology/Quantum Computing/ Cloud Computing/Machine learning | 3 | 0 | 0 | 3 |
| 2 | Professional Elective courses | PEC-IT702A/B/C/D/E/F | (Elective-V) Multimedia Technology/Neural Networks and Deep Learning/Soft Computing/ Ad-Hoc and Sensor Networks/Information Theory and Coding/Cyber Security | 3 | 0 | 0 | 3 |
| 3 | Open Elective courses | OEC-IT701A/B/C | (Open Elective-II) Operations Research/Introduction to Philosophical Thoughts/ Soft Skill & Interpersonal Communication | 3 | 0 | 0 | 3 |
| 4 | Humanities & Social Sciences including | HSMC 701 | Project Management and Entrepreneurship | 2 | 1 | 0 | 3 |

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|---|--------------------|------------|----------------------|---|---|----|-----------|
| | Management courses | | | | | | |
| 5 | Project | PROJ-IT781 | Project-II | 0 | 0 | 12 | 6 |
| | | | Total credits | | | | 18 |

Semester VIII (Fourth year)
[Summer Industry Internship]

| Sl. No. | Type of course | Code | Course Title | Hours per week | | | Credits |
|---------|-------------------------------|--------------------|---|----------------|---|----|-----------|
| | | | | L | T | P | |
| 1 | Professional Elective courses | PEC-IT801A/B/C/D/E | (Elective-VI) Signals and Networks/Cryptography & Network Security/ Speech and Natural Language Processing/ /Internet of Things/ Remote Sensing and GIS | 3 | 0 | 0 | 3 |
| 2 | Open Elective courses | OEC-IT801A/B/C/D/E | Open Elective-III Big Data Analysis/Cyber Law and Ethics/ Mobile Computing/Bioinformatics/ Robotics | 3 | 0 | 0 | 3 |
| 3 | Open Elective courses | OEC-IT802A/B/C | (Open Elective-IV) E-Commerce and ERP/Micro-electronics and VLSI Design/Economic Policies in India | 3 | 0 | 0 | 3 |
| 4 | Project | PROJ-CS881 | Project-III | 0 | 0 | 12 | 6 |
| | | | Total credits | | | | 15 |