SMIT SIKKIM MANIPAL UNIVERSITY
SIKKIM MANIPAL INSTITUTE OF TECHNOLOGY

Information Booklet

2023-24

Ranking

SMIT Rankings By Various Agencies 2023

INDIA TODAY

- Top Engineering Colleges in India: Rank- 45 (2023)
- Top Engineering (Private) Colleges in India: Rank-17 (2023)
- Top Private Engineering Colleges (East Zone): Rank 3 (2023)
- Top Emerging Private Colleges of this century: Rank-7 (2023)

Outlook

- Top 160 Private Institutes: Rank - 12 (2023)

competition success review — CSR-GHRDC Engineering Colleges Survey 2023

- Ranking of Top Engineering Colleges of Super Excellence (Rank - 04) (2023)
- Placements, USP, Social Responsibility, Networking & Industry Interface (Rank - 10) (2023)
- Faculty, Research, Consultancy, EDP & Other Programmes (Rank - 14) (2023)

IIRF — Indian Institutional Ranking Framework (IIRF)

- Best Engineering Colleges in India (Private): Rank - 76 (2023)

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 conducive environment towards holistic growth on setting out first time away from your home. Discipline is the hallmark of SMIT which facilitate overall constructive personality development 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 facilitate you in pursuing your objectives of life under the best educational, social and cultural environment so as to make the SMIT, and your family proud of your accomplishments.

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.

MODIFIED ACADEMIC CALENDAR FOR ODD SEMESTER: 2023 (ALL COURSES)

10 Jul- 30 Jul 2023	Commencement of student Induction programme for 1st semester B.Tech course.
17 Jul – 30 Jul 2023	Commencement of student Induction programme for 1st semester of all other UG courses
31 Jul 2023	Commencement of classes of 1st semester of all UG courses
01 Aug 2023	Commencement of classes of 1st semester of all PG courses
07 Aug 2023	Semester registration for all higher semester students (Both UG and PG) including rejoining of the subjects/semester ***(Less 1st semester students)***
14 Aug 2023	Last date of semester registration
04 Sep– 12 Sep 2023	Quiz-I
04 Sep– 12 Sep 2023	Student Feedback (Phase-I)
18 Sep - 23 Sep 2023	Sessional-I
03 Oct - 07 Oct 2023	Student Profiling/DAC meeting/Class Committee Meeting
23 Oct - 26 Oct 2023	**Mid Semester Break**
30 Oct - 03 Nov 2023	Quiz-II
30 Oct - 03 Nov 2023	Student Feedback (Phase-II)
04 Nov – 10 Nov 2023	Sessional-II
20 Nov - 22 Nov 2023	Re-Sessional/Special Sessional
24 Nov – 30 Nov 2023	Lab Sessional
30 Nov 2023	**Last Instructional Day**
02 Dec 2023 onwards	**Commencement of Odd Semester Examinations**
03 Jan 2024	Publication of Odd Semester Examinations Results*
06 Jan 2024	Last date for completing Additional Lab classes/Examination##
07 Jan 2024	Last date of application for Supplementary Examination (Online/Offline)*
08 Jan 2024	**Even Semester begins**
10 Jan 2024 onwards	Supplementary Examinations*

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

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 with reputed 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. TheIncubation 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 About E-Cell: The Entrepreneurship Development Cell (E-Cell) at Sikkim Manipal Institute of Technology (SMIT) aims to foster an entrepreneurial mindset among students and promote innovation and startup culture on campus. It provides access to funding, resources, and mentorship for student startups, as well as workshops and seminars to develop necessary skills. E-Cell collaborates with industry experts to provide exposure to the latest industry trends and developments. Its success can be seen in the number of successful startups that have emerged from SMIT in recent years. The E-Cell is the parent organization of Institution's Innovation Council, IPR Cell, National Innovation and Start-Up Policy, Pre-Incubation Centre, Innovation Studio, and Skill Development Cell. The E-Cell has played a significant role in promoting entrepreneurship on campus and helping students gain valuable real-world experience and essential skills for today's competitive job market.

1.1.10 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.

1.1.11 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.

1.1.12 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.

1.1.13 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.

1.1.14 Student Club: 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.

1.1.15 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.

1.1.16 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.

1.1.17 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.

1.1.18 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.

1.1.19 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 CSE (Data Science)	-
Civil Engineering (CE)	B.Tech. in CE	M.Tech in Structural Engineering
Computer Science and Engineering (CSE)	B.Tech. in CSE	M.Tech. in Computer Science and Engineering
	B.Tech in CSE (AI&ML)	
	B.Tech in CSE (IoT and Cyber Security including Block Chain Technology)	
Electrical & Electronics Engineering (EEE)	B.Tech. in EEE	M.Tech. in Power Electronics
Electronics & Communication Engineering (ECE)	B.Tech. in ECE	M.Tech. in Digital Electronics andCommunication Engineering
	B.Tech in (VLSI Design & Technology)	
	B.Sc in Computer Science	‘-
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)
	B.Sc (Economics)	
	BBA (Business Analytics in FinTech)	
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)	B.Sc in Physics	M. Sc. in Physics
Physical Education	B.Sc in Physical Education and Sprots (PE)	‘-
Clinical Psychology	B.Sc in Clinical Psychology	

2.3 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
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

2.4. 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

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

Physical Education and Sports (PE), 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.	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	12 (Compulsory Courses) +6 credits (Project/Online courses) + Seminar (of 2 credits) = 20 credits

	02 such courses can be obtained through MOOCs.	respective departments. The remaining 2 credits can be obtained from Seminar/Project work in the field of his/her Minor Specialization.	

2.5 Massive Open Online Courses (MOOCs) (SWAYAM)

Massive Open Online Courses (MOOCs) online courses available on the SWAYAM, developed by theGovernment 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 opting for the same will be considered for credit transfer. The students are only eligible to opt for not more than 20% of the total courses being offered in a particular semester through the SWAYAM platform.

2.6 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

2.7 Course Coding System

The course-coding system for Department/Program/Subject are organized by the short titles of the programs are as mentioned below:

- Civil Engineering (CE)
- Computer Science & Engineering (CS)
- Computer Science & Engineering (Artificial Intelligence and Machine Learning) (CSML)
- Computer Science & Engineering (IOT, Cyber Security including Block Chain Technology) (CSIC)
- Electronics and Communication Engineering (EC)
- Electrical and Electronics Engineering (EE)
- Information Technology (IT)
- Computer Science & Engineering (Data Science) (AD)
- Mechanical Engineering (ME)
- Material Science & Nano Technology (MN)
- Computer Application (CA)
- Business Administration (BA)
- Mathematics (MA)
- Physics (PH)
- Chemistry (CH)
- Computer Science (BC)
- Physical Education and Sports (PE)
- Economics (EN)
- General (GN)

The coding structure is as follows:

1. Levels of Courses

1.1 Level-0 (00-99) : Pre requisite courses
1.2 Level-1 (100-199) : Foundation or introductory courses (First Year)
1.3 Level-2 (200-299): Intermediate -level courses (Second Year)
1.4 Level-3 (300-399): Higher level courses (Third Year)
1.5 Level-4 (400-499): Advanced Courses (Fourth Year)
1.6 Level-5 (500-599): Courses at first year master's degree level for a 2 year master's degree program
1.7 Level-6 (600-699): Courses for second year of 2 year master's or 1 year master's degree program
1.8 Level-7 (700-799) & above: Courses limited to doctoral students.

2. Subject Type

1. Core Theory
2. Open Elective/Audit Course (To be offered to the other Dept. students)
3. Program Elective/Dept. specific Elective
4. Practical Subjects/Labs
5. Mini Project/Project based learning.
6. Major Project
7. Seminar/Grand Viva
8. Minor specialization to other department subjects
9. Industrial Training/Summer Internship/Skill Based Vocational Training Skill based vocational training is valid only for the students who will opt for the exit after 1st Yr or 2nd Year.

3. Coding Format

Program code	Level as per UGC	Version	Subject Type
Short name of the program (2 digit Alphabet)	3 digit based on the levels of course given in 1	Revision number – "A"	1 digit (1-9) Core Theory/ Elective Lab/ Project/ Industrial training etc.

For example, coding of B.Sc Computer Science (BC) program:

Code UGC guidelines	**Subject Name**	**Remarks**
BC101A1	Computational Methods	Core Theory/UGC level-1 course
BC201A1	Computer Organization and Architecture	Core Theory/UGC level-2 course
BC302A1	Embedded Systems	Core Theory/UGC level-3 course
BC401A1	IoT Gateways and Edge Computing	Core Theory/UGC level-4 course
BC201A3	R Programming	Program Elective/UGC level-2 course
BC301A2	Wireless Sensor Networks	Open Elective/UGC level-3 course
BC102A4	Digital Electronics Lab	Lab/UGC level-1 course

2.8 Credit System

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

2.9 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).

2.9.1 Award of Grade

The relative grading scheme using the mean (μ) and standard deviation (σ) parameters calculated from the 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.

2.9.2 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:

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

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.

2.10 Credit requirement for promotion to higher semester

The credit requirement for promotion to higher semester for all courses commenced from Academic Year 2023 will follow university guidelines.

2.11 Award of Degree

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

2.11.1 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 , BBA, & B.Sc 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.

2.12 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.

2.13 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 /Experimentalresults	Knowledge ofthe student on Experiment/ Program	Totalmarks
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.

2.13.1 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.

2.13.2 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.

B.Sc Physical Education and Sports

- The internship takes place in the V semester, while the project involves Comprehensive Student Teaching in School.
- ***Mini Project: VI semester is focused on Mini Project.***

Industrial Training:

Industrial Training-I: B. Tech Students should have to undergo a summer training of minimum 2 weeksduration 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.

2.13.3 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/-.

2.13.4 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.

2.13.5 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.

2.14 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.

2.15 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.

2.16 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**
MA101A1	Engineering Mathematics –I	4	MA102A1	Engineering Mathematics -II	4
CE101A1	Elements of Civil Engineering	3	ME102A1	Elements of Mechanical Engineering	3
PH101A1	Engineering Physics	4	CH101A1	Engineering Chemistry	4
EC101A1	Basic Electronics	3	EE101A1	Elements of Electrical Engineering	3
BA101A1	Communication Skills	2	CS101A1	Computer Programming in C	4
ME101A1	Engineering Graphics	2	CH102A1*	Environmental Science	1
BP101A1*	Constitution of India *	1	CS101A4	Computer Programming Lab	1
ME101A4	Workshop Practice	1	CH101A4	Engineering Chemistry Lab	1
PH101A4	Engineering Physics Lab	1	GN102A4	Experiential Learning Lab-II/ NCC	1
GN101A4	Experiential Learning Lab-I/ 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**
MA101A1	Engineering Mathematics –I	4	MA102A1	Engineering Mathematics -II	4
CE101A1	Elements of Civil Engineering	3	ME102A1	Elements of Mechanical Engineering	3
PH101A1	Engineering Physics	4	CH101A1	Engineering Chemistry	4
EC101A1	Basic Electronics	3	EE101A1	Elements of Electrical Engineering	3
BA101A1	Communication Skills	2	CS101A1	Computer Programming in C	4
ME101A1	Engineering Graphics	2	CH102A1*	Environmental Science	1
BP101A1*	Constitution of India *	1	CS101A4	Computer Programming Lab	1
ME101A4	Workshop Practice	1	CH101A4	Engineering Chemistry Lab	1
PH101A4	Engineering Physics Lab	1	GN102A4	Experiential Learning Lab-II/ NCC	1
GN101A4	Experiential Learning Lab-I/ 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

MA101A1: 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.

EC101A1: 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.

CE101A1: 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.

PH101A1: ENGINEERING PHYSICS, Credit: 4 (L-3, T-1, P-0)
Vibrations, Oscillators, Resonance, Waves, Interference of light waves, Young's experiment, Thin filminterference, 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).

ME101A1 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.

BA101A1 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.

ME101A4- Workshop Practice, Credit:1 (L-0, T-0, P-2)
Carpentry, Plumbing, Fitting, Soldering

PH101A4: 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.

GN101A4: 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

MA102A1: 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.

CH101A1: 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.

EE101A1: 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.

CS101A1: 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.

ME102A1: 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.

CH 102A1*: 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).

CH101A4: 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.

CS101A4: 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.

GN102A4: 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 syllabus is displayed on SMIT Website

3.2.1 B. Tech CSE (Data Science)

THIRD SEMESTER				FOURTH SEMESTER		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
	MA201A1	Engineering Mathematics – III (Probability & Statistics)	3	MA202A1	Engineering Mathematics –IV (Discret Mathematics)	3
	CD201A1	Digital Systems and Computer Organization	4	CD202A1	Design & Analysis of Algorithms	4
	CS202A1	Data Science	4	CD207A1	Database Mgt Systems	3
	CS203A1	Data Structures	3	CD208A1	Artificial Intelligence	3
	CD204A1	Object-Oriented Programming using Python	3	CD20XXX	Program Elective-I (+MOOC Based)	3
II	CD205A1	Operating Systems	3	CD201A2	Open Elective-1 (+MOOC Based)/ NCC)	3
	CD201A4	Data Structures & OOPs using Python Lab	1	GN201A1	UHV-II	3
	CD202A4	Data Science Lab	1	CD203A4	Artificial Intelligence Lab	1
	CD201A5	Project Based Learning-I	1	CD204A4	Database Management Systems Lab	1
				CD202A5	Project Based learning-II	1
Total:			**23**	**Total:**		**25**
FIFTH SEMESTER				**SIXTH SEMESTER**		
	GN302A1	Technical Writing	1	BA346A1	Industrial Management	2
	CD301A1	Formal Language & Automata Theory	3	CD304A1	Deep Learning	3
	CD302A1	Big Data Analytics	3	CD305A1	Text Analytics and Natural Language Processing	3
	CD303A1	Machine Learning	3	CD306A1	Data Communications and Networks	3
III	CD30XXX	Program Elective-2 (+MOOC Based)	3	CD30XXX	Program Elective-3 (+MOOC Based)	3
	CD301A2	Open Elective II/MOOC/NCC	3	CD30XXX	Program Elective-4(+MOOC based)	3
	GN301A1	Behaviour Management & Leadership (Capsule Course/ Certificate course)	3	CD302A2	Open Elective-III/MOOC/NCC	3
	CD301A4	Big Data Analytics Lab	1	GN301A2	Quantitative Aptitude & Logical Reasoning**	0
	CD302A4	Machine Learning Lab	1	CD303A4	Deep Learning Lab	1
	CD301A5	Project Based Learning-III	1	CD304A4	Text Analytics and NLP Lab	1
	CD301A9	Industrial Training-I	1	CD302A5	Mini Project	2
Total:			**23**	**Total:**		**24**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CD401A2	Open Elective-IV/MOOC/NCC	0	CD402A6	Research Project/Industrial Project- Phase II	12
	CD40XXX	Program Elective-5(+MOOC based)	0			
	CD401A6	Research Project/Industrial Project-Phase I	12			
	CD401A9	Industrial Training-II	2			
Total:			**14**	**Total:**		**12**

List of Program Elective

Subject Code	Program Elective-I (4th Semester)
CD201A3	Analog Electronics and Integrated Circuits
CD202A3	Digital Signal Processing
CD202A3	Programming in Java
CD204A3	ARM controller
	Program Elective-II (5th Semester)
CD301A3	Digital Image Processing
CD302A3	Compiler Design
CD303A3	AI for Internet of Things (IoT)
CD304A3	Speech Processing

	Program Elective-III (6th Semester)
CD305A3	Cloud Computing
CD306A3	Remote Sensing & GIS
CD307A3	Augmented and Virtual Reality
CD308A3	Parallel and Distributed Algorithms
	Program Elective-IV (6th Semester)
CD309A3	Social Network Analytics
CD310A3	Block Chain Technologies
CD311A3	High-Performance Computing
CD312A3	Bio-Inspired Computing
	Program Elective-V (7th Semester)
CD401A3	Quantum Computing
CD402A3	Machine learning in VLSI Design
CD403A3	Cryptography and Network Security
CD404A3	Reinforcement Learning

List of Open Elective

Subject Code	Open Electives
CD201A2	**Open Elective (4th Semester):** Introduction to Python Programming
CD301A2	**Open Elective (5th Semester):** Data Analytics using Python
CD302A2	**Open Elective (6th Semester):** Introduction to Machine Learning
CD401A2	**Open Elective (7th Semester):** Biometric Technology

List of Honors Specializations/ Minor (Cross Domain) Specializations

**** HONOURS SPECIALIZATION:**		**C (20)**
I. AI in Healthcare:		
CD209A1	Artificial Intelligence for Health and Medicine	3
CD307A1	Bioinformatics	3
CD311A1	Healthcare Informatics	3
CD401A1	Artificial Intelligence in Medical Imaging	3
CD403A6	Project Work	6
CD401A7	Seminar	2
II. Intelligent Robotics &Automation		
CD210A1	Introduction to Robotics & Programming	3
CD308A1	Human Machine Interface	3
CD312A1	Industrial Automation and Control	3
CD402A1	Game Theory	3
CD404A6	Project Work	6
CD402A7	Seminar	2
III. Infrastructure and Big Data Management		
CD211A1	Parallel and Distributed Computer Architecture	3
CD309A1	Cloud Computing architecture and services	3
CD313A1	Big Data algorithms for large scale data processing	3
CD403A1	Digital Marketing	3
CD405A6	Project Work	6
CD403A7	Seminar	2
IV. Computer Vision and Speech Technology		
CD212A1	Introduction to Speech Disorders	3
CD310A1	Biometric Technology	3
CD314A1	Automatic Speech Recognition	3
CD404A1	Deep Learning for Computer Vision	3
CD406A6	Project Work	6
CD404A7	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	MA10105A	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	Professional Communication & 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	Geotechnical Lab	1
	CE10901A	Industrial Training -I	1	CE10409A	Geoinformatics 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 Elective Subject:

PROGRAM ELECTIVE-I (VI SEMESTER)

Year	Course Code	Course Title
VI	CE10301A	Ground Water Engineering
	CE10302A	Environment Impact Assessment
	CE10303A	Solid Waste Management
	CE10304A	Transport Planning
	CE10305A	Design of Hydraulic Structures

PROGRAM ELECTIVE-II (VII SEMESTER)

Year	Course Code	Course Title
VII	CE10306A	Finite Element Method of Analysis
	CE10307A	Ground Improvement Techniques
	CE10308A	Structural Dynamics & Earthquake Engineering
	CE10309A	Advanced Foundation Engineering
	CE10310A	Advanced Structural Design
	CE10311A	Advanced Structural Analysis
	CE10312A	Bridge Engineering
	CE10313A	Repair and Rehabilitation of Structures

OPEN ELECTIVE-II (V SEMESTER)

Year	Course Code	Course Title
V	CE10203A	Disaster Management

OPEN ELECTIVE-III (VI SEMESTER)

Year	Course Code	Course Title
VI	CE10202A	Optimization Techniques

OPEN ELECTIVE-IV (VII SEMESTER)

Year	Course Code	Course Title
VII	CE10201A	Fundamentals of RS&GIS

List of Minor (Cross Domain) Specialization

NATURAL HAZARDS AND DISASTER MANAGMENT	
CE10801A	Engineering Seismology
CE10802A	Flood and Drought
CE10803A	Landslide Hazard Assessment and Mitigation
CE10804A	Disaster Management
CE10702A	Seminar
CE10604A	Project

List of Honors

EARTHQUAKE RESISTANT STRUCTURES	
CE10314A	Engineering Seismology
CE10315A	Advanced Concrete Technology
CE10316A	Introduction to Structural Dynamics
CE10317A	Earthquake Design and Construction
CE10701A	Seminar
CE10603A	Project

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	MA205A1	Discrete Mathematics	3	MA206A1	Probability, Statistics and Stochastic Processes	3
	CS201A1	Data Structures	4	CS206A1	Design and Analysis of Algorithms	4
	CS202A1	Digital Circuits & Logic Design	4	CS207A1	Computer Network-I	3
	CS203A1	Computer Organization and Architecture	3	CS208A1	Programming Methodology	3
	CS204A1	Professional and Software Ethics	3	CS2**A3	Program Elective-I (+MOOC Based)	3
	CS205A1	Object Oriented Concepts & Programming using C++	3	CS2**A2	Open Elective-I (+MOOC Based)/NCC	3
	GN201A1	UHV-II	3	CS203A4	Programming Methodology Lab	1
	CS201A4	Data Structures Lab	1	CS204A4	Algorithm Lab	1
	CS202A4	Object Oriented Concepts & Programming using C++ Lab	1	CS202A5	Project Based Learning-I	1
	CS201A5	Project Based Learning-I	1			
Total:			**26**	**Total:**		**22**
FIFTH SEMESTER				**SIXTH SEMESTER**		
III	BA346A1	Industrial Management	2	GN301A2	Quantitative Aptitude & Logical Reasoning**	0
	CS301A1	Operating System	3	CS304A1	Software Engineering	3
	CS302A1	Formal Languages & Automata Theory	3	CS305A1	Database Management System	3
	CS303A1	Computer Network-II	3	CS306A1	Compiler Design	3
	CS3**A3	Program Elective-2(+MOOC Based)	3	CS3**A3	Program Elective-3 (+MOOC Based)	3
	CS3**A2	Open Elective-2 (+MOOC Based/NCC)	3	CS3**A3	Program Elective-4 (+MOOC Based)	3
	GN302A1	Professional Communications & Technical writing	1	CS3**A2	Open Elective-3 (+MOOC based)/NCC	3
	CS301A4	Operating System Lab	1	GN301A1	Behavior Management and Leadership	3
	CS302A4	Computer Network Lab	1	CS303A4	Database Management System Lab	1

	CS301A5	Project Based Learning-II	1	CS304A4	Compiler Design Lab	1
	CS301A9	Industrial Training-II	1	CS302A5	Minor Project	2
Total:			**22**	**Total:**		**25**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CS4**A2	Open Elective-4 (+MOOC Based)	3	CS402A6	Research based Project/Industrial project phase-II	12
	CS4**A2	Program Elective-5 (+MOOC Based)	3			
	CS401A6	Research based Project/Industrial Project Phase-I	7			
	CS401A9	Industrial Training-II	1			
Total:			**14**	**Total:**		**12**
OR						

SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CS4**A2	Open Elective-4 (+MOOC Based)	3	CS4**A3	Program Elective-5 (+MOOC Based)	3
	CS401A6	Research based Project/Industrial Project Phase-I	@	CS402A6	Research based Project/Industrial project phase-II	12+7@
	CS401A9	Industrial Training-II	1			
Total:			**04**	**Total:**		**22**
@One year, Research based project/Industrial Project, Credit for Phase-I and Phase II allocated together as 12+7=19						

List of Electives

Programme Elective I (IV Semester)			
Year	**Sub Code**	**Sub Name**	**C**
2nd	CS201A3	PC Hardware and Peripherals	3
	CS202A3	Java Programming	3
	CS203A3	Python Programming	3
	CS204A3	Fundamentals of Web Technologies	3
	CS205A3	User interface/User experience (UI/UX) Design	3
	CS206A3	Information Transmission and Coding Theory	3
	CS207A3	Computer Graphics	3
	CS208A3	Unix Internals and Shell Programming	3
	CS209A3	Enterprise Resource Planning	3
	CS210A3	Microprocessors and Peripheral Devices	3
	CS211A3	Internet, Technology and Society	3
Open Elective I			
2nd	CS201A2	Programming with Data Structures	3
List of Electives for V Semester			
Programme Elective II			
Year	**Sub Code**	**Sub Name**	**C**
3rd	CS301A3	Biology	3
	CS302A3	Advanced Java Programming	3
	CS303A3	System Programming	3
	CS304A3	Discrete Structure	3
	CS305A3	Graph Theory	3
	CS306A3	System Simulation and Modelling	3
	CS307A3	Advanced Web Technologies	3
	CS308A3	Bioinformatics	3
	CS309A3	Digital Image Processing	3
	CS310A3	Embedded Systems	3
	CS311A3	Low Power Circuits and Systems	3
	CS312A3	Information Retrieval	3
	CS313A3	Advanced Algorithms	3
	CS314A3	Artificial Intelligence	3
	CS315A3	Artificial Neural Networks	3
	CS316A3	Data Warehousing and Data Mining	3
	CS317A3	Real Time Systems	3
	CS318A3	Social Network Analysis	3
	CS319A3	VLSI Design	3
	CS320A3	Signals and Network	3
	CS321A3	Soft Skills and Interpersonal Communication	3

	CS322A3	Human Resource Development & Organizational Behavior	3
	CS323A3	Principles of Programming Languages	3
Open Elective -II			
3rd	CS301A2	Programming with Java	3
	CS303A2	Problem Solving and Analysis of Algorithm	3

List of Electives for VI Semester			
PROGRAMME ELECETIVE III & IV			
Year	**Sub Code**	**Sub Name**	**C**
3rd	CS324A3	Latest Trends in Computer Science	3
	CS325A3	R Programming	3
	CS326A3	Agile Methodology	3
	CS327A3	Software Quality Management	3
	CS328A3	Design Thinking	3
	CS329A3	Haskell Programming	3
	CS330A3	Speech and Natural Language Processing	3
	CS331A3	Neural Networks and Deep Learning	3
	CS332A3	Remote Sensing	3
	CS333A3	Autonomous Mobile Robotics and Computational Intelligence	3
	CS334A3	Geographical Information System	3
	CS335A3	Machine Learning	3
	CS336A3	Ethical Hacking	3
	CS337A3	High Performance Computing	3
	CS338A3	Human Computer Interaction	3
	CS339A3	Internet of Things	3
	CS340A3	Block Chain Coding	3
	CS341A3	Augmented Reality	3
	CS342A3	Data Analytics	3
	CS343A3	Big Data	3
	CS344A3	Cloud Computing	3
	CS345A3	Deep Learning	3
	CS346A3	Soft Learning	3
	CS347A3	Computer Vision	3
	CS348A3	Ad-Hoc Wireless Networks	3
	CS349A3	Cryptography and Network Security	3
	CS350A3	Mobile Computing	3
	CS351A3	Computational Number Theory	3
	CS352A3	Advanced Operating System	3
	CS353A3	Fault Tolerant Computing	3
	CS354A3	Multi agent intelligent Systems	3
	CS355A3	Parallel and Distributed Algorithms	3
	CS356A3	Computational Geometry	3
	CS357A3	Object Oriented Analysis & Design Using UML	3
	CS358A3	VLSI System Design	3
OPEN ELECTIVE -3			
Year	Course Code	Course Title	C
3rd	CS303A2	Engineering Practices and software Ethics	3
	CS304A2	Programming with Python	3
	CS305A2	DBMS with SQL	3
	CS306A2	Developing Soft Skill and Interpersonal Communication	

LIST OF ELECTIVES FOR VII/VIII SEMESTER

PROGRAM ELECTIVE -5			
Year	Course Code	Course Title	C
4th	CS401A3	Distributed Database System	3
	CS402A3	Wireless Sensor Networks	3
	MA401A3	Queuing Theory and Modeling	3
	CS403A3	Quantum Computing	3
	CS404A3	Cyber Security	3
	CS405A3	Future Internet Architecture	3
OPEN ELECTIVE-4			
Year	Course Code	Course Title	C
4th	CS401A2	Distributed Systems	3
	CS402A2	Optimization Technique	3
	CS403A2	History of Science	3
	CS404A2	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 (Cross Domain) Specialization

Minor (Cross Domain) Specialization: B. Tech (Cyber Security)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS201A8	Signal and Networks	3
III	5th	CS301A8	1) Ethical Hacking and Data Privacy	3
		CS302A8	2) Seminar/Project work using Python	2
	6th	CS303A8	1) Cryptography and Network Security	3
		CS304A8 or CS305A8	2) Specialization Elective-I:12 Weeks duration (a) Intrusion Detection and Prevention System or (b) Block Chain	3
IV	7th Or 8th	CS401A8	Distributed Computing	3
		CS402A8 or CS403A8	Specialization Elective-II: 12 weeks duration on – Web Application Security OR Forensic of Cyber Security	3
		CS404A8	Incase Specialization Elective-II not opted, then- One Publication in the field of Cyber Security in International Conference / Journal (Scopus/ SCI)	
			Total	**20**

Minor (Cross Domain) Specialization: B.Tech (Artificial Intelligence)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS202A8	1) Introduction to Machine Learning	3
III	5th	CS306A8	1) Artificial Intelligence	3
		CS307A8	2) Seminar/Project work using Python	2
	6th	CS308A8	1) Block Chain	3
		CS309A8 OR CS310A8	2) Specialization Elective-I : 12 weeks duration- a) Artificial Neural Networks OR b) Mobile Robotics	3
IV	7th OR 8th	CS405A8	1) Soft Computing	3
		CS406A8 OR CS407A8	2) Specialization Elective-II: 12 Weeks duration a) Speech & Natural Language Processing OR b) Digital Image Processing	3
		CS408A8	In case specialization Elective-II : 12 weeks duration is not opted, then- One Publication in	

			the field of Artificial Intelligence in International Conference/Journal (Scopus)/SCI)	
			Total	**20**

Minor (Cross Domain) Specialization: B. Tech (Data Science)

Year	Semester	Subject Code	Subject Name	C
II	4th	CS8203A8	1) Probability & Statistics for Data Analytics	3
III	5th	CS311A8	1) Artificial Intelligence	3
		CS312A8	2) Seminar/Project work using Python or R-Programming	2
	6th	CS313A8	1) Big Data Analytics	3
		CS314A8 OR CS315A8 OR CS316A8	2) Specialization Elective-I : 12 weeks duration- a) Data Privacy & Security OR b) Bioinformatics c) IoT	3
IV	7th OR 8th	CS409A8	1) Information Retrieval	3
		CS410A8 OR CS411A8 OR CS412A8	2) Specialization Elective-II: 12 Weeks duration a) Optimization Technique OR b) Data Forensic OR c) Medical Image Processing	3
		CS413A8	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	CS201A8	1) Signals and Networks	3
III	5th	CS301A8	1) Ethical Hacking and Data Privacy	3
		CS302A8	2) Seminar/Project work using Python	2
	6th	CS303A8	1) Cryptography and Network Security	3
		CS304A8 OR CS305A8	2) Specialization Elective-I: 12 weeks duration- a) Intrusion Detection and Prevention System OR b) Block Chain	3
IV	7th OR 8th	CS401A8	1) Distributed Computing	3
		CS402A8 OR CS403A8	2) Specialization Elective-II: 12 Weeks duration a) Web Appliction Security OR b) Forensic of Cyber Security	3
		CS404A8	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	CS202A8	1) Introduction to Machine Learning	3
III	5th	CS306A8	1) Artificial Intelligence	3
		CS307A8	2) Seminar/Project work using Python	2
	6th	CS308A8	1) Block Chain	3
		CS309A8 OR CS310A8	2) Specialization Elective-I: 12 weeks duration- a) Artificial Neural Networks OR b) Mobile Robotics	3
	7th OR 8th	CS405A8	1) Soft Computing	3
		CS406A8 OR	2) Specialization Elective-II: 12 Weeks	3

IV		CS407A8	duration on a) Speech & Natural Language Processing OR b) Digital Image Processing	
		CS408A8	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	CS203A8	1) Probability & statistics for Data Analytics	3
III	5th	CS311A8	1) Artificial Intelligence	3
		CS312A8	2) Seminar/Project work using Python OR R Programming	2
	6th	CS313A8	1) Big Data Analytics	3
		CS314A8 OR CS315A8 OR CS316A8	2) Specialization Elective-I: 12 weeks duration- a) Data Privacy and Security OR b) Bioinformatics c) IoT	3
IV	7th OR 8th	CS409A8	1) Information Retrieval	3
		CS410A8 OR CS411A8 OR CS412A8	2) Specialization Elective-II: 12 Weeks duration a) Optimization Technique OR b) Data Forensic OR c) Medical Image Processing	3
		CS413A8	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)

THIRD SEMESTER				FOURTH SEMESTER		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
	MA1307	Engineering Mathematics-III	3	MA1402	Engineering Mathematics– IV	3
	EC201A1	Electronic Devices and Components	4	EC206A1	Electromagnetic Waves	4
	EC202A1	Digital Electronics and Systems Design	4	EC207A1	Analog Electronic Circuits	3
	EC203A1	Signals and Systems	3	EC208A1	Digital Signal Processing	3
	EC204A1	Network Analysis and Synthesis	3	EC2XXA3	Program Elective-I (+MOOC based)	3
II	EC205A1	Microprocessor, Midcrocontroller and ARM Processor	3 3	EC2XXA2	Open Elective-1 (+MOOC based)/NCC	3
	EC201A4	Electronic Devices and Components Lab.	1	GN201A1	UHV-II	3
	EC202A4	Digital Electronics and System Design Lab	1	EC203A4	Analog Electronic Circuits Lab	1
	EC201A5	Project Based Learning-I	1	EC204A4	Microprocessor and Micro Controller Lab	1
				EC202A4	Project Based Learning-II	1
Total:			**23**	**Total:**		**25**
FIFTH SEMESTER				**SIXTH SEMESTER**		
	GN302A1	Professional Communication & Technical Writing	1	BA346A1	Industrial Management	2
	EC301A1	Antenna Theory	3	EC304A1	Microwave Engineering	3
	EC302A1	Analog and Digital Comunication	3	EC305A1	Micro Electronics and VLSI Design	3
	EC303A1	Computer Networks	3	EC306A1	Linear and Digital Control System	3
	EC3XXA3	Program Elective-2 (+MOOC Based)	3	EC3XXA3	Program Elective-3(+MOOC Based)	3
III	EC3XXA2	Open Elective-2 (+MOOC Based)/ NCC	3	EC3XXA3	Program Elective-3(+MOOC Based)	3
	GN301A1	Behavior Management and Leadership	3	EC3XXA2	Open Elective-3(+MOOC Based)/	3

					NCC	
	EC301A1	Communication Engineering Lab	1	GN301A2	Quantitative Aptitude & Logical Reasoning**	0
	EC302A4	Digital Signal Processing Lab	1	EC303A4	HDL Simulation Lab	1
	EC301A5	Project Based Learning-III	1	EC304A4	Microwave Engineering Lab	1
	EC301A9	Industrial Training– I	1	EC302A5	Mini Project	2
Total:			**23**	**Total:**		**24**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	EC4XXA2	Open Elective-4 (+MOOC Based)	3	EC402A6	Research based Project/ Industrial Project Phase II	12
	EC4XXA3	Program Elective-5 (+MOOC Based)	3			
	EC401A6	Research based Project/Industrial Project Phase I	7			
	EC401A9	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**
EC201A3	Computer Organization and Architecture	3	EC301A3	Power Electronics	3
EC202A3	Data Base Management System	3	EC302A3	Advanced Electronics Devices	3
EC203A3	Electronic Instrumentation & Measurements	3	EC303A3	OOPs with C++	3
EC204A3	Python and R Programming	3	EC304A3	JAVA Programming	3
EC205A3	Data Structure	3	EC305A3	Data Science for Engineers	3
EC206A3	Internet of Things	3	EC306A3	Digital Image Processing	3
			EC307A3	Embedded Systems	3
PROGRAM ELECTIVE III			**PROGRAM ELECTIVE IV**		
EC308A3	Mobile Communication	3	EC314A3	Multimedia Communication	3
EC309A3	Information Theory & Coding	3	EC315A3	Detection and Estimation	3
EC310A3	Wireless Sensor Networks	3	EC316A3	Adaptive Signal Processing	3
EC311A3	Speech Processing	3	EC317A3	Machine Learning	3
EC312A3	MEMs and NEMs	3	EC318A3	Soft Computing Techniques	3
EC313A3	Automation and Robotics	3			
PROGRAM ELECTIVE V					
EC401A3	Advanced Computer Networks	3			
EC402A3	Cloud Computing	3			
EC403A3	Software Defined Networks	3			
EC404A3	Advanced DSP	3			
EC405A3	Deep Learning	3			
EC406A3	Computer Vision	3			

OPEN ELECTIVE I			**OPEN ELECTIVE II**		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
EC201A2	Introduction to IoT	3	EC301A2	Introduction to Robotics	3
OPEN ELECTIVE III			**OPEN ELECTIVE IV**		
EC303A2	Introduction to NANO Electronics	3	EC401A2	IIoT and Industry 4.0	3

Minor (Cross Domain) Specialization

Minor (Cross Domain) Specialization: **"Internet of Things"**

Sub Code	Subject Name	C
EC201A8	Sensor and Actuators for IoT	3
EC301A8	IoT Gateways and Edge Computing	3
EC302A8	Communication Pathways between cloud and IoT	3
EC401A8	Data Centre and Cloud Computing	3
EC404A6	Minor Specialization Project	6
EC402A7	Seminar	2

Honours Specialization

1) VLSI And Nano Technology 2) Signal Processing

Sub Code	Subject Name	C
EC207A3	Semiconductor Physics	3
EC319A3	Solid State Devices	3
EC320A3	Nano Electronic Devices and Materials	3
EC407A3	Advanced VLSI Design and applications	3
EC208A3	Signal Processing for Communication	3
EC321A3	Optimization Techniques	3
EC322A3	Pattern Recognition	3
EC408A3	Time frequency Analysis	3
EC403A6	Honours Project	6
EC401A7	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**
	MA1307	Engineering Mathematics – III	3	MA208A1	Engineering Mathematics – IV	3
	EE201A1	Circuits & Networks	4	EE206A1	Signals & Systems	4
	EE202A1	Measurement and Instrumentation	4	EE207A1	Electrical Machines-II	3
	EE203A1	Electrical Machines-I	3	EE208A1	GTD of Electrical Power	3
	EE204A1	Digital Electronics	3	EE2XXA3	Program Elective-1 (+MOOC Based)	3
II	EE205A1	Analog Electronic Circuits	3	EE2XXA2	Open Elective-1 (+MOOC Based)/ NCC	3
	EE201A4	Electric Circuits & PSPICE Lab	1	GN201A1	UHV-II	3
	EE202A4	Analog and Digital Electronics La	1	EE203A4	Electrical Machines Lab -I	1
	EE201A5	Project Based Learning-I	1	EE204A4	Measurement & Instrumentation Lab	1
				EE202A5	Project Based Learning-I	1
Total:			**23**	**Total:**		**25**
FIFTH SEMESTER				**SIXTH SEMESTER**		
	GN302A1	Professional Communication and technical Writing	1	BA346A1	Industrial Management	2
	EE301A1	Power Electronics	3	EE304A1	Power System Stability, Operation & Control	3
	EE302A1	Linear Control Systems	3	EE305A1	Advanced Control Theory	3
	EE303A1	Power System Analysis	3	EE306A1	Electrical Drives	3
	EE3XXA3	Program Elective-2 (+MOOC Based)	3	EE3XXA3	Program Elective-3 (+MOOC Based)	3
III	EE3XXA2	Open Elective-2 (+MOOC Based)/ NCC	3	EE3XXA3	Program Elective-4 (+MOOC Based)	3
	GN301A1	Behavior Mgt and Leadership	3	EE3XXA2	Open Elective-3 (+MOOC based)/NCC	3
	EE301A4	Advance Programming Lab	1	GN301A2**	Quantitative Aptitude & Logical Reasoning	0
	EE302A4	Control Lab	1	EE303A4	Power Electronics and Drives Lab	1
	EE301A5	Project Based Learning-II	1	EE304A4	Power System Lab	1
	EE301A9	Industrial Training-II	1	EE302A5	Minor Project	2
	EE308A2*	Data Structures and Algorithms	0	EE309A2*	Basics of Java	0
**** Optional Audit Course * Mandatory Audit Course**						
Total:			**23**	**Total:**		**24**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
	EE4XXA2	Open Elective-4 (+MOOC based)	3	EE402A6	Research based Project/ Industrial Project Phase-II	12
	EE4XXA3	Program Elective-5 (+MOOC based)	3			
	EE401A6	Research based Project/ Industrial Project Phase-I	7			
	EE401A9	Industrial Training-II	1			
Total:			**14**	**Total:**		**12**

PROGRAM ELECTIVE I			PROGRAM ELECTIVE II		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
EE201A3	Electromagnetic Theory	3	EE301A3	Microprocessor & Microcontroller	3
EE202A3	Process Control & Instrumentation	3	EE302A3	Digital System Design	3
EE203A3	Fundamentals of Nano Electronics	3	EE303A3	Data Base Mgt Systems	3

PROGRAM ELECTIVE III			PROGRAM ELECTIVE IV		
EE304A3	Latest Trends in Electrical & Electronics Engineering	3	EE307A3	Switchgear & Protection	3
			EE308A3	Electrical Machine Design	3
EE305A3	EHV AC&DC Transmission	3	EE309A3	Flexible AC Transmission System	3
EE306A3	Advanced Microprocessor & Embedded Systems	3			
PROGRAM ELECTIVE V					
EE401A3	High Voltage Engineering	3			
EE402A3	Digital Signal Processing	3			
EE403A3	Modern Power Converters	3			

OPEN ELECTIVE- I			OPEN ELECTIVE II		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
EE201A2	Analog Systems Design	3	EE301A2	Principles of Communication	3
EE202A2	Bio Medical Instrumentation	3	EE302A2	Software Engineering	3
EE203A2	Data Communication & Computer Networks	3	EE303A2	Fuzzy Logic and Evolutionary Algorithms	3
OPEN ELECTIVE III			**OPEN ELECTIVE IV**		
EE304A2	Renewable Energy Systems	3	EE401A2	Advanced Methods in Control Theory	3
EE305A2	Basics of Data Science with Python Programming	3			
EE306A2	Wave Guides & Antena	3	EE402A2	Machine Learning	3
EE307A2	VLSI Design	3	EE403A2	Real Time Embedded System	3
			EE404A2	Digital Image Processing	3

Honours/ Minor (Cross Domain) Specialization

Electric-Drive Vehicle Engineering

Sub Code	Subject Name	C	Sem
EE201A8	Introduction to Hybrid and Electric Vehicles	3	IV
EE301A8	Energy Storage Technology	3	V
EE302A8	Foundations of Optimization	3	VI
EE401A8	Advance Power Converters	3	VII

Power and Energy Systems

Sub Code	Subject Name	C	Sem
EE202A8	Sustainable and Renewable Energy Technology	3	IV
EE303A8	Computational Intelligence for Power Applications	3	V
EE304A8	Smart Grid	3	VI
EE402A8	Power Electronics for Renewable Energy Technologies	3	VII

3.2.6 B. Tech Information Technology (IT)

THIRD SEMESTER				FOURTH SEMESTER		
Yr	Sub Code	Sub Name	C	Sub Code	Sub Name	C
	MA209A1	Engineering Maths-III	3	MA210A1	Engineering Maths- IV	3
	IT200A1	Data Structure	4	IT221A1	Object Oriented Programming with C++	4
	IT201A1	Digital Circuits and Logic Design	4	IT222A1	Database Management Systems	3
	IT202A1	Python Programming	3	IT223A1	Formal Language & Automata	3
	IT203A1	NumericalTechniques	3	IT21*A3	Program Elective-I (+MOOC Based)	3
II	IT204A1	Computer Organization and Architecture	3	IT21*A2	Open Elective-I (+MOOC Based/NCC)	3
	IT205A4	Data Structure Lab	1	GN201A1	UHV-II	3
	IT206A4	Digital Circuits and Logic Design Lab	1	IT224A4	OOP with C++ Laboratory	1
	IT207A5	Project Based Learning-I	1	IT225A4	Database Management Systems Lab	1
				IT226A5	Project Based Learning-II	1
Total:			**23**	**Total:**		**25**
FIFTH SEMESTER				**SIXTH SEMESTER**		
	GN302A1	Professional Communication & Technical Writing	1	BA346A1	Industrial Management	2
	IT300A1	Design and Analysis of Algorithms	3	IT321A1	Computer Networks	3
	IT301A1	Operating Systems	3	IT322A1	Web Technology and Web Services	3
	IT302A1	Data Communication	3	IT323A1	Software Engineering	3
III	IT32*A3	Program Elective-2 (+MOOC Based)	3	IT33*A3	Program Elective-3 (+MOOC Based)	3
	IT32*A2	Open Elective-2 (+MOOC Based) /NCC	3	IT34*A3	Program Elective-4 (+MOOC Based)	3
	GN301A1	Behaviour Management & leadership	3	IT33*A2	Open Elective 3 (+MOOC Based/NCC)	3
	IT303A4	Operating System Lab	1	GN301A2	Quantitative Aptitute and Logical Reasoning ** (T&P)	-
	IT304A4	Java Programming Lab	1	IT324A4	Computer Network Lab	1
	IT305A5	Project Based Learning-III	1	IT325A4	Web Technology and Web Services Lab	1
	IT306A9	Industrial Training-I	1	IT326A5	Mini Project	2
Total:			**23**	**Total:**		**24**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	IT44*A2	Open Elective 4 (+MOOC Based)	3	IT400A6	Research based Project/Industrial Project Phase II	12
	IT45*A3	Program Elective 5 (+MOOC Based)	3			
	IT400A5	Research based Project/Industrial Project-Phase I	7			
	IT401A9	Industrial Training-II	1			
Total:			**14**	**Total:**		**12**
					Total Credit =	**122**

List of Electives for Semester IV

Program Elective-I	
COURSE CODE	**COURSE TITLE**
IT211A3	Simulation and Modeling
IT212A3	Information Systems and Security
IT213A3	Computer Graphics
IT214A3	Microprocessors
IT215A3	Numerical Technique

Open Elective-I	
COURSE CODE	**COURSE TITLE**
IT211A2	Management Information Systems
IT212A2	Geographical Information Systems

List of Elective for V Semester

Program Elective-II	
Sub Code	**Subject Name**
IT321A3	Artificial Intelligence
IT322A3	Cloud Computing
IT323A3	Microcontrollers

IT324A3	Information System Management
IT325A3	Information Theory

Open Elective-II	
Sub Code	**Subject Name**
IT321A2	Introduction to Artificial Intelligence
IT322A2	Enterprise Resource Planning
IT323A2	Communication Techniques

List of Elective for VI Semester

Program Elective-III	
Sub Code	**Subject Name**
IT331A3	Natural Language Processing
IT332A3	Digital Image Processing
IT333A3	Information Retrieval
IT334A3	Fog Computing
IT335A3	Wireless Sensor Networks
IT336A3	Data Mining
IT337A3	Mobile Communication
Program Elective-IV	
Sub Code	**Subject Name**
IT341A3	Latest Trends in Information Technology
IT342A3	System Programming
IT343A3	Bio Inspired Computing
IT344A3	Mobile Computing
IT345A3	Robotics
IT346A3	Real Time Systems
IT347A3	Big Data Analytics
IT348A3	Machine Learning/ Deep Learning
Open Elective-III	
Sub Code	**Subject Name**
IT331A2	Internet of Things
IT332A2	Fundamentals of Machine Learning
IT333A2	e-Commerce

List of Elective for VII Semester

Program Elective-V	
Sub Code	**Subject Name**
IT450A3	Multimedia Computing and Communications
IT451A3	Cryptography and Network Security
IT452A3	Neural Networks
IT454A3	Pattern Recognition
IT454A3	Web 3.0
IT455A3	Soft Computing
IT456A3	Distributed Computing
IT457A3	Grid Computing
IT458A3	Cyber Physical Systems
IT459A3	Social Network Analysis
Open Elective-IV	
Sub Code	**Subject Name**
IT440A2	Introduction to Soft Computing
IT441A2	Cyber Security
IT442A2	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 (Cross Domain) 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	MA1305	Engineering Mathematics- III	3	MA204A1	Numerical Methods	3
	ME201A1	Thermal Engineering -I	4	ME206A1	Fluid Mechanics & Hydraulic Machines	4
	ME202A1	Strength of Materials	4			
	ME203A1	Manufacturing Process	3	ME207A1	Theory of Machines-I	3
	ME204A1	Material Science	3	ME208A1	Manufacturing & Metrology	3
	ME205A1	Mechanical Drawing	3			
	GN201A1	UHV-II	3	ME2XXA3	Program Elective – I (+MOOC Based)	3
	ME201A1	Strength of Materials lab	1			
	ME202A1	CAE Lab	1	ME2XXA2	Open Elective-I (+MOOC Based)	3
	ME201A5	Project Based Learning -I	1	GN301A1	Leadership and Behavior Management	3
				ME203A4	Fluid Mechanics Lab	1
				ME204A4	Manufacturing and Metrology Lab	1
				ME202A5	Project Based Learning-II	1
Total:			**26**	**Total:**		**25**
	FIFTH SEMESTER			**SIXTH SEMESTER**		
III	ME301A1	Thermal Engineering-II	3	BA346A1	Industrial Management	2
	ME302A1	Machine Design-I	3	ME304A1	Heat Transfer	3
	ME303A1	Theory of Machines-II	3	ME305A1	Machine Design-II	3
	ME3XXA3	Program Elective – II (+MOOC Based)	3	ME306A1	Operation Research	3
				ME3XXA3	Program Elective-III (+MOOC Based)	3
	ME3XXA2	Open Elective-II (+MOOC Based)	3			
				ME3XXA3	Program Elective-IV (+MOOC Based)	3
	GN302A1	Professional Communication and Technical Writing	1	ME3XXA2	Open Elective-III (+MOOC Based)	3
	ME301A4	Thermal Energy Lab	1	ME303A4	Machine Dynamics Lab	1
	ME302A4	Computational Lab	1	ME304A4	Heat Transfer Lab	1
	ME301A5	Project Based Learning III	1	ME302A5	Minor Project	2
				GN301A2	Quantitative Aptitude and Logical Reasoning	0
	ME301A9	Industrial Training-I	1			
Total:			**20**	**Total:**		**24**
	SEVENTH SEMESTER			**EIGHTH SEMESTER**		
IV	ME4XXA2	Open Elective-IV (+MOOC Based)	3	ME402A6	Research based Project/ Industrial Project Phase II	12
	ME4XXA3	Program Elective-5 (+MOOC Based)	3			
	ME401A6	Research Based Project/ Industrial Project Phase -I	7			
	ME401A9	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**
ME201A3	Automobile Engineering	3	ME301A3	Turbo Machinery	3
ME202A3	Power Plant Engineering	3	ME302A3	Advanced Manufacturing processes	3
ME203A3	Supply Chain Management	3	ME303A3	Internal Combustion Engine	3
PROGRAM ELECTIVE III			**PROGRAM ELECTIVE IV**		
ME304A3	Latest Trends in MechanicalEngineering	3	ME307A3	Refrigeration and Air Conditioning	3
ME305A3	Computer Integrated Manufacturing	3	ME308A3	Robotics and Automation	3
ME306A3	Tool Engineering and Design	3	ME309A3	Electric Vehicle Fundamentals	3
			ME310A3	Computational Fluid Dynamics	3

PROGRAM ELECTIVE V					
ME401A3	Mechanical Vibration	3			
ME402A3	Computer Aided Design & Manufacturing	3			
ME403A3	Finite Element Methods	3			
ME404A3	Production & Operations Management	3			
OPEN ELECTIVE I			**OPEN ELECTIVE II**		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
ME201A2	Renewable Energy	3	ME301A2	Energy Management	3
ME202A2	Introduction to Research Publication and Research Ethics	3	ME302A2	Total Quality Management	3
OPEN ELECTIVE III			**OPEN ELECTIVE IV**		
ME303A2	Personnel Management & Industrial Relations	3	ME401A2	Statistical Method for Data Analysis	3
ME304A2	Financial Planning and Analysis	3	ME402A2	Decision Making Techniques	3

Honours / Minor (Cross Domain) Specialization

Automotive Engineering (12 Credits)

Sub Code	Sub Name	C
ME201A8	Alternative Fuels and Lubrications for Engines	3
ME301A8	Automotive Electrical and Electronics Systems	3
ME302A8	Vehicle Dynamics	3
ME401A8	Automotive Repair and Maintenance	3

Machine Design

Sub Code	Sub Name	C
ME202A8	Composite Materials	3
ME303A8	Tribology	3
ME304A8	Design of Mechanical Systems	3
ME402A8	Fatigue and Fracture	3

Robotics and Automation

Sub Code	Sub Name	C
ME203A8	Introduction to Nanotechnology and MEMS	3
ME305A8	Flexible Manufacturing System	3
ME306A8	Mechatronics	3
ME403A8	Robot Kinematics and Dynamics	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 actual strength.
3.	Management Studies Department offering open elective to Engineering Department	15% (± 2%) from each engineering department on actual strength
4.	Mathematics Department offering open elective to Engineering department	15% (± 2%) from each engineering department on actual strength

- 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 B. Tech Computer Science and Engineering (AI&ML)

THIRD SEMESTER				FOURTH SEMESTER		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
II	MA205A1	Discrete Mathematics	3	MA206A1	Statistics and Stochastic Processes	3
	CSML201A1	Data Structures	4	CSML207A1	Design and Analysis of Algorithms	4
	CSML202A1	Object Oriented Concepts & Programming using C++	4	CSML208A1	Deep Learning	3
	CSML203AI	Computer Organization and Architecture	3	CSML209A1	Software Engineering	3
	CSML204A1	Python Programming	3	CSML2**A3	Program Elective-I (+MOOC Based)	3
	CSML205AI	Machine Learning	3	CSML2**A2	Open Elective-I (+MOOC Based)/NCC	3
	GN201A1	UHV-II	3	CSML203A4	Deep Learning Lab	1
	CSML201A4	Data Structures Lab	1	CSML204A4	Algorithm Lab	1
	CSML202A4	Object Oriented Concepts & Programming using C++ Lab	1	CSML202A5	Project Based Learning-I	1
	CSML201A5	Project Based Learning-I	1			
Total:			**26**	**Total:**		**22**
FIFTH SEMESTER				**SIXTH SEMESTER**		
III	BA346A1	Industrial Management	2	GN301A2	Quantitative Aptitude & Logical Reasoning**	3
	CSML301A1	Operating System	3	CSML304A1	Database Management System	3
	CSML302A1	Formal Languages & Automata Theory	3	CSML305A1	Data Communication and Networks	3
	CSML303A1	Artificial Intelligence	3	CSML306A1	Compiler Design	3
	CSML3**A3	Program Elective-2(+MOOC Based)	3	CSML3**A3	Program Elective-3 (+MOOC Based)	3
	CSML3**A2	Open Elective-2 (+MOOC Based/NCC)	3	CSML3**A3	Program Elective-4 (+MOOC Based)	3
	GN302A1	Professional Communications & Technical writing	1	CSML3**A2	Open Elective-3 (+MOOC based)/NCC	3
	CSML301A4	Operating System Lab	1	GN301A1	Behavior Management and Leadership	3
	CSML302A4	Artificial Intelligence Lab	1	CSML303A4	Database Management System Lab	1
	CSML301A5	Project Based Learning-II	1	CSML304A4	Transfer Learning Lab	1
	CSML301A9	Industrial Training-II	1	CSML302A5	Minor Project	2
				**Optional Audit Course		
Total:			**22**	**Total:**		**28**
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CSML4**A2	Open Elective-4 (+MOOC Based)	3	CSML402A6	Research based Project/Industrial project phase-II	12
	CSML4**A3	Program Elective-5 (+MOOC Based)	3			
	CSML401A6	Research based Project/Industrial Project Phase-I	7			
	CSML401A9	Industrial Training-II	1			
Total:			**14**	**Total:**		**12**
OR						
SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CSML4**A2	Open Elective-4 (+MOOC Based)	3	CSLML4**A3	Program Elective-5 (+MOOC Based)	3
	CSML401A6	Research based Project/Industrial Project Phase-I	@	CSML402A6	Research based Project/Industrial project phase-II	12+7@
	CSML401A9	Industrial Training-II*	1			
Total:			**4**	**Total:**		**22**

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

@=7 @one year, Research based project/Industrial Project, credit for Phase-I and Phase II allocated together as 12+7=1

List of Electives

Programme Elective I (IV Semester)			
Year	**Sub Code**	**Sub Name**	**C**
2nd	CSML201A3	Java Programming	3
	CSML202A3	R Programming	
	CSML203A3	Fundamentals of Web Technologies	3
	CSML204A3	User interface/User experience (UI/UX) Design	3
	CSML205A3	Information Transmission and Coding Theory	3
	CSML206A3	Computer Graphics	3
	CSML207A3	Enterprise Resource Planning	3
	CSML208A3	Internet, Technology and Society	3
Open Elective I			
2nd	CSML201A2	Programming with Data Structures	3
List of Electives for V Semester			
Programme Elective II			
Year	**Sub Code**	**Sub Name**	**C**
3rd	CSML301A3	Biology	3
	CSML302A3	Advanced Java Programming	3
	CSML303A3	Discrete Structure	3
	CSML304A3	Graph Theory	3
	CSML305A3	System Simulation and Modelling	3
	CSML306A3	Advanced Web Technologies	3
	CSML307A3	Bioinformatics	3
	CSML308A3	Digital Image Processing	3
	CSML309A3	Information Retrieval	3
	CSML310A3	Advanced Algorithms	3
	CSML311A3	Object Oriented Analysis and Design Using UML	
	CSML312A3	Artificial Neural Networks	3
	CSML313A3	Data Warehousing and Data Mining	3
	CSML314A3	Real Time Systems	3
	CSML315A3	Social Network Analysis	3
	CSML316A3	Signals and Network	3
	CSML317A3	Soft Skills and Interpersonal Communication	3
	CSML318A3	Programming Methodology	3
Open Elective -II			
3rd	CSML301A2	Programming with Java	3
	CSML303A2	Problem Solving and Analysis of Algorithm	3

OPEN ELECTIVE -III			
Year	Course Code	Course Title	C
3rd	CSML303A2	Engineering Practices and software Ethics	3
	CSML304A2	Programming with Python	3
	CSML305A2	Developing Soft Skill and Interpersonal Communication	3

LIST OF ELECTIVES FOR VI SEMESTER

PROGRAM ELECTIVE -III &IV			
Year	Course Code	Course Title	C
4th	CSML319A3	Latest Trends in Computer Science	3
	CSML320A3	Agile Methodology	3
	CSML321A3	Design Thinking	3
	CSML322A3	Haskell Programming	3
	CSML323A3	Speech and Natural Language Processing	3
	CSML324A3	Neural Networks and Deep Learning	3
	CSML325A3	Autonomous Mobile Robotics and Computational Intelligence	3
	CSML326A3	Ethical Hacking	3
	CSML327A3	High Performance Computing	3
	CSML328A3	Human Computer Interaction	3

	CSML329A3	Internet of Things	3
	CSML330A3	Block Chain Coding	3
	CSML331A3	Augmented Reality	3
	CSML332A3	Data Analytics	3
	CSML333A3	Big Data	3
	CSML334A3	Cloud Computing	3
	CSML335A3	Soft Computing	3
	CSML336A3	Computer Vision	3
	CSML337A3	Ad-Hoc Wireless Networks	3
	CSML338A3	Cryptography and Network Security	3
	CSML339A3	Mobile Computing	3
	CSML340A3	Multi-agent Intelligent Systems	3
	CSML341A3	Parallel and Distributed Algorithms	3
	CSML342A3	Computational Geometry	3
	CSML343A3	VLSI System Design	3
PROGRAM ELECTIVE-V			
Year	Course Code	Course Title	C
4th	CSML401A3	Distributed Database System	3
	CSML402A3	Queuing Theory and Modeling	3
	CSML403A3	Quantum Computing	3
	CSML404A3	Cyber Security	3
	CSML405A3	Future Internet Architecture	3
	CSML406A3	Fuzzy Logic and its Application	3
	CSML407A3	Reinforcement learning	3
	CSML408A3	Speech Recognition	3
	CSML409A3	Knowledge Engineering and Expert Systems	3
	CSML410A3	Cognitive Systems	3
	CSML411A3	Agent Systems	3
OPEN ELECTIVE IV			
4th	CSML401A2	Distributed Systems	3
	CSML402A2	Optimization Technique	3
	CSML403A2	History of Science	3
	CSML404A2	Engineering Research Methodology	3

3.2.9 B. Tech Computer Science and Engineering (IoT and Cyber Security including Block Chain Technology)

THIRD SEMESTER				**FOURTH SEMESTER**		
Yr	**Sub Code**	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
II	MA205A1	Discrete Mathematics	3	MA206A1	Probability, Statistics and Stochastic Processes	3
	CSIC201A1	Data Structures	4	CSIC206A1	Design and Analysis of Algorithms	4
	CSIC202A1	Digital Circuits and Logic Design	4	CSIC207A1	Computer Networks	3
	CSIC203A1	Computer Organization and Architecture	3	CSIC208A1	IoT and Microcontroller	3
	CSIC204A1	Professional and Software Ethics	3	CSIC2**A3	Program Elective-I (+MOOC Based)	3
	CSIC205A1	Object Oriented Concepts & Programming using Java	3	CSIC2**A2	Open Elective-I (+MOOC Based)/NCC	3
	GN201A1	UHV-II	3	CSIC203A4	IoT and Microcontroller Lab	1
	CSIC201A4	Data Structures Lab	1	CSIC204A4	Algorithm Lab	1
	CSIC202A4	Object Oriented Concepts & Programming using C++ Lab	1	CSIC202A5	Project Based Learning-I	1
	CSIC201A5	Project Based Learning-I	1			
Total:			**26**	**Total:**		**22**
FIFTH SEMESTER				**SIXTH SEMESTER**		
	BA346A1	Industrial Management	2	GN301A2	Quantitative Aptitude & Logical	

					Reasoning**	
	CSIC301A1	Operating System	3	CSIC304A1	Software Engineering	3
	CSIC302A1	Formal Languages & Automata Theory	3	CSIC305A1	Database Management System	3
	CSIC303A1	Software Defined Networks	3	CSIC306A1	Cyber Security using Machine Learning	3
III	CSIC3**A3	Program Elective-2(+MOOC Based)	3	CSIC3**A3	Program Elective-3 (+MOOC Based)	3
	CSIC3**A2	Open Elective-2 (+MOOC Based/NCC)	3	CSIC3**A3	Program Elective-4 (+MOOC Based)	3
	GN302A1	Professional Communications & Technical writing	1	CSIC3**A2	Open Elective-3 (+MOOC based)/NCC	3
	CSIC301A4	Operating System Lab	1	GN301A1	Behavior Management and Leadership	3
	CSIC302A4	Software Defined Networks Lab	1	CSIC303A4	Database Management System Lab	1
	CSIC301A5	Project Based Learning-II	1	CSIC304A4	Cyber Security using Machine Learning Lab	1
	CSIC301A9	Industrial Training-II	1	CSIC302A5	Minor Project	2
				**Optional Audit Course		
Total:			**22**	**Total:**		**25**

SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CSIC4**A2	Open Elective-4 (+MOOC Based)	3	CSIC402A6	Research based Project/Industrial project phase-II	12
	CSIC4**A3	Program Elective-5 (+MOOC Based)	3			
	CSIC401A6	Research based Project/Industrial Project Phase-I	7			
	CSIC401A9	Industrial Training-II	1			
Total:			**14**	**Total:**		**12**

OR

SEVENTH SEMESTER				**EIGHTH SEMESTER**		
IV	CSIC4**A2	Open Elective-4 (+MOOC Based)	3	CSLML4**A3	Program Elective-5 (+MOOC Based)	3
	CSIC401A6	Research based Project/Industrial Project Phase-I	@	CSML402A6	Research based Project/Industrial project phase-II	12+7@
	CSIC401A9	Industrial Training-II*	1			
Total:			**4**	**Total:**		**22**

List of Electives

Programme Elective I (IV Semester)			
Year	**Sub Code**	**Sub Name**	**C**
2nd	CSIC201A3	Python Programming	3
	CSIC202A3	Fundamentals of Web Technologies	3
	CSIC203A3	User interface/User experience (UI/UX) Design	3
	CSIC204A3	Unix Internals and Shell Programming	3
	CSIC205A3	Enterprise Resource Planning	3
	CSIC206A3	Internet, Technology and Society	3
Open Elective I			
2nd	CSIC201A2	Programming with Data Structures	3
List of Electives for V Semester			
Programme Elective II			
Year	**Sub Code**	**Sub Name**	**C**
	CSIC301A3	Internet of Things	3
	CSIC302A3	Sensors and Sensing Systems	3
	CSIC303A3	Advanced Web Technologies	3
	CSIC304A3	Artificial Intelligence	3
	CSIC305A3	Artificial Neural Networks	3

3rd	CSIC306A3	Signals and Networks	3
	CSIC307A3	Advanced Java Programming	3
	CSIC308A3	Advanced Algorithms	3
	CSIC309A3	R Programming	3
	CSIC3310A	Data Analytics	3
Open Elective -II			
3rd	CSIC301A2	Programming with Java	3
	CSIC302A2	Problem Solving and Analysis of Algorithm	3

List of Electives for VI Semester			
Programme Elective III			
Year	**Sub Code**	**Sub Name**	**C**
3rd	CSIC311A3	Cryptography and Network Security	3
	CSIC312A3	Compiler Design	3
	CSIC313A3	Autonomous Mobile Robotics and Computational Intelligence	3
	CSIC314A3	Design Thinking	3
Programme Elective IV			
Year	**Sub Code**	**Sub Name**	C
3rd	CSIC315A3	Latest Trends in Computer Science	3
	CSIC316A3	Big Data	3
	CSIC317A3	Deep Learning	3
	CSIC318A3	Human Computer Interaction	3
	CSIC319A3	Cloud Computing	3
Open Elective -III			
3rd	CSIC303A2	Engineering Practices and Software Ethics	3
	CSIC304A2	Programming with Python	3
	CSIC305A2	DBMS with SQL	3
	CSIC306A2	Developing Soft Skills and Interpersonal Communication	3

List of Electives for VII & VIII Semester			
Programme Elective V			
Year	**Sub Code**	**Sub Name**	**C**
4th	CSIC401A3	Block Chain Technology	3
	CSIC402A3	Machine Learning	3
	CSIC403A3	Ethical Hacking	3
	CSIC404A3	Future Internet Architecture	3
	CSIC405A3	Digital Image Processing	3
	CSIC406A3	Computer Vision	3
Open Elective -IV			
4th	CSIC401A2	Distributed Systems	3
	CSIC402A2	Optimization Techniques	3
	CSIC403A2	History of Science	3
	CSIC404A2	Engineering Research Methodology	3

3.2.10 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

3.2.11 Bachelor of Business Administration (BBA)

BBA SEMESTER - I		
Sub Code	**Sub Name**	**C**
BA102A1	Principles and Practice of Management	3
MA105A1	Business Mathematics	4
BA103A1	Financial Accounting	4
BA104A1	Business Economics	3
BA105A1	Business Law	3
BA101A4	MS Application for Business	2
BA101A7	Research Orientation	1
Total credits for the Semester		**20**
BBA SEMESTER -II		
Sub Code	**Sub Name**	**C**
MA106A1	Quantitative Analysis	4
BA106A1	Human Resources Management	3
BA107A1	Business Environment	3
BA108A1	Organization Behaviour	3
BA109A1	Business Finance	4
BA110A1	Business Communications	3
BA102A7	Research Seminar I	1
Total credits for the Semester		**21**
BBA SEMESTER - III		
Sub Code	**Sub Name**	**C**
BA201A1	International Business	3
BA202A1	Production Management	4
BA203A1	Entrepreneurship and Small Business	3
BA204A1	Accounting for Management	4
BA205A1	Marketing Management	4
BA201A7	Research Seminar II	2
Total credits for the Semester		**20**
BBA SEMESTER -IV		
Sub Code	**Sub Name**	**C**
BA206A1	Business Policy and Strategy	3
BA207A1	Marketing Research	3
BA208A1	Marketing of Services	3
BA209A1	Consumer Behaviour	3
BA210A1	Project Management	4
BA211A1	Team Work and Leadership	3
BA202A7	Research Based Learning I	1
Total credits for the Semester		**20**
BBA SEMESTER - V		
Sub Code	**Sub Name**	**C**
BA301A7	Project Presentation and Seminar	4
CA1181A	E-commerce	3
BA301A1	Marketing Communication and Advertising	3
BA302A1	Logistics and Supply Chain Management	3

BA303A1	Industrial Relations	3
BA304A1	Banking and Insurance	3
BA302A7	Research Based Learning II	1
	Total credits for the Semester	**20**
	BBA SEMESTER -VI	
Sub Code	**Sub Name**	**C**
BA303A7	Viva- Voce on Research	3
BA305A1	Corporate Governance & Business Ethics	3
BA306A1	International Marketing Management	3
BA307A1	Rural Marketing	3
BA308A1	Human Resource Development	3
BA309A1	Management of Financial Services	3
BA310A1	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**
CS501A1	Advanced Algorithms	3
CS5**A3	Elective-I	3
CS5**A3-	Elective -II	3
CS5**A3	Elective -III	3
CS5**A3	ELECTIVE-IV	3
CS501A4	Machine Learning Lab	1.5
CS502A4	Advanced Algorithms Lab	1.5
CS501A5	Project Based Learning-I	2
	Total credits for the Semester	**20**
M.Tech (CSE) SEMESTER -II		
Sub Code	**Sub Name**	**C**
CS502A1	Theory of Computation	3
CS5**A3	Elective-V	3
CS5**A3	Elective -VI	3
CS5**A3	Elective -VII	3
CS5**A3	ELECTIVE-VIII	3
CS503A4	Advanced Programming Lab	1.5
CS504A4	Software and Data Analysis Lab	1.5
CS502A5	Project Based Learning-II	2
	Total credits for the Semester	**20**
M.Tech (CSE) SEMESTER - III		
Sub Code	**Sub Name**	**C**
CS601A6	Dissertation -Phase I	15
	Total credits for the Semester	**15**
M.Tech (CSE) SEMESTER -IV		
Sub Code	**Sub Name**	**C**
CS602A6	Dissertation Phase-II	25
	Total credits for the Semester	**25**

List of Electives (I Semester)

Sub.Code	**Sub. Name**
CS501A3	Advanced Computer Architecture
CS502A3	Advanced Database System
CS503A3	Bioinformatics
CS504A3	Digital Image Processing
CS505A3	Embedded Systems
CS506A3	Graph Theory for Computer Engineering Applications
CS507A3	Linux Internals
CS508A3	Real Time Systems
CS509A3	Remote Sensing
CS510A3	System Simulation and Modeling
CS511A3	Advanced Computer Networks
CS512A3	Advanced Software Engineering
CS513A3	Advanced Soft Computing
CS514A3	Object Oriented Analysis and Design using UML
CS515A3	Artificial Intelligence
CS516A3	Internet of Things
CS517A3	Intellectual Property Rights
CS518A3	Machine Learning Theory and Methods
CS519A3	Advanced Operating Systems

CS520A3	Queuing Theory and Modeling
CS521A3	Computer Vision
CS522A3	Block Chain Coding
CS523A3	Cyber Security
CS524A3	Communication Skills
CS525A3	Social Network Analysis
CS526A3	Parallel and Distributed Algorithms
CS527A3	Quantum Computing
CS528A3	Advanced Web Technology

List of Electives (II Semester)

Sub.Code	Sub. Name
CS529A3	Advanced Cryptography and Network Security
CS530A3	Big Data
CS531A3	Adhoc Wireless Networks
CS532A3	Cloud Computing
CS533A3	Data Warehousing and Data Mining
CS534A3	Geographical Information System
CS535A3	Engineering Research Methodology
CS536A3	Mobile Robotics and Intelligent Systems
CS537A3	Network Security
CS538A3	Optimization Techniques
CS539A3	VLSI Design
CS540A3	Wireless Sensor Networks
CS541A3	Data Analytics
CS542A3	Distributed Systems
CS543A3	Object Oriented Systems
CS544A3	Software quality Management
CS545A3	Speech and Natural Language Processing
CS546A3	Deep Learning
CS547A3	Artificial Neural Networks
CS548A3	Distributed Database Systems
CS549A3	Mobile Computing
CS550A3	High Performance Computing
CS551A3	Human Computer Interaction
CS552A3	Agile Methodology
CS553A3	Ethical Hacking
CS554A3	Soft Skills

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

M.Tech (DECE) SEMESTER - I		
Sub Code	**Sub Name**	**C**
EC501A1	Statistical Signal Processing	3
EC502A1	VLSI Design	3
EC5XXA3	Program Elective-I	3
EC5XXA3	Program Elective -II	3
EC5XXA3	Program Elective-III	3
EC501A4	VLSI Laboratory	1.5
EC502A4	Communication Laboratory	1.5
EC501A5	Project Based Learning-I	2
	Total credits for the Semester	**20**
M.Tech (DECE) SEMESTER -II		
Sub Code	**Sub Name**	**C**
EC503A1	Internet of Things	3
EC504A1	Information Theory and Coding	3
EC5XXA3	Program Elective-IV	3
EC5XXA3	Program Elective -V	3
EC5XXA3	Program Elective -VI	3
EC503A4	Advanced DSP Laboratory	1.5
EC504A4	IoT Laboratory	1.5
EC502A5	Project Based Learning-II	2
	Total credits for the Semester	**20**
M.Tech (DECE) SEMESTER - III		
Sub Code	**Sub Name**	**C**
EC606A6	Dissertation Phase -I	15

	Total credits for the Semester	**15**
	M.Tech (DECE) SEMESTER -IV	
Sub Code	**Sub Name**	**C**
EC602A6	Dissertation	25
	Total credits for the Semester	**25**

List of Electives

PROGRAM ELECTIVE -I		
Sub Code	**Sub Name**	**C**
EC501A3	Optimization Techniques in Communication	3
EC502A3	Concepts and Modelling of Semiconductor Devices	3
EC503A3	Advance Communication Techniques	3
PROGRAM ELECTIVE -II		
EC504A3	Cognitive Radio in 5G	3
EC505A3	Wireless Sensor Networks	3
EC506A3	Speech Processing	3
EC507A3	VLSI Testing	3
PROGRAM ELECTIVE -III		
EC508A3	Applied Electromagnetics	3
EC509A3	Digital Image Processing	3
EC510A3	Soft Computing Techniques	3
EC511A3	Digital Integrated Circuit Design	3
PROGRAM ELECTIVE -IV		
EC512A3	Machine Learning	3
EC513A3	Biomedical Signal Processing	3
EC514A3	Low-Power VLSI Design	3
EC515A3	Mobile and Adhoc Communication Networks	3
EC516A3	Computational Electromagnetic	3
PROGRAM ELECTIVE-V		
EC517A3	Data Science for Engineers	3
EC518A3	Cloud Computing	3
EC519A3	Analog Integrated Circuit Design	3
EC520A3	Nanomaterials and Nano electronic Devices	3
EC521A3	Cryptography and Network Security	3
PROGRAM ELECTIVE-VI		
EC522A3	Software Defined Networks	3
EC523A3	High Speed Digital Design	3
EC524A3	VLSI Fabrication Technology	3
EC525A3	Radar Systems and Signal Processing	3
EC526A3	Satellite and Optical Communication	3

3.3.4 Electrical and Electronics Engineering (Power Electronics)

M.Tech (PE) SEMESTER - I		
Sub Code	**Sub Name**	**C**
EE501A1	Advanced Power Electronics	3
EE502A1	Electrical Machine Analysis	3
EE5XXA3	Program Elective -I	3
EE5XXA3	Program Elective-II	3
EE5XXA3	Program Elective -III	3
EE501A4	Power Electronics lab-I	1.5
EE502A4	Programming & Simulation lab	1.5
EE501A5	Project Based Learning-I	2
	Total credits for the Semester	**20**
	M.Tech (PE) SEMESTER -II	
Sub Code	**Sub Name**	**C**
EE503A1	Modeling & Simulation of PowerElectronic Converters	3
EE504A1	Advanced Methods In ControlTheory	3
EE5XXA3	Program Elective-IV	3
EE5XXA3	Program Elective -V	3
EE5XXA3	Program Elective-VI	3
EE503A4	Power Electronics Design &Fabrication Lab	1.5

EE504A4	Control Lab	1.5
EE502A5	Project Based Learning-II	2
	Total credits for the Semester	**20**
	M.Tech (PE) SEMESTER - III	
Sub Code	**Sub Name**	**C**
EE601A6	Dissertation Phase I	15
	Total credits for the Semester	**15**
	M.Tech (PE) SEMESTER -IV	
Sub Code	**Sub Name**	**C**
EE602A6	Dissertation/Thesis/Project	25
	Total credits for the Semester	**25**

List of Program Elective

Sub. Code	Sub. Name	C
	PROGRAM ELECTIVE-I	
.	Electric Drive Systems	3
EE502A3	Fuzzy Logic & Evolutionary Algorithms	3
EE503A3	Flexible AC Transmission Systems (FACTS)	3
	PROGRAM ELECTIVE-II	
EE504A3	Neural Networks	3
EE505A3	Industrial Automation & Control	3
EE506A3	Software Engineering	3
	PROGRAM ELECTIVE-III	
EE507A3	Programming with JAVA	3
EE508A3	Data Base Management Systems	3
EE509A3	Digital Image Processing	3
	PROGRAM ELECTIVE-IV	
EE510A3	Advanced Machines Drives	3
EE511A3	Computer Aided Power systems Analysis	3
EE512A3	Real Time Embedded Systems	3
	PROGRAM ELECTIVE-V	
EE513A3	Biomedical Instrumentation	3
EE514A3	Power Electronic Switching Devices	3
EE515A3	Optimization in Engineering Design	3
	PROGRAM ELECTIVE -VI	
EE516A3	Non Linear Dynamical Systems	3
EE517A3	Data Communication & Computer Networks	3
EE518A3	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 Computer Applications	3
CA20105A	Software Engineering and Unified Modelling 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**
BA501A1	Principles of Management andOrganizational Behavior	3
BA502A1	Marketing Management	3
BA503A1	Accounting for Managers	3
BA504A1	Business Economics	3
BA505A1	Business Communication	2
CA2181A	Computer Applications in Management	3
BA506A1	Legal Aspects in Business	3
BA501A7	Research Seminar I	1
BA501A4	Managerial Skills and PersonalityDevelopment- LAB	2
BA502A4	MS-Office – LAB	2
	Total credits for the Semester	**25**
SEMESTER -II		
Sub Code	**Sub Name**	**C**
MA2151A	Quantitative Methods inManagement	4
MA2152A	Research Methodology	4
BA507A1	Human Resource Management	3
BA508A1	Financial Management	3
BA509A1	Productions and OperationsManagement	3
BA510A1	Global Economic Environmentand Policy	3
CA2182A	Management InformationSystems	3
BA503A4	SPSS - LAB	2
	Total credits for the Semester	**25**
SEMESTER - III		
Sub Code	**Sub Name**	**C**
BA601A9	Project Management	2
BA601A1	Research Seminar II	1
BA601A7	Business strategy	3
BA602A1	Summer Internship Project *(8-10 weeks)	6
BA603A1	Consumer Behaviour &Advertisement and BrandManagement	4
BA604A1	Retail and Distribution Management & Supply ChainManagement	4
BA601A4	MS Project Management and Tally - Lab	2
	Specialization I (4+4)	8
	Total credits for the Semester	**30**
SEMESTER -IV		
Sub Code	**Sub Name**	**C**
BA605A1	Banking and InsuranceManagement	3
BA602A7	Research trends in management (Grand Viva Voce)	3
BA606A1	Market Research	4
BA607A1	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**
BA601A3	Security Analysis and Portfolio Management & Derivative Market	4
BA602A3	Direct and Indirect Taxation	4
BA602A4	Data Analysis using R **(Program Elective)**	2
Specialization -II (Human Resource)		
BA603A3	Industrial Relation	4
BA604A3	Competency Mapping & Performance Management	4
Specialization -III (System)		
BA605A3	Object Oriented Programming System & Open Source System	4
BA606A3	Data base Management Systems	4
Specialization -IV (Business Analytics)		
BA607A3	Introduction to Business Analytics	3

BA608A3	Introduction to R	3
BA602A4	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**
BA619A3	Multinational Finance & Risk Exposure Management	4
BA620A3	Marketing of Financial Services & Mergers and Acquisitions	4
Specialization VI (Human Resource)		
BA621A3	Organization Development & Human Resource Development	4
BA622A3	Compensation Management & International Human Resource Management	4

Specialization VII (System)		
Sub Code	**Sub Name**	**C**
BA623A3	E-Commerce	4
BA624A3	Technology Management and Strategy	4
Specialization VIII (Business Analytics)		
BA625A3	Data Warehousing & Data Mining	4
BA603A4	Forecasting using Python	2
BA604A4	Data Visualization using R	2

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

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**
PH501A1	Mathematical Physics	4
PH502A1	Fundamentals of Electronics	4
PH503A1	Classical Mechanics	4
PH504A1	Quantum Mechanics I	4
PH505A4	Physics Lab I (Gen. Physics)	3
PH506A4	Physics Lab II (Photonics &Spectroscopy)	3
	Total credits for the Semester	**22**
SEMESTER -II		
Sub Code	**Sub Name**	**C**
PH511A1	Classical and RelativisticElectrodynamics	4
PH512A1	Condensed Matter Physics	4
PH513A1	Computational Physics I	3
PH514A1	Quantum Mechanics II	4
PH515A4	Physics Laboratory III (Electronics)	3
PH516A4	Physics Laboratory IV / Computational Physics Lab - I)	3
PH517A5	Project Based Learning-I	1
	Total credits for the Semester	**22**
SEMESTER – III (Theory)		
Sub Code	**Sub Name**	**C**
PH601A1	Statistical Mechanics	4
PH602A1	Nuclear And Particle Physics	4
PH603A1	Computational Physics - II	3
PH604A3	Elective-I Particle Physics I	4
PH605A3	Elective-I Plasma Physics I	4
PH608A5	Project Based Learning -II	2
	Total credits for the Semester	**21**
SEMESTER -III (Experimental)		
Sub Code	**Sub Name**	**C**
PH601A1	Statistical Mechanics	4
PH602A1	Nuclear & Particle Physics	4
PH603A1	Computational Physics II	3
PH606A3	Elective-II Electronics -I	4
PH607A3	Elective-II Electronics Lab-I	4
PH608A5	Project Based Learning-II	2
	Total credits for the Semester	**21**

SEMESTER – IV (Theory)		
Sub Code	**Sub Name**	**C**
PH611A1	Atomic & Molecular Physics	4
PH612A4	Computational Physics Lab-II	3
PH614A3	Elective-I Particular Physics-II	4
PH615A3	Elective-I Plasma Physics II	4
PH618A6	*Dissertation /Project	5
Total credits for the Semester		**20**
SEMESTER -IV (Experimental)		
Sub Code	**Sub Name**	**C**
PH611A1	Atomic & Molecular Physics	4
PH612A4	Computational Physics Lab-II	3
PH616A3	Elective-II Electronics-II	4
PH617A3	Elective-II Electronic Lab II	4
PH618A6	*Dissertation /Project	5
Total credits for the Semester		**20**

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**
MA531A1	Real Analysis I	4
MA532A1	Algebra	4
MA533A1	Ordinary Differential Equation	4
MA534A1	Linear Algebra	4
MA531A4	Computational Lab - I	2
	Total credits for the Semester	**18**
SEMESTER -II		
Sub Code	**Sub Name**	**C**
MA535A1	Real Analysis II	4
MA536A1	Complex Analysis	4
MA537A1	Fluid Mechanics	4
MA538A1	Topology	4
MA539A1	Numerical Analysis	4
MA532A4	Computational Lab - II	2
	Total credits for the Semester	**22**
SEMESTER - III		
Sub Code	**Sub Name**	**C**
MA631A1	Functional Analysis	4
MA632A1	Probability and Inference Theory	4
MA633A1	Discrete Mathematics	4
MA634A1	Partial Differential Equations &Vibrational Principles	4
MA635A1	Graph Theory	4
	Total credits for the Semester	**20**
SEMESTER -IV		
Sub Code	**Sub Name**	**C**
MA636A1	Linear & Non-Linear programmingproblems	4
MA637A1	Stochastic Processes	4
MA6**A3	Elective -I	4
MA6**A3	Elective -II	4
MA631A6	Project and Grand Viva	8
	Total credits for the Semester	**24**

List of Electives

Sub.Code	**Sub. Name**
MA631A3	Wavelet Analysis and Applications
MA632A3	Perturbation Techniques
MA633A3	Plasma Dynamics
MA634A3	Game Theory
MA635A3	Financial Mathematics
MA636A3	Artificial Neural Network
MA637A3	Computational Fluid Dynamics
MA638A3	Advanced Functional Analysis
MA639A3	Time Series Analysis & Forecasting
MA640A3	Simulation and Modelling

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)

Sem	Sub Code	Sub Name	C	Remarks
I	CH103A1	Inorganic Chemistry -I	3	Major
	CH104A1	Physical Chemistry-I	3	Major
	XXX	Communication Skill	2	Ability Enhancement
	XXX	UHV	3	Value Added
	**	Elective -I	3	Interdisciplinary/ Minor
	**	Elective -I Lab	1	Interdisciplinary/ Minor
	XXX	Computer Programming (C)	4	Skill Enhancement
	XXX	Computer Programming (C) Lab	1	Skill Enhancement
	CH102A4	Physical Chemistry-I Lab	1	Major
	CH103A4	Inorganic Chemistry-I Lab	1	Major
		Total Credit of Semester I	**22**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
II	CH105A1	Organic Chemistry-I	3	Major
	CH106A1	Physical Chemistry-II	3	Major
	XXX	English Literature/Functional English/MIL/ Hindi/Foreign Language (Swayam/NPTEL) Elective -II	2	Ability Enhancement
	CH107A1	Constitutions of India/ Environmental Studies	1	Value Added
	**	Elective -III	3	Interdisciplinary/ Minor
	**	Elective -III Lab	1	Interdisciplinary/ Minor
	CH108A1	Analytical Tools in Chemistry	4	Skill Enhancement
	CH104A4	Organic Chemistry -I Lab	1	Major
	CH105A4	Physical Chemistry-II Lab	1	Major
	XXX	Fitness and Yoga	2	Value Added
		Total Credit of Semester II	**21**	
Summer Internship/Vocational (2-4 CR) (required for UG Certificate)			Workshop skills, Carpentry, Plumbing, Web Design, Surveying, Electrical Wiring, Financial s/w, digital photography& editing, Video editing for social media, photoshop, Computer assembling and network: King, Research & Technical writing etc.	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
III	CH201A1	Inorganic Chemistry-II	4	Major
	CH202A1	Organic Chemistry-II	4	Major
	CH203A1	Physical Chemistry-III	4	Major
	XXXXX	Leadership and Behavior Management/ Emotional Intelligence/Alternative English/ Nepali/ Sanskrit (SWAYAM, NPTEL) EL-4	2	Ability Enhancement
	**	Minor Specialization (EL-5)	3	Minor
	CH201A4	Inorganic Chemistry-II Lab	1	Major
	CH202A4	Organic Chemistry-II Lab	1	Major
	CH201A5	Project Based Learning-I	1	Major
		Total Credit of Semester III	**20**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
	CH204A1	Inorganic Chemistry-III	4	Major
	CH205A1	Organic Chemistry-III	4	Major

IV	CH206A1	Physical Chemistry-IV	4	Major
	**	Minor Specialization (EL-6)	3	Minor
	XXXXX	Community based Participatory Research (Field Work)	2	Ability Enhancement/Summer Training
	CH203A4	Inorganic Chemistry-III Lab	1	Major
	CH204A4	Organic Chemistry-III Lab	1	Major
	CH202A5	Project Bases Learning-II	1	Major
		Total Credit of Semester IV	**20**	
Summer Internship/Vocational (2-4 CR) (required for UG Certificate)			Workshop skills, Carpentry, Plumbing, Web Design, Surveying, Electrical Wiring, Financial s/w, digital photography& editing, Video editing for social media, photoshop, Computer assembling and network: King, Research & Technical writing etc.	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
V	CH301A1	Organic Chemistry-IV	4	Major
	CH302A1	Physical Chemistry-V	3	Major
	XXXXX	DSE I (EL-7)	4	Minor
	XXXXX	Open Elective I (EL-8)	3	Interdisciplinary/Minor
	XXXXX	Minor Specialization (EL-9)	3	Interdisciplinary/ Minor
	CH301A4	Physical Chemistry-V lab	1	Major
	CH301A4	Summer Internship	2	Summer Internship
	CH302A5	Project Based Learning III	1	Major
		Total Credit of Semester V	**21**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
VI	CH303A1	Inorganic Chemistry-IV	4	Major
	CH304A1	Organic Chemistry-V	3	Major
	XXXXX	DSE II (EL-10)	4	Minor
	XXXXX	Open Elective II (EL-11)	3	Interdisciplinary/Minor
	XXXXX	Minor Specialization (EL-12)	3	Interdisciplinary/Minor
	CH302A4	Organic Chemistry-V Lab	1	Major
	CH303A5	Mini Project	2	Major
		Total Credit of Semester VI	**20**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
VII	CH401A1	Principles of Inorganic Chemistry	4	Major
	CH402A1	Principles of Organic Chemistry	4	Major
	CH403A1	Chemical Thermodynamics	4	Major
	CH404A1	Quantum Chemistry-I	4	Minor
	CH401A4	Analytical Chemistry Lab	2	Major
	XXXXX	Research Methodology	3	Minor
	XXXXX	Project/Dissertation* (1 year)		
		Total Credit of Semester VII	**21**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
VIII	CH405A1	Modern Spectroscopic Technique	4	Major
	CH406A1	Organic Reactions and Mechanisms	4	Major
	CH401A6	Project/Dissertation* (1 year project)	12	Project
	XXXXX	Paper I (EL-13) (**in lieu of Project)**	4	Major
	XXXXX	Paper II (EL-14) (**in lieu of Project)**	4	Major
	XXXXX	Paper III (EL-15) (**in lieu of Project)**	4	Major
	*In place of Project, students with honors will take 3 theory subjects of 12 credit			

Total Credit of Semester VIII	**20**	

List of Electives

**** Electives (Interdisciplinary/Minor)**

Sem	Sub Code	Sub Name	C	Remarks
I	XXXXX	Mathematics-I (Theory + Tutorial)	4	Elective I
	CH101A2	Ecology and Environment-I	3	Elective I
	CH101A4	Ecology and Environment-I Lab	1	Elective I Lab
	CH102A2	Chemistry-I	3	Elective I (for other Dept)
	CH102A4	Chemistry-I Lab	1	Elective I lab (for other Dept)
II	XXXXX	Mathematics-II	4	Elective 3
	XXXXX	General Physics-I	3	Elective 3
	XXXXX	General Physics-I Lab	1	Elective 3 Lab
	CH103A2	Ecology and Environment II	3	Elective 3
	CH103A4	Ecology and Environment II Lab	1	Elective 3 Lab
	CH104A2	Chemistry I	3	Elective 1 (for other Dept)
	CH104A4	Chemistry-I Lab	1	Elective I Lab (for other Dept)
Note : In case of Mathematics as Elective, the total credit will be 4 which includes both theory and tutorial. In case of other elective, student has to take respective lab.				
III	CH201A2	Environmental Chemistry-I	3	Elective 5 (Minor Specialization)
	CH202A2	Medicinal Chemistry-I		
	CH203A2	Interfacial Science-I		
IV	CH204A2	Environmental Chemistry-II	3	Elective 6 (Minor Specialization)
	CH205A2	Medicinal Chemistry-II		
	CH206A2	Interfacial Science-II		
V	CH301A3	Application of Computers in Chemistry	4	DSE I (Elective -7)
	CH301A2	Renewable Energy	3	Open Elective I (Elective -8)
	CH302A2	Environmental Chemistry-III	3	Minor Specialization (Elective -9)
	CH303A2	Medicinal Chemistry-III		
	CH304A2	Interfacial Science-III		
VI	CH302A3	Novel Inorganic Solids	4	DSE II (Elective -10)
	CH305A2	Inorganic Material of Industrial Importance	3	Open Elective II (Elective -11)
	CH306A2	Environmental Chemistry-IV	3	Minor Specialization (Elective-12)
	CH307A2	Medicinal Chemistry-IV		
	CH308A2	Interfacial Science -IV		

3.7.2 B.Sc. Physics 3 years /04 years (Honours)/Honours with research

Sem	Sub Code	Sub Name	C	Remarks
I	PH101A1	Mathematical Physics I	3	Major
	PH102A1	Mechanics	4	Major
	BA101A1	Communication Skill	2	AEC
	GN201A1	UHV	3	VAC
	XXXXX	Chemistry I/Mathematics (EL-I)	3	Interdisciplinary/Minor
	BC103A1	C Programming	4	SEC
	XXXXX	Chemistry Lab (EL-I)	1	Interdisciplinary/Minor
	BC101A4	C Programming Lab	1	Skill enhancement
	PH103A4	General Physics Lab	1	Major
	Total Credit of Semester I		**22**	

Sem	Sub Code	Sub Name	C	Remarks
II	PH104A1	Mathematical Physics II	4	Major
	PH105A1	Wave and Optics	4	Major
	XXXXX	English Literature/Functional English/MIL/ Hindi/Foreign Language (Swayam/NPTEL) (EL-II)	2	AEC

	XXXXX	Constitution of India/Environmental Science	1	VAC
	XXXXX	Chemistry II/Mathematics II (EL-III)	3	Interdisciplinary/Minor
	PH106A1	Numerical Techniques	3	SEC
	PH107A4	Wave and Optics Lab	1	Major
	PH108A4	Numerical Techniques Lab	1	Skill enhancement
	XXXXX	Chemistry-II Lab (EL-III)	1	Interdisciplinary/Minor
	XXXXX	Sports, Fitness and Yoga	2	Value Added
		Total Credit of Semester II	**22**	

Summer Internship/Vocational (2-4 CR): Workshop skills, Carpentry, Plumbing, Web design, Surveying, Electrical Wiring, Financial s/w, digital photography & editing , Video editing for social media, Computer assembling and networking, Research & Technical writing etc.

Sem	Sub Code	Sub Name	C	Remarks
III	PH201A1	Heat & Thermodynamics	4	Major
	PH202A1	Electricity & Magnetism	4	Major
	PH203A1	Analog systems & Applications	4	Major
	XXXXX	Leadership and Behavior Management/Emotional Intelligence/ Alternative English/Nepali/Sanskrit	2	Ability Enhancement
	XXXXX	Minor Elective (EL-5)	3	Minor
	PH204A4	Heat & Thermodynamics Lab	1	Minor
	PH205A5	Electricity, Magnetism Lab	1	Major
	PH206A5	Project Based Learning I	1	Major
		Total Credit of Semester III	**20**	

Sem	Sub Code	Sub Name	C	Remarks
IV	PH207A1	Mathematical Physics III	4	Major
	PH208A1	Elements of Modern Physics	4	Major
	PH209A1	Digital Systems & Applications	4	Major
	XXXXX	Minor Elective (EL-6)	3	Minor
	XXXXX	Community based Participatory Research (Field Work)	2	Ability enhancement/ Summer Training
	PH210A4	Electronics Lab	1	Major
	PH211A4	Modern Physics/Photonics Lab	1	Major
	PH212A5	Project Based learning II	1	Major
		Total Credit of Semester IV	**20**	

Summer Internship/Vocational (2-4 CR): Workshop skills, Carpentry, Plumbing, Web design, Surveying, Electrical Wiring, Financial s/w, digital photography & editing , Video editing for social media, Computer assembling and networking, Research & Technical writing etc.

Sem	Sub Code	Sub Name	C	Remarks
V	XXXXX	Quantam Mechanics and Applications	4	Major
	XXXXX	Solid State Physics	4	Major
	XXXXX	DSE I (EL-7)/Interdisciplinary Minor	4	Minor
	XXXXX	Open Elective I (EL-8)	3	Interdisciplinary/Minor
	XXXXX	Minor Elective (EL-9)	3	Interdisciplinary/Minor
	XXXXX	Solid state Physics Lab	1	Major
	XXXXX	Summer Internship	2	Summer Internship
	XXXXX	Project Based learning III	1	Major
		Total Credit of Semester V	**22**	

Sem	Sub Code	Sub Name	C	Remarks
VI	XXXXX	Electromagnetic Theory	4	Major
	XXXXX	Statistical Mechanics I	4	Major
	XXXXX	DSE II (EL-10)/Interdisciplinary Minor	4	Minor
	XXXXX	Open Elective II (EL-11)	3	Interdisciplinary/Minor
	XXXXX	Minor Elective (EL-12)	3	Interdisciplinary/Minor
	XXXXX	Mini Project	2	Major

		Total Credit of Semester VI	**20**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
VII	XXXXX	Mathematical Physics IV	4	Major
	XXXXX	Classical Mechanics	4	Major
	XXXXX	Quantum Mechanics I	4	Major
	XXXXX	Condensed Matter Physics/Fundamental of Electronics (EL-13)	4	Minor
	XXXXX	Photonics & Spectroscopy Lab/General Physics Lab (EL-14)	3	Minor
	XXXXX	Project/Dissertation* (1 year project)		
		Total Credit of Semester VII	**19**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
VIII	XXXXX	Classical & Relativistic Electrodynamics	4	Major
	XXXXX	Quantum Mechanics II	4	Major
	XXXXX	Project/Dissertation * (1 year project)	12	Major
	XXXXX	Paper I (EL-13) (in lieu of project)	4	Major
	XXXXX	Paper II (EL-14) (in lieu of project)	4	Major
	XXXXX	Paper III (EL-15) (in lieu of project)	4	Major
		Total Credit of Semester VIII	**20**	

*** In place of project, students with honours will take 3 theory subjects of 12 credit.**

DSE : Discipline Specific Electives	
1	Atomic Molecular Physics
2	Nuclear & Particle Physics
3	Experimental Techniques & Data Analysis
4	Communication Electronics
5	Nanomaterials and Applications
6	Thin film Technology
7	Semiconductor and Optoelectronics
8	Low Temperature Physics

3.7.3 B.Sc. Mathematics 3 years /04 years (Honours)/Honours with research

5 Years Integrated M.Sc./ 2 years M.Sc in Mathematics/1 year M.Sc in Mathematics

Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
I	MA131A1	Foundation Course in Mathematics	4	Major
	MA132A1	Single Variable Calculus	4	Major
	XXXXX	English	2	AEC
	GN201A1	UHV	3	VAC
	XXXXX	Elective-I/MOOC	4	MLTD/Minor
	XXXXX	C Programming	3	SEC
	XXXXX	C Programming Lab	1	SEC
		Total Credit of Semester I	**21**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
II	MA133A1	Solid Geometry & Vector Calculus	4	Major
	MA134A1	Discrete Mathematics	4	Major
	MA135A1	Linear Algebra	4	Major
	XXXXX	English Literature/Functional English/MIL/ Hindi/Foreign Language/ Elective-II/MOOC	2	AEC
	CH107A1/ BP101A1	Environmental Studies/Constitution of India	1	VAC
	XXXXX	Elective -III/MOOC	4	MLTD/Minor
	PE108A4	Fitness and Yoga	2	VAC
		Total Credit of Semester II	**21**	

Sem	Sub Code	Sub Name	C	Remarks
Summer Internship/Vocational (2-4 CR): Workshop skills, Carpentry, Plumbing, Web design, Surveying, Electrical Wiring, Financial s/w, digital photography & editing , Video editing for social media, Computer assembling and networking, Research & Technical writing etc.				
III	MA231A1	Algebra I : Group Theory	4	Major
	MA232A1	Elementary Number Theory	4	Major
	MA231A8	Probability Theory	4	Minor
	XXXXX	Elective-IV	4	MLTD/Minor
	XXXXX	Leadership and Behavior Management/ Emotional Intelligence/ Alternative English/ Nepali/ Sanskrit/ MOOC/ Elective -V	2	AEC
	MA231A9	Summer Internship/ Vocational	2	SEC
		Total Credit of Semester III	**20**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
IV	MA233A1	Algebra II : Ring Theory	4	Major
	MA234A1	Multivariable Calculus	4	Major
	MA235A1	Ordinary Differential Equations	4	Major
	MA232A8	Statistical Methods	4	Minor
	XXXXX	Elective-VI/MOOC	4	MLTD/Minor
	MA232A9	Community based participatory research (Field work)	2	AEC/Summer Internship
		Total Credit of Semester IV	**22**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
V	MA331A1	Complex Analysis	4	Major
	MA332A1	Numerical Analysis	4	Major
	MA331A8	Dynamics	4	Minor
	MA332A8	Introduction to Machine Learning	4	Minor
	XXXXX	Elective-VII/MOOC	4	MLTD/Minor
		Total Credit of Semester V	**20**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
VI	MA333A1	Metric Spaces	4	Major
	MA334A1	Classical Mechanics	4	Major
	MA333A8	Theory of Computation	4	Minor
	XXXXX	Elective-VIII/MOOC	4	MLTD/Minor
	MA331A7	Seminar-I	3	SEC
		Total Credit of Semester VI	**19**	
		Total Credits after three years	**123**	(Exit-III (Degree)
Semester VII (B.Sc)/Semester-I (2 Yrs M.Sc Program) (Entry-II)				
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
VII	MA431A1/ MA541A1	Real Analysis	4	Major
	MA432A1/ MA542A1	Abstract Algebra	4	Major
	MA433A1/ MA543A1	Ordinary and Partial Differential Equations	4	Major
	MA434A1/ MA544A1	Advanced Linear Algebra	4	Major
	MA431A8/ MA541A8	Basics of Financial Mathematics	4	Minor
	MA431A4/ MA541A4	Computational Laboratory	2	SEC
		Total Credit of Semester VII	**22**	

Semester VIII (B.Sc)/Semester II (2 Years M.Sc Program)

Sem	Sub Code	Sub Name	C	Remarks
VIII	MA435A1/ MA545A1	Measure and Integration	4	Major
	MA436A1/ MA546A1	Graph Theory	4	Major
	MA437A1/ MA547A1	Topology (in lieu of Project)	4	Major
	MA438A1/ MA548A1	Advance Complex Analysis (in lieu of Project)	4	Major
	MA4**A3/ MA5**A3	Basics of Financial Mathematics (in lieu of Project)/MOOC	4	Minor
	MA431A6	Project/Dissertation	12	Project
Total Credit of Semester VIII			**22**	
Total Credits after 4 years			**180**	Exit-IV (B.Sc Mathematics (Hons)/ B.Sc Mathematics (Hons with Research)

Semester IX (Integrated M.Sc)/Semester III (2 Years M.Sc Program)/ Semester-I (1 Yr M.Sc Program) (Entry-III)

Sem	Sub Code	Sub Name	C	Remarks
IX	MA641A1	Stochastic Processes	4	Major
	MA642A2	Functional Analysis-I	4	Major
	MA643A1	Integral Equations and Transforms	4	Major
	MA641A8	Number Theory and Cryptography	4	Minor
	MA6***A3	Elective-X/MOOC	4	MLTD/Minor
	MA431A6	Project/Dissertation	12	Project
Total Credit of Semester IX			**20**	

Semester X (Integrated M.Sc)/ Semester-IV (2 Years M.Sc Program)/ Semester-II (1 Yr M.Sc Program) (Entry-III)

Sem	Sub Code	Sub Name	C	Remarks
X	MA644A1	Variational Calculus	4	Major
	MA645A1	Functional Analysis-II	4	Major
	MA6**A3	Elective-XI (in lieu of Project)	4	Major
	MA6**A3	Elective-XII (in lieu of Project)	4	Major
	MA6**A3	Elective-XIII (in lieu of Project)/MOOC	4	MLTD/Minor
	MA641A6	Major Project	12	Project
Total Credit of Semester X			**20**	
Total Credits of Integrated M.Sc Degree			**205**	Exit-V (Integrated M.Sc Degree)
Total Credits of 2 Yrs M.Sc Degree			**82**	2 Years M.Sc Degree
Total Credits of 1 Yr M.Sc Degree			**40**	1 Year M.Sc Degree

List of Electives

Elective I	
Sub Code	**Sub Name**
CH10201A/ CH10419A	Chemistry-I, Chemistry Lab-I
BA10106A	Business Economics
MA131A3	Classical Algebra
Elective III	
PH1XXA1, PH1XXA4	Physics-I, Physics Lab-I
MA132A3	Data Structures
Elective IV	
MA231A3	Linear Programming & Game Theory
BA10116A	Accounting for Management

Elective VI	
MA232A3	Object Oriented Programming
MA231A4	Object Oriented Programming Lab
XXXXA1, XXXXA4	Python Programming Python Programming Lab
Elective VII	
MA331A3	Artificial Intelligence
Elective IX	
MA431A3/ MA541A3	Advance Numerical Analysis
MA432A3/ MA542A3	Artificial Neural Network
Elective X	
MA641A3	Design and Analysis of Algorithms
MA642A3	Fluid Mechanics
MA643A3	Field and Galois Theory
Elective XI-XII	
MA644A3	Plasma Dynamics
MA645A3	Algebraic Topology
MA646A3	Dynamical Systems
MA647A3	Wavelet Analysis and Signal Processing
MA648A3	Representation Theory
MA649A3	Algebraic Graph Theory
Elective XIII	
MA650A3	Queuing Theory and Modeling
MA651A3	Optimization Techniques
MA652A3	Mathematical Finance

3.7.4 B.Sc Economics

Sem	Sub Code	Sub Name	C
I	EN101A1	Introduction to Calculus for Economics	4
	MA106A1	Quantitative Analysis	4
	GN111A1	Introduction to Sociology	3
	EN102A1	Data Management	4
	EN103A1	Business Economics	4
	BA101A1	Communication Skills	2
		Total Credit	**20**
Sem	**Sub Code**	**Sub Name**	**C**
II	EN104A1	Principles of Microeconomics	4
	MA503A1	Quantitative Methods in Management	4
	EN105A1	Intermediate Calculus for Economics	4
	BA505A1	Business Communication	2
	BA113A1	Accounting and Business Finance	4
	EN101A4	SPSS Lab	2
		Total Credit	**20**
Sem	**Sub Code**	**Sub Name**	**C**
III	EN201A1	Demography	3
	EN202A1	Principles of Macroeconomics	4
	EN203A1	The Interplay of Economics Theory and Data	2
	EN204A1	Introduction to theory of Econometrics	4
	BA205A1	Marketing Management	4
	EN205A1	Intermediate Microeconomics	4
		Total Credit	**21**
Sem	**Sub Code**	**Sub Name**	**C**
	MA212A1	Operation Research	3

IV	EN206A1	Intermediate Macroeconomics	4
	EN201A4	Econometrics with Case Studies using R and Python	4
	EN207A1	The Indian Economy: 1947-1991*	4
	EN208A1	Development Economics	4
	MA504A1	Research Methodology	3
		Total Credit	**22**

Sem	Sub Code	Sub Name	C
V	EN301A4	Advanced Analytics (ML, DL, AI and NN) Using R and Python	4
	EN301A1	Pure Theory of Trade	4
	EN302A1	Urban Economics	4
	EN303A1	The Indian Economy: 1991-Present Dy	4
	BA304A1	Banking and Insurance	3
	EN301A5	Project Work	2
		Total Credit	**21**

Sem	Sub Code	Sub Name	C
VI	EN305A1	Strategy and Game Theory	4
	EN306A1	Behavioural Economics	4
	EN307A1	Schools of Economic Thought	4
	EN301A3	Energy Economics	4
	EN302A3	Environmental Economics	4
		Total Credit	**20**
		Total Credit for Three Years	**124**

3.7.5 B.Sc. (Computer Science)

Sem	Sub Code	Sub Name	C	Remarks
I	BC101A1	Computational Methods	3	Major
	BC102A1	Fundamentals of Digital Systems	4	Major
	XXXXX	Communication Skills	2	Ability Enhancement
	XXXXX	UHV	3	Value Added
	XXXXX	Elective-I	3	Interdisciplinary/Minor
	BC103A1	Computer Programming (C)	4	Skill enhancement/Major
	BC101A4	C Programming Lab	1	Skill enhancement/Major
	BC102A4	Digital Electronics Lab	1	Major
		Total	**21**	

Sem	Sub Code	Sub Name	C	Remarks
II	BC104A1	Web Technology	3	Major
	BC105A1	Data Structure	4	Major
	XXXXX	English Literature/Functional English/MIL/ Hindi/Foreign Language/ Elective-II/MOOC	2	Ability Enhancement
	XXXXX	Constitution of India/Environmental Science	3	Value Added
	XXXXX	Elective-III	3	Interdisciplinary/Minor
	BC106A1	Python Programming	3	Skill enhancement/Major
	BC103A4	Web Technology Lab	1	Skill enhancement/Major
	XXXXX	Fitness and Yoga	2	Value Added
		Total	**20**	

Summer Internship/Vocational (2-4 CR): Workshop skills, Carpentry, Plumbing, Web design, Surveying, Electrical Wiring, Financial s/w, digital photography & editing, Video editing for social media, Computer assembling and networking, Research & Technical writing etc.

Sem	Sub Code	Sub Name	C	Remarks
III	BC201A1	Computer Organization and Architecture	4	Major
	BC202A1	OOPs with C++	4	Major
	BC203A1	Computer Networks	4	Major
	XXXXX	Behavior Management/Emotional	2	Ability enhancement

		Intelligence/Alternative English/Nepali/ Sanskrit (SWAYAM, NPTEL) EL-4)		
	XXXXX	Minor Specialization (EL-5)	3	Minor
	BC201A4	OOPs with C++ Lab	1	Major
	BC202A4	Networking Lab	1	Major
	BC201A5	Project based learning I	1	Major
		Total	**20**	

Sem	Sub Code	Sub Name	C	Remarks
IV	BC204A1	Database Management System	4	Major
	BC205A1	Introduction to Internet of Things	4	Major
	BC206A1	Operating Systems	4	Major
	XXXX	Minor Specialization (EL-6)	3	Minor
	XXXX	Community based Participatory Research (Field Work)	2	Ability enhancement/ Summer Training
	BC203A4	Operating System Lab	1	Major
	BC204A4	DBMS Lab	1	Major
	BC202A5	Project Based Learning II	1	
		Total	**20**	

Summer Internship/Vocational (2-4 CR): Workshop skills, Carpentry, Plumbing, Web design, Surveying, Electrical Wiring, Financial s/w, digital photography & editing , Video editing for social media, Computer assembling and networking, Research & Technical writing etc.

Sem	Sub Code	Sub Name	C	Remarks
V	BC301A1	Formal Language & Automata Theory	3	Major
	BC302A1	Embedded Systems	3	Major
	XXXX	DSE I (El-7)	3	Minor
	XXXX	Elective I (EL-8)	3	Interdisciplinary/Minor
	XXXX	Minor Specialization (EL-9)	3	Interdisciplinary/Minor
	BC301A4	Embedded Systems Lab	1	Major
	BC301A9	Summer Internship	2	Summer Internship
	BC301A5	Project Based Learning III	1	Major
		Total	**19**	

Sem	Sub Code	Sub Name	C	Remarks
VI	BC303A1	Design and Analysis of Algorithms	4	Major
	BC304A1	Introduction to Artificial Intelligence	4	Major
	XXXX	DSE II (EL-10)	3	Minor
	XXXX	Elective II (EL 11)	3	Interdisciplinary/Minor
	XXXX	Minor specialization (EL 12)	3	Interdisciplinary/Minor
	BC302A4	IoT Lab	1	Major
	BC302A5	Mini Project	2	Major
		Total	**20**	

Sem	Sub Code	Sub Name	C	Remarks
VII	BC401A1	IoT Gateways and Edge Computing	4	Major
	BC402A1	Industrial IoT and Industry 4.0	3	Major
	BC403A1	Deep Learning	4	Major
	BC404A1	Software Engineering	4	Minor
	XXXX	Research Methodology	3	Minor
	XXXX	Research Ethics	2	
		Total	**20**	

Sem	Sub Code	Sub Name	C	Remarks
VIII	BC405A1	Data Centre and Cloud Computing	4	Major
	XXXX	Elective-13	4	Major
	BC401A6	Project/Dissertation* (1 year project)	12	Major

	XXXX	Paper I (EL-14)		Major
	XXXX	Paper II (EL-15)		Major
	XXXX	Paper III (EL-16)		Major
Total			**20**	
*** In place of Project, students with honours will take 3 theory subjects of 12 credits.**				

List of Electives

Yr	Sub Code	Sub Name	C
I	BC101A3	Basic Electronics	3
	BC102A3	Communication Systems	3
	BC103A3	Analog Electronics	3
	BC104A3	Microprocessor and Microcontroller	3
II	BC201A3	R Programming	3
	BC202A3	Project Management	3
	BC203A3	E-Commerce	3
	BC204A3	Principles of Programming Language	3
	BC205A3	Sensors and Actuators for IoT	3
III	BC301A3	Wireless Sensor Networks	3
	BC302A3	Data Science	3
	BC303A3	Soft Computing Techniques	3
	BC304A3	Discrete Structure	3
	BC305A3	Numerical Analysis	3
	BC306A3	Industrial Management	3
	BC307A3	PHP Technology	3
	BC308A3	Digital Marketing	3
	BC309A3	JAVA Programming	3
	BC310A3	Artificial Neural Network	3
	BC311A3	Compiler Design	3
	BC312A3	Object Oriented Analysis & Design	3
	BC313A3	Machine Learning	3
	BC314A3	Cyber Security	3
	BC315A3	Cloud Computing	3
	BC316A3	Block Chain Technology	3
IV	BC401A3	NANO Electronic devices and Materials	4
	BC402A3	NET Programming	4
	BC403A3	Mobile Communication	4
	BC404A3	Production Management	4
	BC405A3	Acoustic Signal Processing	4
	BC406A3	System and Network Administration	4
	BC407A3	Software defined Networks	4
	BC408A3	Computer Vision	4
	BC409A3	Automation and Robotics	4
	BC410A3	Computer Graphics	4
	BC411A3	Information theory and Coding	4

List of Open Elective

Sub Code	Sub Name	C
BC201A2	Introduction to Internet of Things	3
BC302A2	Embedded Systems	3
BC303A2	Introduction to Artificial Intelligence	3

3.7.6 B.Sc. Physical Education and Sprots (3 Years Program)

Sem	Sub Code	Sub Name	C	Remarks
I	PE101A1	Introduction and history of Physical Education	4	Major
	XXXX	Communication Skills	2	Ability Enhancement
	GN201A1	UHV	3	Value Added
	XXXX	Elective-I	3	Interdisciplinary/Minor
	BC103A1	Computer Programming (C)	4	Skill enhancement
	BC101A4	Computer Programming (C) Lab	1	Skill enhancement
	PE102A4	Field Activity-I (Football and Basketball)	2	Major
		Fundamentals of Computer Lab	1	Skill Enhancement
		Total	**20**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
II	PE103A1	Anatomy and Physiology	3	Major
	PE104A1	Psychology in Physical Education and Sports	3	Major
	PE105A3	Elective – 2	2	Ability enhancement
	XXXXX	Constitutions of India/ Environmental Sc.	1	Value added
	XXXXX	Elective -3	3	Interdisciplinary/minor
	BC106A1	Python Programming	3	Skill enhancement
	PE106A4	Gym Training	1	Skill enhancement
	PE107A4	Field Activity II- (Volleyball and Cricket)	2	Major
	PE108A4	Fitness and Yoga	2	Major/Value added
		Total	20	
Summer Internship/Vocational (2-4 CR): Workshop skills, Carpentry, Plumbing, Web design, Surveying, Electrical Wiring, Financial s/w, digital photography & editing, Video editing for social media, Computer assembling and networking, Research & Technical writing etc.				
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
III	PE201A1	Kinesiology and Biomechanics	4	Major
	PE202A1	Test, Measurement and Evaluation	4	Major
	PE203A1	Basics of Research	4	Major
	XXXXX	Elective-4	2	Ability enhancement
	PE204A3	Elective-5	3	Minor
	PE205A4	Field Activity - III- (Squash)	1	Major
	PE206A4	Field Activity - IV - (Tennis)	1	Major
	PE207A4	Field Activity - V- (Badminton)	1	Major
		Total	20	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
IV	PE207A1	Health Education	4	Major
	PE208A1	Sports Training	4	Major
	PE209A1	Fundamentals of statistics for Physical Education	4	Major
	PE210A3	Elective-6	3	Minor
	XXXXX	Community Engagement & Social Responsibility (FIELD WORK) (SWAYAM/NPTEL)	2	Ability enhancement/Summer Training
	PE211A4	Field Activity -VI - (Kho-Kho)	1	Major
	PE212A4	Field Activity -VII- Table-tennis	1	Major
	PE213A4	Weightlifting	1	Major
		Total	20	

Summer Internship/Vocational (2-4 CR): Workshop skills, Carpentry, Plumbing, Web design, Surveying, Electrical Wiring, Financial s/w, digital photography & editing , Video editing for social media, Computer assembling and networking, Research & Technical writing etc.				
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
V	PE301A1	Health Education	3	Major
	PE302A1	Sports Training	4	Major
	PE303A3	Fundamentals of statistics for Physical Education	3	Minor
	PE304A3	Elective-6	3	Interdisciplinary/Minor
	PE305A3	Community Engagement & Social Responsibility (FIELD WORK) (SWAYAM/NPTEL)	3	Interdisciplinary/Minor
	PE306A4	Field Activity -VI - (Kho-Kho)	1	Major
	PE307A9	Field Activity -VII- Table-tennis	2	Summer Internship
	PE308A4	Weightlifting	1	Major
		Total	20	

Sem	Sub Code	Sub Name	C	Remarks
VI	PE309A1	Education Technology and Methods in Physical Education	4	Major
	PE310A1	Organization and Administration in Physical Education	4	Major
	PE311A3	Elective -10	3	Minor
	PE312A3	Elective – 11	3	Interdisciplinary/Minor
	PE313A3	Elective – 12	3	Interdisciplinary/Minor
	PE314A4	Specialization - II Skill anyone (Football, Athletics, Volleyball, Swimming, Weightlifting and Yoga)	1	Major
	PE315A5	Mini Project	2	Major
Total			20	
Total Credit			120	
Summer Internship/Vocational (2-4 CR): Workshop skills, Carpentry, Plumbing, Web design, Surveying, Electrical Wiring, Financial s/w, digital photography & editing , Video editing for social media, Computer assembling and networking, Research & Technical writing etc.				

List of Electives

Sub Code	Sub Name	C
PE105A3	Yoga for positive psychology for managing career and life (SWYAM/NPTEL) (Elective-2)	2
PE204A3	Track & Field (Sprint and Middle Distance) (Elective – 5)	3
PE210A3	Track & Field – Long Distance (Elective – 6)	3
PE303A3	Professional Preparation – (Elective – 7)	3
PE304A3	Athletic Care & Rehabilitation (Elective-8)	3
PE305A3	Track and Field – Shot-Put and Discus (Elective-9)	3
PE311A3	Mass Demonstration Activities – March past / wands/ Hoop/Umbrella (Elective – 10)	3
PE312A3	Personality Development (Elective – 11)	3
PE313A3	Track and Field -Jumps (Elective - 12	3

List of Open Elective

Sub Code	Sub Name	C
XXX	Elective – 1, Introduction to Psychology – I	3
XXX	Elective – 3, Introduction to Psychology – II	3
XXX	Elective – 4, Behaviour Management/Emotional Intelligence // Alternative English/Nepali/ Sanskrit (SWAYAM/NPTEL)	2
XXX	Communication Skill	2

XXX	Constitutions of India	1
XXX	Environmental Science	1

3.7.7 B.Sc. Clinical Psychology

Sem	Sub Code	Sub Name	C	Remarks
I	PY101A1	Fundamentals of Psychology	3	Major
	PY102A1	Introduction to Personality	4	Minor
	XXXXX	Elective -I	4	Interdisciplinary
	XXXXX	UHV	3	Value added Course
	BC103A1	Computer Skills (C)	4	Skill enhancement
	BC101A4	Computer Skills (C) Lab	1	Skill enhancement
	XXXXX	Communication Skills	2	AECC
		Total	**21**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
II	PY103A1	Cognitive Psychology	4	Major
	PY104A4	Foundation of Social Psychology	4	Minor
	PY101A4	Social Psychology Lab	1	Major
	XXXXX	Elective -II	4	Interdisciplinary
	XXXXX	English Literature/functional English/ MIL/ Hindi/Foreign Language (SWAYAM/ NPTEL) (EL-2)	2	AECC (Compulsory)
	XXXXX	Fitness and Yoga	2	Value Added Course
	XXXXX	Environment Science/Constitution of India	1	AECC (Compulsory)
	PY101A7	Seminar	2	AECC/Major
		Total	**19**	
		First Year Total	**40**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
III	PY201A1	Bio Psychology	4	Major
	PY202A1	Statistical Methods for Psychological Research	4	Major
	PY203A1	Organizational Psychology	4	Minor
	PY201A4	Organization Lab Psychology	1	Major
	XXXXX	Elective-III	4	Interdisciplinary
	PY202A4	SPSS for Data Analysis	2	SEC/Major
	PY202A7	Seminar	1	AECC/Major
		Total	**20**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
IV	PY204A1	Development Psychology	4	Major
	PY205A1	Psychology of Individual Differences	4	Minor
	PY206A1	Fundamental of Clinical Psychology-I	4	Major
	PY202A4	Individual Differences Lab	1	Major
	XXXXX	Elective-IV	4	Interdisciplinary
	PY201A9	Summer Internship*	2	SEC/Major
	PY203A7	Seminar	1	AECC/Major
		Total	**20**	
		Second Year Total	**42**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
V	PY301A1	Fundamental of Clinical Psychology-II	4	Major
	PY302A1	Understanding the Human Psyche	4	Minor
	XXXXX	Elective-V	4	Interdisciplinary/Minor
	XXXXX	DSE Elective I (Any Two)	4	Major
		Total	**20**	

Sem	Sub Code	Sub Name	C	Remarks
VI	PY303A1	Applications of Psychology in Modern Life	4	Minor
	PY304A1	Psychological Assessment	4	Major
	XXXXX	Elective -VI	4	Interdisciplinary
	XXXXX	DSE Elective II (Any two)	4	Major
	XXXXX		4	Major
	PY301A5	Field based learning/Group Project **	1	SEC/Major
	PY301A4	Lab work	1	Major
		Total	**22**	
		First Year Total	**42**	
		Total Credits of three year	**122**	
Sem	**Sub Code**	**Sub Name**	**C**	**Remarks**
VII	PY401A1	Systems and Schools in Psychology I	4	Major
	PY402A1	Introduction to Indian Psychological Thought	4	Major
	PY403A1	Fundamentals of Counselling	4	Major
	PY401A4	Lab Work	2	Major
	PY401A6	Systematic Review of Literature (Seminar)	2	Major
	PY402A6	Research Paper writing for publication	2	Major
	PY403A6	Research Proposal	2	Major
		Total	**20**	

Sem	Sub Code	Sub Name	C	Remarks
VIII	PY404A6	Major Research Project/Dissertation (Final Phase)	12	Major
	XXXXX	DSE III (Any two)***	4	Major
	XXXXX		4	Major
		Sem Total Credits	**20**	
		Fourth Year Total	**40**	
		Total	**162**	

*Summer Internship will be carried out in the summer break after IV sem and will be evaluated in V Semester.
** In place of project, students may choose 3 theory subjects of 12 credit for honours requirement.
*** DSE-III courses can be opted as offline or MOOC based courses which will be evaluated in house.

List of Open Elective/Interdisciplinary

Sub Code	Sub Name	C
PY302A3	Positive Psychology	4
PY102A1	Fundamentals of Psychology	4
PY104A3	Foundation of Social Psychology	4
PY203A1	Organizational Psychology	4
PY205A1	Psychology of Individual Differences	4
PY302A1	Understanding the Human Psyche	4
PY303A1	Applications of Psychology in Modern Life	4

3.7.8 BBA (Business Analytics and Fintech) (3 Years Program)

Sem	Sub Code		Sub Name		C		Remarks
I	BA1103A		Principle & Practice of Management*		3		Major
	MA1121A		Business Mathematics*		4		Major
	BA1105A		Financial Accounting*		4		Minor/Multidisciplinary
	BA1106A		Business Economics*		3		Major
	GN201A1/ BA1107A		UHV/Business Law*		3		Value Added/Major
	BA101A1	BA1401A	Fundamentals of Data Analytics	MS Application for Business*	3	2	Major
		BA1703A		Research Orientation*		1	
	BA101A4		Data Analytics Lab		1		Skill Enhancement
	*approved subjects from regular BBA degree programme						
	Total Credit for the Semester: 21						

Sem	Sub Code		Sub Name		C		Remarks
II	BA1108A		Human Resource Management*		3		Major
	BA1110A		Organization Behaviour*		3		Major
	BA1111A		Business Finance*		4		Major
	BA1112A		Business Communication*		3		Ability enhancement
	BC106A1	MA1122A	Python Programming	Quantitative Analysis*	3	4	Major
	BA102A4		Python Programming Lab		1		Skill Enhancement
			Constitution of India		1		Value Added
	PE108A4		Sprots fitness, Yoga		2		Value Added
	*approved subjects from regular BBA degree programme						
	Total Credit for the Semester: 20						

Sem	Sub Code		Sub Name		C		Remarks
III	BA201A1/BA1113A		Financial Technology Service & Management/ International Business*		3		Major
	BA1116A		Accounting for Management*		4		Major
	BA1115A		Entrepreneurship and Small Business*		3		Minor/Multidisciplinary
	BA202A1	BA1114A	Business Analytics	Production Management*	3	4	Major
	BA201A4		Business Analytics Lab		1		
	BA1117A		Marketing Management*		4		Major
	GN301A1		Behaviour Management/ Emotional Intelligence/ Nepali/ Sanskrit		2		Ability Enhancement
	*approved subjects from regular BBA degree programme						
	Total Credit for the Semester: 20						

Sem	Sub Code	Sub Name	C	Remarks
	BA1118A	Business Policy and Strategy*	3	Major
	BA1119A	Marketing Research*	3	Minor
	BA203A1/ BA1120A	Business Ideation & Startup Ecosystem/ Marketing of Services*	3	interdisciplinary

IV	BA1121A		Consumer Behaviour*		3		Major
	BA204A1	BA1122A	Decentralized Finance	Project Management*	3	4	Major
	BA202A4		Financial data visualization Lab		1		
	BA205A1/ BA1123A		Fundamentals of Econometrics/ Team Work and Leadership*		3		Major
			Community-based Participatory Research		2		Ability Enhancement/ Summer Training
	*approved subjects from regular BBA degree programme						
	Total Credit for the Semester: 21						

Sem	Sub Code	Sub Name	C	Remarks
V	BA1125A	Marketing Communication and Advertising*	3	Major
	BA301A1/BA1126A	Business Model formulation/ Logistics & Supply Chain Management*	3	Interdisciplinary/ Minor
	BA302A1/ BA1127A	Cyber Security & Cyber Law/ Industrial Relation*	3	Major
	BA1129A	Banking and Insurance*	3	Major
	BA303A1/ CA1181A	Fintech Payments Mechanism/ E-commerce	3	Major
	BA301A4	Financial Modeling Lab	1	Skill enhancement
	BA1501A	Project Presentation & Seminar**	4	Summer Internship
	*approved subjects from regular BBA degree programme **project presentation & seminar (done during summer break after IV semester)			
	Total Credit for the Semester: 20			

Sem	Sub Code	Sub Name	C	Remarks
VI	BA10131A	Corporate Governance & Business Ethics*	3	Major
	BA304A1/ BA1132A	Data Mining & Business Intelligence/ International Marketing Management*	3	Interdisciplinary/ Major
	BA305A1/BA1133A	Artificial Intelligence in Business Mgt/Rural Marketing*	3	Interdisciplinary/Major
	BA1136A	Management of Financial Services*	3	Major
	BA1137A	Taxation*	3	Major
	BA306A1/BA1134A	Fintech in financial planning and Analysis/ Human Resource Development*	3	Major
	BA302A4	Technical Analysis Lab	2	Skill enhancement
	*approved subjects from regular BBA degree programme			
	Total Credit for the Semester: 20			

Important Contacts & Phone Numbers

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General Administration						
1	Lt. Col. D. B. Chettri	Head Administrative Officer	9760095631	head.admin@smit.smu.edu.in	B-105	262
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3	Col Surajit Debnath	Head Engineering	8109648371	surajit.d@smit.smu.edu.in	Chief Engg Office	256
SMIT Health Centre						
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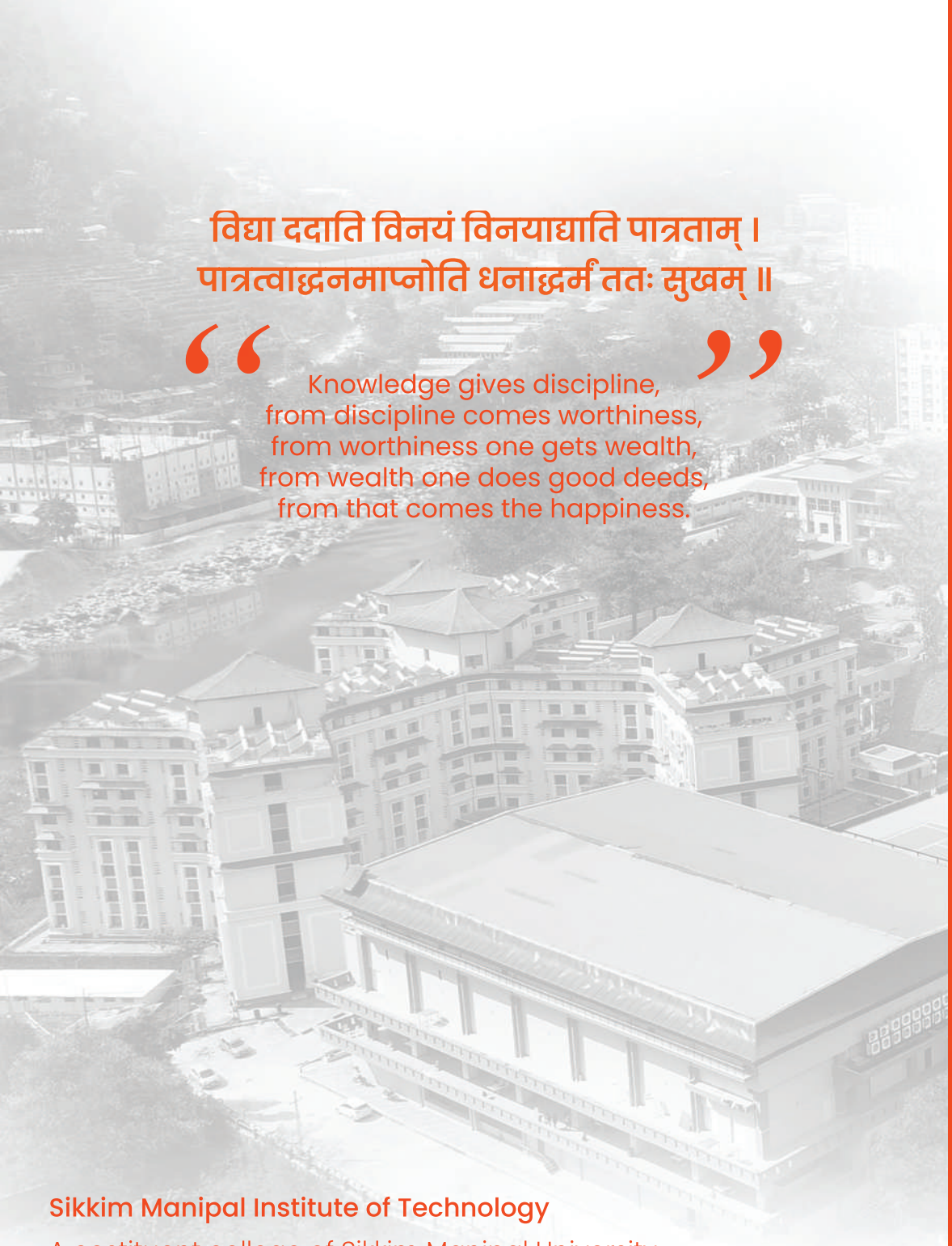
2	Dr. Ashis Sharma	Sr. Resident Doctor	9614902435		DS-1	482
3	Medical Staff	SMIT Dispensary	7797006296 9647460209 9064408234		DS-3	227
Important Public Services						
1	Police	OC/Rangpo Police Stn	100 / (+91 3592) 240835			
2	Fire Brigade	East Sikkim	101 / (+91 3592) 233722 / (+91 3592) 202022			
3	Natural Calamities Dept.	East Sikkim	(+91 3592) 202371 / 202001			



विद्या ददाति विनयं विनयाद्याति पात्रताम् ।
पात्रत्वाद्धनमाप्नोति धनाद्धर्मं ततः सुखम् ॥

“Knowledge gives discipline,
from discipline comes worthiness,
from worthiness one gets wealth,
from wealth one does good deeds,
from that comes the happiness.”

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