

B. Tech. (Information Technology): Semester-wise Scheme

Induction Programme

It is mandatory to conduct an induction programme for newly admitted students right at the beginning of the first semester. The objective of the induction programme is to create a bond between the institution and the newly admitted students.

The new students enter an institution with diverse backgrounds and expectations. It is important to help them adjust to the new environment. To meet this purpose, there will be a week-long induction programme before the normal classes start. The induction program shall provide students the opportunity to settle down and be comfortable in the new environment. The new students will come to know their seniors, faculty members, department and university. The student would be engaged in the following activities.

1. Familiarization with the Department and the University
2. Physical activities like morning walks, cycling or playing one or the other games.
3. Creative arts like painting, music and dancing etc.
4. Talks and lectures by eminent people, and group discussion on universal Human values
5. Literary activities like reading writing or debating

An English crash course of three weeks duration will be organized for the students who are not proficient in English language. A schedule for organizing the induction programme and English proficiency classes shall be prepared every year at university level.

Depending on the interest, every student must opt for one of the activities during all the semesters. For this purpose, the following clubs shall be established in the Department.

1. Sports Club
2. Green Club
3. Culture, Literature and Film Club
4. Social Service Club
5. Technology Innovation Club

Each student will spend 3 to 5 hours for these activities per week.

SEMESTER I

| Sr. No. | Course Codes | Nomenclature of the Course | Hours per week | | | Credits |
|--------------|----------------------|--|----------------|---|---|---------|
| | | | L | T | P | |
| 1. | BSC101-T BSC101-P | Physics (Group A) | 3 | 1 | 3 | 5.5 |
| | BSC102-T BSC102-P | Chemistry (Group B) | | | | |
| 2. | BSC103-T | Mathematics –I | 3 | 0 | 1 | 4.0 |
| | BSC105-T | Mathematics –I (for CSE/IT) | | | | |
| 3. | ESC101-T ESC101-P | Basic Electrical Engineering (Group A) | 3 | 1 | 2 | 5.0 |
| | ESC103-T ESC103-P | Programming for Problem Solving (Group B) | | | | |
| 4. | ESC104-T ESC104-P | Workshop/Manufacturing Practices (Group A) | 1 | 0 | 4 | 3 |
| | ESC102-P | Engineering Graphics & Design (Group B) | | | | |
| 5. | MC101 | Induction Training (Group A & B) | 3 weeks | 0 | 0 | 0 |
| Total Credit | | | | | | 17.5 |

SEMESTER II

| Sr. No. | Course Codes | Nomenclature of the Course | Hours per week | | | Credits |
|--------------|------------------------|--|----------------|---|---|---------|
| | | | L | T | P | |
| 1. | BSC101-T BSC101-P | Physics (Group B) | 3 | 1 | 3 | 5.5 |
| | BSC102-T BSC102-P | Chemistry (Group A) | | | | |
| 2. | BSC103-T | Mathematics –II | 3 | 0 | 1 | 4.0 |
| | BSC106-T | Mathematics –II (for CSE/IT) | | | | |
| 3. | ESC101-T ESC101-P | Basic Electrical Engineering (Group B) | 3 | 1 | 2 | 5.0 |
| | ESC103-T ESC103-P | Programming for Problem Solving (Group A) | | | | |
| 4. | ESC104-T ESC104-P | Workshop/Manufacturing Practices (Group B) | 1 | 0 | 4 | 3 |
| | ESC102-P | Engineering Graphics & Design (Group A) | | | | |
| 5. | HSMC101-T HSMC101-P | English (Group A and B) | 2 | 0 | 2 | 3 |
| 6. | MC102-T | Environmental Sciences (Group A) | 3 | 0 | 0 | 0 |
| | MC103-T | Indian Constitution (Group B) | | | | |
| Total Credit | | | | | | 20.5 |

SEMESTER-III

| Sr. No. | Course Code | Nomenclature of the Course | Hours per week | | | Credits |
|---------------|-------------------------------|--|----------------|---|---|---------|
| | | | L | T | P | |
| 1. | BSC201-T | Mathematics-III | 3 | 0 | 0 | 3 |
| 2. | PCC-IT201-T/ PCC-CSE201-T | Data Structures and Algorithms | 3 | 0 | 0 | 3 |
| 3. | PCC-IT202-T/ PCC-CSE-202-T | Object Oriented Programming using C++ | 3 | 0 | 0 | 3 |
| 4. | PCC-IT203-T/ PCC-CSE203-T | Discrete Mathematics | 3 | 0 | 0 | 3 |
| 5. | PCC-IT204-T/ PCC-CSE204-T | Computer Organisation and architecture | 3 | 0 | 0 | 3 |
| 6. | MC102-T | Environmental Science | 3 | 0 | 0 | 0 |
| 7. | PCC-IT201-P/ PCC-CSE201-P | Data Structures and Algorithms using C/C++ Lab. | 0 | 0 | 4 | 2 |
| 8. | PCC-IT202-P/ PCC-CSE202-P | Object Oriented Programming using C++ Lab. | 0 | 0 | 4 | 2 |
| Total Credits | | | | | | 19 |

SEMESTER IV

| Sr. No. | Course Code | Nomenclature of the Course | Hours per week | | | Credits |
|--|------------------------------|-------------------------------------|----------------|---|---|---------|
| | | | L | T | P | |
| 1. | PCC-IT205-T/ PCC-CSE205-T | Microprocessor and Interfacing | 3 | 0 | 0 | 3 |
| 2. | PCC-IT206-T/ PCC-CSE305-T | Operating System | 3 | 0 | 0 | 3 |
| 3. | PCC-IT207-T/ PCC-CSE207-T | Database Management System | 3 | 0 | 0 | 3 |
| 4. | PCC-IT208-T/ PCC-CSE208-T | Analysis and Design of Algorithms | 3 | 0 | 0 | 3 |
| 5. | PCC-IT209-T/ PCC-CSE209-T | Software Engineering | 3 | 0 | 0 | 3 |
| 6. | PCC-IT210-T/ PCC-CSE210-T | Java Programming | 3 | 0 | 0 | 3 |
| 7. | PCC-IT205-P/ PCC-CSE205-P | Microprocessor and Interfacing Lab. | 0 | 0 | 2 | 1 |
| 8. | PCC-IT206-P/ PCC-CSE305-P | Operating System Lab. | 0 | 0 | 2 | 1 |
| 9. | PCC-IT207-P/ PCC-CSE207-P | Database Management System Lab. | 0 | 0 | 2 | 1 |
| 10. | PCC-IT210-P/ PCC-CSE210-P | Java Programming Lab. | 0 | 0 | 4 | 2 |
| Total Credits | | | | | | 23 |
| Industrial Training of 4-6 weeks after IV th semester | | | | | | |

Semester V

| Sr. No. | Course Code | Nomenclature of the Course | Hours per week | | | Credits |
|---------------|------------------------------|--|----------------|---|---|---------|
| | | | L | T | P | |
| 1. | PCC-IT301-T/ PCC-CSE206-T | Computer Networks | 3 | 0 | 0 | 3 |
| 2. | PCC-IT302-T/ PCC-CSE308-T | .NET using C# | 2 | 0 | 0 | 2 |
| 3. | PCC-IT303-T/ PCC-CSE306-T | Formal Language and Automata Theory | 3 | 0 | 0 | 3 |
| 4. | PCC-IT304-T/ PCC-CSE402-T | Artificial Intelligence | 3 | 0 | 0 | 3 |
| 5. | OEC-I | Open Elective Course offered by other Departments | 3 | 0 | 0 | 3 |
| 6. | HSMC301-T | Economics for Engineers | 2 | 0 | 0 | 2 |
| 7. | MC104-T | Essence of Indian Traditional Knowledge | 3 | 0 | 0 | - |
| 8. | PCC-IT301-P/ PCC-CSE206-P | Computer Networks Lab. | 0 | 0 | 2 | 1 |
| 9. | PCC-IT302-P/ PCC-CSE308-P | .NET using C# Lab. | 0 | 0 | 2 | 1 |
| 10. | INT-IT301 | Industrial Training/Internship | 0 | 0 | 0 | 1 |
| Total Credits | | | | | | 19 |

SEMESTER VI

| Sr. No. | Course Codes | Nomenclature of the Course | Hours per week | | | Credits |
|---|-------------------------------|---|----------------|---|---|---------|
| | | | L | T | P | |
| 1. | PCC-IT305-T/ PEC-CSE411-T | Network Administration & Management | 3 | 0 | 0 | 3 |
| 2. | PCC-IT306-T/ PCC-CSE401-T | Compiler Design | 3 | 0 | 0 | 3 |
| 3. | PCC-IT307-T | Information and Cyber Security | 3 | 0 | 0 | 3 |
| 4. | PCC-IT308-T/ PCC-CSE302-T | Python Programming | 3 | 0 | 0 | 3 |
| 5. | PEC-IT301-T to PEC-IT305-T | Professional Elective Course to be opted by students | 3 | 0 | 0 | 3 |
| 6. | HSMC302-T | Fundamentals of Management for Engineers | 2 | 0 | 0 | 2 |
| 7. | OEC-II | Open Elective Course offered by other Departments | 3 | 0 | 0 | 3 |
| 8. | PCC-IT305-P/ PEC-CSE411-P | Network Administration & Management Lab. | 0 | 0 | 2 | 1 |
| 9. | PCC-IT308-P/ PCC-CSE302-P | Python Programming Lab. | 0 | 0 | 3 | 1.5 |
| Total Credits | | | | | | 22.5 |
| A Mini-Project/Training based on open source tools/.NET | | | | | | |

List of Electives I

1. PEC-IT301-T/ PEC-CSE301-T: Embedded System Design
2. PEC-IT302-T/ PEC-CSE302-T: Soft Computing
3. PEC-IT303-T/ PEC-CSE303-T: Graph Theory
4. PEC-IT304-T/ PEC-CSE304-T: Bioinformatics
5. PEC-IT305-T/ PCC-CSE303-T: High Speed Network Technologies
6. Any one of the MOOC not studied earlier and of equal credits (3)

*A student can do only one course from MOOC in lieu of elective courses in a semester with the approval of Chairperson of the Department.

SEMESTER VII

| Sr. No. | Course Codes | Nomenclature of the Course | Hours per week | | | Credits |
|---------------|----------------------------------|--|----------------|---|---|---------|
| | | | L | T | P | |
| 1. | PCC-IT401-T/ PEC-CSE302-T | Wireless and Mobile Communication | 3 | 0 | 0 | 3 |
| 2. | PCC-IT402-T/ PCC-CSE403-T | Data Mining Techniques | 3 | 0 | 0 | 3 |
| 3. | PEC-IT401-T to PEC-IT404-T | Professional Elective Course to be opted by students | 3 | 0 | 0 | 3 |
| 4. | PEC-IT405-T to PEC-IT409-T | Professional Elective Course to be opted by students | 3 | 0 | 0 | 3 |
| 5. | OEC-III | Open Elective Course offered by other Departments | 3 | 0 | 0 | 3 |
| 6. | PEC-IT405-P to PEC-IT409-P | Professional Elective Course Lab. | 0 | 0 | 2 | 1 |
| 7. | PROJ-IT401 | Major Project I | 0 | 0 | 8 | 4 |
| 8. | PROJ-IT402 | Mini Project using open source tools/.NET | 0 | 0 | 2 | 1 |
| Total Credits | | | | | | 21 |

List of Electives II

1. PEC-IT401-T/ PEC-CSE401-T: Software Project Management
2. PEC-IT402-T/ PCC-CSE304-T: Cryptography and Network Security
3. PEC-IT403-T/ PEC-CSE403-T: Distributed Operating Systems
4. PEC-IT404-T/ PEC-CSE404-T: Cloud Computing
5. Any one of the MOOC not studied earlier and of equal credits (3)

List of Elective III

1. PEC-IT405-T/ PEC-CSE405-T: Advanced Microprocessor
2. PEC-IT406-T/ PEC-CSE417-T: Digital Forensics
3. PEC-IT407-T/ PCC-CSE307-T: Data Analytics Using R
4. PEC-IT408-T/ PEC-CSE408-T: Digital Image Processing
5. PEC-IT409-T/ PCC-CSE301-T: Computer Graphics
6. Any one of the MOOC not studied earlier and of equal credits (4)

List of Elective III (Labs.)

1. PEC-IT405-P/ PEC-CSE405-P: Advanced Microprocessor (Lab.)
2. PEC-IT406-P/ PEC-CSE417-P: Digital Forensics (Lab.)
3. PEC-IT407-P/ PCC-CSE307-P: Data Analytics Using R (Lab.)
4. PEC-IT408-P/ PEC-CSE408-P: Digital Image Processing (Lab.)
5. PEC-IT409-P/ PCC-CSE301-P: Computer Graphics (Lab.)

SEMESTER VIII

| Sr. No. | Course Codes | Nomenclature of the Course | Hours per week | | | Credits |
|---------------|----------------------------------|--|----------------|---|----|---------|
| | | | L | T | P | |
| 1. | PCC-IT403-T/ PEC-CSE406-T | Mobile Application Development | 2 | 0 | 0 | 2 |
| 2. | PEC-IT409-T to PEC-IT412-T | Professional Elective Course to be opted by students | 3 | 0 | 0 | 3 |
| 3. | PEC-IT413-T to PEC-IT416-T | Professional Elective Course to be opted by students | 3 | 0 | 0 | 3 |
| 4. | PCC-IT403-T/ PEC-CSE406-T | Mobile Application Development Lab | 0 | 0 | 3 | 1.5 |
| 5. | PEC-IT409-P to PEC-IT412-P | Professional Elective Course Lab. | 0 | 0 | 2 | 1 |
| 6. | PEC-IT413-P to PEC-IT416-P | Professional Elective Course Lab. | 0 | 0 | 2 | 1 |
| 7. | PROJ-IT403 | Major Project II | 0 | 0 | 12 | 6 |
| Total Credits | | | | | | 17.5 |

List of Electives IV

1. PEC-IT409-T/ PEC-CSE409-T: Internet of Things
2. PEC-IT410-T/ PEC-CSE410-T: Software Defined Networks
3. PEC-IT411-T/ PCC-CSE407-T: Multimedia Technologies
4. PEC-IT412-T/ PEC-CSE412-T: Software Testing and Quality Assurance
5. Any one of the MOOC not studies earlier and of equal credits (4)

List of Electives IV (Labs.)

1. PEC-IT409-P/ PEC-CSE409-P: Internet of Things (Lab.)
2. PEC-IT410-P/ PEC-CSE410-P: Software Defined Networks (Lab.)
3. PEC-IT411-P/ PEC-CSE407-P: Multimedia Technologies (Lab.)
4. PEC-IT412-P/ PEC-CSE412-P: Software Testing and Quality Assurance (Lab.)

List of Electives V

1. PEC-IT413-T/ PEC-CSE413-T: Machine Learning
2. PEC-IT414-T/ PEC-CSE414-T: Big Data Analytics
3. PEC-IT415-T/ PEC-CSE415-T: Web Development
4. PEC-IT416-T/ PEC-CSE416-T: Statistical Computing
5. Any one of the MOOC not studies earlier and of equal credits

List of Electives V (Labs.)

1. PEC-IT413-P/ PEC-CSE413-P: Machine Learning (Lab.)
2. PEC-IT414-P/ PEC-CSE414-P: Big Data Analytics (Lab.)
3. PEC-IT415-P/ PEC-CSE415-P: Web Development (Lab.)
4. PEC-IT416-P/ PEC-CSE416-P: Statistical Computing (Lab.)