2022-23
INFORMATION BOOKLET

https://smu.edu.in/smu.html

https://www.facebook.com/SMIT.SMU

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SMIT SIKKIM MANIPAL UNIVERSITY
SIKKIM MANIPAL INSTITUTE OF TECHNOLOGY

SMIT RANKINGS BY VARIOUS AGENCIES 2021-22

1. THE WEEK

Top Engineering College (All India) SMIT ranked 66 (2022)

Top Private Engineering Colleges (All India) SMIT ranked 42 (2022)

Top Private Engineering Colleges (East Zone) SMIT ranked 3 (2022)

2. OUTLOOK

India's Top 100 Private Engineering Colleges SMIT ranked 12 (2022)

3. INDIA TODAY

Best Engineering Private College (All India) SMIT ranked 22 (2022)

Best Private Engineering College (East Zone) SMIT ranked 02 (2022)
Top 10 emerging Private Engineering Colleges SMIT ranked 06 (2022)

4. CSR-GHRDC ENGINEERING COLLEGES SURVEY

Ranking of Top Engineering Colleges Of Super Excellence SMIT ranked 5 (2022)

Best Engineering College in Sikkim SMIT ranked 01 (2022)

Top 25 Engineering Colleges Ranked by Faculty, Research, Consultancy, EDP & Other Programmes SMIT ranked 12 (2022)

Top 25 Engineering Colleges Ranked by Placements, USP, Social Responsibility, Networking & Industry Interface SMIT Rank 13 (2022)

MESSAGE FROM DIRECTOR

It is with great pleasure I take this opportunity of welcoming you to the portals of Sikkim Manipal Institute of Technology (SMIT).

I congratulate you for choosing SMIT as your destination for launching in the future. I am sure you are going to enjoy your stay at SMIT in the serene and salubrious environment which would be a perfect catalyst for studies.

You are going to spend premium time of your life whilst pursuing your degree at SMIT, I would urge you all to keep focus on your goals and go on moving towards it at a steady pace in a systematic manner. We shall also take a good care of you and provide you homely environment on setting out first time away from your home. Discipline is the hallmark of SMIT which facilitate holistic growth of our students and we expect the same from our perspective students. We shall ensure once you go out from SMIT on completion of your degree in the chosen field, you would serve the humanity as a responsible global citizen.

I once again welcome you to the SMIT family and assure you that we will help you pursue your objectives of life under the best educational, social and cultural environment so as to make the SMIT, you and your family proud.

Professor (Dr) GL Sharma
Director

SMIT SIKKIM MANIPAL UNIVERSITY
SIKKIM MANIPAL INSTITUTE OF TECHNOLOGY

VISION

To achieve eminence in the field of quality technological education and research

MISSION

To develop SMIT into an Institution of Excellence capable of producing competent techno-managers who can contribute effectively to the advancement of the society

OBJECTIVES

❖ To provide wholesome education to meet the intellectual aspirations of the students.

❖ To equip students with techno-managerial skills to enable them to take their assigned role in the industry.

❖ To inculcate essential ethics and values to meet the spiritual needs to the students.

❖ To provide a sound institutional environment nurturing emotional strength, healthy mind, body, and resilience amongst the students.

ACADEMIC CALENDAR FOR ODD SEMESTER: 2022
(ALL FIRST YEAR COURSES)

05 Sep 2022 - 09 Sep 2022	Student Induction Program for 1st semester BCA/BBA/B.Sc/M.Sc/M.Tech/MBA, MCA courses
06 Sep 2022 - 01 Oct 2022	Bridge course for 1st semester B.Tech.
12 Sep 2022	Commencement of 1st semester of all courses. (less B.Tech 1st Yr)
03 Oct - 07 Oct 2022	**Break**
10 Oct 2022	Student Induction Program for B.Tech 1st Year.
27 Oct 2022	Commencement of B.Tech 1st Semester classes
17 Nov - 23 Nov 2022	Quiz-I
17 Nov - 23 Nov 2022	Student Feedback **(Phase-I)**
28 Nov- 03 Dec 2023	Sessional-I
19 Dec- 23 Dec 2023	Quiz-II
19 Dec - 23 Dec 2023	Student Feedback **(Phase-II)**
05 Jan – 11 Jan 2023	Sessional-II
16 Jan - 18 Jan 2023	Re-sessional Examination
19 Jan - 25 Jan 2023	Lab sessional Examination
25 Jan 2023	**Last Working Day**
03 Feb-18 Feb 2023	End semester Examinations
27 Feb 2023	**Even Semester begins**

*There may be minor modification based on prevailing situation

ACADEMIC CALENDAR FOR ODD SEMESTER: 2022
(ALL HIGHER SEMESTER COURSES)

02 Aug 2022	Odd Semester begins. Semester registration for all students (Both UG and PG) including rejoining of the subjects/semester ***(Less 1st semester students)***
10 Aug 2022	Last date of semester registration
27 Aug– 02 Sep 2022	Quiz-I
27 Aug– 02 Sep 2022	Student Feedback (Phase-I)
09 Sep - 16 Sep 2022	Sessional-I
03 Oct - 07 Oct 2022	**Mid Semester Break**
17 Oct - 22 Oct 2022	Quiz-II
17 Oct - 22 Oct 2022	Student Feedback (Phase-II)
05 Nov- 11 Nov 2022	Sessional-II
14 Nov - 19 Nov 2022	Lab Sessional Examination
17 Nov - 19 Nov 2022	Re-Sessional Examination
21 Nov 2022	Last Working Day
24 Nov - 09 Dec 2022	**Odd Semester (Nov/Dec) Examinations**
20 Dec 2022	Publication of Odd Semester Examinations Results
23 Dec 2022	Last date for completing Additional Lab classes/Examination. *
30 Dec 2022	Last date of application for Supplementary Examination (Online/Offline)
06 Jan - 17 Jan 2023	Supplementary Examinations
09 Jan 2023	**Even Semester begins**

***Additional Lab will start from the next day of last semester examination**

ACADEMIC CALENDAR FOR EVEN SEMESTER: 2023
(ALL FIRST YEAR COURSES)

27 Feb 2023	Commencement of 2nd semester of all courses.
27 Mar- 01 Apr 2023	Quiz-I / Students learning profiling
27 Mar- 01 Apr 2023	Student Feedback (Phase -I)/ Class Committee Meeting
10 Apr- 15 Apr 2023	Sessional-I
30 Apr 2023	Annual Day/ Review of students' learning profile.
15 May- 20 May 2023	Quiz-II
15 May- 20 May 2023	Student Feedback (Phase -II)
29 May- 03 Jun 2023	Sessional-II / Review of students' learning profile.
07 Jun- 09 Jun 2023	Re-sessional Examination
12 Jun- 17 Jun 2023	Lab sessional Examination
12 Jun- 17 Jun 2023	Course Exit Feedback
17 Jun 2023	**Last Working Day**
19 Jun - 05 Jul 2023	End Semester Examination
06 Jul- 15 Jul 2023	Additional Lab##
17 Jul 2023	Publication of Even Semester Examination(First Yr.) Results / Review of students' learning profile.
19 Jul 2023	Last date of receipt of application form for Supplementary Examinations for First Yr (Online/Offline)
21 Jul- 29 Jul 2023	Supplementary Examination for First year.
05 Aug 2023	Declaration of combined results.
07 Aug 2023	Odd Semester begins. Semester Registration for all students (Both UG and PG) including rejoining of the subjects/semester.

Additional lab will start from the next day of last semester examination

***There may be minor modification based on the decision of regulatory body.**

ACADEMIC CALENDAR FOR EVEN SEMESTER: 2023
(ALL HIGHER SEMESTER COURSES)

09 Jan 2023	Even Semester begins. Semester registration for all students (Both UG and PG) including rejoining of the subjects/semester *(Less 1st year students)*
16 Jan 2023	Last date of semester registration with late fee.
13 Feb- 18 Feb 2023	Quiz-I/ Students learning profiling
13 Feb- 18 Feb 2023	Student Feedback (Phase -I)/ Class Committee Meeting
27 Feb - 04 Mar 2023	Sessional-I / Review of students' learning profile.
06 Mar-10 Mar 2023	Mid Semester Break
27 Mar- 02 Apr 2023	Quiz-II
27 Mar- 02 Apr 2023	Student Feedback (Phase -II)
10 Apr-15 Apr 2023	Sessional-II
17 Apr- 22 Apr 2023	Lab sessional Examination/ Review of students' learning profile.
17 Apr- 22 Apr 2023	Course Exit Feedback
20 Apr- 22 Apr 2023	Re-sessional Examination
29 Apr 2023	**Last Working Day**
30 Apr 2023	Annual Day
02 May -19 May 2023	End Semester Examination
08 May –10 Jun 2023	Slot-I: Major Project Viva (for in-house candidates and external candidates who have completed 16 weeks.)
22 May – 03 Jun 2023	Additional Lab##
17 Jun 2023	Publication of Even Semester Examination Results (Less Final year B.Tech)/ Review of students' learning profile.
30 Jun 2023	Last date of receipt of application form for Supplementary Examinations (Online/Offline)
03 Jul – 15 Jul 2023	Supplementary Examination/Extended Major Project Viva Voce / Review of students' learning profile.
10 Jul 2023	Commencement of 1st Semester of all B.Tech courses, BCA, BBA, B.Sc classes
31 Jul 2023	Declaration of Combined Results
07 Aug 2023	Odd Semester begins. Semester Registration for all students (Both UG and PG) including rejoining of the subjects/semester.
07 Aug 2023	Commencement of 1st Semester of all M.Tech courses, MCA, MBA & M.Sc classes.
14 Aug 2023	Last date of semester registration (less 1st Semester students).

Additional lab will start from the next day of last semester examination

***There may be minor modification based on the decision of regulatory body.**

CONTENTS

SECTION – 1
GENERAL INFORMATION

1. Introduction

Welcome to Sikkim Manipal Institute of Technology (SMIT). This beautiful campus is locatedin the most peaceful state of India, Sikkim. The people in Sikkim are warm, polite, and hospitable. We at SMIT try to emulate the wonderful spirit and culture of Sikkim to the students. The institute guides the students not only in achieving a successful career, but also molds them to become a better human being.

The institute is continually focused at embracing the latest trends and practices of the modernworld; it is aimed at refining, cultivating, and nourishing these attributes to enrich the student'slife. We as mentors facilitate the student in strengthening their belief to excel and guide themto explore their true potential. This information booklet, will act as a guide to the students to understand SMIT and its practices in a better way.

1.1 Important Information

1.1.1 Teacher Guardian: The scheme is aimed at implementing a noble practice where everyteacher acts as a guardian and a mentor to the students under him/her. The TG extends his/hersupport in all academic and non-academic related activities to the students. The TG also acts as a link between the parent and the Institute, which serve as a primary media for communication during the student's stay at SMIT. It is dedicated for constructing/providing aplatform for making a students' life more comfortable at SMIT. The TG can be approached bythe students anytime to share their problems. As a guardian in true sense, he/she will try to understand and help the students in case of any issues. Students are encouraged to develop a good communication with the TG by frequent visits and establish personal bonding during their stay at SMIT and beyond.

SMIT takes pride in its TG scheme; it helps the institute to develop an efficient and excellent way of understanding students. SMIT sincerely believes that the students will benefit in all ways through this 'Samaritan Scheme'

1.1.2 Floor Warden: Every 24 rooms in the Hostel have a designated floor warden. He/She will address any issues pertaining to the hostel and will also be in touch regularly with the parents.The students are free to interact with him/her or any hostel staff for any problem related with their stay in the hostel.

1.1.3 Identity Card: Every student must carry their identity card when moving out of the Hostel orthe campus. It helps the administration to identify each student uniquely which in turn would facilitate the organization for the effective monitoring of the individuals. The students are advised to carry the identity cards as an important mode of identification (digital signature) and practice a healthy habit of carrying it in person wherever they go.

1.1.4 Medical Facilities: The Institute has a Health Center with resident Doctors available 24x7 forattending students in need of medical help. In case of further medical assistance, the students are referred to Central Referral Hospital (CRH), a super specialty hospital located in Tadong, Gangtok; so that proper care and treatment can be given to the student under the supervision of medical specialists. Two ambulances are stationed 24x7 at the health center for any referralcase(s). Doctor/Nurse will visit individual room only for exceptional medical cases. **Essential**medicines **only** are available in the dispensary.

1.1.5 Library: The library is open from 9:00 AM– 8:00 PM on all working days and from 9:00 AM to 4:00 PM on holidays. The students can borrow books from the library using the library cardfor a period of one month.

1.1.6 Training and Placement: The institute takes special care and interest in interacting withreputed companies to ensure proper internships and placements of students. The cell is proactively and continually involved in bringing companies of good repute to the institute. Pre-placement training, soft-skill development courses and allied activities are conducted by the T&P Cell to prepare the students for their placements.

Special Coaching Unit: It is a subunit under the T&P cell which conducts/arranges special coaching classes to help the interested students clear various competitive examinations.

1.1.7 Innovation Studio and Incubation Cell: SMIT has also succeeded in being a part of Government of India's Start-up initiatives to establish Atal Incubation Centre in the campus. In order to inculcate the culture of entrepreneurship amongst the students, the institute offers Entrepreneurship for Engineers as an open elective in all under graduate engineering courses in collaboration with Atal Incubation Centre, SMIT. The students are motivated and supportedto acquire the requisite entrepreneurial skills. The ideology follows three important

processes of Ideate, Innovate and Create, to achieve the goals with the help of the Innovation Studio. The Incubation Lab gives the student an opportunity to keep their ideas afloat by helping them to design, develop and implement various business models to become successful entrepreneurs.

1.1.8 International Collaboration Cell: This cell promotes collaboration with various institutes and universities across the globe enabling the students to avail and reap the benefits of the association by way of Study Abroad Program. Details of the same is given in the succeeding paragraph.

IAESTE (International Association for Exchange of Students for Technical Experience): It is a popular non-profit and non-political student exchange program which facilitates the students to enroll for internship abroad of varying duration during their course of study at SMIT. SMU being a member university of the IAESTE global network extends essential support to the students in getting internship abroad.

AIESEC (International Association of Students in Economic and Commercial Sciences): It is an international non-governmental and non-profitable organization that provides young people with leadership development, cross cultural any internships, and volunteer exchange globally experiences. The organization focusses on empowering young people to make a progressive social impact.

Study Abroad Program (SAP): B.Tech. students after successfully completing 2 years and MBA/MCA/M.Tech students after successfully completing 1 year of their studies are eligiblefor the program. A student can earn credits for one semester from any university/institute abroad.

1.1.9 Alumni Engagement Cell: It serves as a single point of contact and provides a platform to thecurrent students for interaction with the alumni members of the institute to assist them in careerplanning, placement and transitions. The institute invites successful alumni members to sharethe latest trends in the industries and their experiences to make the students aware of the latest demand in the industries so that the students are better prepared for the campus drive. Apart from interaction and encouragement the alumni also extend help to get internship to the current students.

1.1.10 Marena(Sports Complex): The modern sports complex, one of its kind in the entire Easternpart of the country is provided with the latest sports equipment and facilities to encourage the students to excel in extra-curricular activities as well. It comprises a Gymnasium, a SwimmingPool, a Yoga Room, a Meditation Hall, an Aerobics Hall, Squash, Lawn Tennis, Basketball &Badminton courts, Snooker, Table Tennis and Carom. The Marena is also facilitated with a Food Court. The Food court offers various cuisines for an empty appetite to take a bite.

1.1.11 Personal Requirement:

a) Stationery Shop is located inside the campus at F-Block behind the workshop building tocater the need of stationery items.

b) General Store/ Departmental Store is located inside the campus behind the academic block to cater the need of necessary day to day items.

c) A Shopping complex is also present just at the entrance of the Institute. The shopping complex consists of a bank, ATMs, a Post Office, a General Store, a Beauty Parlour, a Barber shop and a Telephone exchange. In addition, there are a large number of shops spread across Majitar where the students can buy essential commodities.

d) Eateries: The **Food Court** in the Marena and the **Canteen** located at the back of the mainbuilding are the main food outlets inside the campus. In addition there are a large numberof eateries spread across Majitar within a distance of 0.3 km to 1.0 km.

e) Laundry: Laundry service is arranged where laundry persons visit hostels on regular andscheduled timings. The details can be obtained from the hostel office.

f) Rangpo (4 kms towards Siliguri) and **Singtam** (6 kms on the way to Gangtok) are two places in the proximity where the students can buy items apart from Majitar. Students canvisit **Gangtok**, the capital of Sikkim which is located approximately 35kms away from Majitar to enjoy the cool weather, the eateries and for shopping. Shared taxis/buses are available for transportation from the Institute gate located on the highway.

1.1.12 Student Council: It is the elected body of the students which is responsible for taking care ofthe welfare and issues pertaining to the students. The council is focused on addressing the quality of student's life in the campus, the food in the mess, the curricular, co-curricular as wellas extra-curricular activities in the institute. The council constitutes of academically bright andpassionate students who help the management to address the student related issues. AssociateDirector (Student Affairs) looks after all student related issues including hostels. The office ofthe Associate Director (Student Affairs) can be contacted for any information related to studentcouncil, co-curricular and extra-curricular activities and other hostel issues.

1.1.13 Student Council: There are a large number of students' clubs to engage the students to follow their passion and hobbies. Students are given the freedom of choosing the club of their interest;even the recluse students are motivated to peek out of their shell. These opportunities help them to explore and discover their hidden talents. At the institute level, there are a large numberof clubs functioning under the Associate Director (Student Affairs). Apart from these, every Department has its own clubs/associations which add flavor to the departmental and institutional activities and functions. The departmental clubs of SMIT are: CESA (Civil Engineering Students' Association), ACCESS (All Core Computer Engineering Students' Society), SEED (Society for Electrical & Electronics Department), ECSA (Electronics & Communication Students' Association), FORUM 2K (Information Technology), MEDUSA (Mechanical Engineering Department Undergraduate Students' Association), SMS (Society for Management Studies), CASS (Computer Application Students' Society), SCS (School of Chemical Sciences), Science Space etc. Apart from these, some professional societies likeIEEE Student Chapter, CSI Student Chapter, SAE (Society of Automotive Engineers)are also functional in the Institute to cater the professional needs and aspirations of thestudents.
The list of the institute clubs to mention a few are: Sports Club, Cultural Club (Singing Club, Dance Club and Drama Club), Photography Club, MUNSMIT (Model United Nations) Club, Literacy & Debate Club, Artistic Club, REVERBS (Socio-Literary Club), INNOVISION Club, Dadati (social welfare club) etc.

1.1.14 Discipline: The students are advised to maintain a good discipline, conduct and be polite to teachers, college management authorities, seniors, and fellow mates. A good discipline is of utmost importance in the development and maintenance of human character. Students are expected to adhere to the good practices and maintain discipline for creating a good ambiencefor conducive learning in the institute.

1.1.15 Environment & Cleanliness: Taking good care of the environment is a practice to be cultivated by one and all. All students are warmly advised to take an initiative to care for mother earth and motivate others in maintaining a clean and a healthy environment. Please stay awayfrom the habit of littering the room, corridor, and premises. Bad habits are easy to develop buthard to do away with, so be wary not to fall prey to these bad practices.

1.1.16 Societal Responsibility: To be a good human being is a societal responsibility, therefore eachone of us should be more responsible towards the society we live in. Hence learn to develop agood habit of giving at least something back to the society which has selflessly given you so much.

1.1.17 Main Gate Entry: Students are firmly advised to enter the campus before 8:00 PM. Coming late amounts to gross violation of laid down rules and regulations of the institute and warrantsdisciplinary actions which is undesirable from the students' community. In case of exigencies,student(s) may seek the permission of the floor warden/hostel authority.

1.1.18 Hostel Regulations: The details of the Hostel rules and regulations are available in http://suchana/ which can be accessed through the local intranet of the institute. The students are requested to maintain good ambience in the hostel.

Wishing you all the best for your journey at SMIT.

SECTION – 2
CGPA REGULATIONS

2.1 Background

Sikkim Manipal Institute of Technology (SMIT) is one of the premier Institutes in the country. The Institute focuses on imparting high-quality technical education to the students and prepares them as industry-ready professionals. It offers the state-of-the-art facilities, nurturing of entrepreneurial skills and conducive learning and research environment. SMIT is a constituent college of Sikkim Manipal University which offers various Under Graduate & Post Graduate programs, a summary of which is given below. Apart from these regular courses, the Institute also offers Ph.D. programs in various disciplines of Engineering, Science and Management. **The medium of instruction is English.**

2.2 Undergraduate and Post Graduate Programs:

Department	Under Graduate	Post Graduate
Artificial Intelligence (AI) & Data Science	B.Tech. in AI&DS	-
Civil Engineering (CE)	B.Tech. in CE	M.Tech in Civil Engineering
Computer Science and Engineering (CSE)	B.Tech. in CSE	M.Tech. in Computer Science and Engineering
	B.Tech in CSE (AI&ML)	
Electrical & ElectronicsEngineering (EEE)	B.Tech. in EEE	M.Tech. in Power Electronics
Electrical & Communication Engineering (ECE)	B.Tech. in ECE	M.Tech. in Digital Electronics andCommunication Engineering
Mechanical Engineering(ME)	B.Tech. in ME	-
Information Technology (IT)	B.Tech. in IT	-
Management Studies (MS)	Bachelor of Business Administration (BBA)	Master of Business Administration(MBA)
Computer Applications (CA)	Bachelor of Computer Applications (BCA)	Master of Computer Applications (MCA)
Chemistry (CH)	B.Sc in Chemistry	M. Sc. in Chemistry
Mathematics (MA)	B.Sc in Mathematics	M. Sc. in Mathematics
Physics (PH)	-	M. Sc. in Physics

2.3 Minor Specialization Courses:

The undergraduate Engineering students at Sikkim Manipal Institute of Technology can opt for minor specialization. For the same, there will be four theory courses having 3 credits each. This course will beoffered on IV/V/VI/VII semester and the selection of the course will be done by the respective departments. As the student completes/clears all the courses they will earn 12 credits. To obtain remaining 6 credit can be earned from Mini Project in the area of Minor specialization leading to a publication in at least an international conference or earn 3 credit each from two certified MOOCs.

(Massive Open Online Courses) from the choices listed by the respective departments. The remaining 2 credit can be obtaining from a Seminar in the field of Minor Specialization. The seminar will be conducted at the end of the VIII Semester. Students should clear Minor Specialization subjects in first chance. If they fail, they will get only one chance in Supplementary Examination immediately followingthe regular examination. If a student fails to clear any subject of Minor Specialization during the intended period as mentioned above their name should be struck off from the Minor Specialization. Minor Specialization will be mentioned in the VIII semester grade sheet and in Transcript but not in degree certificate.

A. List of Minor Specialization offered by various departments:

Civil Engineering (list of Minor Specializations)

a) Natural Hazard and Disaster Management
b) Earthquake Resistant Structures

Computer Science & Engineering (list of Minor Specializations)

a) Data Science
b) Artificial Intelligence
c) Internet of Things
d) Cyber Physical System

Electronics & Communication Engineering (list of Minor Specializations)

a) VLSI & Nanotechnology
b) Internet of Things (IOT)
c) Signal Processing

Electrical & Electronics Engineering (list of Minor Specializations)
a) Electric Drive Vehicle Engineering
b) Power and Energy System
Information Technology (list of Minor Specializations)
a) Artificial Intelligence and Machine learning
b) Cloud Computing
c) Cyber Security
d) Management Information Systems (MIS)
Mechanical Engineering (list of Minor Specializations)
a) Automotive Engineering
b) Robotics & Automation
c) Machine Design

B. Cross Domain Minor Specialization offered by the parent department to other departments from 2022 admitted batch onwards:
Artificial Intelligence and Data Science (AI&DS)
a) AI in health care
b) Intelligent Robotics and Automation
c) Infrastructure and Big Data Management
d) Computer Vision and Speech Technology
Civil Engineering (CE)
a) Natural Hazards and Disaster Management b) Intelligent Robotics and Automation
Computer Science & Engineering (CSE)
a) Data Science
b) Artificial Intelligence
c) Cyber Security
Electronics & Communication Engineering (ECE)
a) Internet of Things (IoT)
Electrical & Electronics Engineering (EEE)
a) Electric Drive Vehicle Engineering
b) Power and Energy System
Information Technology (IT)
a) Computer Vision and Artificial Intelligence
Mechanical Engineering (ME)
a) Automotive Engineering
b) Robotics & Automation
c) Machine Design
Management Studies (Mgt Studies)
a) Marketing
b) Human Resource Management
c) Entrepreneurship
d) Fintech
Sports Cell, SMIT
a) Yoga, Fitness & Sprots

- The Academic Council of SMIT, has proposed a criteria for earning 20 credits for obtaining Minor specialization in B.Tech. For the same there will be four theory courses having 3 credits each. These courses will be offered in IV, V, VI and VII Semesters and the selection of the courses will be done by the respective departments. As the students completes/clears all the courses he/she will earn 12 credits. To obtain remaining credits, 6 credits can be earned from a Project/Research work in the area of Minor Specialization in VII/VIII semester.

OR

- earn 3 credits each from two certified **MOOCs (Massive Open Online Courses)** from the choices listed by the respective departments. The remaining 2 credits can be obtained from a Seminar in the field of his/her specialization. The seminar will be conducted at the end of the 8th Semester.
- 20 extra credits leading to Minor Specialization is not used for CGPA calculation. However, the courses can be awarded letter grades. These credits will not be counted for annual promotion criteria to higher semester.
- The code for the minor specialization subjects will be as per the format of 8th semester subjects viz. AD108XXA, AD108XXA etc.

- Students should clear the Minor specialization subjects in first chance. If he/she fails, he/she will get only one chance in Supplementary examination immediately following the regular examination.
- If a student fail to clear any subject of Minor specialization in the intended period as mentioned in Sl. No 13.5, his/her name should be struck off from the Minor Specialization.
- Minor Specialization will be mentioned in the VIII semester grade sheet, transcripts and also in degree certificate.
- The minor specialization course will be offered to the students, if the number of student registered is 20 and above.

S/N	Course	Project/Online Courses/Seminar	Total Credit
01.	Compulsory (04) four courses designed and approved by the respective departments having (03) three credits each. The courses will be offered in IV, V, VI and VII semester students. 02 such courses can be obtained through MOOCs.	Student can either do mini project in the area of Minor Specialization. **OR** Earn 3 credits each from **MOOCs (Massive Open Online Courses)** from the choices listed by the respective departments. The remaining 2 credits can be obtained from Seminar/Project work in the field of his/her Minor Specialization.	12 (Compulsory Courses) +6 credits (Project/Online courses) + Seminar (of 2 credits) = 20 credits

2.4 Honours Program In B. Tech Engineering Courses (180 CREDITS)

As per the AICTE Model Curriculum for undergraduate Degree course in Engineering and Technology, there is a provision to award B.Tech degree with Honours, in engineering undergraduate programs namely AI&DS/CE/CSE/ECE/EEE/IT and ME from 2022 admitted batch onwards:

Artificial Intelligence and Data Science (AI&DS)

a) AI in health care
b) Intelligent Robotics and Automation
c) Infrastructure and Big Data Management
d) Computer Vision and Speech Technology

Civil Engineering (CE)

a) Earthquake Resistant Structures

Computer Science & Engineering (CSE)

a) Data Science
b) Artificial Intelligence
c) Cyber Security

Electronics & Communication Engineering (list of Minor Specializations)

a) VLSI & Nanotechnology
b) Signal Processing

Electrical & Electronics Engineering (EEE)

a) Electric Drive Vehicle Engineering
b) Power and Energy System

Information Technology (IT)

a) Cloud Computing
b) Cyber Security
c) Management Information Systems (MIS)
d) Artificial Intelligence and Machine Learning

Mechanical Engineering (ME)

a) Automotive Engineering
b) Robotics & Automation
c) Machine Design

- The Academic Council of SMIT, has proposed a criteria for earning 20 credits for obtaining Honours in B.Tech. For the same there will be four theory courses having 3 credits each. These courses will be offered in IV, V, VI and VII Semesters and the selection of the courses will be done by the respective departments. As the students completes/clears all the courses he/she will earn 12 credits. To obtain remaining credits, 6 credits can be earned from a Project/Research work in the area of Honours in VII/VIII semester.

OR

- earn 3 credits each from two certified **MOOCs (Massive Open Online Courses)** from the choices listed by the respective departments. The remaining 2 credits can be obtained from a Seminar in the field of his/her specialization. The seminar will be conducted at the end of the 8th Semester.
- 20 extra credits leading to Honours is not used for CGPA calculation. However, the courses can be awarded letter grades.
- To enroll for Honours degree program for the students of 2022 admitted batch onwards, **the students should have CGPA 6.0 and above without any backlog upto 3rd Semester.**
- These credits will not be counted for annual promotion criteria to higher semester.
- The code for the Honours subjects will be as per the format of 8th semester subject viz. CS18XX, EC18XX etc.
- Students should clear the Honours subjects in first chance. If he/she fails, he/she will get only one chance in Supplementary examination immediately following the regular examination.
- If a student fails to clear any subject of Honours in the intended period as mentioned in sub para 2.4.6, his/her name should be struck off from the Honours.
- Honours will be mentioned in the 8th Semester grade sheet, transcript and also in degree certificate.

S/N	Course	Project/Online Courses/Seminar	Total Credit
01.	Compulsory (04) four courses designed and approved by the respective departments having (03) three credits each. The courses will be offered in IV, V, VI and VII semester students. 02 such courses can be obtained through MOOCs.	Student can either do mini project in the area of honours. **OR** Earn 3 credits each from **MOOCs (Massive Open Online Courses)** from the choices listed by the respective departments. The remaining 2 credits can be obtained from Seminar/Project work in the field of his/her honours.	12 (Compulsory Courses) +6 credits (Project/Online courses) + Seminar (of 2 credits) = 20 credits

2.5 Value Added Certificate Courses in the Department of Management Studies (20-24 Credits each)

a) Stress Management
b) Data Analysis using Excel
c) Communication Skill for Managers
d) Entrepreneurship

2.6 Massive Open Online Courses (MOOCs) (SWAYAM)

Massive Open Online Courses (MOOCs) online courses available on the SWAYAM, developed by the Government of India as per the UGC/AICTE regulations 2016, (Credit framework for online learning courses through SWAYAM). Course shall be considered as a subject in a semester and students optingfor the same will be considered for credit transfer. The students are only eligible to opt for not more than 40% of the total courses being offered in a particular semester through the SWAYAM platform.

2.7 Students' Entry/Registration Number

The Entry/Registration No of a student consists of nine numerals: YYYYNNNNN
First four digits (YYYY) indicate the year/batch of admission. Next five digits (NNNNN) indicate serial number of admissions. For example:
Registration Number: 201800123
YYYY: 2018, and NNNNN: 0012

2.8 Course Structure

The course-coding system for Department/Program/Subject are organized by the short titles of the programs code N1, N2, N3 and N4, which are as mentioned below:

- Civil Engineering (CE)
- Computer Science & Engineering (CS)
- CSE (Artificial Intelligence and Machine Learning) (CAM)
- Electronics and Communication Engineering (EC)
- Electrical and Electronics Engineering (EE)

- Information Technology (IT)
- Artificial Intelligence and Data Science (AD)
- Mechanical Engineering (ME)
- Material Science & Nano Technology (MN)
- Computer Application (CA)
- Business Administration (BA)
- Mathematics (MA)
- Physics (PH)
- Chemistry (CH)
- General (GN)

N1, N2, N3 & N4 are defined as follows:

N1 : One-digit code for the program

=1 for Under Graduate Program (B.Tech/BCA/BBA etc)
=2 for Post Graduate Program (M.Tech/MCA/MBA/M.Sc. etc)
= 3 for integrated/dual post graduate courses (IMCA)
= 5 Ph.D. course work

N2 : Two-digit code for the subjects offered by a Department for a Program

01: subject code for core theory papers offered by a Department
02: subject code for Open electives offered by a Department
03: subject code for Program electives and Honours courses offered by a Department
04: subject code for Lab subjects offered by a Department
05: subject code for Mini project offered by a Department
06: subject code for Major project offered by a Department
07: subject code for Seminars/Grand viva offered by a Department
08: subject code for Minor Specialization offered by a Department for other department students.
09: subject code for Industrial training offered by a Department
10.Audit course

**Specialization subject code (department offering for their own department students) shall select the code 3 as stated above.

N3 : Two digits code for the subjects depends upon the following list of subjects.

01-99: Theory paper
01-99: Open Electives
01-99: Program Electives
01-99: Lab subjects
01-99: Mini project
01-99: Major project
01-99: Seminars/Grand viva
01-99: Minor specialization
01-99: Audit course

N4 : Version for revision of subject syllabus shall be indicated by alphabetic character starts with "A – Z".

Blue print: Subject coding shall be allotted which starts with department code following by N1 to N4 codes as stated above.

Example 1: ECE department, B. Tech- core theory subject 1, first version starts with "A" Subject Coding: EC10101A

Dept code	N1 – B. Tech	N2 – Theory subject	N3 – subject code (00-99)	N4 – first version
EC	1	01	01	A

Example 2: ECE department, B. Tech- theory subject 2, first version starts with "A" Subject Coding: EC10102A

Dept code	N1 – B. Tech	N2 – Theory subject	N3 – subject code (00-99)	N4 – first version
EC	1	01	02	A

Example 3: ECE department, M. Tech- theory subject 1, first version starts with "A" Subject Coding: EC20101A

Dept code	N1 – M. Tech	N2 – Theory subject	N3 – subject code (00-99)	N4 – first version
EC	2	01	01	A

Example 4: ECE department, M. Tech- Lab subject 1, first version starts with "A" Subject Coding: EC20401A

Dept code	N1 – M. Tech	N2 – Lab subject	N3 – subject code (00-99)	N4 – first version
EC	2	04	01	A

2.9 Credit System

The credit for a particular theory subject is based on the total number of teaching hours and the tutorialclasses conducted per week. Remedial classes are not counted as a part of the credit. Credit assignmentfor laboratory subjects or workshops is taken as half of the total number of hours assigned to the subjectper week.

2.10 Grading System

Grade determination for a student is based on the total marks scored by the student in the in-semester and end-semester examinations. Both examinations are given equal weightage to compute the final score. The grades given to a student are interpreted as follows:

Letter Grade	S	A	B	C	D	E	F	I
Grade Point	10	9	8	7	6	5	0	0

Where F: Fail, I : Incomplete and DT: Detained (due to the shortfall in attendance).

2.10.1 Award of Grade

The relative grading scheme using the mean (μ) and standard deviation (σ) parameters calculated fromthe group of students who have appeared for a particular subject is used to determine the categories of the grading system. The procedure followed is illustrated below:

i. The data is taken only from students who have appeared in both in-semester and end-semester examinations.
ii. The cut-off for E and S grades are calculated as $\mu - 2\sigma$ and $\mu + 1.5\sigma$ respectively.
iii. If $\mu - 2\sigma$ is less than 35, the lower cut-off for E grade is taken as 35. In case the value exceeds 45, the lower cut-off for E grade is then taken as 45. For practical/laboratory subjects, the lower cut- off will be taken as 50 if the value of $\mu - 2\sigma$ computed is greater than 50
iv. If $\mu + 1.5\sigma$ is more than 90, the upper cut-off for S grade is considered as 90. If the value is less than 80, the upper cut-off will be fixed at 80. The value $\mu + 1.5\sigma$ calculated will be rounded off to the nearest integer which will be the lower limit of S grade.
v. The range between the lower and the upper cut-off as decided by sub-para iii & sub-para iv above will be divided by 5 to get the step size for deciding other grades.
vi. $\mu - 2\sigma$ (rounded off) will be the lower limit for E grade as per sub-para iii described above. Marks below the lower limit of E grade will be assigned F grade.
vii. The lower limit of D, C, B, and A will be obtained by adding multiples of 1, 2, 3 and 4 step sizes to the lower limit as obtained in sub-para iii & v. These limits will be rounded off after adding the step sizes and will be utilized as a cut-off for assigning the respective grades.
viii. In case the number of students is below 20 in courses like M.Tech, M.Sc and Ph.D program the absolute grading scheme will be applied as given below. In case of B.Tech the relative grading is still applicable even if the student strength is less than 20.

Grade	S	A	B	C	D	E	F
Marks	≥ 90	80 – 89	70 – 79	60 – 69	50 - 59	40 - 49	< 40

ix. For the students appearing for backlog subjects, the cut off of the current semester subjects or of the previous semester subjects whichever is lower, will be taken as the cut off for E grades. However, the step size for the backlog subjects for awarding other grades will be same as calculated for the regular subjects.
x. For examinations of the backlog subject(s), which are not offered in the current semester, the same criteria used in the last regular examination held for that particular subject will be followed.

2.10.2 Grade Point Average (GPA) and Cumulative Grade Point Average (CGPA)

The GPA (Grade Point Average) is used to evaluate the academic performance of a student in a given semester.

It is the weighted average of the grade points obtained by a student in all the subjects during the semester. The overall performance of a student is obtained by calculating the CGPA (Cumulative Grade Point Average). It is the weighted average of the grade points obtained in all the subjects studiedby the student which is taken into account from his/her date of joining. At the end of every semester, the CGPA will be calculated up to two decimal places and will be indicated on the grade report.
GPA and CGPA are calculated by the following equations:

$$GPA_i = \frac{\sum_{j=1}^{n} C_{ij} G_{ij}}{\sum_{j=1}^{n} C_{ij}}, \quad CGPA = \frac{\sum_{i=1}^{n} GPA_i * \sum_{j=1}^{n} C_{ij}}{\sum_{i=1}^{n} (\sum_{j=1}^{n} C_{ij})}$$

Where n = number of subjects in a given semester; N = number of semesters; GPA_i = GPA for the i^{th} semester; C_{ij} = number of credits for the j^{th} subject in the i^{th} semester; and G_{ij} = Grade point correspondsto the grades obtained in the j^{th} subject in the i^{th} semester. At the end of each semester the grade reportor Grade Card, which reflects the performance of a student in that semester, is issued by the University.

2.11 Credit requirement for promotion to higher semester

The minimum credit required for promotion to next/higher year of different courses are given in the table below:

Program	Promotion from / to	Minimum Credits	Total Credit
B.Tech.	I Year to II Year	23	44
	II Year to III Year	55	90
	III Year to IV Year	95	137
	Final Year	**165**	**165**
B.Tech. (Lateral Entry)	II Year to III Year	28	48
	III Year to IV Year	67	95
	Final Year	**121**	**121**
M.Tech.	I Year to II Year	24	40
	Final Year	**80**	**80**
MBA	I Year to II Year	30	50
	Final Year	**102**	**102**
MCA	I Year to II Year	27	45
	Final Year	**80**	**80**
BBA	I Year to II Year	25	41
	II Year to III Year	49	81
	Final Year	**122**	**122**
BCA	I Year to II Year	23	42
	II Year to III Year	50	84
	Final Year	**130**	**130**
B.Sc. (Chem.)	I Year to II Year	24	44
	II Year to III Year	60	100
	Final Year	**146**	**146**
B.Sc. (Maths)	I Year to II Year	26	49
	II Year to III Year	56	94
	Final Year	**136**	**136**
M.Sc. (Chem)	I Year to II Year	27	45
	Final Year	**95**	**95**
M.Sc. (Phy.)	I Year to II Year	27	45
	Final Year	**92**	**92**
M.Sc (Math)	I Year to II Year	27	43
	Final Year	**92**	**92**

2.12 Award of Degree

The degree is awarded on successful completion of the course and fulfillment of all the requirements as prescribed by the University.

2.12.1 Maximum period of Completion of a program

The maximum number of years allowed to complete the program is twice the value of the normal courseduration.

A student will not be allowed to continue the course on the following academic grounds:

i. In case of B. Tech courses, a student will be declared as Not Fit for Technical Education (NFTE) if he/she fails to get promoted to 2nd year within 2 years of joining or fails to complete the course within 8 years.
ii. For BCA and BBA, it is mandatory for a student to get promoted to 2nd year within 2 years, from the start of the course and they should complete the course within double the normal course duration.
iii. For MBA, MCA & M.Sc., a student should complete the course within double the normal course duration.

2.13 Attendance Requirement

A minimum of 75% attendance is required for a student to be eligible to appear in the end-semester examination of a particular subject. The detained student will have to repeat the course and fulfill the minimum attendance criteria. In exceptional cases based on medical grounds/circumstances, 10% relaxation in attendance may be accorded only with the consent of the Vice Chancellor of the University.

2.14 Assessment and Examination

In-Semester Assessment: Components of In-Semester are illustrated in the table given below:

Sessional I	Sessional II	Attendance	Tutorial/ Quiz/Assignment	Total
15	15	5	15	50

Marks for attendance:-

≥75% & <80%	≥80 & < 85%	≥85% & <90%	≥90% & <95%	≥95%
1	2	3	4	5

Re-Sessional: Students who fail to give their First or/and Second Sessional(s) due to a medical reason or any exceptional circumstances, will be allowed to appear in the Re-Sessional Examination at a date which will be notified prior to the semester examinations, subjected to validation of proper documents.The entire syllabus will be considered for the examination. The 1st year students will have to submit the relevant documents to Associate Director (Academics) office and the higher semester students should approach their respective HOD's to validate their absence.

Laboratory Assessment: The components of the laboratory assessment are given below:

Evaluation of Lab Report on daily basis - 60 Marks
Final Lab Examination - 40 Marks
Total - 100 Marks

Drawing Classes: The drawing classes comprise of 1 hr of theory, 2 hrs of the lab class in aweek. The marks distribution is as follows:

Job description	**Marks**
Class work (12-13 sheets)	25
Assignments (at least 5)	10
Sessional/ mid-term test (one)	15
Total	50

Continuous Assessment of Laboratory comprises of:

Relative Weight				
Logic/Algorithm/ Procedure/ Conduct of Lab/ Program Writing /Experiment set up/ Circuit connection etc.	Executions of Experiment/ Program	Data collection and Calculations, Program output /Experimental results	Knowledge ofthe student on Experiment/ Program	Total marks
3	2	3	2	10

End Semester Lab Examination: An end semester examination for lab assessment is conducted for a total of 40 marks.

Attendance criteria for Lab Classes: Students need a minimum attendance of 75% to appear for the labexam. No attendance relaxation is considered. However, extra lab classes may be conducted by the department for medical cases/special circumstances.

2.14.1 Additional Lab Classes:

Additional lab classes will be conducted after the end-semesterexamination. The eligibility criteria for the students are listed below:

Type I	:	Regular students who have dropped the lab classes of their current semester to attend classes of the lower semester(s) in parallel semester. **For all TYPE –I cases no additional fee is charged.**
Type II	:	1st Year students who have failed in previous semester lab examination, or Higher Semester students who have failed in previous year lab examination. **For all TYPE –II cases a fee of Rs. 4000/- will be charged per lab.**
Type III	:	(i) If a student after having requisite attendance (75%) and above misses laboratory examination on medical/ compassionate ground, he or she is permitted to appear for additional lab examination. It is a onetime opportunity for such cases. Such student need to pay **Rs. 1000**/- for appearing in the lab examination (refer Registrar office 53rd ASM Office order No. 118/SMU/REG/OO/21/2018 dated 11Jul 2018, point No. 1 (a). **For all TYPE –III cases a fee of Rs. 1000/- will be charged per lab.** (i) Such students must attend the regular/additional lab classes, if he /she fails to comply with conditions cited thereof in Type III clause (i) Such student will be treated as Type-II case when they apply a fresh for Additional or rejoins lab later.
Type IV	:	All malpractice/detained cases are not permitted to join the immediate AdditionalLab of the current semester. The students will be permitted to apply for AdditionalLabs based on the following guidelines (subject to a maximum of two labs is permitted). **(i)** First (1st) Year student(s): Student can apply after a gap of one semester. **(ii)** Second (2nd) Year onwards (Less 8th semester): Student can apply after a gap of one academic year. **(iii)** Eight (8th) Semester student(s) : Student can apply for both Odd and Even Semester Labs at the end of 8th Semester (maximum of two labs only) **For all TYPE-IV cases a fee of Rs. 4000/- will be charged per lab.**
Type V (Special Case)	:	When a student is not able to attain minimum requirement of 75% attendance in lab(s) because of some medical exigency in between the semester, the student maybe permitted to join/apply for additional lab provided: (i) The student has been advised complete bed rest/hospitalization for more than 03 weeks/ genuine medical cases known or reported to the higher authority by the student/parent or TG of the student. All such cases will be treated as special case which will be duly endorsed by the concerned HOD and recommended by Associate Director (Academics) approved by Director. **For all TYPE –V cases a fee of Rs. 4000/- will be charged per lab.**

Regulations for Additional Lab:

i. From Academic session 2018-19 the conduct of Additional Lab will strictly follow Odd-Odd or Even-Even semester pattern except for Type-IV (i) and (iii) cases.

ii. Maximum Number of labs which students can drop per semester (to join the lower semester parallel semester subject(s) classes) should not exceed 2 (two) per semester.

iii. Maximum number of labs permitted to join in the additional lab is 2 (two) only.

iv. The duration of Additional laboratory class is 3 hrs.

v. Total number of labs to be conducted is 12 (minimum), (excluding lab examination day), not exceeding 6 (six) labs per week.

vi. The students need to maintain a minimum 80% attendance in additional lab classes to become eligible for appearing in the final lab examination.

vii. Students who drop the lab for attending the rejoin theory subject but clears the same in the supplementary exam will not be allowed for lab drop.

2.14.2 Project/ Industrial Training

B.Tech

- ***Mini Project:*** In the VI Semester the students have to carry out a mini project under the supervision of a faculty member based on their area of interest. The project is taken as a part of the VI Semester

curriculum and is carried out along with other subjects.

- ***Major Project:*** VIII semester is focused entirely on major project for a duration of minimum 16 weeks. The students are encouraged to carry out the major projects in industries.

i) A faculty member is assigned as an internal guide to monitor the progress of a student carrying out their projects outside under external supervision.

ii) In case of in-house projects the monitoring is done on regular basis by the assigned projectguide and the department.

- Project Diary/Log Book will be maintained for both the mini and major projects.

M.Tech

- ***Major Project:*** In III & IV Semester, the students do their M.Tech Thesis project under the supervision of faculty member(s) either in house or in the industry. If the project is done outside then there will be an external guide who will be attached to the student throughout his/ her project. Daily attendance in mandatory for in house candidate.
- Project Diary/Log Book will be maintained for both the mini and major projects.

BCA

- ***Project:*** In VI semester the students have to carry out a project under the supervision of the faculty member based on their area of interest. The project is taken as a part of the VI Semester curriculum and is carried out along with other subjects.

i) The monitoring is done on regular basis by the assigned project guide and the department.

- Project Diary/Log Book will be maintained for project.

MCA

- ***Mini Project:*** In III Semester the students have to carry out a mini project under the supervision of a faculty member based on their area of interest. The project is taken as a part of the V Semester curriculum and is carried out along with other subjects**.**
- ***Major Project:*** IV semester is focused entirely on major project for a duration of minimum 16 weeks. The students are encouraged to carry out the major projects in industries.

i) A faculty member is assigned as an internal guide to monitor the progress of a student carrying out their projects outside under external supervision.

ii) In case of in-house project, the monitoring is done on regular basis by the assigned project guide and the department.

- Project Diary/Log Book should be maintained for both the mini and major projects.

M.Sc (Chem/Phy/Math)

- ***Project:*** M.Sc. students have to carry out a research project under the supervision of a faculty member based on their area of interest. The project is initiated on III semester and completed on IV semester.

i) The monitoring is done on regular basis by the assigned project guide and the department.

- Project Diary/Log Book should be maintained for project.

BBA

- ***Summer Project:*** Summer project is done during vacation after IV Semester and the final presentation is made during V Semester. ***Summer*** project is done at industries for a duration of 08-10 weeks.

MBA

- ***Summer Project:*** Summer project is done during vacation after II Semester and the final presentation is made during III Semester. Summer project is done at industries for a duration of 08-10 weeks.

Industrial Training:

Industrial Training-I: B. Tech Students should have to undergo a summer training of minimum 2 weeks duration after the completion of the 4th semester, during the summer break/ vacation. It is evaluated inthe 5th semester.

***Industrial Training-II*:** B. Tech Students should have to undergo a training of minimum 4 weeks duration after the completion of the 6th semester, during the summer break/ vacation. It is evaluated inthe 7th semester.

Industrial Training: (MCA): MCA Students should have to undergo a training of minimum 4 weeks duration after the completion of the 2nd semester, during the summer break/ vacation. It is evaluated in the 3rd semester.

2.14.3 Extension of Mini/Major Projects

- If a student fails to complete the mini project in due time or if the progress is found unsatisfactory and rejected by the Departmental Review Committee, the project may be extended but needs to be evaluated prior to the declaration of the combined result of the end semester examinations. No extra fee will be charged.
- Similarly, the major projects can be extended but have to be submitted at least 30 days prior to the convocation date. No extra fee is applicable.
- Students getting extension in Mini/Major Projects for more than 6 months or declared fail in the project work or incomplete otherwise have to rejoin the project by paying an additional fee as mentioned

below:

i) Fee for backlog in Mini Project: Rs 3000/-,
ii) Fee for backlog in Major Project: Rs 10,000/-.

2.14.4 Parallel Semester

- A student is allowed to take a maximum of nine (09) subjects (including theory and lab) per semester. This includes all the theory papers of the current semester and the backlog papers of the lower semesters. The above is subjected to non-clashes of classes and if the student is having an old internal greater than 18 they are not allowed for parallel semester.
- While opting for lower semester papers, in case of any clash in the routine, one can skip the lab classes of the current semester and may appear for the same during the additional session of lab classes.
- A student rejoining will be treated as a fresh student in the parallel semester course. The previous attendance and internal marks for the subject(s) will not be taken into consideration. Once a student rejoins, he/she will not be allowed to withdraw the subject(s).
- Attendance for students in the rejoined subjects will be counted with effect from the day after the declaration of examination results or commencement of parallel semester or whichever is later.

2.14.5 Supplementary & Backlog Examination:

Supplementary examinations are conducted after the end of the regular odd and even semesterexaminations, in the months of June/July and Dec/Jan, every academic year. In the June/July examination, students may appear in subjects of both odd and even semester backlogs. However, in Dec/Jan examination one can only appear for the odd semester backlogs. If an examination for the regular end semester coincides with a backlog subject, then the student can appear for the latter providedhe/she fulfills the minimum attendance criteria.

2.15 Change of Branch

- Allotment of a 1st-year student to a course is purely done on merit basis. Changes in their courses are possible only if there is any vacancy available after the completion of admission process.
- In case of branch change after the 2nd semester, the following criteria needs to be fulfilled:
- Students should not have any backlogs and have a CGPA ≥ 6.5.
- The branch change will take place subject to the vacancy in the particular branch. The top 10 eligible students are given the first priority.
- A change in course for a student from Sikkim quota is possible only if there is a vacancy in the desired branch/course in the same category. However, if there are no vacancies, the student may join as a general candidate.

2.16 Admission of Students from Other Universities

- The applicant should satisfy all the norms of the University.
- Admission process has to be completed within 30 days of commencement of the semester.

2.17 Lateral Entry to Second Year of Engineering

- The eligibility criteria for admission in 2nd year of B.Tech course are as follows:
- Students who have completed 3 years of diploma course with a minimum of 60% marks (55% for SC/ST/OBC students) in the particular branch of engineering.
- Students who have completed 3 years of B.Sc. with mathematics (compulsory) with a minimum of 60% marks (55% for SC/ST/OBC students).
- Students should clear the institute entrance exams.

SECTION –3
DESCRIPTION OF COURSES OFFERED

3.0 Schema of B. Tech First Year (Common) Course

PHYSICS GROUP					
B. TECH FIRST SEMESTER			**B. TECH SECOND SEMESTER**		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
MA1101A	Engineering Mathematics –I	4	MA1102A	Engineering Mathematics -II	4
CE1101A	Elements of Civil Engineering	3	ME1102A	Elements of Mechanical Engineering	3
PH1101A	Engineering Physics	4	CH1101A	Engineering Chemistry	4
EC1101A	Basic Electronics	3	EE1101A	Elements of Electrical Engineering	3
BA1101A	Communication Skills	2	CS1101A	Computer Programming in C	4
ME1101A	Engineering Graphics	2	CH1101A*	Environmental Science	1
BP1101A	Constitution of India *	1			
ME1401A	Workshop Practice	1	CS1401A	Computer Programming Lab	1
PH1401A	Engineering Physics Lab	1	CH1401A	Engineering Chemistry Lab	1
GN1401A	Experiential Learning Lab-I/ NCC	1	GN1402A	Experiential Learning Lab-II/ NCC	1
Total credits for the Semester:		**22**	Total credits for the Semester:		**22**
* Mandatory Credit Course					

CHEMISTRY GROUP					
B. TECH FIRST SEMESTER			**B. TECH SECOND SEMESTER**		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
MA1101A	Engineering Mathematics –I	4	MA1102A	Engineering Mathematics -II	4
CE1101A	Elements of Civil Engineering	3	ME1102A	Elements of Mechanical Engineering	3
PH1101A	Engineering Physics	4	CH1101A	Engineering Chemistry	4
EC1101A	Basic Electronics	3	EE1101A	Elements of Electrical Engineering	3
BA1101A	Communication Skills	2	CS1101A	Computer Programming in C	4
ME1101A	Engineering Graphics	2	CH1101A*	Environmental Science	1
BP1101A	Constitution of India *	1			
ME1401A	Workshop Practice	1	CS1401A	Computer Programming Lab	1
PH1401A	Engineering Physics Lab	1	CH1401A	Engineering Chemistry Lab	1
GN1401A	Experiential Learning Lab-I/ NCC	1	GN1402A	Experiential Learning Lab-II/ NCC	1
Total credits for the Semester:		**22**	Total credits for the Semester:		**22**
* Mandatory Credit Course					

3.1 Short Syllabus of B. Tech First Year (Common) Course

B. Tech – Semester I

MA 1101A: ENGINEERING MATHEMATICS –I, Credit: 4 (L-3, T-1, P-0)

Successive differentiation, Leibnitz's theorem, Polar curves, Tangent and normal of polar curves, Angle between radius vector and tangent, Angle of intersection of two curves, Derivatives of arcs (Cartesian and polar), Asymptotes, Curvature, Radius of curvature and Evolute, Multiple points, Points of inflection, Concavity, Convexity. Rolle's theorem, Mean value theorems, Expansion of functions in Taylor's and Maclaurin's series, Indeterminate forms. Partial differentiation, Euler's theorem, Total differential, Errors and approximation, Differentiation of composite and implicit functions. Tracing of curves: Folium of Descartes, Lemniscate of Bernoulli, Astroid, Catenary, Cardioide, Cycloid. Direction Cosines, Planes, Straight lines, Spheres, Right circular cone and Right circular cylinder. Convergence, Divergence, Comparison test, Ratio test, Raabe's test, Cauchy's root test, Cauchy's integral test, Alternating series, Leibnitz's test, Absolute and conditional convergence.

EC1101A: BASIC ELECTRONICS, Credits: 03 (L-3, T-0, P-0)
Electronics in our daily life, Role of electronics in smart city, Application of electronics in computers, Diodes, LED, Transistors and their applications, introduction to Digital Electronics, introduction to communication and networking, Internet of Things (IoT), introduction to 5G and 6G communication.

CE 1101A: ELEMENTS OF CIVIL ENGINEERING, Credit: 3 (L-2, T-1, P-0)
In recent years, the role of civil engineering in social development through infrastructure development projects has grown in prominence. All engineering students, regardless of branch, are expected to have some knowledge about the civil engineering field. The purpose of providing the course to first year students is to provide some fundamental knowledge and scope of various discipline of civil engineering: Surveying, Building Materials, Construction Technology, Geotechnical Engineering, Structural Engineering, Hydraulics, Water Resources & Irrigation Engineering, Transportation Engineering and Environmental Engineering.This course is intended to address the needs of students who have been admitted to engineering school for the first time and to pique their interest in civil engineering.

PH 1101A: ENGINEERING PHYSICS, Credit: 4 (L-3, T-1, P-0)
Vibrations, Oscillators, Resonance, Waves, Interference of light waves, Young's experiment, Thin film interference, Newton's ring, Diffraction of light, Fraunhofer diffraction and plane transmission grating,Rayleigh criterion, Polarization, Double refraction, Plane, Circularly and elliptically polarized light, Inadequacy of classical mechanics, Black body radiation, Rayleigh Jeans' law, Wien's displacement law, Planck's radiation law, Planck's quantum hypothesis, Photoelectric effect, Wave particle duality, de Broglie waves, Matter waves (Davisson-Germer experiment), Group velocity and phase velocity, Wave packets and Heisenberg's uncertainty principle, Wave function and its physical significance, Schrodinger's equation, Schrodinger's 1-D time independent equations, Potential well, potential barrierand quantum tunneling. Concept of free electron theory, Quantum theory of free electrons, Fermi energy, Effect of temperature in Fermi-Dirac distribution, Bloch theorem, Concept of energy levels andbands, Distinction between Insulator, Semi conductors and Conductors in terms of energy band, p-n junction. Lecture(s) on recent trends in Physics in engineering perspective (Non-credit).

ME1101A ENGINEERING GRAPHICS, CREDIT 2 (L-1, T-0, P-0)
Scales: Representative fraction, construction of plain scales, diagonal scales and comparative scales, Projections of lines in different positions with respect to the reference planes, Projection of planes, Projection of solids, Section of Solids, Development of Surfaces, Orthographic Projection, Isometric Projection.

BA 1101A COMMUNICATION SKILLS, Credit: 2 (L-2, T-0, P-0)
Introduction and Understanding Communication Skills, 7 C's of Communication, Verbal Communication- 3 V's of Communication, Non Verbal Communication, Essay Writing, Expansion of idea, Comprehension, Vocabulary, Report Writing, Business Correspondence, E-mail Writing. Grammar, Class Room Practice / Language Lab (Not to be included in Question Paper), Oral Communication, Extempore, Group Discussion, Power Point Presentation, Role Play.

ME1401A- Workshop Practice, Credit:1 (L-0, T-0, P-2)
Carpentry, Plumbing, Fitting, Soldering

PH 1401A: ENGINEERING PHYSICS LAB, Credit: 1 (L-0, T-0, P-2)
12 labs are to be conducted on the basis of the syllabus of the corresponding theory paper.

GN1401A: EXPERIENTIAL LEARNING LAB-I (jointly conducted by Dept of EEE and ME Credit: 1 (L-0,T-0,P-2)
This lab exposes students with hands on experience to various electrical and mechanical devices, equipment, electrical machines, solar panel, Arduino control, electrical wiring, power factor with different loads.

B. Tech – Semester II

MA 1102A ENGINEERING MATHEMATICS -II, Credit: 4 (L-3, T-1, P-0)
Formation of ODE, Definition of order, degree and solutions of ODE. Solutions of equations: Homogeneous and non homogeneous equations, exact equations, Linear equations, Bernoulli's equations. Applications: LR, RC circuits. General linear differential equations: Homogeneous equations, Linear equations with constant coefficients, Non homogeneous equations, Method of variation of parameters and Inverse differential operators, Solution of Cauchy's homogeneous linear equations. Solution of simple simultaneous equations. Applications of equations - LRC circuits, string problem, free and forced vibration problems. Transforms of elementary functions, Transforms of derivatives, Inverse transforms, Transforms of periodic functions, Unit step function, Shifting theorems, solutions of differential equations using Laplace transforms. Concept of vectors and its generalization to higher dimensions, Vector spaces and subspaces, Simple examples. Linear dependence and independence; Basis, Dimension, Matrices, Elementary column and row transformations, Inverse, Rank, System of linear equations, Consistency, Solution by Gauss elimination method. Taylor's theorem for a function of two variables. Extreme values of a function of two variables, Lagranges's method of undetermined multipliers- Simple problems. Multiple integrals: Definitions, Evaluation by change of order of integration, Changing of variables. Jacobians. Applications to areas and volumes. Beta and Gamma functions: Definition, elementary properties, simple problems.

CH 1101A ENGINEERING CHEMISTRY, Credit: 4 (L-3, T-1, P-0)
Electrode potential, half reactions, origin of electrode potential – measurement of electrode potential, Nernst equation and its applications, electrochemical series & its applications, electrochemical cell and its classifications (galvanic cell, electrolytic cell), liquid junction potential, salt bridge, types of electrodes (reference electrodes- standard hydrogen electrode, calomel electrode, silver-silver chloride electrode and indicatorelectrodes- hydrogen electrode, quinhydrone electrode), electromotive force. Cells and Batteries: Standard cell, determination of EMF (Poggendorff's compensation method), concentration cell, EMF of concentration cell. Overview on Primary and secondary cell: Dry (Leclanche) Cell, Alkaline Storage Batteries - Nickel Cadmium Alkaline Cells. The lead-acid storage cell, lithium-ion battery, Fuel Cell: H2–O2 fuel cell. Corrosion and its control: Corrosion – Cause of corrosion, types and mechanism of corrosion - dry corrosion, Pilling Bedworth rule, electrochemical or wet corrosion (mechanism via Hydrogen evolution & Oxygen absorption), types of electrochemical corrosion (galvanic corrosion, concentration cell corrosion, water line corrosion, stress corrosion - caustic embrittlement, passivity, galvanic series, factors influencing corrosion, corrosion control-corrosion inhibitors, cathodic protection - sacrificial anodic and impressed current cathodic protection. Introduction, classification of liquid crystals-thermotropic & lyotropic liquid crystal, different phases of thermotropic & lyotropic liquid crystal, chemical constitution and liquid crystalline behaviour, liquid crystalline behaviour in homologous series, molecular ordering in different meso phases, applications of liquid crystals in displays- LCD. Definition, type of polymerization with example, Copolymerization, natural rubber, Introduction of Ziegler-Natta polymerization, tacticity (atactic, isotactic, syndiotactic), conducting polymers, Low density polythene (LDPE) and high-density polythene (HDPE), Molecular weights of polymers- number average molecular weight MW and weight average molecular weight MN and Z-average molecular weight, MZ. Biopolymers: types and examples.

EE1101A ELEMENTS OF ELECTRICAL ENGINEERING, Credit: 3 (L-3,T-0,P-0)
DC Circuits, Magnetic Circuits, Single Phase AC Circuits, Three Phase AC Circuits: Symmetrical sinusoidal supply systems, voltage, current and power relationship in 3-phase balanced star and delta connected loads, Transformers, Three phase induction motor, power system.

CS 1101A COMPUTER PROGRAMMING WITH C, Credit: 4 (L-3, T-1, P-0)
INTRODUCTION TO COMPUTER FUNDAMENTALS & PROGRAMMING LANGUAGE, Constants, Variables and Data Types, Operators and Expressions, Decision making and branching and Looping, Arrays, User defined functions and Macro, Structures and Unions, File Management in C.

ME1102A ELEMENTS OF MECHANICAL ENGINEERING CREDIT:3 (L-3, T-0, P-0)
Thermodynamics: Introduction, reversible and irreversible process, heat, work and energy, First law of thermodynamics, Second law of thermodynamics. Internal Combustion Engine: working principles of 4-stroke and 2-stroke cycle engines, Fluid Mechanics: Introduction, Viscosity, Fluid statics. Transmission of Motion and Power: Introduction, belt drive, Gear drive, simple and compound gear trains, Metal Cutting and Machine tools: Welding, Metal Cutting and Machine Tools, Lathe, Drilling Machine.

CH1101A ENVIRONMENTAL SCIENCE, Credit: 1 (L-2, T-0, P-0)
Current environmental issues, socio-economic reasons behind degradation of environment, Environmental Science as an interdisciplinary subject, Difference between Environmental Science and Ecology. (2 hrs), Unique features of earth and types of natural resources (1hr.), Tragedy of commons & Ecological Footprint (1 hr.) Lithosphere and Aesthenosphere. Physico-chemical properties of crust, mantle and core, theory of plate tectonics (1 hr) Types of rocks – igneous, sedimentary and metamorphic. (1 hr) Polarity of water, unique properties of water. (1hr), importance of hydrogen bond in biomolecules, amphipathic substances, composition & characteristics of sea & river water. (1hr) Atmospheric composition (1 hr), Layers of atmosphere. (1hr) Components and functions of Ecosystem. (1 hrs), Cybernetics in ecosystem (1 hr) Analysis of Technoecosytem as case study (1 hr) Carbonaceous BOD test. (1 hr), BOD numerical (1 hrs) Air pollution and meteorology (1 hrs): Mathematical model of dry adiabatic lapse rate (1hr), atmospheric stability and air pollution, radiation inversion (1hr) Simple global temperature model and numerical (1hr), global warming and its impact (1 hr).

CH1401A: ENGINEERING CHEMISTRY LAB, Credit: 1 (L-0, T-0, P-2)
12 labs are to be conducted on the basis of the syllabus of the corresponding theory paper.

CS1401A: COMPUTER PROGRAMMING LAB 1.5 (L-0, T-0, P-3)
12 labs are to be conducted on the basis of the syllabus of the corresponding theory paper.

GN1402A EXPERIENTIAL LEARNING LAB-II (JOINTLY CONDUCTED BY ECE AND CIVIL ENGG. DEPARTMENTS) CREDITS: 01 (L-0,T-0, P-2)
Familiarization with different types of Robot and its components; Explore different Robotic parameters (Degree of freedom, angle of freedom, serial and parallel Manipulator); Hands on different sensors and actuators in Robotics(IR, Ultrasonic, Gas, Dc motor, Stepper Motor, servo motor); Familiarization of different embedded platform (Arduino, Raspbetrypi, Node MCU) , I/O interfacing with different sensors and Actuators; CASE STUDIES: Home security system, playing robot, Unmanned vehicles, Smart card application; Assembling your own wheel Robot.

3.2 Schema of Higher Semester (III to VIII) of all B. Tech Courses:

The detailed syllabuses are displayed on SMIT Website

3.2.1 B. Tech Artificial Intelligence and Data Science (AI&DS)

	THIRD SEMESTER			FOURTH SEMESTER		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
II	MA 10103A	Engineering Mathematics – III (Probability & Statistics)	3	MA10104A	Engineering Mathematics –IV (Discret Mathematics)	3
	AD10101A	Digital Systems and Computer Organization	4	AD10106A	Design & Analysis of Algorithms	4
	AD10102A	Data Science	4	AD10107A	Database Management Systems	3
	AD10103A	Data Structures	3	AD10108A	Artificial Intelligence	3
	AD10104A	Object-Oriented Programming using Python	3	AD103XXA	Program Elective-I (+MOOC Based)	3
	AD10105A	Operating Systems	3	AD102XXA	Open Elective-1 (+MOOC Based)/ NCC)	3
	AD10401A	Data Structures & OOPs using Python Lab	1	GN10101A	UHV-II	3
	AD10402A	Data Science Lab	1	AD10403A	Artificial Intelligence Lab	1
	AD10501A	Project Based Learning-I	1	AD10404A	Database Management Systems Lab	1
				AD10502A	Project Based learning-II	1
	Total:		**23**	**Total:**		**25**
	FIFTH SEMESTER			**SIXTH SEMESTER**		
III	GN10103A	Technical Writing	1	BA10146A	Industrial Management	2
	AD10109A	Formal Language & Automata Theory	3	AD10112A	Deep Learning	3
	AD10110A	Big Data Analytics	3	AD10113A	Text Analytics and Natural Language Processing	3
	AD10111A	Machine Learning	3	AD10114A	Data Communications and Networks	3
	AD103XXA	Program Elective-2 (+MOOC Based)	3	AD103XXA	Program Elective-3 (+MOOC Based)	3
	AD102XXA	Open Elective II/MOOC/NCC	3	AD103XXA	Program Elective-4(+MOOC based)	3
	GN10102A	Behaviour Management & Leadership (Capsule Course/ Certificate course)	3	AD102XXA	Open Elective-III/MOOC/NCC	3
	AD10405A	Big Data Analytics Lab	1	GN11001A	Quantitative Aptitude & Logical Reasoning**	0
	AD10406A	Machine Learning Lab	1	AD10407A	Deep Learning Lab	1
	AD10503A	Project Based Learning-III	1	AD10408A	Text Analytics and NLP Lab	1
	AD10901A	Industrial Training-I	1	AD10504A	Mini Project	2
	Total:		**23**	**Total:**		**24**
	SEVENTH SEMESTER			**EIGHTH SEMESTER**		
IV	AD102XXA	Open Elective-IV/MOOC/NCC	0	AD10602A	Research Project/Industrial Project- Phase II	12
	AD103XXA	Program Elective-5(+MOOC based)	0			
	AD10601A	Research Project/Industrial Project-Phase I	12			
	AD10902A	Industrial Training-II	2			
	Total:		**14**	**Total:**		**12**

List of Program Elective

Subject Code	Program Elective-I (4th Semester)
AD10301A	Analog Electronics and Integrated Circuits
AD10302A	Digital Signal Processing
AD10303A	Programming in Java
AD10304A	ARM controller
	Program Elective-II (5th Semester)
AD10305A	Digital Image Processing
AD10306A	Compiler Design
AD10307A	AI for Internet of Things (IoT)
AD10308A	Speech Processing
	Program Elective-III (6th Semester)
AD10309A	Cloud Computing

AD10310A	Remote Sensing & GIS
AD10311A	Augmented and Virtual Reality
AD10312A	Parallel and Distributed Algorithms
	Program Elective-IV (6th Semester)
AD10313A	Social Network Analytics
AD10314A	Block Chain Technologies
AD10315A	High-Performance Computing
AD10316A	Bio-Inspired Computing
	Program Elective-V (7th Semester)
AD10317A	Quantum Computing
AD10318A	Machine learning in VLSI Design
AD10319A	Cryptography and Network Security
AD10320A	Reinforcement Learning

List of Open Elective

Subject Code	Open Electives
AD10201A	**Open Elective (4th Semester):** Introduction to Python Programming
AD10202A	**Open Elective (5th Semester):** Data Analytics using Python
AD10203A	**Open Elective (6th Semester):** Introduction to Machine Learning
AD10204A	**Open Elective (7th Semester):** Biometric Technology

List of Honors Specializations/ Minor Specializations

**** HONOURS SPECIALIZATION:**		**C (20)**
I. AI in Healthcare:		
AD10321A	Artificial Intelligence for Health and Medicine	3
AD10322A	Bioinformatics	3
AD10323A	Healthcare Informatics	3
AD10324A	Artificial Intelligence in Medical Imaging	3
AD10603A	Project Work	6
AD10701A	Seminar	2
II. Intelligent Robotics &Automation		
AD10325A	Introduction to Robotics & Programming	3
AD10326A	Human Machine Interface	3
AD10327A	Industrial Automation and Control	3
AD10328A	Game Theory	3
AD10604A	Project Work	6
AD10702A	Seminar	2
III. Infrastructure and Big Data Management		
AD10329A	Parallel and Distributed Computer Architecture	3
AD10330A	Cloud Computing architecture and services	3
AD10331A	Big Data algorithms for large scale data processing	3
AD10332A	Digital Marketing	3
AD10605A	Project Work	6
AD10703A	Seminar	2
IV. Computer Vision and Speech Technology		
AD10333A	Introduction to Speech Disorders	3
AD10334A	Biometric Technology	3
AD10335A	Automatic Speech Recognition	3
AD10336A	Deep Learning for Computer Vision	3
AD10606A	Project Work	6
AD10704A	Seminar	2

3.2.2 B. Tech Civil Engineering (CE)

THIRD SEMESTER				FOURTH SEMESTER		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
II	MA 10105A	Engineering Mathematics – III	3	CE10107A	Numerical Methods & Statistics	3
	CE10102A	Strength of Materials	3	CE10108A	Geotechnical Engineering-I	3
	CE10103A	Fluid Mechanics	4	CE10109A	Structural Analysis-I	3
	CE10104A	Engineering Geology	3	CE10110A	Design of RC structure I	3
	CE10105A	Surveying	3	CE10111A	Transportation Engineering	4
	CE10106A	Building Materials & Concrete Tech	3	CE10112A	Irrigation Engineering/NCC	3
				GN10101A	UHV-II	3
	CE10401A	Planning & CA Drawing of Buildings	1	CE10404A	Fluid Mechanics Lab	1
	CE10402A	Geology Lab	1	CE10405A	Material Testing Lab	1
	CE10403A	Surveying Lab	1	CE10502A	Project Based Learning II	1
	CE10501A	Project Based Learning-I	1			
Total:			**23**	**Total:**		**25**
FIFTH SEMESTER				**SIXTH SEMESTER**		
III	GN10103A	Technical Writing	1	CE10117A	Construction Planning and Management	2
	CE10113A	Structural Analysis-II	3	CE10118A	Geotechnical Engineering-II	3
	CE10114A	Engineering Hydrology	3	CE10119A	Remote Sensing and GIS	3
	CE10115A	Environmental Engineering	3	CE10120A	Design of Steel Structures	3
	CE10116A	Design of RC structure-II	3	CE10121A	Estimating Costing and Valuation	3
	CE 102**A	Open Elective II/MOOC/NCC	3	CE103**A	Program Elective-I/MOOC	3
	GN10102A	Behaviour Management & Leadership	3	CE102**A	Open Elective-III/MOOC/NCC	3
	CE10406A	Computer Aided Structural Analysis & Design	1	GN11001A	Quantitative Aptitude & Logical Reasoning**	0
	CE10407A	Environmental Engineering Lab	1	CE10408A	Geo Technical Lab	1
	CE10901A	Industrial Training -I	1	CE10409A	Geo informatics Lab	1
	CE10503A	Project Based Learning-III	1	CE10504A	Minor Project	2
Total:			**23**	**Total:**		**24**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CE102**A	Open Elective-IV/MOOC/NCC	3	CE10602A	Major Project/Industrial Project-II	12
	CE103**A	Program Elective-II/MOOC	3			
	CE10902A	Industrial Training-II	1			
	CE10601A	Research Project/Industrial Project-I	7			
Total:			**14**	**Total:**		**12**

Note:

Students may opt for Audit Courses offered by the Civil Engineering Department or any other Department of SMIT. Students may also opt for relevant Online Courses selected by the Department as Audit Course.

List of Open Elective Subject:

1. CE10201A Fundamentals of Remote Sensing and GIS
2. CE10202A Optimization Techniques
3. CE10203A Natural Hazards and Disaster Management

3.2.3 B. Tech Computer Science and Engineering (CSE)

THIRD SEMESTER				FOURTH SEMESTER		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
II	MA10107A	Discrete Mathematics	3	MA10108A	Probability, Statistics and Stochastic Processes	3
	CS10101A	Data Structures	4	CS 10106A	Design and Analysis of Algorithms	4
	CS10102A	Digital Circuits & Logic Design	4	CS10107A	Computer Network-I	3
	CS10103A	Computer Organization and Architecture	3	CS10108A	Programming Methodology	3
	CS10104A	Professional and Software Ethics	3	CS1030**A	Program Elective-I (+MOOC Based)	3
	CS10105A	Object Oriented Concepts & Programming using C++	3	CS1020**A	Open Elective-I (+MOOC Based)/NCC	3
	GN10101A	UHV-II	3	CS10403A	Programming Methodology Lab	1
	CS10401A	Data Structures Lab	1	CS10404A	Algorithm Lab	1
	CS10402A	Object Oriented Concepts & Programming using C++ Lab	1	CS10502A	Project Based Learning-I	1
	CS10501A	Project Based Learning-I	1			
Total:			**26**	**Total:**		**22**
FIFTH SEMESTER				**SIXTH SEMESTER**		
	BA101046A	Industrial Management	2	GN11001A	Quantitative Aptitude & Logical Reasoning**	0
	CS10109A	Operating System	3	CS10112A	Software Engineering	3
	CS10110A	Formal Languages & Automata Theory	3	CS10113A	Database Management System	3
	CS10111A	Computer Network-II	3	CS10114A	Compiler Design	3
III	CS103**A	Program Elective-2(+MOOC Based)	3	CS103**A	Program Elective-3 (+MOOC Based)	3
	CS102**A	Open Elective-2 (+MOOC Based/NCC)	3	CS103**A	Program Elective-4 (+MOOC Based)	3
	GN10103A	Professional Communications & Technical writing	1	CS102**A	Open Elective-3 (+MOOC based)/NCC	3
	CS10405A	Operating System Lab	1	GN10102A	Behavior Management and Leadership	3
	CS10406A	Computer Network Lab	1	CS10407A	Database Management System Lab	1
	CS10503A	Project Based Learning-II	1	CS10408A	Compiler Design Lab	1
	CS10901A	Industrial Training-II	1		Minor Project	2
Total:			**22**	**Total:**		**25**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CS102**A	Open Elective-4 (+MOOC Based)	3	CS10602A	Research based Project/Industrial project phase-II	12
	CS103**A	Program Elective-5 (+MOOC Based)	3			
	CS10601A	Research based Project/Industrial Project Phase-I	7			
	CS10902A	Industrial Training-II	1			
Total:			**14**	**Total:**		**12**

List of Electives

Programme Elective I (IV Semester)			
Year	**Sub Code**	**Sub Name**	**C**
2nd	CS10301A	PC Hardware and Peripherals	3
	CS10302A	Java Programming	3
	CS10303A	Python Programming	3
	CS10304A	Fundamentals of Web Technologies	3
	CS10305A	User interface/User experience (UI/UX) Design	3
	CS10306A	Information Transmission and Coding Theory	3
	CS10307A	Computer Graphics	3
	CS10308A	Unix Internals and Shell Programming	3
	CS10309A	Enterprise Resource Planning	3
	CS10310A	Microprocessors and Peripheral Devices	3
	CS10311A	Internet, Technology and Society	3

Open Elective I			
2nd	CS10201A	Programming with Data Structures	3
List of Electives for V Semester			
Programme Elective II			
Year	**Sub Code**	**Sub Name**	**C**
3rd	CS10312A	Biology	3
	CS10313A	Advanced Java Programming	3
	CS10314A	System Programming	3
	CS10315A	Discrete Structure	3
	CS10316A	Graph Theory	3
	CS10317A	System Simulation and Modelling	3
	CS10318A	Advanced Web Technologies	3
	CS10319A	Bioinformatics	3
	CS10320A	Digital Image Processing	3
	CS10321A	Embedded Systems	3
	CS10322A	Low Power Circuits and Systems	3
	CS10323A	Information Retrieval	3
	CS10324A	Advanced Algorithms	3
	CS10325A	Artificial Intelligence	3
	CS10326A	Artificial Neural Networks	3
	CS10327A	Data Warehousing and Data Mining	3
	CS10328A	Real Time Systems	3
	CS10329A	Social Network Analysis	3
	CS10330A	VLSI Design	3
	CS10331A	Signals and Network	3
	CS10332	Soft Skills and Interpersonal Communication	3
	CS10333A	Human Resource Development & Organizational Behavior	3
	CS10334A	Principles of Programming Languages	3
Open Elective -II			
3rd	CS10202A	Programming with Java	3
	CS10203A	Problem Solving and Analysis of Algorithm	3

List of Electives for VI Semester			
Year	**Sub Code**	**Sub Name**	**C**
3rd	CS10335A	Latest Trends in Computer Science	3
	CS10336A	R Programming	3
	CS10337A	Agile Methodology	3
	CS10338A	Software Quality Management	3
	CS10339A	Design Thinking	3
	CS10340A	Haskell Programming	3
	CS10341A	Speech and Natural Language Processing	3
	CS10342A	Neural Networks and Deep Learning	3
	CS10343A	Remote Sensing	3
	CS10344A	Autonomous Mobile Robotics and Computational Intelligence	3
	CS10345A	Geographical Information System	3
	CS10346A	Machine Learning	3
	CS10347A	Ethical Hacking	3
	CS10348A	High Performance Computing	3
	CS10349A	Human Computer Interaction	3
	CS10350A	Internet of Things	3
	CS10351A	Block Chain Coding	3
	CS10352A	Augmented Reality	3
	CS10353A	Data Analytics	3
	CS10354A	Big Data	3
	CS10355A	Cloud Computing	3
	CS10356A	Deep Learning	3
	CS10357A	Soft Learning	3
	CS10358A	Computer Vision	3
	CS10359A	Ad-Hoc Wireless Networks	3
	CS10360A	Cryptography and Network Security	3
	CS10361A	Mobile Computing	3
	CS10362A	Computational Number Theory	3

	CS10363A	Advanced Operating System	3
	CS10364A	Fault Tolerant Computing	3
	CS10365A	Multi agent intelligent Systems	3
	CS10366A	Parallel and Distributed Algorithms	3
	CS10367A	Computational Geometry	3
	CS10368A	Object Oriented Analysis & Design Using UML	3
	CS10369A	VLSI System Design	3
OPEN ELECTIVE -3			
Year	Course Code	Course Title	C
3rd	CS10204A	Engineering Practices and software Ethics	3
	CS10205A	Programming with Python	3
	CS10206A	DBMS with SQL	3

LIST OF ELECTIVES FOR VII/VIII SEMESTER

PROGRAM ELECTIVE -5			
Year	Course Code	Course Title	C
4th	CS10370A	Distributed Database System	3
	CS10371A	Wireless Sensor Networks	3
	MA10301A	Queuing Theory and Modeling	3
	CS10372A	Quantum Computing	3
	CS10373A	Cyber Security	3
	CS10374A	Future Internet Architecture	3
OPEN ELECTIVE-4			
Year	Course Code	Course Title	C
4th	CS10207A	Distributed Systems	3
	CS10208A	Optimization Technique	3
	CS10209A	History of Science	3
	CS10210A	Engineering Research Methodology	3

Project Based Learning

- Besides core and elective courses, we included PROJECT BASED LEARNING as a course in 3rd, 4th and 5th Semester.
- That definitely help the students to work with relevant project and learn from that practical experiences that they incur during development of that project.
- That incorporates industry standard case-studies and projects to make them ready for industry professionals.

Minor Specialization

Minor Specialization: B. Tech (Cyber Security)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS10801A	Signal and Networks	3
III	5th	CS10805A	1) Ethical Hacking and Data Privacy	3
		CS10806A	2) Seminar/Project work using Python	2
	6th	CS10813A	1) Cryptography and Network Security	3
		CS10814A or CS10815A	2) Specialization Elective-I:12 Weeks duration (a) Intrusion Detection and Prevention System or (b) Block Chain	3
IV	7th Or 8th	CS10827A	Distributed Computing	3
		CS10828A or CS10815A	Specialization Elective-II: 12 weeks duration on – Web Application Security OR Forensic of Cyber Security	3
		CS10830A	Incase Specialization Elective-II not opted, then- One Publication in the field of Cyber Security in International Conference / Journal (Scopus/ SCI)	
			Total	**20**

Minor Specialization: B.Tech (Artificial Intelligence)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS10802A	1) Introduction to Machine Learning	3
III	5th	CS10807A	1) Artificial Intelligence	3
		CS10808A	2) Seminar/Project work using Python	2
	6th	CS10816A	1) Block Chain	3

		CS10817A OR CS10818A	2) Specialization Elective-I : 12 weeks duration- a) Artificial Neural Networks OR b) Mobile Robotics	3
IV	7th OR 8th	CS10831A	1) Soft Computing	3
		CS10832A OR CS10833A	2) Specialization Elective-II: 12 Weeks duration a) Speech & Natural Language Processing OR b) Digital Image Processing	3

Minor Specialization: B. Tech (Internet of Things)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS10803A	1) Introduction to IoT Mircroprocessor	3
III	5th	CS10809A	1) Information Theory	3
		CS10810A	2) Seminar/Project work using Python	2
	6th	CS10819A	1) Cloud Architecture & Deployment	3
		CS10820A OR CS10821A OR CS10822A	2) Specialization Elective-I : 12 weeks duration- a) Wireless Sensor Network OR b) IoT Standards OR c) IoT for Industries	3
IV	7th OR 8th	CS10835A	1) IoT Security	3
		CS10836A OR CS10837A	2) Specialization Elective-II: 12 Weeks duration a) Embedded Systems OR b) Smarter Cities	3
		CS10838A	In case specialization Elective-II is not opted, then – One Publication in the field of IoT in International Conference / Journal (Scopus / SCI)	3
			Total	20

Minor Specialization: B. Tech (Data Science)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS10804A	1) Probability & Statistics for Data Analytics	3
III	5th	CS10811A	1) Artificial Intelligence	3
		CS10812A	2) Seminar/Project work using Python or R-Programming	2
	6th	CS10823A	1) Big Data Analytics	3
		CS10824A OR CS10825A OR CS10826A	2) Specialization Elective-I : 12 weeks duration- a) Data Privacy & Security OR b) Bioinformatics c) IoT	3
IV	7th OR 8th	CS10839A	1) Information Retrieval	3
		CS10840A OR CS10841A OR CS10842A	2) Specialization Elective-II: 12 Weeks duration a) Optimization Technique OR b) Data Forensic OR c) Medical Image Processing	3
		CS10843A	In case specialization Elective-II is not opted, then – One Publication in the field of Data Science in International Conference / Journal (Scopus / SCI)	
			Total	20

HONOURS SPECIALIZATIONS

Honours Specialization: B. Tech (Cyber Security)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS10375A	1) Signals and Networks	3
III	5th	CS10378A	1) Ethical Hacking and Data Privacy	3
		CS10379A	2) Seminar/Project work using Python	2
	6th	CS10384A	1) Cryptography and Network Security	3
		CS10385AOR CS10386A	2) Specialization Elective-I: 12 weeks duration- a) Intrusion Detection and Prevention System OR b) Block Chain	3
IV	7th OR 8th	CS10394A	1) Distributed Computing	3
		CS10395A OR CS10896A	2) Specialization Elective-II: 12 Weeks duration a) Web Appliction Security OR b) Forensic of Cyber Security	3

		CS10397A	In case specialization Elective-II is not opted, then – One Publication in the field of Cyber Security in International Conference / Journal (Scopus / SCI)	
			Total	20

Honours Specialization: B. Tech (Artificial Intelligence)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS10376A	1) Introduction to Machine Learning	3
III	5th	CS10380A	1) Artificial Intelligence	3
		CS10381A	2) Seminar/Project work using Python	2
	6th	CS10387A	1) Block Chain	3
		CS10388AOR CS10389A	2) Specialization Elective-I: 12 weeks duration- a) Artificial Neural Networks OR b) Mobile Robotics	3
IV	7th OR 8th	CS10398A	1) Soft Computing	3
		CS10399A OR CS103100A	2) Specialization Elective-II: 12 Weeks duration on a) Speech & Natural Language Processing OR b) Digital Image Processing	3
		CS10397A	In case specialization Elective-II is not opted, then – One Publication in the field of Artificial Intelligence in International Conference / Journal (Scopus / SCI)	
			Total	20

Honours Specialization: B. Tech (Data Science)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS10377A	1) Probability & statistics for Data Analytics	3
III	5th	CS10382A	1) Artificial Intelligence	3
		CS10383A	2) Seminar/Project work using Python OR R Programming	2
	6th	CS10390A	1) Big Data Analytics	3
		CS10391AOR CS10392A OR CS10393A	2) Specialization Elective-I: 12 weeks duration- a) Data Privacy and Security OR b) Bioinformatics c) IoT	3
IV	7th OR 8th	CS103102A	1) Information Retrieval	3
		CS103103A OR CS103104A OR CS103105A	2) Specialization Elective-II: 12 Weeks duration a) Optimization Technique OR b) Data Forensic OR c) Medical Image Processing	3
		CS103106A	In case specialization Elective-II is not opted, then – One Publication in the field of Data Science in International Conference / Journal (Scopus / SCI)	
Total				**20**

3.2.4 B. Tech Electronics and Communication Engineering (ECE)

Yr	Sub Code	Sub Name	C	Sub Code	Sub Name	C
	THIRD SEMESTER			**FOURTH SEMESTER**		
II	MA10109A	Engineering Mathematics-III	3	MA10110A	Engineering Mathematics– IV	3
	EC10102A	Electronic Devices and Components	4	EC10107A	Electromagnetic Waves	4
	EC10103A	Digital Electronics and Systems Design	4	EC10108A	Analog Electronic Circuits	3
	EC10104A	Signals and Systems	3	EC10109A	Digital Signal Processing	3
	EC10105A	Network Analysis and Synthesis	3	EC103XXA	Program Elective-I (+MOOC based)	3
	EC10106A	Microprocessor, Midcrocontroller and ARM Processor	3	EC102XXA	Open Elective-1 (+MOOC based)/NCC	3
	EC10401A	Electronic Devices and Components Lab.	1	GN10101A	UHV-II	3
	EC10402A	Digital Electronics and System Design Lab	1	EC10403A	Analog Electronic Circuits Lab	1
	EC10501A	Project Based Learning-I	1	EC10404A	Microprocessor and Micro Controller Lab	1
				EC10502A	Project Based Learning-II	1
	Total:		**23**	**Total:**		**25**
	FIFTH SEMESTER			**SIXTH SEMESTER**		
III	GN10103A	Professional Communication & Technical Writing	1	BA10146	Industrial Management	2
	EC10110A	Antenna Theory	3	EC10113A	Microwave Engineering	3
	EC10111A	Analog and Digital Comunication	3	EC10114A	Micro Electronics and VLSI Design	3
	EC10112A	Computer Networks	3	EC10115A	Linear and Digital Control System	3
	EC103XXA	Program Elective-2 (+MOOC Based)	3	EC103XXA	Program Elective-3(+MOOC Based)	3
	EC102XXA	Open Elective-2 (+MOOC Based)/ NCC	3	EC103XXA	Program Elective-3(+MOOC Based)	3
	GN10102A	Behavior Management and Leadership	3	EC102XXA	Open Elective-3(+MOOC Based)/ NCC	3
	EC10405A	Communication Engineering Lab	1	GN110001A	Quantitative Aptitude & Logical Reasoning**	0
	EC10406A	Digital Signal Processing Lab	1	EC10407A	HDL Simulation Lab	1
	EC10503A	Project Based Learning-III	1	EC10408A	Microwave Engineering Lab	1
	EC10901A	Industrial Training– I	1	EC10504A	Mini Project	2
	Total:		**23**	**Total:**		**24**
	SEVENTH SEMESTER			**EIGHTH SEMESTER**		
IV	EC102XXA	Open Elective-4 (+MOOC Based)	3	EC10602A	Research based Project/ Industrial Project Phase II	12
	EC103XXA	Program Elective-5 (+MOOC Based)	3			
	EC10601A	Research based Project/Industrial Project Phase I	7			
	EC10902A	Industrial Training -II	1			
	Total:		**14**	**Total:**		**12**

* Industrial Trainings will be conducted during the summer vacations after IV and VI semester and evaluated in V and VII Semester respectively

PROGRAM ELECTIVE I			**PROGRAM ELECTIVE II**		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
EC10301A	Computer Organization and Architecture	3	EC10307A	Power Electronics	3
EC10302A	Data Base Management System	3	EC10308A	Advanced Electronics Devices	3
EC10303A	Electronic Instrumentation & Measurements	3	EC10309A	OOPs with C++	3
EC10304A	Python and R Programming	3	EC10310A	JAVA Programming	3
EC10305A	Data Structure	3	EC10311A	Data Science for Engineers	3
EC10306A	Internet of Things	3	EC10312A	Digital Image Processing	3
			EC10313A	Embedded Systems	3
PROGRAM ELECTIVE III			**PROGRAM ELECTIVE IV**		
EC10314A	Mobile Communication	3	EC10320A	Multimedia Communication	3
EC10315A	Information Theory & Coding	3	EC10321A	Detection and Estimation	3
EC10316A	Wireless Sensor Networks	3	EC10322A	Adaptive Signal Processing	3
EC10317A	Speech Processing	3	EC10323A	Machine Learning	3
EC10318A	MEMs and NEMs	3	EC10324A	Soft Computing Techniques	3
EC10319A	Automation and Robotics	3			
PROGRAM ELECTIVE V					
EC10325A	Advanced Computer Networks	3			
EC10326A	Cloud Computing	3			
EC10327A	Software Defined Networks	3			
EC10328A	Advanced DSP	3			
EC10329A	Deep Learning	3			
EC10330A	Computer Vision	3			

OPEN ELECTIVE I			OPEN ELECTIVE II		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
EC10201A	Introduction to IoT	3	EC10202A	Introduction to Robotics	3
OPEN ELECTIVE III			**OPEN ELECTIVE IV**		
EC10203A	Introduction to NANO Electronics	3	EC10204A	IIoT and Industry 4.0	3

Minor Specialization

Minor Specialization: **"Internet of Things"**

Sub Code	Subject Name	C
EC10801A	Sensor and Actuators for IoT	3
EC10802A	IoT Gateways and Edge Computing	3
EC10803A	Communication Pathways between cloud and IoT	3
EC10804A	Data Centre and Cloud Computing	3
EC10604A	Minor Specialization Project	6
EC10702A	Seminar	2

Honours Specialization

VLSI And Nano Technology and Signal Processing

Sub Code	Subject Name	C
EC10331A	Semiconductor Physics	3
EC10332A	Solid State Devices	3
EC10333A	Nano Electronic Devices and Materials	3
EC10334A	Advanced VLSI Design and applications	3
EC10335A	Signal Processing for Communication	3
EC10336A	Optimization Techniques	3
EC10337A	Pattern Recognition	3
EC10338A	Time frequency Analysis	3
EC10603A	Honours Project	6
EC10701A	Seminar	2

3.2.5 B. Tech Electrical and Electronics Engineering (EEE)

THIRD SEMESTER				FOURTH SEMESTER		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
	MA10111A	Engineering Mathematics – III	3	MA10112A	Engineering Mathematics – IV	3
	EE10102A	Circuits & Networks	4	EE10107A	Signals & Systems	4
	EE10103A	Measurement and Instrumentation	4	EE10108A	Electrical Machines-II	3
	EE10104A	Electrical Machines-I	3	EE10109A	GTD of Electrical Power	3
	EE10105A	Digital Electronics	3	EE103XXA	Program Elective-1 (+MOOC Based)	3
II	EE10106A	Analog Electronic Circuits	3	EE102XXA	Open Elective-1 (+MOOC Based)/ NCC	3
	EE10401A	Electric Circuits & PSPICE Lab	1	GN10101A	UHV-II	3
	EE10402A	Analog and Digital Electronics La	1	EE10403A	Electrical Machines Lab -I	1
	EE10501A	Project Based Learning-I	1	EE10404A	Measurement & Instrumentation Lab	1
				EE10502A	Project Based Learning-I	1
Total:			**23**	**Total:**		**25**
FIFTH SEMESTER				**SIXTH SEMESTER**		
	GN10103A	Professional Communication and technical Writing	1	BA10146A	Industrial Management	2
	EE10110A	Power Electronics	3	EE10113A	Power System Stability, Operation & Control	3
	EE10111A	Linear Control Systems	3	EE10114A	Advanced Control Theory	3
	EE10112A	Power System Analysis	3	EE10115A	Electrical Drives	3
	EE103XXA	Program Elective-2 (+MOOC Based)	3	EE103XXA	Program Elective-3 (+MOOC Based)	3
III	EE102XXA	Open Elective-2 (+MOOC Based)/ NCC	3	EE103XXA	Program Elective-4 (+MOOC Based)	3
	GN10102A	Behavior Mgt and Leadership	3	EE102XXA	Open Elective-3 (+MOOC based)/NCC	3
	EE10405A	Advance Programming Lab	1	GN11001A**	Quantitative Aptitude & Logical Reasoning	0
	EE10406A	Control Lab	1	EE10407A	Power Electronics and Drives Lab	1
	EE10503A	Project Based Learning-II	1	EE10408A	Power System Lab	1
	EE10901A	Industrial Training-II	1	EE10504A	Minor Project	2
	EE11001A	Data Structures and Algorithms	2	EE11002A	Basics of Java*(MAC)-T&P Advice	0
Total:			**23**	**Total:**		**24**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
	EE102XXA	Open Elective-4 (+MOOC based)	3	EE10602A	Research based Project/ Industrial Project Phase-II	12
	EE103XXA	Program Elective-5 (+MOOC based)	3			
	EE10601A	Research based Project/ Industrial Project Phase-I	7			
	EE10902A	Industrial Training-II	1			
Total:			**14**	**Total:**		**12**

PROGRAM ELECTIVE I			**PROGRAM ELECTIVE II**		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
EE10301A	Electromagnetic Theory	3	EE10304A	Microprocessor & Microcontroller	3
EE10302A	Process Control & Instrumentation	3	EE10305A	Digital System Design	3
EE10303A	Fundamentals of Nano Electronics	3	EE10306A	Data Base Mgt Systems	3
PROGRAM ELECTIVE III			**PROGRAM ELECTIVE IV**		
EE10307A	Latest Trends in Electrical & Electronics Engineering	3	EE10310A	Switchgear & Protection	3
			EE10311A	Electrical Machine Design	3
EE10308A	EHV AC&DC Transmission	3	EE10312A	Flexible AC Transmission System	3
EE10309A	Advanced Microprocessor & Embedded Systems	3			
PROGRAM ELECTIVE V					
EE10313A	High Voltage Engineering	3			
EE10314A	Digital Signal Processing	3			
EE10315A	Modern Power Converters	3			

OPEN ELECTIVE- I			**OPEN ELECTIVE II**		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
EE10201A	Analog Systems Design	3	EE10204A	Principles of Communication	3
EE10202A	Bio Medical Instrumentation	3	EE10205A	Software Engineering	3
EE10303A	Data Communication & Computer Networks	3	EE10206A	Fuzzy Logic and Evolutionary Algorithms	3
OPEN ELECTIVE III			**OPEN ELECTIVE IV**		

EE10207A	Renewable Energy Systems	3	EE10211A	Advanced Methods in Control Theory	3
EE10208A	Basics of Data Science with Python Programming	3			
EE10209A	Wave Guides & Antena	3	EE10212A	Machine Learning	3
EE10210A	VLSI Design	3	EE10213A	Real Time Embedded System	3
			EE10214A	Digital Image Processing	3

Honours/ Minor Specialization

Electric-Drive Vehicle Engineering

Sub Code	Subject Name	C	Sem
EE10316A	Introduction to Hybrid and Electric Vehicles	3	IV
EE10317A	Energy Storage Technology	3	V
EE10318A	Foundations of Optimization	3	VI
EE10319A	Advance Power Converters	3	VII
EE10603A	Project Work OR	6	VIII
EEXXXXX	Specialization Elective – I	3	
EEXXXXX	Specialization Elective – II	3	VIII
EE10701A	Seminar	2	VIII
	Total	**20**	

Power and Energy Systems

Sub Code	Subject Name	C	Sem
EE10320A	Sustainable and Renewable Energy Technology	3	IV
EE10321A	Computational Intelligence for Power Applications	3	V
EE10322A	Smart Grid	3	VI
EE10323A	Power Electronics for Renewable Energy Technologies	3	VII
EE10603A	Project Work OR	6	VIII
EEXXXXX	Specialization Elective – I	3	VIII
EEXXXXX	Specialization Elective – II	3	VIII
EE10701A	Seminar	2	VIII
	Total	**20**	

3.2.6 B. Tech Information Technology (IT)

THIRD SEMESTER				FOURTH SEMESTER		
Yr	Sub Code	Sub Name	C	Sub Code	Sub Name	C
II	MA10113A	Engineering Maths-III	3	MA10114A	Engineering Maths- IV	3
	IT10130A	Data Structure	4	IT10140A	Object Oriented Programming with C++	4
	IT10131A	Digital Circuits and Logic Design	4	IT 10141A	Database Management Systems	3
	IT10132A	Python Programming	3	IT 10142A	Formal Language & Automata	3
	IT10133A	NumericalTechniques	3	IT1013*A	Program Elective-I (+MOOC Based)	3
	IT10134A	Computer Organization and Architecture	3	IT1021*A	Open Elective-I (+MOOC Based/NCC)	3
	IT10430A	Data Structure Lab	1	GN10101A	UHV-II	3
	IT10431A	Digital Circuits and Logic Design Laboratory	1	IT10440A	OOP with C++ Laboratory	1
				IT10441A	Database Management Systems Lab	1
	IT10501A	Project Based Learning-I	1	IT10502A	Project Based Learning-II	1
Total:			**23**	**Total:**		**25**
FIFTH SEMESTER				**SIXTH SEMESTER**		
III	GN10103A	Professional Communication & Technical Writing	1	BA10146A	Industrial Management	2
	IT10150A	Design and Analysis of Algorithms	3	IT10160A	Computer Networks	3
	IT10151A	Operating Systems	3	IT10161A	Web Technology and Web Services	3
	IT10152A	Data Communication	3	IT10162A	Software Engineering	3
	IT1032*A	Program Elective-2 (+MOOC Based)	3	IT1033*A	Program Elective-3 (+MOOC Based)	3
	IT1022*A	Open Elective-2 (+MOOC Based) /NCC	3	IT1034*A	Program Elective-4 (+MOOC Based)	3
	GN10102A	Behaviour Management & leadership	3	IT1023*A	Open Elective 3 (+MOOC Based/NCC)	3
	IT10451A	Operating System Lab	1	GN11001A	Quantitative Aptitute and Logical Reasoning ** (T&P)	-
	IT10452A	Java Programming Lab	1	IT10460A	Computer Network Lab	1
	IT10503A	Project Based Learning-III	1	IT10461A	Web Technology and Web Services Lab	1
	IT10901A	Industrial Training-I	1	IT10560A	Mini Project	2
Total:			**23**	**Total:**		**24**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	IT1024*A	Open Elective 4 (+MOOC Based)	3	IT10602A	Research based Project/Industrial Project Phase II	12
	IT1035*A/ IT1036A	Program Elective 5 (+MOOC Based)	3			
	IT10601A	Research based Project/Industrial Project-Phase I	7			
	IT10920A	Industrial Training-II	1			
Total:			**14**	**Total:**		**12**
				Total Credit = 122		

List of Electives for Semester IV

Program Elective-I	
COURSE CODE	**COURSE TITLE**
IT10310A	Simulation and Modeling
IT10311A	Information Systems and Security
IT10312A	Computer Graphics
IT10313A	Microprocessors

Open Elective-I	
COURSE CODE	**COURSE TITLE**
IT10210A	Management Information Systems
IT10211A	Geographical Information Systems

List of Elective for V Semester

Program Elective-II	
Sub Code	**Subject Name**
IT10320A	Artificial Intelligence
IT10321A	Cloud Computing
IT10322A	Microcontrollers
IT10323A	Information System Management
IT10324A	Information Theory

Open Elective-II

Sub Code	Subject Name
IT10220A	Introduction to Artificial Intelligence
IT10221A	Enterprise Resource Planning
IT10222A	Communication Techniques

List of Elective for VI Semester

Program Elective-III	
Sub Code	**Subject Name**
IT10330A	Natural Language Processing
IT10331A	Digital Image Processing
IT10332A	Information Retrieval
IT10333A	Fog Computing
IT10334A	Wireless Sensor Networks
IT10335A	Data Mining
IT10336A	Mobile Communication
Program Elective-IV	
Sub Code	**Subject Name**
IT10340A	Latest Trends in Information Technology
IT10341A	System Programming
IT10342A	Bio Inspired Computing
IT10343A	Mobile Computing
IT10344A	Robotics
IT10345A	Real Time Systems
IT10346A	Big Data Analytics
IT10347A	Machine Learning
Open Elective-III	
Sub Code	**Subject Name**
IT10231A	Internet of Things
IT10232A	Fundamentals of Machine Learning
IT10233A	e-Commerce

List of Elective for VII Semester

Program Elective-V	
Sub Code	**Subject Name**
IT10350A	Multimedia Computing and Communications
IT10351A	Cryptography and Network Security
IT10352A	Neural Networks
IT10353A	Pattern Recognition
IT10354A	Web 3.0
IT10355A	Soft Computing
IT10356A	Distributed Computing
IT10357A	Grid Computing
IT10358A	Cyber Physical Systems
IT10359A	Social Network Analysis
Open Elective-IV	
Sub Code	**Subject Name**
IT10240A	Introduction to Soft Computing
IT10241A	Cyber Security
IT10242A	Introduction to e-Governance

Honours Specialization

Cloud Computing: Theory Components (12 Credits)

Sub Code	Subject Name	C
IT10371A	Introduction to Cloud Computing	3
IT10372A	Cloud System and infrastructure	3
IT10373A	Big Data and Cloud	3
IT10374A	Cloud Networking and Security	3

Project/Seminar/Research Paper (8 Credits)

Sub Code	Subject Name	C
IT10701A	Seminar	2
IT10504A	Project	6

Cyber Security: Theory Components (12 Credits)

Sub Code	Subject Name	C
IT10375A	Network Security	3
IT10376A	Cybersecurity	3
IT10377A	Cyber Security Solutions	3
IT10378A	Cryptography	3

Project/Seminar/Research Paper (8 Credits)

Sub Code	Subject Name	C
IT10702A	Seminar	2
IT10505A	Project	6

Management Information Systems: Theory Components (12 Credits)

Sub Code	Subject Name	C
IT10379A	Introduction to Management Information System	3
IT10380A	Enterprise Resource Planning	3
IT10381A	Secure E-Commerce	3
IT10382A	Software Quality Assurance	3

Project/Seminar/Research Paper (8 Credits)

Sub Code	Subject Name	C
IT10703A	Seminar	2
IT10506A	Project	6

Artificial Intelligence and Machine Learning: Theory Components (12 Credits)

Sub Code	Subject Name	C
IT10383A	Introduction to Artificial Intelligence	3
IT10384A	Machine Learning	3
IT10385A	Soft Computing	3
IT10386A	Deep Learning	3

Project/Seminar/Research Paper (8 Credits)

Sub Code	Subject Name	C
IT10704A	Seminar	2
IT10507A	Project	6

Minor Specialization

Computer Vision and Artificial Intelligence: Theory Components (12 Credits)

Sub Code	Subject Name	C
IT10801A	Artificial Intelligence	3
IT10802A	Machine Learning	3
IT10803A	Introduction to Deep Learning	3
IT10804A	Computer Vision	3

Project/Seminar/Research Paper (8 Credits)

Sub Code	Subject Name	C
IT10710A	Seminar	2
IT10510A	Project	6

3.2.7 B. Tech Mechanical Engineering (ME)

	THIRD SEMESTER			FOURTH SEMESTER		
Yr	Sub Code	Sub Name	C	Sub Code	Sub Name	C
II	MA10115A	Engineering Mathematics- III	3	MA10116A	Numerical Methods Fluid	3
	ME10103A	Thermal Engineering -I	4	ME10108A	Mechanics & Hydraulic Machines	4
	ME10104A	Strength of Materials	4			
	ME10105A	Manufacturing Process	3	ME10109A	Theory of Machines-I	3
	ME10106A	Material Science	3	ME10110A	Manufacturing & Metrology	3
	ME10107A	Mechanical Drawing	3			
	GN10101A	UHV-II	1	ME103XXA	Program Elective – I (+MOOC Based)	3
	ME10402A	Strength of Materials	1			
	ME10403A	Lab CAE Lab	1	ME102XXA	Open Elective-I (+MOOC Based)	3
	ME10501A	Project Based Learning -I	1			
				GN10102A	Leadership and Behavior Management	3
				ME10404A	Fluid Mechanics Lab	1
				ME10405A	Manufacturing and Metrology Lab	1
				ME10502A	Project Based Learning-II	1
	Total:		**24**	**Total:**		**25**
	FIFTH SEMESTER			**SIXTH SEMESTER**		
III	ME10111A	Thermal Engineering-II	3	BA10146A	Industrial Management	2
	ME10112A	Machine Design-I	3	ME10114A	Heat Transfer	3
	ME10113A	Theory of Machines-II	3	ME10115A	Machine Design-II	3
	ME103XXA	Program Elective – II (+MOOC Based)	3	ME10116A	Operation Research	3
				ME103XXA	Program Elective-III (+MOOC Based)	3
	ME 102XXA	Open Elective-II (+MOOC Based)	3			
				ME103XXA	Program Elective-IV (+MOOC Based)	3
	GN10103A	Professional Communication and Technical Writing	3			
				ME102XXA	Open Elective-III (+MOOC Based)	3
	ME10406A	Thermal Energy Lab	1	ME10408A	Machine Dynamics Lab	1
	ME10407A	Computational Lab	1	ME10409A	Heat Transfer Lab	1
	ME10503A	Project Based Learning III	1	ME10504A	Minor Project	2
				GN11001A**	Quantitative Aptitude and Logical Reasoning	0
	ME10901A	Industrial Training-I	1			
	Total:		**22**	**Total:**		**24**
	SEVENTH SEMESTER			**EIGHTH SEMESTER**		
IV	ME102XXA	Open Elective-IV (+MOOC Based)	3	ME10602A	Research based Project/ Industrial Project Phase II	12
	ME103XXA	Program Elective-5 (+MOOC Based)	3			
	ME10601A	Research Based Project/ Industrial Project Phase -I	7			
	ME10902A	Industrial Training II	1			
	Total:		**14**	**Total:**		**12**

Note: Industrial Trainings will be conducted during the summer vacations after IV and VI semester and evaluated in V and VII Semester respectively.

List of Electives

PROGRAM ELECTIVE I			PROGRAM ELECTIVE II		
Sub Code	Sub Name	C	Sub Code	Sub Name	C
ME10301A	Automobile Engineering	3	ME10304A	Turbo Machinery	3
ME10308A	Power Plant Engineering	3	ME10305A	Advanced Manufacturing	3
ME10309A	Supply Chain Management	3	ME10306A	Processes	
				Internal Combustion Engine	3
PROGRAM ELECTIVE III			**PROGRAM ELECTIVE IV**		
ME10307A	Latest Trends in MechanicalEngineering	3	ME10310A	Refrigeration and Air Conditioning	3
ME10308A	Computer Integrated Manufacturing	3	ME10311A	Robotics and Automation	3
ME10309A	Tool Engineering and Design	3	ME10312A	Electric Vehicle Fundamentals	3
			ME10313A	Computational Fluid Dynamics	3
PROGRAM ELECTIVE V					
ME10314A	Mechanical Vibration	3			
ME10315A	Computer Aided Design & Manufacturing	3			
ME10316A	Finite Element Methods	3			
ME10317A	Production & Operations Management	3			
OPEN ELECTIVE I			**OPEN ELECTIVE II**		

Sub Code	Sub Name	C	Sub Code	Sub Name	C
ME10201A	Renewable Energy	3	ME10203A	Energy Management	3
ME10202A	Introduction to Research Publication and Research Ethics	3	ME10204A	Total Quality Management	3
OPEN ELECTIVE III			**OPEN ELECTIVE IV**		
ME10205A	Personnel Management & Industrial Relations	3	ME10207A	Statistical Method for Data Analysis	3
ME10206A	Financial Planning and Analysis	3	ME10208A	Decision Making Techniques	3

Honours / Minor Specialization

Automotive Engineering (12 Credits)

Sub Code	Sub Name	C
ME10331A	Alternative Fuels and Lubrications for Engines	3
ME10332A	Introduction to Nanotechnology and MEMS	3
ME10333A	Vehicle Dynamics	3
ME10334A	Automative Repair and Maintenance	3

Machine Design

Sub Code	Sub Name	C
ME10335A	Composite Materials	3
ME10336A	Tribology	3
ME10337A	Design of Mechanical Systems	3

Note: The following guidelines may be followed by all departments offering open electives.

Sl.No	Particulars	Percentage distribution (%) of student
1.	Parent Department offering Open Elective(s)	20% (± 2%) of actual student strength of their own department
2.	Other Department	15% (± 2%) from each engineering department on actualstrength.
3.	Management Studies Department offering open elective to Engineering Department	15% (± 2%) from each engineering department on actualstrength
4.	Mathematics Department offering open elective toEngineering department	15% (± 2%) from each engineering department on actualstrength

- Maximum number of students to be enrolled in any open elective is 60 per subject.
- Minimum number of student's enrolment should be 20 or more for floating any open elective by all departments.

3.2.8 Bachelor of Computer Application (BCA)

BCA SEMESTER - I		
Sub Code	**Sub Name**	**C**
MA10123A	Mathematics I	4
CA 10101A	Fundamentals of Computer and Multimedia Technologies	4
BA10138A	Fundamentals of Business Management	4
CA 10102A	C Programming - I	4
CA 10103A	Fundamentals of Digital Electronics	4
CA10401A	PC Configuration Lab	1.5
CA 10402A	C Programming Lab - I	1.5
	Total credits for the Semester	**23**
BCA SEMESTER -II		
Sub Code	**Sub Name**	**C**
MA 10124A	Mathematics – II	4
CA 10104A	C Programming - II	4
BA 10139A	Accounting and Financial Management	4
CA 10105A	HTML and Scripting for Web Page Design	4
CA10106A	Principles of Programming Language	4
CA10403A	C Programming - II Lab	1.5
CA 10404A	HTML and Scripting for Web Page Design Lab	1.5
	Total credits for the Semester	**23**
BCA SEMESTER - III		
Sub Code	**Sub Name**	**C**
MA10125A	Mathematics III	4
CA10107A	E – Commerce	4
CA10108A	Fundamentals of Data Structures	4
CA10109A	Object Oriented Programming Using C++	4
BA10140A	Computer and Communication Skill	4
CA10405A	Data Structures Lab	1.5
CA10406A	C++ Lab	1.5
	Total credits for the Semester	**23**
BCA SEMESTER -IV		
Sub Code	**Sub Name**	**C**
CA10110A	Database Management System	4
CA1011A	Java Programming	4
CA10112A	UNIX and Shell Programming	4
CA10113A	Recent Trends in ComputerApplication	4
CA10114A	Data Communication & Network	4
CA10407A	Database Management System Lab	1.5
CA10408A	Java Programming Lab	1.5
	Total credits for the Semester	**23**
BCA SEMESTER - V		
Sub Code	**Sub Name**	**C**
CA10115A	Operating Systems	4
CA10116A	IT Laws and Practices	4
CA10117A	.Net Programming	4
CA103**	Elective – I	4
CA103**	Elective – II	4
CA10409A	Operating Systems Lab	1.5
CA10410A	.Net Lab	1.5
	Total credits for the Semester	**23**
BCA SEMESTER -VI		
Sub Code	**Sub Name**	**C**
CA10118A	Software Engineering	4
CA10119A	Python Programming	4
CA103**	Elective – III	4
CA103**	Elective – IV	4
CA10411A	Software Engineering Lab	1.5
CA10412A	Python Lab	1.5
CA10501A	Project	6
	Total credits for the Semester	**25**

LIST OF ELECTIVES-I FOR BCA (SEMESTER V)	
Sub Code	**Sub Name**
CA10301A	Cobol and MIS
CA10302A	Web Development using PHP
CA10303A	Web Technologies
CA10304A	C# Programming

Minor Specialization (BCA SEMESTER V)	
DATA SCIENCE	
Sub. Code	**Sub. Name**
CA10305A	Fundamentals of Data Science
CLOUD TECHNOLOGY	
CA10306A	Fundamentals of Cloud Computing
NETWORK SECURITY	
CA10307A	Cryptography Fundamentals

Minor Specialization (BCA SEMESTER VI)	
Sub. Code	**Sub. Name**
DATA SCIENCE	
CA10308A	Data Analytics using Python
CA10309A	Security and Privacy for Data Science
CA10310A	Database Administration
CLOUD TECHNOLOGY	
CA10311A	Cloud Computing and Security
CA10312A	Big Data and its Applications in Cloud
CA10313A	Distributed System
NETWORK SECURITY	
CA10314A	Network and Information Security
CA10315A	Internet Security and Privacy
CA10316A	System and Network Administration

3.2.9 Bachelor of Business Administration (BBA)

BBA SEMESTER - I		
Sub Code	**Sub Name**	**C**
BA10103A	Principles and Practice of Management	3
MA10121A	Business Mathematics	4
BA10105A	Financial Accounting	4
BA10106A	Business Economics	3
BA10107A	Business Law	3
BA10401A	MS Application for Business	2
BA10703A	Research Orientation	1
	Total credits for the Semester	**20**
BBA SEMESTER -II		
Sub Code	**Sub Name**	**C**
MA10122A	Quantitative Analysis	4
BA10108A	Human Resources Management	3
BA10109A	Business Environment	3
BA10110A	Organization Behaviour	3
BA10111A	Business Finance	4
BA10112A	Business Communications	3
BA10704A	Research Seminar I	1
	Total credits for the Semester	**21**
BBA SEMESTER - III		
Sub Code	**Sub Name**	**C**
BA10113A	International Business	3
BA10114A	Production Management	4
BA10115A	Entrepreneurship and Small Business	3
BA10116A	Accounting for Management	4
BA10117A	Marketing Management	4
BA10705A	Research Seminar II	2
	Total credits for the Semester	**20**
BBA SEMESTER -IV		
Sub Code	**Sub Name**	**C**
BA10118A	Business Policy and Strategy	3
BA10119A	Marketing Research	3
BA10120A	Marketing of Services	3
BA10121A	Consumer Behaviour	3
BA10122A	Project Management	4
BA10123A	Team Work and Leadership	3
BA10706A	Research Based Learning I	1
	Total credits for the Semester	**20**
BBA SEMESTER - V		
Sub Code	**Sub Name**	**C**
BA10501A	Project Presentation and Seminar	4
CA10181A	E-commerce	3
BA10125A	Marketing Communication andAdvertising	3
BA10126A	Logistics and Supply ChainManagement	3
BA10127A	Industrial Relations	3
BA10129A	Banking and Insurance	3
BA10707A	Research Based Learning II	1
	Total credits for the Semester	**20**
BBA SEMESTER -VI		
Sub Code	**Sub Name**	**C**
BA10701A	Viva- Voce on Research	3
BA10131A	Corporate Governance & Business Ethics	3
BA10132A	International Marketing Management	3
BA10133A	Rural Marketing	3
BA10134A	Human Resource Development	3
BA10136A	Management of Financial Services	3
BA10137A	Taxation	3
	Total credits for the Semester	**21**

3.3 Schema of M.Tech Courses:

3.3.1 Civil Engineering (Structural Engineering)

M.Tech (CE) SEMESTER - I		
Sub Code	**Sub Name**	**C**
MA201**A	Advanced Engineering Mathematics and Optimization	3
CE20102A	Structural Dynamics	3
CE20102A	Advanced Structural Analysis	3
CE203**A	Program Elective-I	3
CE203**A	Program Elective-II	3
CE20401A	Concrete and Material Testing Lab	1.5
CE20402A	CAD Lab	1.5
CE20501A	Project Based Learning-I	2
	Total credits for the Semester	**20**
M.Tech (CE) SEMESTER -II		
Sub Code	**Sub Name**	**C**
CE20103A	Advanced Concrete Technology	3
CE20104A	Finite Element Method	3
CE20105A	Applied Elasticity for Engineers	3
CE203**A	Program Elective III	3
CE203**A	Program Elective IV	3
CE20403A	Finite Element Analysis Lab	1.5
CE20404A	Programming Lab (C/MATLAB)	1.5
CE20502A	Project Based Learning-II	2
	Total credits for the Semester	**20**
M.Tech (CE) SEMESTER - III		
Sub Code	**Sub Name**	**C**
CE20601A	Dissertation -Phase I	15
	Total credits for the Semester	**15**
M.Tech (CE) SEMESTER -IV		
Sub Code	**Sub Name**	**C**
CE20602A	Dissertation Phase-II	25
	Total credits for the Semester	**25**

List of Program Electives

Sub.Code	**Sub. Name**
CE20301A	Advanced Design of RC Structures
CE20302A	Design of Masonry Structure
CE20303A	Design of Bridges
CE20304A	Design of Pre-Stress Concrete Structure
CE20305A	Advanced Strength of Materials
CE20306A	Soil Structure Interactions
CE20307A	Engineering Seismology
CE20308A	Composite Materials
CE20309A	Earthquake Resistant Design of Structures
CE20310A	Advanced foundation Engineering
CE20311A	Ground Improvement Techniques
CE20312A	Sustainable Materials and Green Building
CE20313A	Advanced Design of Steel Structures
CE20314A	Structural Health Monitoring
CE20315A	Theory of Plates and Shells
CE20316A	Retrofitting and Rehabilitation of Structures
***MOOC courses as decided by the Department**	

3.3.2 Computer Science and Engineering (CSE)

M.Tech (CSE) SEMESTER - I		
Sub Code	**Sub Name**	**C**
CS20101A	Advanced Algorithms	3
CS203**A	Elective-I	3
CS203**A	Elective -II	3
CS203**A	Elective -II	3
CS203**A	ELECTIVE-IV	3
CS20401A	Machine Learning Lab	1.5
CS20402A	Advanced Algorithms Lab	1.5
CS20501A	Project Based Learning-I	2
	Total credits for the Semester	**20**
M.Tech (CSE) SEMESTER -II		
Sub Code	**Sub Name**	**C**
CS20102A	Theory of Computation	3
CS203**A	Elective-V	3
CS203**A	Elective -VI	3
CS203**A	Elective -VII	3
CS203**A	ELECTIVE-VIII	3
CS20403A	Advanced Programming Lab	1.5
CS20404A	Software and Data Analysis Lab	1.5
CE20502A	Project Based Learning-II	2
	Total credits for the Semester	**20**
M.Tech (CSE) SEMESTER - III		
Sub Code	**Sub Name**	**C**
CS20601A	Dissertation -Phase I	15
	Total credits for the Semester	**15**
M.Tech (CSE) SEMESTER -IV		
Sub Code	**Sub Name**	**C**
CS20602A	Dissertation Phase-II	25
	Total credits for the Semester	**25**

List of Electives

Sub.Code	**Sub. Name**
CS20329A	Advanced Cryptography and Network Security
CS20330A	Big Data
CS20331A	Adhoc Wireless Networks
CS20332A	Cloud Computing
CS20333A	Data Warehousing and Data Mining
CS20334A	Geographical Information System
CS20335A	Engineering Research Methodology
CS20336A	Mobile Robotics and Intelligent Systems
CS20337A	Network Security
CS20338A	Optimization Techniques
CS20339A	VLSI Design
CS20340A	Wireless Sensor Networks
CS20341A	Data Analytics
CS20342A	Distributed Systems
CS20343A	Object Oriented Systems
CS20344A	Software quality Management
CS20345A	Speech and Natural Language Processing
CS20346A	Deep Learning
CS20347A	Artificial Neural Networks
CS20348A	Distributed Database Systems
CS20349A	Mobile Computing
CS20350A	High Performance Computing
CS20351A	Human Computer Interaction
CS20352A	Agile Methodology
CS20353A	Ethical Hacking
CS20354A	Soft Skills

3.3.3 Electronics & Communication Engineering (Digital Electronics & Communication Engg)

M.Tech (DECE) SEMESTER - I		
Sub Code	**Sub Name**	**C**
EC20101A	Statistical Signal Processing	3
EC20102A	VLSI Design	3
EC203XXA	Program Elective-I	3
EC203XXA	Program Elective -II	3
EC203XXA	Program Elective-III	3
EC20402A	VLSI Laboratory	1.5
EC20402A	Communication Laboratory	1.5
EC20501A	Project Based Learning-I	2
Total credits for the Semester		**20**
M.Tech (DECE) SEMESTER -II		
Sub Code	**Sub Name**	**C**
EC20103A	Internet of Things	3
EC20104A	Information Theory and Coding	3
EC203XXA	Program Elective-IV	3
EC203XXA	Program Elective -V	3
EC203XXA	Program Elective -VI	3
EC20403A	Advanced DSP Laboratory	1.5
EC20404A	IoT Laboratory	1.5
EC20502A	Project Based Learning-II	2
Total credits for the Semester		**20**
M.Tech (DECE) SEMESTER - III		
Sub Code	**Sub Name**	**C**
EC20601A	Dissertation Phase -I	15
Total credits for the Semester		**15**
M.Tech (DECE) SEMESTER -IV		
Sub Code	**Sub Name**	**C**
EC20602A	Dissertation	25
Total credits for the Semester		**25**

3.3.4 Electrical and Electronics Engineering (Power Electronics)

M.Tech (PE) SEMESTER - I		
Sub Code	**Sub Name**	**C**
EE20101A	Advanced Power Electronics	3
EE20202A	Electrical Machine Analysis	3
EE203XXA	Program Elective -I	3
EE203XXA	Program Elective-II	3
EE203XXA	Program Elective -III	3
EE20401A	Power Electronics lab-I	1.5
EE20402A	Programming & Simulation lab	1.5
EE20501A	Project Based Learning-I	2
Total credits for the Semester		**20**
M.Tech (PE) SEMESTER -II		
Sub Code	**Sub Name**	**C**
EE20103A	Modeling & Simulation of PowerElectronic Converters	3
EE20104A	Advanced Methods In ControlTheory	3
EE203XXA	Program Elective-IV	3
EE203XXA	Program Elective -V	3
EE203XXA	Program Elective-VI	3
EE20403A	Power Electronics Design &Fabrication Lab	1.5
EE20404A	Control Lab	1.5
EE20502A	Project Based Learning-II	2
Total credits for the Semester		**20**
M.Tech (PE) SEMESTER - III		
Sub Code	**Sub Name**	**C**
EE20601A	Dissertation Phase I	15
Total credits for the Semester		**15**
M.Tech (PE) SEMESTER -IV		
Sub Code	**Sub Name**	**C**
EE20602A	Dissertation/Thesis/Project	25
Total credits for the Semester		**25**

List of Program Elective

Sub. Code	Sub. Name	C
PROGRAM ELECTIVE-I		
EE20301A	Electric Drive Systems	3
EE20302A	Fuzzy Logic & Evolutionary Algorithms	3
EE20303A	Flexible AC Transmission Systems (FACTS)	3
PROGRAM ELECTIVE-II		
EE20304A	Neural Networks	3
EE20305A	Industrial Automation & Control	3
EE20306A	Software Engineering	3
PROGRAM ELECTIVE-III		
EE20307A	Programming with JAVA	3
EE20308A	Data Base Management Systems	3
EE20309A	Digital Image Processing	3
PROGRAM ELECTIVE-IV		
EE20310A	Advanced Machines Drives	3
EE20311A	Computer Aided Power systems Analysis	3
EE20312A	Real Time Embedded Systems	3
PROGRAM ELECTIVE-V		
EE20313A	Biomedical Instrumentation	3
EE20314A	Power Electronic Switching Devices	3
EE20315A	Optimization in Engineering Design	3
PROGRAM ELECTIVE -VI		
EE20316A	Non Linear Dynamical Systems	3
EE20317A	Data Communication & Computer Networks	3
EE20318A	Fundamentals of Nano Electronics	3

3.4 Master of Computer Applications (MCA)

SEMESTER - I		
Sub Code	**Sub Name**	**C**
MA20153A	Computational Mathematics	3
CA20101A	Latest Trends in Computer Application	3
CA20102A	Database Management System	3
CA20103A	Operating Systems	3
CA20104A	Java Programming	3
BA20120A	Accounting and Managerial Economics	3
CA20401A	Operating Systems Lab	1.5
CA20402A	Java Programming Lab	1.5
CA20403A	Database Management System Lab	1.5
CA210**	(BRIDGE COURSES)	-
	Total credits for the Semester	**23.5**
SEMESTER -II		
Sub Code	**Sub Name**	**C**
MA20154A	Quantitative Analysis for ComputerApplications	3
CA20105A	Software Engineering and UnifiedModelling Language	3
CA203**	Elective-I	3
CA203**	Elective-II	3
CA20106A	.NET Framework	3
CA20107A	Computer Network	3
CA20404A	Software Engineering and UML Lab	1.5
CA20405A	Computer Network Lab	1.5
CA20406A	.NET Lab	1.5
CA210**	(BRIDGE COURSES)	-
	Total credits for the Semester	**23.5**
SEMESTER - III		
Sub Code	**Sub Name**	**C**
CA20108A	Formal Languages and Automata Theory	3
CA20109A	Data Structure and Algorithms	3
CA20110A	Unix/Linux Internal	3
CA203**	Elective -III	3
CA203**	Elective -IV	3
CA20407A	Unix/Linux Internal Lab	1.5
CA20408A	Data Structure and Algorithms Lab	1.5
CA20501A	Mini Project	2
CA20901A	Industrial Training/Course Work	1
	Total credits for the Semester	**21**
SEMESTER -IV		
Sub Code	**Sub Name**	**C**
CA20601A	Major Project	14
	Total credits for the Semester	**14**

List of Electives -I (Semester II)

LIST OF ELECTIVES -I (SEMESTER II)	
Sub. Code	**Sub. Name**
Elective -I	
CA20301A	Bioinformatics
CA20302A	Digital Image Processing
CA20303A	Management Information Systems
CA20304A	Optimization Technique
CA20305A	Mobile Application Development
CA20306A	Artificial Intelligence and ExpertSystems
CA20307A	IT Law and Practices
CA20308A	Computer Organization and Architecture
CA20309A	Python Programming
CA20310A	Angular JS, REACT and VUE JS

Minor Specialization

Minor Specialization (SEMESTER II)	
Sub. Code	**Sub. Name**
DATA SCIENCE	
CA20311A	Data Warehousing and Data Mining
CLOUD TECHNOLOGY	
CA20312A	Cloud Computing
NETWORK SECURITY	

CA20313A	Cryptography

MINOR SPECIALIZATION (SEMESTER III)	
Sub. Code	**Sub. Name**
DATA SCIENCE	
CA20314A	Machine Learning
CA20315A	Big Data Analytics
CA20316A	Social and Web Media Analytics
CA20317A	Deep Learning
CLOUD COMPUTING	
CA20318A	Distributed System and Grid Computing
CA20319A	Big Data and its applications in Cloud
CA20302A	Virtualization and Cloud Security
CA20321A	Edge/Fog Computing
NETWORK SECURITY	
CA20322A	Applied Cryptography
CA20323A	Network Security
CA20324A	Privacy and Security in Web Application
CA20325A	Block Chain Technology
BRIDGE COURSE	
CA21001A	Statistical Method and Simulation
CA21002A	Web Page Design
CA21003A	Digital Logic
CA21004A	Programming language

3.5 Master of Business Administration (MBA)

SEMESTER - I		
Sub Code	**Sub Name**	**C**
BA20101A	Principles of Management andOrganizational Behavior	3
BA20102A	Marketing Management	3
BA20103A	Accounting for Managers	3
BA20104A	Business Economics	3
BA20105A	Business Communication	2
CA20181A	Computer Applications in Management	3
BA20107A	Legal and Ethical Aspects in Business	3
BA20702A	Research Seminar I	1
BA20401A	Managerial Skills and PersonalityDevelopment- LAB	2
BA20402A	MS-Office – LAB	2
	Total credits for the Semester	**25**
SEMESTER -II		
Sub Code	**Sub Name**	**C**
MA20151A	Quantitative Methods inManagement	4
BA20108A	Human Resource Management	3
BA20109A	Financial Management	3
BA20110A	Productions and OperationsManagement	3
MA20152A	Research Methodology and Statistical Techniques	4
BA20111A	Global Economic Environmentand Policy	3
CA20182A	Management InformationSystems	3
BA20403A	SPSS - LAB	2
	Total credits for the Semester	**25**
SEMESTER - III		
Sub Code	**Sub Name**	**C**
BA20113A	Project Management	2
BA20703A	Research Seminar II	1
BA20114A	Business strategy	3
BA20601A	Summer Internship Project *(8-10 weeks)	6
BA20115A	Consumer Behaviour &Advertisement and BrandManagement	4
BA20116A	Retail and Distribution Management & Supply ChainManagement	4
BA20404A	MS Project Management and Tally - Lab	2
	Specialization (4+4)	8
	Total credits for the Semester	**30**
SEMESTER -IV		
Sub Code	**Sub Name**	**C**
BA20117A	Banking and InsuranceManagement	3
BA20701A	Research trends in management (Grand Viva Voce)	3
BA20118A	Market Research	4
BA20119A	Service Marketing and GlobalMarketing	4
	Specialization (4+4)	8
	Total credits for the Semester	**22**

 # Out of the following four specialization I/II/III/IV, anyone must be opted for in 3rd Semester

Specialization-I (FINANCE)		
Sub Code	**Sub Name**	**C**
BA20301A	Security Analysis and Portfolio Management & Derivative Market	4
BA20302A	Taxation	4
Specialization -II (Human Resource)		
BA20303A	Industrial Relation	4
BA20304A	Competency Mapping & Performance Management	4
Specialization -III (System)		
BA20305A	Object Oriented Programming System & Open Source System	4
BA20306A	Data base Management Systems	4
Specialization -IV (Business Analytics)		
BA201317A	Introduction to Business Analytics	3
BA20318A	Introduction to R	3
BA20405A	Data Analysis using R	2

 # Out of the following four specialization V/VI/VII/VIII anyone must be opted for in 4th Semester

Specialization V (Finance)		
Sub Code	**Sub Name**	**C**
BA20319A	Multinational Finance & Risk Exposure Management	4
BA20320A	Marketing of Financial Services & Mergers and Acquisitions	4
Specialization VI (Human Resource)		
BA20321A	Organization Development & Human Resource Development	4
BA20322A	Compensation Management & International Human Resource Management	4

Specialization VII (System)		
Sub Code	**Sub Name**	**C**
BA20323A	E-Commerce	4
BA20324A	Technology Management and Strategy	4
Specialization VIII (Business Analytics)		
BA20335A	Data Warehousing & Data Mining	4
BA20406A	Forecasting using Python	2
BA20407A	Data Visualization using R	2

 # Minimum 10 students are required to be enrolled in order to run a specialization.

Minor Specialization

Fintech

Sub Code	Sub Name	C
BA10805A	Fintech: Foundation & Overview	3
BA10806A	Financial Services	3
BA10807A	Digital Payments	3
BA10808A	Blockchain	3
BA10872A	Internship Project	6
BA10882A	Seminar	2
	Total Credit	**20**

Marketing

Sub Code	Sub Name	C
BA10813A	Introduction to Marketing Management	3
BA10814A	Consumer Behavior	3
BA10815A	Advertising and Brand Management	3
BA10816A	Logistics and Supply Chain Management	3
BA10874A	Internship Project	6
BA10884A	Seminar	2
	Total Credit	**20**

Human Resource Management

Sub Code	Sub Name	C
BA10809A	Human Resource Management	3
BA10810A	Training and Development	3
BA10811A	Competency Mapping and Performance Management	3
BA10812A	Industrial Relations	3
BA10873A	Internship Project	6
BA10883A	Seminar	2
	Total Credit	**20**

Entrepreneurship

Sub Code	Sub Name	C
BA10801A	Fundamentals of Entrepreneurship	3
BA10802A	Creating and Starting the Venture	3
BA10803A	Planning and Business	3
BA10804A	Growth and Development of Entrepreneurial Ventures	3
BA10871A	Internship Project	6
BA10881A	Seminar	2
	Total Credit	**20**

List of Open Elective

Sub Code	Sub Name	C
BA10201A	Entrepreneurship for Engineers (In collaboration with Atal Incubation Centre)	3

3.6 Schema of all M.Sc. courses

3.6.1 Schema of M.Sc. (Physics)

SEMESTER - I		
Sub Code	**Sub Name**	**C**
PH20101A	Mathematical Physics	4
PH20102A	Fundamentals of Electronics	4
PH20103A	Classical Mechanics	4
PH20104A	Quantum Mechanics I	4
PH20401A	Physics Lab I (Gen. Physics)	3
PH20402A	Physics Lab II (Photonics &Spectroscopy)	3
	Total credits for the Semester	**22**
SEMESTER -II		
Sub Code	**Sub Name**	**C**
PH20105A	Classical and RelativisticElectrodynamics	4
PH20106A	Condensed Matter Physics	4
PH20107A	Computational Physics I	4
PH20208A	Quantum Mechanics II	4
PH20403A	Physics Laboratory III (Electronics)	3
PH20404A	Physics Laboratory IV / Computational Physics Lab - I)	3
PH20701A	Project Based Learning-I	1
	Total credits for the Semester	**23**
SEMESTER – III (Theory)		
Sub Code	**Sub Name**	**C**
PH20109A	Statistical Mechanics	4
PH20110A	Nuclear And Particle Physics	4
PH20111A	Computational Physics - II	4
PH20301A	Elective-I Particle Physics I	4
PH20303A	Elective-I Plasma Physics I	4
PH20702A	Project Based Learning -II	2
	Total credits for the Semester	**22**
SEMESTER -III (Experimental)		
Sub Code	**Sub Name**	**C**
PH20109A	Statistical Mechanics	4
PH20110A	Nuclear & Particle Physics	4
PH20111A	Computational Physics II	4
PH20305A	Elective-II Electronics -I	4
PH20307A	Elective-II Electronics Lab-I	2
PH20702A	Project Based Learning-II	2
	Total credits for the Semester	**22**
SEMESTER – IV (Theory)		
Sub Code	**Sub Name**	**C**
PH20112A	Experimental Techniques and Data Analysis	4
PH20113A	Atomic & Molecular Physics	4
PH20405A	Computational Physics Lab-II	4
PH20302A	Elective-I Particular Physics-II	4
PH20304A	Elective-I Plasma Physics II	4
PH20603A	*Dissertation /Project	5
	Total credits for the Semester	**25**
SEMESTER -IV (Experimental)		
Sub Code	**Sub Name**	**C**
PH20112A	Experimental Techniques and Data Analysis	4
PH20113A	Atomic & Molecular Physics	4
PH20405A	Computational Physics Lab-II	4
PH20306A	Elective-II Electronics-II	4
PH20308A	Elective-II Electronic Lab II	4
PH20603A	*Dissertation /Project	5
	Total credits for the Semester	**25**

3.6.2 Schema of M.Sc. (Chemistry)

SEMESTER - I		
Sub Code	**Sub Name**	**C**
CH20101A	Principles of Inorganic Chemistry	4
CH20102A	Principles of Organic Chemistry	4
CH20103A	Classical and StatisticalThermodynamics	4
CH20104A	Analytical Chemistry	4
CH20401A	Analytical Chemistry lab	3
CH20402A	Physical Chemistry lab	3
CH20601A	Project Based Seminar	1
	Total credits for the Semester	**23**
SEMESTER -II		
Sub Code	**Sub Name**	**C**
CH20105A	Modern Spectroscopic Technique	4
CH20106A	Organic Reactions and Mechanisms	4
CH20107A	Computer Fundamentals &Programming	4
CH20108A	Quantum Chemistry- I	3
CH20403A	Computer Programming Lab	3
CH20404A	Organic Chemistry lab	3
CH20602A	Project Based Seminar	1
	Total credits for the Semester	**22**
SEMESTER -III		
Sub Code	**Sub Name**	**C**
CH20109A	Advanced Coordination Chemistry& Inorganic Reaction Mechanism	4
CH20110A	Concepts in Organic Synthesis	4
CH20111A	Chemical Dynamics andElectrochemistry	4
CH20112A	Biochemistry	4
El-I	ELECTIVE I (Special paper)	4
CH20405A	Inorganic Chemistry Lab	3
CH20603A	Project Based Learning	1
	Total credits for the Semester	**24**
SEMESTER -IV		
Sub Code	**Sub Name**	**C**
CH20113A	Bio-inorganic Chemistry	4
CH20114A	Solid State Chemistry and InterfaceScience	4
CH20115A	Group Theory-A Chemist Approach	4
CH20116A	Quantum Chemistry-II	4
EL-II	Elective-II (Special Paper)	4
CH20604A	Research Project work	6
	Total credits for the Semester	**26**

List of Electives

ELECTIVE - I		
Sub.Code	**Sub. Name**	**C**
CH20301A	Photoinorganic Chemistry	4
CH20302A	Synthetic Organic Chemistry	4
CH20303A	Advanced Physical Chemistry	4
ELECTIVE - II		
Sub.Code	**Sub. Name**	**C**
CH20304A	Chemistry of Nanomaterials	4
CH20305A	Supramolecular Chemistry	4
CH20306A	Medicinal Chemistry	4

3.6.3 Schema of M.Sc. (Mathematics)

SEMESTER - I		
Sub Code	**Sub Name**	**C**
MA20201A	Real Analysis I	4
MA20102A	Algebra	4
MA20103A	Ordinary Differential Equation	4
MA20104A	Linear Algebra	4
MA20105A	Differential Geometry & TensorCalculus	4
MA20106A	Computational Lab - I	2
	Total credits for the Semester	**22**
SEMESTER -II		
Sub Code	**Sub Name**	**C**
MA20107A	Real Analysis II	4
MA20108A	Complex Analysis	4
MA20109A	Fluid Mechanics	4
MA20110A	Topology	4
MA20111A	Numerical Analysis	4
MA20112A	Computational Lab - II	2
	Total credits for the Semester	**22**
SEMESTER - III		
Sub Code	**Sub Name**	**C**
MA20113A	Functional Analysis	4
MA20114A	Probability and Inference Theory	4
MA20115A	Discrete Mathematics	4
MA20116A	Partial Differential Equations &Vibrational Principles	4
MA20117A	Graph Theory	4
MA20118A	Number Theory	4
	Total credits for the Semester	**24**
SEMESTER -II		
Sub Code	**Sub Name**	**C**
MA20119A	Linear & Non-Linear programmingproblems	4
MA20120A	Stochastic Processes	4
MA20301A	Wavelet Analysis (Elective)	4
MA20302A	Plasma Dynamics (Elective)	4
MA20601A	Major Project	8
	Total credits for the Semester	**24**

3.7 Schema of all B.Sc. courses (Honours)

3.7.1 B.Sc Chemistry (Honours) with research : 3 Years (146 Credit)

B.Sc Chemistry (Honours)with Research : 4 Years (186 Credit)

FIRST SEMESTER				SECOND SEMESTER		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
I	BA10101A	English	2	CH10103A	Environmental Studies	2
	CH10101A	Inorganic Chemistry-I	4	GN10101A	Universal Human Values	2
	CH10401A	Inorganic Chemistry-I Lab	2	GN10102A	Leadership and Behaviour Management	2
	CH10102A	Physical Chemistry-I	4			
	CH10402A	Physical Chemistry-I Lab	2	CH10104A	Organic Chemistry-I	4
		GE-I (Generic Elective) (Physics/Math)	4	CH10403A	Organic Chemistry-I Lab	2
					Physical Chemistry-II	4
		Generic Elective-I Practical/Lab (Math Tutorial)	2	CH10105A	Physical Chemistry-II Lab	2
				CH10404A	GE-I (Generic Elective) (Physics/Math)	4
					Generic Elective-I Practical/ Lab (Math Tutorial)	2
Total:			**20**	**Total:**		**24**
THIRD SEMESTER				**FOURTH SEMESTER**		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
II	CH10106A	Inorganic Chemistry-II	4	CH10109A	Inorganic Chemistry-III	4
	CH10405A	Inorganic Chemistry-II Lab	2	CH10408A	Inorganic Chemistry-III Lab	2
	CH10107A	Organic Chemistry-II	4	CH10110A	Organic Chemistry-III	4
	CH10406A	Organic Chemistry-II Lab	2	CH10409A	Organic Chemistry-III Lab	2
	CH10108A	Physical Chemistry-III	4	CH10111A	Physical Chemistry-IV	4
	CH10407A	Physical Chemistry-III Lab	2	CH10410A	Physical Chemistry-IV Lab	2
	CH10301A	SEC-I (Skill Enhancement course Analytical Tools in Chemistry)	3	CH10302A	SEC-II (Skill Enhancement course Analytical Tools in Chemistry)	3
		GE-3 (Generic Elective) (Phy/Math)	4		GE-4 (Generic Elective) (Phy/Math)	4
		Generic Elective-3 Practical/ Lab	2		Generic Elective-4 Practical/ Lab	2
	CH10601A	Project Based Seminar	1	CH10602A	Project Based Seminar	1
Total:			**28**	**Total:**		**28**
FIFTH SEMESTER				**SIXTH SEMESTER**		
III	CH10112A	Organic Chemistry-IV	4	CH10114A	Inorganic Chemistry-V	4
	CH10411A	Organic Chemistry-IV Lab	2	CH10415A	Inorganic Chemistry-V lab	2
	CH10113A	Physical Chemistry-V	4	CH10115A	Organic Chemistry-V	4
	CH10412A	Physical Chemistry-V Lab	2	CH10416A	Organic Chemistry-V Lab	2
	CH10303A	DSE-I (Discipline Specific Elective Paper) (Applications of Computer in Chemistry)	4	CH10305A CH10306A	DSE-III (Discipline Specific Elective Paper) Inorganic Material of Industrial Importance/ Novel Inorganic Solids	4
	CH10413A	Applications of Computer in Chemistry Lab	2			
			3			
	CH10304A	DSE-II (Discipline Specific Elective Paper) Renewable Energy		CH10417A CH10418A	Inorganic Material of Industrial Importance Lab Novel Inorganic Solids Lab	2
	CH10414A	Renewable Energy- Lab	2			
	CH10603A	Project Based Learning	1	CH10604A	DSE-IV (Discipline Specified Elective Paper) Dissertation/ Project Based Learning	4
Total:			**24**	**Total:**		**22**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CH10605A	Research Ethics	2	CH10606A	Research Project	20
		Research Methodology	4			
		Research Project	14			
Total:			**20**	**Total:**		**20**

3.7.2 B.Sc. Chemistry (Honours) with research: 3 Years (146 Credit)
5 Years Integrated M.Sc./ B.Sc. Mathematics (Honours) with research : 3 Years

	FIRST SEMESTER			SECOND SEMESTER		
Yr	Sub Code	Sub Name	C	Sub Code	Sub Name	C
I	MA10131A	Foundation Course in Mathematics	5	MA10134A	Solid Geometry & Vector Calculus	5
	MA10132A	Algebra I: Classical Algebra	5	MA10135A	Discrete Mathematics	5
	MA10133A	Single Variable Calculus	5	MA10136A	Linear Algebra	5
	PH103XXA	Physics	3	CH103XXA	Chemistry	3
	MA10331A	Programming with Phython/C/ C++	3	MA10332A	Data Structures	3
	CH101XXA	Environmental Science	2	BA101XXA	Communication Skills	3
Total:			**23**	**Total:**		**23**
	THIRD SEMESTER			**FOURTH SEMESTER**		
II	MA10137A	Algebra II: Group Theory	5	MA10140A	Algebra III : Ring Theory	5
	MA10138A	Elementary Number Theory	5	MA10141A	Multi Variable Calculus	5
	MA10139A	Probability Theory	5	MA10333A	Object Oriented Programming	3
	MA10363A	Linear Programming & Game Theory	4	MA10334A	Ordinary Differential Equations Statistical Methods	4
	GN10101A	Universal Human Values	2	MA10335A		4
Total:			**21**	**Total:**		**21**
	FIFTH SEMESTER			**SIXTH SEMESTER**		
III	MA10142A	Complex Analysis	5	MA10340A	Theory of Computation	5
	MA10336A	Numerical Analysis	4	MA10341A	Basics of Financial Mathematics	4
	MA10337A	Introduction to Machine Learning	3		Metric Spaces	
	MA10338A	Dynamics	4	MA10342A	Open Elective	4
	MA10339A	Artificial Intelligence	3	XXXXXXA	Seminar-II	3
	MA10701A	Seminar-I	2	MA10702A	Grand Viva	2
				MA10703A		2
Total:			**21**	**Total:**		**20**
	SEVENTH SEMESTER			**EIGHTH SEMESTER**		
IV	MA30101A	Real Analysis	4	MA30106A	Measure Theory and Integration	4
	MA30102A	Abstract Algebra	4	MA30107A	Advanced Complex Analysis	4
	MA30103A	Ordinary and Partial Differential Equations	4	MA30108A	Graph Theory	4
				MA30109A	Topology	4
	MA30104A	Advanced Linear Algebra	4	MA303XXA	Elective I/(Project for Exit Four)	4
	MA30105A	Classical Mechanics	4	MA30402A	Computational Lab II	2
	MA30401A	Computational Lab I	2			
Total:			**22**	**Total:**		**22**
	NINTH SEMESTER			**TENTH SEMESTER**		
V	MA30110A	Advanced Numerical Analysis	4	MA30114A	Variational Calculus	4
	MA30111A	Functional Analysis	4	MA30115A	Stochastic Processes	4
	MA30112A	Integral Equations and Transform	4	MA303ZZA	Elective-III	4
	MA30113A	Number Theory and Cryptography	4	MA303WWA	Elective-IV	4
	MA303YYA	Elective-II	4	MA30602A	Project	6
	MA30701A	Seminar III/ Seminar I for entry II Students	2	MA30702A	Grand Viva	2
Total:			**22**	**Total:**		**24**
Grant Total of Credits			**219**	**Exit V (Integrated M.Sc/ M.Sc Degree)**		

Important Contacts & Phone Numbers

Sl. No	Name	Designation & Dept	Mobile No	Email ID	oomNo	Intercom
Academic Administration						
1	Prof. (Dr.) G.L Sharma	Director	9434012147	director.smit@smu.edu.in	C-101	201
2	Prof. (Dr.) Sangeeta Jha	Asso. Director (Acad)	8768823119	deanacad@smit.smu.edu.in	C-105	270
3	Prof. (Dr.) A.P Tiwary	Asso. Director (Students'Affairs)	9620689530	deansa@smit.smu.edu.in	D-207	488
4	Prof. (Dr.) Kalpana Sharma	Asso. Director (R & D)	9434153524	adrd@smit.smu.edu.in	C-201	382
5	Prof. (Dr.) P. Chettri	Addl. Registrar	8967467717	add.registrar@smu.edu.in	B-107	429
6	Dr. Amrita Biswas	Deputy. Registrar (Admin)	9434211795	deputy.registrar@smit.smu.edu.in	C-107	224
7	Mr. Sanjeev Kumar	Asst. Registrar (Comp)	9933304161	asstregistrar.comp@smit.smu.edu.in	B-107	429
Head of the Departments / Offices						
1	Prof. (Dr.) C. Bhuyan	Civil Engineering/ CMSNT i/c	9836562555	hod.ce@smit.smu.edu.in	F-420	221
2	Prof. (Dr.) Udit Kr Chakraborty	Computer Science & Engineering/ Head QC	7908078878	hod.cse@smit.smu.edu.in	D-308	283
3	Prof. (Dr.) S. Dhar	Electronics & Comm. Engg.	7908300529	hod.ec@smit.smu.edu.in	D-208	280
4	Mr. M.N. Ansari	Electrical & ElectronicsEngg.	7407484784	hod.eee@smit.smu.edu.in	E-304 (A)	214
5	Dr. Udayan Baruah	Information Technology	9832325749	hod.it@smit.smu.edu.in	D-307	216
6	Dr. R. Phipon	Mechanical Engineering	8906184911	hod.me@smit.smu.edu.in	F-441	222
7	Prof. (Dr.) S. Borah	Computer Applications	9735948888	hod.ca@smit.smu.edu.in	B-108	392
8	Dr. B. Bora	Management Studies	9832391333	hod.ms@smit.smu.edu.in	D-105	220
9	Prof. (Dr.) A Raychaudhuri	Mathematics	9474056669	hod.math@smit.smu.edu.in	E-204	219
10	Prof. (Dr) G.C Mishra	Physics/Add. Controller of Examination	9832391572	hod.physics@smu.edu.in	E-104	317
11	Prof. (Dr.) N.K. Bhattacharyya	Chemistry	9382371372	hod.chemistry@smit.smu. edu.in	D-108	218
13	Mr. Pajany M	Coordinator, IQAC	8248201133	pajany.m@smit.@smu.edu.in	A-311	512/298
14	Dr. Ramu T	DCE (Tech)	9663262747	dce.tech@smit.smu.edu.in	C-301	688
15	Mr. Himangshu Pal	Chairman, Admission	9732947000	admission.smit@smu.edu.in	C-116	457
16	Dr. NK.Bhattacharyya	Head, Alumni	9679888929	nayan.b@smit.smu.edu.in	B-106	381
17	Mr. Biswaraj Sen	Head, Industry Academia Linkage and T&P	9434153434	biswaraj.s@smit.smu.edu.in	C-130	274
18	Dr. Bhaskar Bhuiyan	Asso. Head (T & P)	9775448654	bhaskar.b@smit.smu.edu.in	C-130	443
19	Dr. Rustam Ali Ahmed	Head, IT Council	7002453818	rustam.al@smit.smu.edu.in	C-205	354
20	Dr. Kh Premoda Devi	Librarian	8145886905	librarian@smit.smu.edu.in	F-511	238
21	Mr. Binod Hingmang	AM (Fin)	9732941000	binod.hingmang@smu.edu.in	C-108	303
22	Mr. Sonam R. Bhutia	AM (HR)	9775230601	sonamrinchen.b@crh.smu.edu.in	A-104	412
General Administration						
1	Lt. Col. D. B. Chettri	Head Administrative Officer	9760095631	head.admin@smit.smu.edu.in	B-105	262
2	Dr. A. K. Roy	Chief Warden	9679703193	amit.r@smit.smu.edu.in	B-101	352
3	Col. Manoj Kumar	Head Engineering	9614902435	manoj.k@smit.smu.edu.in	Project Office	256
SMIT Health Centre						
1	Dr. Anita Pateshwari	Sr. Resident Doctor	9434071982		L-106	258
2	Dr. Ashis Sharma	Sr. Resident Doctor	9614902435		DS-1	482
3	Medical Staff	SMIT Dispensary	7797006296 9647460209 9064408234		DS-3	227
Important Public Services						
1	Police	OC/Rangpo Police Stn	100 / (+91 3592) 240835			
2	Fire Brigade	East Sikkim	101 / (+91 3592) 233722 / (+91 3592) 202022			
3	Natural Calamities Dept.	East Sikkim	(+91 3592) 202371 / 202001			

Sikkim Manipal Institute of Technology
A constituent college of Sikkim Manipal University
Majitar, Sikkim, India - 737136,
Website: https://www.smit.smu.edu.in