SMIT
SIKKIM MANIPAL UNIVERSITY
SIKKIM MANIPAL INSTITUTE OF TECHNOLOGY

INFORMATION BOOKLET

2024 – 25

Message From **Director**

I am delighted to welcome you to SMIT, where your academic journey begins in a serene and inspiring environment, ideal for learning and personal growth.

Congratulations on choosing SMIT as the launchpad for your future. You are about to embark on an exciting and transformative chapter of your life. These years will not only shape your career but also help define who you become as a person. I encourage you to remain focused on your goals, progressing steadily and systematically achieve them. We are committed to supporting you by providing a nurturing atmosphere that fosters academic excellence and holistic development.

At SMIT, discipline is a core value, ensuring that our students not only excel academically but also grow as responsible, ethical individuals. We expect you to embrace this discipline and make the most of the opportunities available. From world-class infrastructure to enriching cultural and social experiences, SMIT offers the perfect platform for you to discover your true potential.

We will ensure that you are well-prepared for the challenges ahead and that by the time you graduate, you will be ready to contribute meaningfully to society as a responsible global citizen. This journey will be filled with hard work, but it will also be rewarding and fulfilling. Make every moment count and strive to leave a lasting impact, both here at SMIT and beyond.

Once again, welcome to the SMIT family. We are excited to accompany you on this incredible journey, and we are confident that your time with us will be both memorable and transformative.

Professor (Dr) G. L. Sharma
Director

Ranking

Sl.No	Ranking	SMIT Rank
1.	CAREERS360 ENGINEERING/Architecture/Design - RANKING/ RATING 2024	✓ AAA+
2.	CSR ENGINEERING COLLEGE / INSTITUTE SURVEY 2024	✓ Rank-7 in Top leading engineering colleges of super excellence ✓ Rank-1 in Top Engineering Colleges Ranked by State ✓ Rank-12 in Top 20 Engineering Colleges Ranked by Faculty, Research, Consultancy, EDP & Other Programmes ✓ Rank-9 in Top 20 Engineering Colleges Ranked by Placements, USP, Social Responsibility, Networking & Industry Interface
3.	GHRDC MCA INSTITUTES SURVEY – 2024	✓ Rank-1 in the State of Sikkim ✓ Rank-1 in the Eastern and Central Region ✓ Rank-4 in Top MCA colleges of Outstanding Excellence
4.	GHRDC ENGINEERING COLLEGE / INSTITUTE SURVEY 2024	✓ Rank-1 in the state of Sikkim ✓ Rank-1 in Eastern & Central Region ✓ Rank-2 in Top Engg colleges of Super Excellence
5.	IIRF SURVEY 2024 FOR INDIAN ENGINEERING COLLEGES	✓ Rank -80 in Best Engineering Colleges in India (Private)

6.	INDIA TO-DAY-MDRA BEST COLLEGES RANK-ING – 2024	✓ Rank-10 in top 10 emerging college ✓ Rank-2 in top 5 Region-wise (East) ✓ Rank-20 in over all engineering (Private)
7.	THE WEEK - HAN-SA RESEARCH - ENGINEERING COLLEGE SURVEY 2024	✓ Rank-3 in private engg. Colleges East Zone ✓ Rank-43 in Private Engg. Colleges all india ✓ Rank-69 in Engineering colleges all India.

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 technomanagers who can contribute effectively to the advancement of the society

OBJECTIVES

- To provide wholesome education to meet the intellectual aspirations of the students.
- To equip students with techno-managerial skills to enable them to take their assigned role in the industry.
- To inculcate essential ethics and values to meet the spiritual needs to the students.
- To provide a sound institutional environment nurturing emotional strength, healthy mind, body, and resilience amongst the students.

ACADEMIC CALENDAR FOR ODD SEMESTER: 2024 (ALL COURSES)

09 Jul – 11 Jul 2024	Reporting of 1st semester of all B.Tech courses
12 Jul – 13 Jul 2024	Reporting of 1st semester of BBA, BCA & B.Sc Courses
15 Jul – 28 Jul 2024	Commencement of Student Induction programme for 1st semester of all B.Tech courses, BCA, BBA and B.Sc courses.
22 Jul - 23 Jul 2024	Semester registration and Induction programme for all higher semester students (Both UG and PG) including rejoining of the subjects/semester ***(Less 1st semester students)***
29 Jul 2024	Commencement of classes of 1st semester of all UG courses
01 Aug 2024	Commencement of classes of 1st semester of all M.Tech courses, MCA, MBA, & M.Sc courses.
12 Aug 2024	Last date of semester registration (less 1st Semester students).
26 Aug– 31 Aug 2024	Quiz-I
26 Aug– 31 Aug 2024	Student Feedback (Phase -I)
09 Sep - 16 Sep 2024	Sessional-I
30 Sep- 03 Oct 2024	Student Profiling/DAC meeting/Class Committee Meeting
30 Sep 2024	***Last date of sending TG reports to the parents after Sessional-I.***
11 Oct - 14 Oct 2024	**Mid Semester Break**
25 Oct - 31 Oct 2024	Quiz-II
25 Oct - 31 Oct 2024	Student Feedback (Phase -II)
04 Nov – 11 Nov 2024	Sessional-II
14 Nov - 16 Nov 2024	Re-sessional
14 Nov - 18 Nov 2024	Student Profiling/DAC meeting/Class Committee Meeting
18 Nov 2024	***Last date of sending TG reports to the parents after Sessional-II.***
18 Nov – 23 Nov 2024	Lab sessional
23 Nov 2024	**Last Instructional Day**
27 Nov - 13 Dec 2024	**Commencement of Odd Semester (Nov/Dec) Examinations**
24 Dec 2024	Publication of Odd Semester Examination Results.
28 Dec 2024	Last date for completing Additional Lab classes/Examination*
30 Dec 2024	Last date of receipt of application form for Supplementary Examinations (Online/ Offline)
02 Jan - 15 Jan 2025	Supplementary Examinations
06 Jan 2025	**Even Semester begins.**
27 Jan 2025	Publication of Supplementary Examinations Results
27 Nov 2024- 30 Dec 2024	***Winter Vacation slot for Faculty members***

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

SECTION – 1

GENERAL INFORMATION

1. Introduction

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

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-readyprofessionals. It offers the state-of-the-art facilities, nurturing of entrepreneurial skills and conducive learning and research environment.

The institute is focused at embracing the latest trends and practices of the modern world; it aimes at refining, cultivating, and nourishing these attributes to enrich the student's life. We as mentors facilitate the student in strengthening their belief to excel and guide them to 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 Facilities

1.1.1 Identity Card: Every student must carry their identity card when moving out of the Hostel or the 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.

1.1.2 Medical Facilities: The Institute has a Health Center with resident Doctors available 24x7 for attending 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 referral case(s). Doctor/Nurse will visit individual room only for exceptional medical cases. Essential medicines only are available in the dispensary.

Health Centre: The health centre is located within the campus and is staffed with two doctors and three nurses available 24x7. It also provides ambulance services and emergency medicine facilities.

1.1.3 Library: The library is open from 9:00 AM– 9:00 PM on all working days and the reading hall is open from 9:00 AM to 11:59 PM. Librery is also open from 9:00 AM to 4:00 PM on Sundays & Second Saturdays. The students can borrow books from the library using the library card for a period of one month.

1.1.4 Marena (Sports Complex): The modern sports complex, one of its kind in the entire Eastern part 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 Swimming Pool, 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.

1.1.5 Stationery Shop is located inside the campus at F-Block near SBI ATM to cater the need of stationery items.

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

1.1.7 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.

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

1.1.9 Laundry: Laundry service is arranged where laundry persons visit hostels on regular and scheduled timings. The details can be obtained from the hostel office.

1.1.10 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 can visit 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.

1.2 Important Offices

1.2.1 Training and Placement Cell: 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 to clear various competitive examinations.

1.2.2 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 in collaboration with Government of India's Start-up initiative-Atal Incubation Centre which is also in the 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 has constituent units viz., Institution's Innovation Council (IIC, under the aegis of Ministry of Education's Innovation Cell), National Innovation and Startup Policy (NISP), 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. The ideology follows three important processes of Ideate, Innovate and Create, to achieve the goals. The Incubation Lab at AIC 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.

1.2.3 International Collaboration Cell: is dedicated to fostering global partnerships with renowned institutes and universities worldwide. This initiative aims to provide faculty and students with invaluable opportunities to engage in international collaborations, enhancing their academic and professional experiences. The cell also provides essential assistance to foreign students enrolled at SMIT, guiding them through the documentation process to ensure a smooth and hassle-free stay. Additionally, the cell supports the following activities:

IAESTE (International Association for the Exchange of Students for Technical Experience): IAESTE is a renowned non-profit, non-governmental student exchange program that offers SMU students to participate in technical paid internships abroad during their studies. As a member university of the IAESTE global network, SMU provides essential support to students in securing these international internships, enriching their technical and professional skills.

AIESEC (International Association of Students in Economic and Commercial Sciences): AIESEC is an international non-profit, non-governmental organization focused on developing leadership potential in young people through global internships, volunteer experiences, and leadership opportunities. The organization empowers youth to make a meaningful social impact, equipping them with the skills needed to drive positive change in their communities and beyond.

Study Abroad Program (SAP): The Study Abroad Program allows SMIT students to earn external credits by studying at foreign universities or institutes with which SMU/SMIT has established MOUs or from other approved universities.

1.2.4 Academics Cell: is responsible for ensuring the smooth and effective delivery of academic programs and courses. It oversees the scheduling of classes, management of academic records, and implementation of curriculum updates to maintain high educational standards. The cell supports faculty and students by addressing academic concerns, facilitating examinations in coordination with the Controller of Examination office, and coordinating with various departments. By ensuring the alignment of academic activities with institutional goals, the Academics Cell plays a crucial role in enhancing the overall learning experience and academic success at SMIT.

Board of studies of department includes experts from academia, industry, university representative and alumni for framing the curriculum.

1.2.5 Alumni Engagement Cell: It serves as a single point of contact and provides a platform to the students for interaction with the alumni members of the institute to assist them in career planning, placement and transitions. Alumni talks for the students are regularly arranged so that they can share their experiences and the latest trends in the industries which will help our students to prepare for the campus placement drive. Our reputed alumni also extend their help in arranging student internships. The cell also extends support to our alumni for their various requirements like issue of documents from the institute, academic credential verification by WES etc.

1.2.6 Research Cell: actively promotes, organizes, and supports technical research and innovation. Students and faculty get access to research, and innovation conducted by their peers and colleagues at Manipal Group universities worldwide. The cell supports faculty and students in pursuing advanced research projects, often in collaboration with industry and academic partners, to address real-world challenges. Technical research is sponsored by both the University and government and semi-government organizations like the Department of Science and Technology, Department of Biotechnology, Defense Research and Development Organization, All India Council of Technical Education, Indian Space Research Organization (ISRO), National Natural Resources Management System, Department of Information and Electronics Technology and the Ministry of Science & Technology etc.

1.2.7 Student Affairs Cell is dedicated to enhancing the overall student experience by addressing their needs and concerns. It organizes various extracurricular activities, fostering a vibrant campus life and promoting holistic development. The cell acts as a bridge between students and the administration, ensuring that student voices are heard, and their well-being is prioritized. Through counseling, mentorship, and support services, the Student Affairs Cell helps students to navigate academic and personal challenges, contributing to a positive and enriching environment at SMIT.

1.2.8 Office of Chief Wardens: Office oversees the overall management of hostel facilities, ensuring a safe and comfortable living environment for students. They coordinate with floor wardens to address student needs, maintain discipline, and handle any issues that arise in the hostels. Each floor in the Hostel has a designated floor warden. Floor Wardens play a crucial role in day-to-day operations, acting as the first point of contact for students and ensuring compliance with hostel rules. Both the Chief Warden and Floor Wardens work collaoratively to create a supportive and secure residential community. Their efforts contribute significantly to the well-being and academic success of students living on campus.

1.2.9 Quality Cell: is committed to ensuring the highest standards of academic and administrative excellence. Cell's practices are designed to ensure continuous quality improvement & alignment with national & international standards in higher education.

It plays a crucial role in monitoring and enhancing the quality of education, focusing on continuous improvment through regular assessments and feedback mechanisms. The cell works closely with faculty and staff to implement best practices, ensuring that the institute's programs align with global standards. By fostering a culture of quality, the Quality Cell contributes to the overall development of students and the institution's reputation for excellence.

1.2.10 Administration and Security Cell: is integral to the smooth functioning of the campus, overseeing administrative operations and ensuring a secure environment for all. The cell manages essential services, coordinates with various departments, and upholds institutional policies to maintain operational efficiency. Security is a top priority, with the cell implementing comprehensive measures like CCTV surveillance and security guards at all strategic points to safeguard the campus community. By streamlining administrative processes and ensuring safety, the Administration and Security Cell contributes to a well-organized and protected campus atmosphere.

1.2.11 Admission Cell: is dedicated to guiding prospective students through a seamless and transparent admission process. The cell also promulgates details about the institute through various outreach activities. It provides comprehensive support, from answering queries to assisting with application procedures and ensuring eligibility criteria are met. The cell plays a vital role in welcoming new students by offering personalized assistance like transport arrangement and timely information. Through its efficient and student-centered approach, the admission cell ensures that the enrollment process is smooth and accessible for all applicants, helping them transition into the SMIT community with ease.

1.2.12 Faculty Development Cell: is dedicated to enhancing the professional growth and teaching excellence of the institute's faculty members. It organizes workshops, training programs, and seminars to keep educators updated with the latest pedagogical techniques and research advancements. The cell provides resources and support for faculty to engage in continuous learning and professional development. By fostering an environment of academic and instructional improvement, the Faculty Development Cell helps ensure that educators deliver high-quality education and contribute to the institute's overall success.

1.2.13 IT Council: focuses on advancing the institute's technological infrastructure and digital capabilities. It manages and oversees IT-related projects, ensuring the efficient operation of computer systems, networks, and software applications across the campus. The council supports both faculty and students by addressing technical issues, implementing new technologies, and enhancing digital resources. Through strategic planning and innovation, the IT Council plays a key role in maintaining a modern and effective technological environment at SMIT. Its activities contribute to the seamless integration of technology in academic and administrative functions.

1.2.14 Universal Human Values Cell at is dedicated to promoting ethical principles and core human values within the academic community. It coordinates the Human Values lectures which are part of the curriculum and also organizes workshops, seminars, and activities focused on fostering integrity, respect, and social responsibility among students and faculty. The cell aims to integrate these values into the educational process, encouraging a holistic approach to personal and professional development. By cultivating a culture of empathy and ethical behavior, the Universal Human Values Cell supports the development of well-rounded individuals who contribute positively to society.

1.2.15 Outreach Cell: focuses on strengthening the institute's engagement with the community and beyond. It organizes initiatives and programs aimed at addressing social issues, promoting sustainability, and fostering community development. The cell facilitates partnerships with local organizations and participates in projects that benefit both students and the wider community. By encouraging active involvement and social responsibility, the SMIT Outreach Cell enhances the institute's impact and builds meaningful connections with various stakeholders. Its efforts contribute to creating a positive and proactive presence both on and off campus.

1.2.16 Office of the Additional Registrar: is responsible for ensuring adherence to regulatory and institutional policies. It manages compliance with accreditation standards, legal requirements, and internal procedures, maintaining the institute's operational integrity. The office works closely with various departments to monitor and enforce adherence to guidelines and standards. Its role is crucial in upholding the institute's reputation.

1.3 Processes

1.3.1 Teacher Guardian: The scheme is aimed at implementing a noble practice where every teacher acts as a guardian to the students under him/her. The TG extends his/her support 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 serves 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 the 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 'Teacher Guardian Scheme'.

Mentor Mentee: The First-year students would continue to be under the TG scheme. All students of 2nd, 3rd, and 4th years are to be equally distributed among teachers from each year. A teacher would continue to be the mentor/ TG of these students who have been allocated to him in the 2nd year throughout their stay in the university. Every year 4th year students would complete their degree and new students of 2nd year are to be allocated to them. The mentors are to allocate long term projects to the students from 2nd year onward which shall continue till final year of the student and take weekly feedback on the progress of the same. Mentor to form groups of three/four students for each project. The allocated project would be credit based assessed under Project based learning (PBL).

1.3.2: National Service Scheme (NSS): National Service Scheme (NSS) is a Central Sector Scheme of Government of India, Ministry of Youth Affairs & Sports from the year 1969. It provides opportunity to the student youth of 11th & 12th Class of schools at +2 Board level and student youth of Technical Institution, Graduate & Postgraduate at colleges and University level of India to take part in various government led community service activities & programs. The sole aim of the NSS is to provide hands on experience to young students in delivering community service.

The motto of National Service Scheme is **"NOT ME BUT YOU"**

It reflects the essence of democratic living and upholds the need for self-less service. NSS helps the student's development & appreciation to other person's point of view and also show consideration towards other living beings.

1.3.3: National Cadet Corps (NCC): The Senior Division/Wing NCC (army) at SMIT was raised in the year 2018 under the aegis of 3 Sikkim Bn NCC, Tadong. Since then, 49 Cadets have successfully completed B certificate exams and out of these 16 cadets have completed both B as well as C certificate exam. The cadets take part in ATC/CATC/COC and other training camps organized by the NCC. The cadets are exposed to regimental way of life and develop a flair for sports and adventure through these camps. They participate in different types of drills and activities as part of their institutional training and also during the Camps organized by NCC. These activities include organizing blood donation camps, tree plantation drive, cleanliness drive, drill, physical training, etc. Ashutosh Panda from the first cohort of 18 cadets did make it successfully participated in the highly coveted Republic Day Camp-2020, participated in the PM's rally and consequently won the Governor's Gold medal for his outstanding and consistent performance as a cadet. NCC not only prepares and motivates the young students to join the Indian armed forces but also instills within them nationalist felling, camaraderie, high regard for moral and ethical values, sense of discipline and social responsibility, confidence and leadership skills and thus makes them a valuable citizen for the country. Joining NCC is very beneficial to those students who aspire to make a career in the defense services as there is special entry schemes for NCC C certificate holders. NCC C certificate holders also get bonus marks in other modes of selection in the Armed forces, paramilitary forces, and many renowned private organizations like reliance holds special recruitment drives for them. During 2023 two cadets namely Kumar Aakarsh and Namrata Parbat got the opportunity to attend NCC sponsored SSB coaching at M/S Siegwald Leadership & Training Academy, Pvt. Ltd., Kolkata during 17 Nov 23 to 29 Nov 23. They were selected after screening at 2 stages including that at the level of Grp. Cdr.

1.3.4 Student Council: It is the elected body of the students which is responsible for taking care of the welfare and issues pertaining to the students. The council is focused on addressing the quality of student life in the campus, the food in the mess, the curricular, co-curricular as wellas extra-curricular activities in the institute. The council is constituted 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.

1.3.5 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 number of 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 like IEEE 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.

1.3.6 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 ambience for conducive learning in the institute.

1.3.7 Main Gate Entry: Hostlers are firmly advised to enter the campus before 09:00 PM. Coming late amounts to gross violation of laid down rules and regulations of the institute and warrants disciplinary actions which is undesirable from the students' community. In case of exigencies, student(s) may seek the permission of the floor warden/hostel authority.

Day Scholars are also advised to leave the campus by 06:00 PM. However, for any academic/ sports engagements students are advised to seek prior written permission from AD(SA)/ Sr. Sprots Officer respectively.

1.3.8 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 but hard to do away with, so be wary not to fall prey to these bad practices.

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

1.3.10 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
PROGRAMS AND CGPA REGULATIONS

2.1 Background

SMIT is a constituent college of Sikkim Manipal University which offers various Undergraduate & Postgraduate 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 Communication and Signal Process
	B.Tech in Electronics Engineering (VLSI Design and Technology)	
	B.Sc in Computer Science	'-
Mechanical Engineering(ME)	B.Tech. in ME	-
Information Technology (IT)	B.Tech. in IT	-
	B.Tech in Computer Science and Technology	
Management Studies (MS)	Bachelor of Business Administration (BBA)	Master of Business Administration (MBA)
	B.Sc (Economics)	
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	Batchelor of Physical Education and Sprots (BPES)	'-
Psychology	B.Sc Applied Psychology	-
	BA Psychology	

2.3 Honours Program in B. Tech Engineering Courses with specialization (180 Credits)

As per the AICTE Approval Process Handbook (2024-25) for undergraduate Degree course in Engineering and Technology, there is a provision to award B.Tech degree for all engineering undergraduate programs are as follows:

- A student will earn B.Tech (Honours), if he/she has opted for select open elective from parent department with 180 credits.
- A student will earn minor specialization, if select open elective are opted from anyone of the non-parent departments with 180 credits.
- A student may opt out from choosing open elective from 5th semester onwards, in this case he/she may be awarded B.Tech degree with 164 credits.

CSE (Data Science)

a) Data Science
b) Computer Vision and Speech Technology
c) Biomedical Technology

Civil Engineering (CE)

a) Natural Hazard and Disaster Management
b) Environmental Engineering
c) Earthquake Engineering
d) Geoinformatics

Computer Science & Engineering (CSE), CSE (AI&ML) & CSE (IoT Cyber Security including Block Chain Technology)

a) Industry 5.0
b) Computational Social Science
c) Computer Graphics & Visualization
d) Computational Mathematics
e) Artificial Intelligence Systems

Electronics & Communication Engineering

a) Semiconductor and Nanotechnology
b) Internet of Things (IoT)
c) Singal Processing
d) 5G and Future Generation Communication

Electrical & Electronics Engineering (EEE)

a) Electric Drive Vehicle Engineering
b) Power and Energy Systems
c) Advanced Specialization on Electric Vehicle (Electrical) in collaboration with L&T Edu Tech

Information Technology (IT)

a) Cyber Security

b) Multimedia Computing & Communications

Mechanical Engineering (ME)

a) Automotive Engineering

b) Robotics & Automation

c) Machine Design

d) Advanced Specialization on Electric Vehicle (Mechanical) in collaboration with L&T Edu Tech

Computer Science and Technology (CST)

a) Artificial Intelligence & Machine Learning (AI & ML)

b) Cloud Computing

Electronics Engineering (VLSI Design and Technology)

2.4 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 optingfor the same will be considered for credit transfer. The students are only eligible to opt for not more than 40% of the total courses being offered in a particular semester through the SWAYAM platform. The deatils of Standard Operating Procedure (SOP) for SWAYAM/NPTEL is available in https://smtech.in, which can be accessed through the local internet of the institute.

2.5 Student's 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: 202400123

YYYY: 2024, and NNNNN: 00123

2.6 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) (CD)
- Mechanical Engineering (ME)
- Computer Science and Technology (CST)
- Electronics Engineering (VLSI Design and Technology) (VT)
- Computer Application (CA)
- Business Administration (BA)
- Mathematics (MA)
- Physics (PH)
- Chemistry (CH)
- Computer Science (BC)
- Physical Education and Sports (PE)
- Economics (EN)
- Psychology (PY)
- 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

2.7 CGPA and 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.

2.8 Criteria for Minimum passing marks in End Semester Examination for all UG and PG courses for 2024 admitted batch onwards.

- For UG courses, Minimum 35% marks to be scored in every theory subject in the End Semester Examination.
- For PG courses, Minimum 40% marks to be scored in every theory subject in the End Semester Examination.
- For UG and PG courses, Minimum 40% marks to be scored in every Non theory subjects like, practical, project, seminar, project-based learning, Industrial training in the End Semester Examination.

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:

- The data is taken only from students who have appeared in both in-semester and end-semester examinations.
- The cut-off for E and S grades is calculated as μ - 2σ and μ + 1.5σ respectively.
- For UG theory subjects, if μ - 2σ is less than 35, the lower cut-off for E grade is taken as 35. In case the value exceeds 35, the lower cut-off for E grade is then taken as 35.
- For UG non-theory subjects If μ - 2σ is less than 50, the lower cut-off for E grade is taken as 50. In case the value exceeds 50, the lower cut-off for E grade is then taken as 50.
- For PG and PhD theory subjects, if μ - 2σ is less than 40, the lower cut-off for E grade is taken as 40. In case the value exceeds 40, the lower cut-off for E grade is then taken as 40.
- For PG and PhD non-theory subjects If μ - 2σ is less than 50, the lower cut-off for E grade is taken as 50. In case the value exceeds 50, the lower cut-off for E grade is then taken as 50.
- For UG, PG and PhD theory and Non theory subjects, If μ + 1.5 σ is more than 90, the upper cut-off for S grade is considered as 90. If the value is less than 85, the lower cut-off will be fixed at 85. The value μ + 1.5 σ calculated will be rounded to the lower whole number which will be the lower limit of S grade.
- The range between the lower and the upper cut-off as decided by para above will be divided by 5 to get the step size for deciding other grades.
- μ-2σ will be lower limit for E grade as per para described above. Marks below the lower limit of E grade will be F assigned F Grade.
- 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 para above. These limits will be rounded off after adding the step sizes and will be utilized as a cut-off for assigning the respective grades.
- (a) In case the number of students is below 20 in UG theory subjects, the absolute grading scheme will be applied as given below. In case the number of students is more than 20 in UG theory subjects, the relative grading scheme will be applicable.

Grade	S	A	B	C	D	E	F
Marks	>_90	79-89	68-78	57-67	46-56	35-45	<35

(b) In case the number of students is below 20 in PG and Ph.D. theory subjects, the absolute grading scheme will be applied as given below. In case the number of students is more than 20 in PG and Ph.D. theory subjects, the relative grading scheme will be applicable.

Grade	S	A	B	C	D	E	F
Marks	>_90	80-89	70-79	60-69	50-59	40-49	<40

c) In case the number of students is below 20 in UG, PG and Ph.D. programs of Non theory subjects like, practical, project, seminar, project-based learning, Industrial training, the absolute grading scheme will be applied as given below. In case the number of students is more than 20 in UG, PG and Ph.D. programs of Non theory subjects, the relative grading scheme will be applicable.

Grade	S	A	B	C	D	E	F
Marks	>_90	82-89	74-81	66-73	58-65	50-57	<50

- For backlog subjects, the above grade calculations are applicable.

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 studied by the student which is taken into account from his/her date of joining. At the end of every semester, the CGPA will be calculated up to two decimal places and will be indicated on the grade report.

GPA and CGPA are calculated by the following equations:

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

Where n = number of subjects in a given semester; N = number of semesters; GPA_i = GPA for the i^{th} semester; C_{ij} = number of credits for the j^{th} subject in the i^{th} semester; and G_{ij} = Grade point corresponds to the grades obtained in the j^{th} subject in the i^{th} semester. At the end of each semester the grade report or 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

A Standard Promotion Policy applicable to both UG and PG courses as approved vide Agenda Point No. 6 of 64th Academic Senate Meeting held on 10 Jan 2024 is appended below:

Undergraduate Courses (UG) (04 Years)

1st Year to 2nd Year	-	50% of the total credit in 1st Year
2nd Year to 3rd Year	-	60% of the total credit upto 2nd Year
3rd Year to 4th Year	-	70% of the total credit upto 3rd Year
Final Year	-	100%

Undergraduate Courses (UG) B.Tech Lateral Entry

2nd Year to 3rd Year	-	60% of the total credit in 2nd Year
3rd Year to 4th Year	-	70% of the total credit upto 3rd Year
Final Year	-	100%

Undergraduate Courses (UG) (03 Years)

1st Year to 2nd Year	-	50% of the total credit in 1st Year
2nd Year to 3rd Year	-	60% of the total credit upto 2nd Year
Final Year	-	100%

Post graduate Courses (PG) (02 Years)

1st Year to 2nd Year	-	55% of the total credit in 1st Year
Final Year	-	100%

* Wherever the credits are in fraction would round off to the lower whole number

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 course duration. A student will not be allowed to complete the course on the following academic grounds:

i. The students of B. Tech, BBA, BCA, BSc and MCA program will be declared as "Not Fit For Technical Education" (NFTE) if he/she fails to complete the program within twice the maximum duration of the program.

ii. For MBA, MSc and M.Tech 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.

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 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.

Drawing Classes: The drawing classes comprise of 1 hr of theory, 2 hrs of the lab class in a week. 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 onExperiment/ Program	Total marks
3	2	3	2	10

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**

End Semester Theory Examination: An end semester examination for theory assessment is conducted for a total of 100 marks which further converted to 50 marks.

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

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 Additional Labs 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:*** Flexibility of final year project duration will be of either six (06) months or one (01) year. The student who will opt for one year internship in academics/Industry will be befitted from this flexibility. The students are encouraged to carry out the major projects in industries.
- A faculty member is assigned as an internal guide to monitor the progress of a student carrying out their projects outside under external supervision.
- In case of in-house projects the monitoring is done on regular basis by the assigned project guide 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.
- 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.
- A faculty member is assigned as an internal guide to monitor the progress of a student carrying out their projects outside under external supervision.
- 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.
- 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 rejoin in parallel semester upto 35 credits (including the credits of current semester) without dropping lab subjects. Moreover, there should not be clash in timetable.
- 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 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 $\geq$ 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 must 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 45% marks (40% for SC/ ST/OBC students) related to a specific branch of engineering.
- Students who have completed 3 years of B.Sc. with mathematics (compulsory) with a minimum of 45% marks (40% for SC/ST/OBC students).
- Students should clear the institute entrance exams.

2.17 Handling of Malpractice during Examination: Acts of Malpractice: The following acts on the part of students during examination will be considered as act of malpractice:

2.17.1 Minor acts of Malpractice (Category I offences)

- Having in his possession or having access to any paper, books or notes or chits with content related to the subject of examination.
- Found receiving assistance from others or giving assistance to others.
- Copying from any paper, book or notes.
- Allowing any other candidate to copy from his answer books or found trying to copy from the neighbors.
- Disclosing identity by making peculiar marks in the answer books where the same act is prohibited**.**
- Found having any written matter on the person (palm, hand, leg, clothes etc.) or on any item in his/her possession (eg. Calculation, scale handkerchief etc.)
- Scribble the points on the question paper and /or pass on the same to some other examinee.
- Write any appeal on the answer book for more marks etc.
- Carrying or using mobile phones in examination hall. Found with mobile phone, smart watch, ear pods or any gadget that is prohibited in the examination hall.

2.17.2 Serious acts of Malpractice (Category II offences)

- Having in his possession or having access to any paper, books or notes or chits with content related to the subject of examination.
- Use of obscene or abusive language during the examination.
- Trying to cause disturbances to the fellow examines and/or proceedings of examinations.
- Tearing off or spoiling the sheets in the answer book.
- Destroying any evidence of malpractice.
- Second instance of minor act of malpractice by a student.

2.17.3 Very serious acts of Malpractice (Category III offences)

- Attempting any act that disturbs the sanctity or confidentiality involved in the examination process.
- Impersonation
- **Third instance of category I Act of malpractice by a student**
- **Second instance of category II Act of malpractice by a student**

2.17.4 Guidelines for the award of punishment:

➢ **Class Tests/Sessional:**

- **Category I**: Scrapping of only paper in which the student is found indulging in malpractice and allowed to appear in Re-sessional.
- **Category II:** Scrapping only paper in which the student is found indulging in malpractice and not allowed to appear in Re-sessional examination.
- **Category III:** Scrapping of the paper in which student indulged in malpractice and will not be permitted to appear for remaining papers/subjects of the examination. Moreover, the student will not be allowed to appear in Re-Sessional Examination and may even lead to suspension for one year or rustication of the student depending upon gravity of offence.

➢ **End Semester Examinations:**

- **Category I:** The candidate shall be punished by scrapping of that subject. The students is allowed to appear for that subject in the next immediate exam.
- **Category II:** The candidate shall be punished with scrapping of that subject. He/She shall not be allowed to appear for that subject in the immediate next exam.
- **Category III: The candidate shall be punished with**

  a) scrapping of that paper and will not be permitted to appear in the remaining subjects of that examination. He or she shall not be eligible to appear in the immediate next exam in any subject of that examination.

  b) In case of students attempting any act that disturbs the sanctity or confidentiality involved in the examination process or Impersonation, punishment shall be suspension for one year/rustication from the university.

SECTION –3
DESCRIPTION OF COURSES OFFERED

3.1 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			
Total credits for the Semester:		**21**	Total credits for the Semester:		**21**

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
ME102A1	Elements of Mechanical Engineering	3	CE101A1	Elements of Civil Engineering	3
CH101A1	Engineering Chemistry	4	PH101A1	Engineering Physics	4
EE101A1	Elements of Electrical Engineering	3	EC101A1	Basic Electronics	3
CS101A1	Computer Programming in C	4	BA101A1	Communication Skills	2
CH102A1	Environmental Science	1	ME101A1	Engineering Graphics	2
CS101A4	Computer Programming Lab	1	BP101A1	Constitution of India	1
CH101A4	Engineering Chemistry Lab	1	ME101A4	Workshop Practice	1
			PH101A4	Engineering Physics Lab	1
Total credits for the Semester:		**21**	Total credits for the semester		**21**

3.1.1 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, Vedic Mathematics Level- I.

EC101A1: BASIC ELECTRONICS, Credit: 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 film interference, Newton's ring, Diffraction of light, Fraunhofer diffraction and plane transmission grating, Rayleigh criterion, Polarization, Double refraction, Plane, Circularly and elliptically polarized light, Inadequacy of classical mechanics, Black body radiation, Rayleigh Jeans' law, Wien's displacement law, Planck's radiation law, Planck's quantum hypothesis, Photoelectric effect, Wave particle duality, de Broglie waves, Matter waves (Davisson-Germer experiment), Group velocity and phase velocity, Wave packets and Heisenberg's uncertainty principle, Wave function and its physical significance, Schrodinger's equation, Schrodinger's 1-D time independent equations, Potential well, potential barrierand quantum tunneling. Concept of free electron theory, Quantum theory of free electrons, Fermi energy, Effect of temperature in Fermi-Dirac distribution, Bloch theorem, Concept of energy

levels and bands, 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.

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, Vedic Mathematics Level- II.

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 indicator electrodes- 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.

CH102A1*: 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.

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		
Sub. Code	**Subject Name**	**C**	**Sub. Code**	**Subject Name**	**C**
MA205A1	Discrete Mathematics	4	MA206A1	Probability, Statistics and Stochastic Process	4
CD201A1	Digital Design and Computer Organization	4	CD204A1	Design and Analysis of Algorithms	4
CD202A1	Data Structures	4	CD205A1	Database Management Systems	4
CD203A1	Introduction to Data Science	4	CD2xxA3	Program Elective-II*	4
CD2xxA3	Program Elective-I*	4	CD2xxA2	Open Elective-II/Minor/NCC*	4
CD2xxA2	Open Elective-I/Minor/ NCC*	4	GN201A1	Universal human values-II: understanding Harmony and ethical human conduct	3
CD201A4	Data Structures Laboratory	1	CD203A4	Object Oriented Programming using Java Laboratory	1
CD202A4	Data Science Laboratory	1	CD204A4	Database Management Systems Laboratory	1
CD201A5	Project Based Learning- I	1	CD202A5	Project Based Learning- II	1
Total:		**27**	**Total :**		**26**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub. Code	**Subject Name**	**C**	**Sub. Code**	**Subject Name**	**C**
CD301A1	Machine Learning	4	BA346A1	Industrial Management	2
CD302A1	Formal Languages and Automata Theory	4	CD305A1	Deep Learning	4
CD303A1	Data Warehousing and Big Data Analytics	4	CD306A1	Text Analytics and Natural Language processing	4
CD304A1	Computer Networks	4	CD3xxA3	Program Elective-IV*	4
CD3xxA3	Program Elective-III*	3	CD3xxA3	Program Elective-V*	4

CD3xxA2	Open Elective-III/Minor/NCC*	4	CD3xxA2	Open Elective-IV/ Minor*	4
CD301A4	Machine Learning using Python Laboratory	1	CD303A4	Deep Learning Laboratory	1
CD302A4	Computer Network Laboratory	1	CD304A4	Data Warehousing and Big Data Analytics Laboratory	1
CD301A5	Project Based Learning-III	1	CD302A5	Mini Project	1
CD301A9	Industrial Training-I	1	GN302A1	Quantitative Aptitude and Logical Reasoning-II	1
GN301A1	Quantitative Aptitude and Logical Reasoning-I	1			
Total		**28**	**** Optional Audit Course**		**26**

SEVENTH SEMESTER			**EIGHTH SEMESTER**		
Sub. Code	**Subject Name**	**C**	**Sub. Code**	**Subject Name**	**C**
CD4xxA2	Open Elective - V/Minor*	4	CD4xxA2	Open Elective - VI/Minor*	4
CD4xxA2	Choice Based Elective*	3	CD402A6	Major Project – Phase II	9
CD401A6	Major Project – Phase I	10			
CD401A9	Industrial Training-II	1			
Total		**18**	**Total**		**13**

List of Program Elective:

Subject Code	Program Elective-I (3rd Semester)	CR	Subject Code	Program Elective-IV(6th Semester)	CR
CD201A3	Object Oriented Programming using Python	4	CD306A3	Machine Learning Operations (MLOps)	4
CD202A3	Digital Signal Processing	4	CD307A3	Compiler Design	4
CD203A3	Mathematical Foundation for Machine Learning	4	CD308A3	Cloud Computing	4
CD204A3	Fundamentals of Web Technologies	4	CD309A3	Remote Sensing & GIS	4
			CD310A3	Augmented and Virtual Reality	4
			CD311A3	High Performance Computing	4
			CD312A3	Cryptography and Network Security	4
			CD313A3	DevOps Engineering	4
Program Elective-II (4th Semester)			**Program Elective-V (6th Semester)**		
CD205A3	Operating System	4	CD314A3	Generative AI and Prompt Engineering	4
CD206A3	Introduction to Artificial Intelligence	4	CD315A3	Social Network Analytics	4
CD207A3	Programming in Java	4	CD316A3	Blockchain Technologies	4
CD208A3	Speech Processing	4	CD317A3	Bio-Inspired Computing	4
CD209A3	Analog Electronic Circuits	4	CD318A3	Quantum Computing	4
Program Elective-III (5th Semester)			CD319A3	Reinforcement Learning	4
CD301A3	Digital Image Processing	3	CD320A3	Cyber Security	4
CD302A3	Optimization Techniques	3	CD321A3	Wireless Sensor Network	4
CD303A3	Internet of Things (IoT)	3	CD322A3	MERN Stack Development	4

CD304A3	ARM controller	3	CD323A3	Software Engineering	4
CD305A3	Parallel and Distributed Algorithms	3	CD324A3	AI in Healthcare	4

List of Minor Specialization/Open Electives

Minor Specialization	Semester	Subject Code (Open/ Minor)	Open Electives	CR
Data Science	III	CD201A2/CD201A8	Introduction to Python Programming	4
	IV	CD202A2/CD202A8	Fundamentals of Data Science	4
	V	CD301A2/CD301A8	Mathematical Foundations of Machine Learning	4
	VI	CD302A2/CD302A8	Machine Learning	4
	VII	CD401A2/CD401A8	Deep Learning for Computer Vision	4
	OR			
	VII	CD402A2/CD402A8	Prompt Engineering	4
	OR			
	VII	CD403A2/CD403A8	Backend Development with Java Spring Boot	4
	VIII	CD404A2/CD404A8	Business Analytics	4
	OR			
	VIII	CD405A2/CD405A8	Cyber Security Tools, Techniques and Counter Measures	4
Computer Vision and Speech Technology	III	CD203A2/CD203A8	Digital Signal Processing	4
	IV	CD204A2/CD204A8	Applied Time-Series Analysis	4
	V	CD303A2/CD303A8	Speech Processing	4
	VI	CD304A2/CD304A8	Computer Vision and Image Processing	4
	VII	CD406A2/CD406A8	Medical Image Analysis	4
	VIII	CD407A2/CD407A8	Automatic Speech Recognition	4
Biomedical Technology	III	CD203A2/CD203A8	Digital Signal Processing	4
	IV	CD206A2/CD206A8	Biomedical Signal Processing	4
	V	CD303A2/CD303A8	Speech Processing	4
	VI	CD305A2/CD305A8	Biomedical Instrumentation	4
	VII	CD406A2/CD406A8	Medical Image Analysis	4
	VIII	CD408A2/CD408A8	Bioinformatics	4

List of Choice Based Electives:

Subject Code	Choice based Electives (Seventh Semester)
CD401A3	Introduction to Japanese Language and Culture
CD402A3	Mandarin (Chinese) for beginners
CD403A3	Spoken Sanskrit: Basic and Intermediate Levels
CD404A3	Essence of Indian Traditional Knowledge
CD405A3	Indian Knowledge System (IKS): Concepts and Applications in Engineering
CD406A3	Introduction to Language and Linguistics
CD407A3	Understanding Incubation and Entrepreneurship
CD408A3	Principles of Economics
CD409A3	Science, Technology and Society

3.2.2 B. Tech Civil Engineering (CE)

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject**	**C**
MA203A1	Engineering Mathematics – III	4	CE212A1	Geotechnical Engineering	4
CE201A1	Strength of Materials	4	CE213A1	Structural Analysis – I	4
CE202A1	Fluid Mechanics & Hydraulics	4	CE214A1	Design of RC Structures	4
CE205A1	Building Materials & Concrete Tech.	4	CE20*A3	Program Elective-II	4
CE20*A3	Program Elective-I	4	CE20*A3	Open Elective-II/Specialization /NCC	4
CE20*A2/A8	Open Elective-I/Specialization / NCC	4	GN201A1	UHV-II	3
CE201A4	Planning & CA Drawing of Buildings	1	CE203A4	Surveying Lab	1
CE205A4	Material Testing Lab	1	CE204A4	Fluid Mechanics Lab	1
CE201A5	Project Based Learning - I	1	CE202A5	Project Based Learning II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject**	**C**
CE301A1	Structural Analysis - II	4	CE305A1	Construction Planning & Management	2

CE302A1	Engineering Hydrology	4	CE308A1	Design of Steel Structures	4
CE306A1	Highway Engineering	4	CE309A1	Estimating, Costing & Valuation	4
CE307A1	Public Health Engineering	4	CE30*A3	Program Elective-IV	4
CE30*A3	Program Elective-III	3	CE30*A3	Program Elective-V	4
CE30*A2/A8	Open Elective III / Specialization / NCC	4	CE30*A2/ A8	Open Elective IV /Specialization	4
CE301A4	Computer Aided Structural Analysis & Design	1	CE302A4	Environmental Engineering Lab	1
CE303A4	Geotechnical Engineering Lab	1	CE304A4	Geoinformatics Lab	1
CE301A9	Industrial Training-I**	1	GN302A1	Quantitative Aptitude & Logical Reasoning- II	1
CE301A5	Project Based Learning III	1	CE302A5	Mini Project	1
GN301A1	Quantitative Aptitude and Logical Reasoning-I	1			
Total		**28**	**Total**		**26**

SEVENTH SEMESTER			**EIGHTH SEMESTER**		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject**	**C**
CE40*A2/A8	Open Elective - V / Specialization	4	CE40*A2/ A8	Open Elective - VI / Specialization	4
CE40*A2	Choice Based Elective***	3	CE402A6	Major Project Phase – II	12
CE401A6	Major Project- Phase I	7			
CE401A9	Industrial Training II**	1			
Total		**15**	**Total**		**16**

***Appropriate subject code depends on selection of program elective.**

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

List of Program Elective:

Subject Code	Program Elective-I (3rd Semester)	Subject Code	Program Elective-IV (6th Semester)
CE201A3	Surveying	CE306A3	Geoinformatics
CE202A3	Latest Trends in Civil Engineering	CE307A3	Advanced Structural Analysis
		CE308A3	Structural Dynamics and Earthquake Engineering
Program Elective-II (4th Semester)		**Program Elective-V (6th Semester)**	
CE204A3	Irrigation Engineering	CE311A3	Waste Water Engineering
CE206A3	Advanced Concrete Technology	CE312A3	Railways, Airports, and Tunneling Engineering
		CE313A3	Bridge Engineering
Program Elective-III (5th Semester)		CE314A3	Advanced Foundation Engineering
CE301A3	Advanced Geotechnical Engineering		
CE302A3	Advanced Design of RC Structures		
CE304A3	Ground Water Engineering		

List of Minor Specialization/Open Elective

Specialization	Semester	Subject Code	Subject name
Natural Hazards and Disaster Management	III	CE201A2/A8	Engineering Geology
	IV	CE204A2/A8	Natural Hazards
	V	CE301A2/A8	Engineering Seismology
	VI	CE305A2/A8	Flood & Drought
	VII	CE401A2/A8	Landside Hazard
	VIII	CE405A2/A8	Disaster Management
Earthquake Engineering	III	CE201A2/A8	Engineering Geology
	IV	CE205A2/A8	Numerical Methods & Statistics
	V	CE301A2/A8	Engineering Seismology
	VI	CE306A2/A8	Introduction to Structural Dynamics
	VII	CE402A2/A8	Earthquake resistant Design and Construction
	VIII	CE406A2/A8	Disaster Management
Geoinformatics	III	CE202A2/A8	Remote Sensing
	IV	CE206A2/A8	Geographic Information Systems
	V	CE303A2/A8	Digital Image Processing
	VI	CE307A2/A8	Pattern Recognition
	VII	CE403A2/A8	Adv. Remote Sensing Techniques
	VIII	CE407A2/A8	Adv. Geospatial Modelling

Environmental Engineering	III	CE203A2/A8	Environment Management
	IV	CE207A2/A8	Solid Waste Management
	V	CE304A2/A8	Air Pollution and Control
	VI	CE308A2/A8	Hazardous Waste Management
	VII	CE404A2/A8	Environmental Impact Assessment
	VIII	CE408A2/A8	Sustainable Engineering Concepts and Life Cycle Analysis

List of Choice Based Electives:

Subject Code	Choice based Electives (Seventh Semester)
	Accountancy and Economics for Engineers
	Safety in Construction

3.2.3 B. Tech Computer Science and Engineering (CSE)

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA205A1	Discrete Mathematics	4	MA206A1	Probability, Statistics, and Stochastic Processes	4
CS201A1	Digital Design and Computer Organization	4	CS204A1	Design and Analysis of Algorithms	4
CS202A1	Data Structures	4	CS205A1	Database Management Systems	4
CS203A1	Object Oriented Programming using C++	4	CS2**A3	Program Elective-II	4
CS2**A3	Program Elective-I	4	CS2**A2/ CS2**A8	Open Elective-II/Minor/NCC	4
CS2**A2/ CS2**A8	Open Elective-I/Minor/NCC	4	GN201A1	Universal Human Values- II: Understanding Harmony and Ethical Human Conduct	3
CS201A4	Data Structures Laboratory	1	CS203A4	Algorithm Laboratory	1
CS202A4	Object Oriented Programming using C++ Laboratory	1	CS204A4	Database Management Systems Laboratory	1
CS201A5	Project Based Learning- I	1	CS202A5	Project Based Learning- II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER		
Sub Code	**Subject Name**	**C**
CS301A1	Artificial Intelligence	4
CS302A1	Formal Languages and Automata Theory	4
CS303A1	Operating Systems	4
CS304A1	Computer Networks	4
CS3**A3	**Program Elective-III**	3
CS3**A2/ CS3**A8	Open Elective-III/Minor/NCC	4
CS301A4	Operating Systems Laboratory	1
CS302A4	Computer Network Laboratory	1
CS301A5	Project Based Learning- III	1
CS301A9	Industrial Training-I	1
GN301A1	Quantitative Aptitude and Logical Reasoning-I	1
Total		**28**

SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**
	Industrial Management	2
CS305A1	Software Engineering	4
CS306A1	Compiler Design	4
CS3**A3	**Program Elective-IV**	4
CS3**A3	**Program Elective-V**	4
CS3**A2/ CS3**A8	Open Elective-IV /Minor	4
CS303A4	Software Engineering Laboratory	1
CS304A4	Compiler Design Laboratory	1
CS302A5	Mini Project	1
GN302A2	Quantitative Aptitude and Logical Reasoning-II	1
Total		**26**

SEVENTH SEMESTER		
Sub Code	**Subject Name**	**C**
CS4**A2/ CS4**A8	Open Elective-V/Minor	4
CS4**A3	Choice-Based Elective	3
CS401A6	Major Project -Phase-I	10
CS401A9	Industrial Training-II	1
Total		**18**

EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**
CS4**A2/ CS4**A8	Open Elective-VI /Minor	4
CS402A6	Major Project -Phase-II	09
Total		**13**

List of Program Electives:

Sub Code	Program Elective -I (3rd semester)	C	Sub Code	Program Elective-III (5th Semester)	C
CS201A3	Java Programming	4	CS301A3	Latest Trends in Computer Science	3
CS202A3	Fundamentals of Web Technologies	4	CS302A3	Design Thinking	3
CS203A3	User Interface/User Experience (UI/UX) Design	4	CS303A3	Speech and Natural Language Processing	3
CS204A3	Information Transmission and Coding Theory	4	CS304A3	Remote Sensing	3
CS205A3	Computer Graphics	4	CS305A3	Autonomous Mobile Robotics and Computational Intelligence	3
CS206A3	Microprocessors and Peripheral Devices	4	CS306A3	Internet of Things	3
CS224A3	Information Systems and Security	4	CS307A3	Data Analytics	3
CS225A3	E-Commerce	4	CS308A3	Big Data	3
CS226A3	Digital Signal Processing	4	CS309A3	Soft Computing	3
CS227A3	Mathematical Foundation for Machine Learning	4	CS310A3	Computer Vision	3
			CS311A3	Cryptography and Network Security	3
			CS312A3	Computational Number Theory	3
			CS313A3	Fault Tolerant Computing	3
			CS314A3	VLSI System Design	3
			CS315A3	Advanced Algorithm	3
			CS316A3	Artificial Neural Network	3
			CS353A3	ARM controller	3

Program Elective-II (4th Semester)			Program Elective-IV (6th Semester)		
CS207A3	Advanced Java Programming	4	CS317A3	High Performance Computing	4
CS208A3	System Programming	4	CS318A3	Parallel and Distributed Algorithm	4
CS209A3	Discrete Structure	4	CS319A3	Internet Technology and Society	4
CS210A3	Graph Theory	4	CS320A3	Deep Learning	4
CS211A3	System Simulation and Modelling	4	CS321A3	Cloud Computing	4
CS212A3	Advanced Web Technologies	4	CS322A3	Remote Sensing and Geographic Information System	4
CS213A3	Embedded Systems	4	CS323A3	Ethical Hacking	4
CS214A3	Social Network Analysis	4	CS324A3	Ad-hoc Wireless Networks	4
CS215A3	VLSI	4	CS325A3	Mobile Computing	4
CS216A3	Signals and Networks	4	CS326A3	Distributed Database Systems	4
CS217A3	Information Retrieval	4	CS327A3	Computational Geometry	4
CS218A3	Data Warehousing and Analytics	4	CS328A3	Advanced Computer Network	4
CS219A3	Advanced Computer Organization and Architecture	4	CS329A3	Machine Learning	4
CS220A3	Principles of Programming Languages	4	CS350A3	Bio Inspired Computing	4
CS221A3	Speech Processing	4	CS351A3	Real Time Systems	4
CS222A3	Analog Electronic Circuits	4	CS352A3	DevOps Engineering	4

CS223A3	Microcontrollers	4	**Program Elective -V**		
			CS330A3	Wireless Sensor Network	4
			CS331A3	Queueing Theory and Modelling	4
			CS332A3	Quantum Computing	4
			CS333A3	Cyber Security	4
			CS334A3	Future Internet Architecture	4
			CS335A3	Distributed Systems	4
			CS336A3	Optimization Techniques	4
			CS337A3	Engineering Research Methodology	4
			CS338A3	Human Computer Interaction	4
			CS339A3	Augmented Reality	4
			CS340A3	Blockchain	4
			CS341A3	Agile	4
			CS342A3	Object Oriented Analysis and Design	4
			CS343A3	Software Quality Management	4
			CS344A3	Pattern Recognition	4
			CS345A3	Web Content Management and Web 3.0	4
			CS346A3	Cyber Physical Systems	4
			CS347A3	Reinforcement Learning	4
			CS348A3	Generative AI and Prompt Engineering	4
			CS349A3	MERN Stack Development	4

List of Choice Based Electives:

Course Code	Course Title	C
CS401A3	Indian Music System	4
CS402A3	History of Science	4
CS403A3	Introduction to Art and Aesthetics	4
CS404A3	Economic Policies in India	4

List of Minor Specialization/Open Elective

Specialization	Semester	Subject Code	Subject name	C
Industry 5.0	III	CS201A2/ CS201A8	Industry Version 4.0	4
	IV	CS202A2/ CS202A8	Programming with Data Structures	4
	V	CS301A2/ CS301A8	Latest Trends in Computer Science	4
	VI	CS302A2/ CS302A8	Internet Technology & Society	4
	VII	CS401A2/ CS401A8	Future Internet Architecture	4
	VIII	CS402A2/ CS402A8	Intellectual Property Rights/Human Computer Interaction	4
Computational Social Science	III	CS203A2/ CS203A8	Python	4
	IV	CS204A2/ CS204A8	Social Network Analysis/Information Retrieval/Data Mining	4
	V	CS303A2/ CS303A8	Soft Computing/ Data Analytics/Speech & Natural Language Processing	4
	VI	CS304A2/ CS304A8	Internet Technology & Society/Block Chain/Machine Learning	4
	VII	CS403A2/ CS403A8	Future Internet Architecture	4
	VIII	CS404A2/ CS404A8	Intellectual Property Rights/Human Computer Interaction	4

Computer Graphics & Visualization	III	CS205A2/ CS205A8	Python/User Interaction (UI)-User Experience (UX)	4
	IV	CS206A2/ CS206A8	Digital Image Processing	4
	V	CS305A2/ CS305A8	Latest Trends in Computer Science / Soft Computing/ Artificial Neural Network/Computer Vision	4
	VI	CS306A2/ CS306A8	Deep Learning/ Machine Learning	4
	VII	CS405A2/ CS405A8	Future Internet Architecture	4
	VIII	CS406A2/ CS406A8	Intellectual Property Rights/Human Computer Interaction	4
Computational Mathematics	III	CS207A2/ CS207A8	Python	4
	IV	CS208A2B/ CS208A8	Discrete Structures/Graph Theory / System Simulation & Modeling	4
	V	CS307A2/ CS307A8	Latest Trends in Computer Science / Soft Computing/Data Analysis/Big Data/ Computational Number Theory	4
	VI	CS308A2/ CS308A8	High Performance Computing/ Computational Geometry/Queueing Theory & Modelling/Optimization Techniques	4
	VII	CS407A2/ CS407A8	Future Internet Architecture	4
	VIII	CS408A2/ CS408A8	Intellectual Property Rights/Human Computer Interaction	4

Artificial Intelligence Systems	III	CS209A2/ CS209A8	Industry Version 4.0	4
	IV	CS210A2/ CS210A8	Programming with Data Structures	4
	V	CS309A2/ CS309A8	Soft Computing	4
	VI	CS310A2/ CS310A8	Prompt Engineering	4
	VII	CS409A2/ CS409A8	Future Internet Architecture	4
	VIII	CS410A2/ CS410A8	Intellectual Property Rights/Human Computer Interaction	4

3.2.4 B. Tech CSE Artificial Intelligence and Machine Learning (AI&ML)

THIRD SEMESTER			**FOURTH SEMESTER**		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA205A1	Discrete Mathematics	4	MA206A1	Probability, Statistics and Stochastic Processes	4
CSML201A1	Machine Learning	4	CSML204A1	Design and Analysis ofAlgorithms	4
CSML202A1	Data Structures	4	CSML205A1	Database Management Systems	4
CSML203A1	Object Oriented Programmingusing C++	4	CSML2**A3	Program Elective-II	4
CSML2**A3	Program Elective-I	4	CSML2**A2/ CSML2**A8	Open Elective-II/Minor/NCC	4
CSML2**A2/ CSML2**A8	Open Elective-I/Minor/NCC	4	GN201A1	Universal Human Values-II: Understanding Harmony and Ethical Human Conduct	3
CSML201A4	Data Structures Laboratory	1	CSML203A4	Algorithm Laboratory	1
CSML202A4	Object Oriented Concepts &Programming using C++ Laboratory	1	CSML204A4	Database Management SystemsLaboratory	1
CSML201A5	Project Based Learning-I	1	CSML202A5	Project Based learning-II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CSML301A1	Artificial Intelligence	4		Industrial Management	2
CSML302A1	Python Programming	4	CSML305A1	Software Engineering	4
CSML303A1	Operating System	4	CSML306A1	Data Analytics	4
CSML304A1	Computer Networks	4	CSML3**A3	**Program Elective-IV**	4
CSML3**A3	**Program Elective-III**	3	CSML3**A3	**Program Elective-V**	4
CSML3**A2/ CSML3**A8	Open Elective-III/Minor/ NCC	4	CSML3**A2/ CSML3**A8	Open Elective-IV/Minor	4
CSML301A4	Machine Learning using Python Laboratory	1	CSML303A4	Software Engineering Laboratory	1
CSML302A4	Computer NetworkLaboratory	1	CSML304A4	Data Analytics using Python Laboratory	1
CSML301A5	Project Based Learning-III	1	CSML302A5	Mini Project	1
CSML301A9	Industrial Training-I	1	GN302A2	Quantitative Aptitude and Logical Reasoning-II	1
GN301A1	Quantitative Aptitude and Logical Reasoning-I	1			
Total		**28**	**Total**		**26**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CSML4**A2/ CSML4**A8	Open Elective-V/Minor	4	CSML4**A2/ CSML4**A8	Open Elective-VI /Minor	4
CSML4**A3	Choice-Based Elective	3	CSML402A6	Major Project -Phase-II	12
CSML401A6	Major Project Phase-I	10			
CSML401A9	Industrial Training-II	1			
Total		**18**	**Total**		**16**

List of Program Elective:

Sub Code	Program Elective -I (3rd Semester)	C	Sub Code	Program Elective-III (5th Semester)	C
CSML201A3	Java Programming	4	CSML301A3	Latest Trends in Computer Science	3
CSML202A3	Fundamentals of Web Technologies	4	CSML302A3	Design Thinking	3
CSML203A3	User Interface/User Experience (UI/ UX) Design	4	CSML303A3	Speech and Natural Language Processing	3
CSML204A3	Information Transmission and Coding Theory	4	CSML304A3	Remote Sensing	3

CSML205A3	Computer Graphics	4	CSML305A3	Autonomous Mobile Robotics and Computational Intelligence	3
CSML206A3	Microprocessors and Peripheral Devices	4	CSML306A3	Internet of Things	3
CSML207A3	Digital Design and Computer Organization	4	CSML307A3	Big Data	3
CSML208A3	Information Systems and Security	4	CSML308A3	Soft Computing	3
CSML209A3	E-Commerce	4	CSML309A3	Computer Vision	3
CSML210A3	Digital Signal Processing	4	CSML310A3	Cryptography and Network Security	3
CSML211A3	Mathematical Foundation for Machine Learning	4	CSML311A3	Computational Number Theory	3
			CSML312A3	Fault Tolerant Computing	3
			CSML313A3	Advanced Algorithm	3
			CSML314A3	Artificial Neural Network	3
			CSML315A3	ARM controller	3
Program Elective-II (4th Semester)			**Program Elective-IV (6th Semester)**		
CSML208A3	Advanced Java Programming	4	CSML316A3	High Performance Computing	4
CSML209A3	System Programming	4	CSML317A3	Parallel and Distributed Algorithm	4
CSML210A3	Discrete Structure	4	CSML318A3	Internet Technology and Society	4
CSML211A3	Graph Theory	4	CSML319A3	Deep Learning	4
CSML212A3	System Simulation and Modelling	4	CSML320A3	Cloud Computing	4
CSML213A3	Advanced Web Technologies	4	CSML321A3	Remote Sensing and Geographic Information System	4
CSML214A3	Embedded Systems	4	CSML322A3	Ethical Hacking	4
CSML215A3	Social Network Analysis	4	CSML323A3	Ad-hoc Wireless Networks	4
CSML216A3	VLSI system Design	4	CSML324A3	Mobile Computing	4

CSML217A3	Signals and Networks	4	CSML325A3	Distributed Database Systems	4
CSML218A3	Information Retrieval	4	CSML326A3	Computational Geometry	4
CSML219A3	Data Warehousing and Analytics	4	CSML327A3	Advanced Computer Network	4
CSML220A3	Advanced Computer Organization and Architecture	4	CSML328A3	Bio Inspired Computing	4
CSML221A3	Digital Image Processing	4	CSML329A3	Real Time Systems	4
CSML222A3	Principles of Programming Languages	4	CSML347A3	DevOps Engineering	4
CSML223A3	Speech Processing	4			
CSML224A3	Analog Electronic Circuits	4			
CSML225A3	Microcontrollers	4	**Program Elective -V**		
			CSML330A3	Wireless Sensor Network	4
			CSML331A3	Queueing Theory and Modelling	4
			CSML332A3	Quantum Computing	4
			CSML333A3	Cyber Security	4
			CSML334A3	Future Internet Architecture	4
			CSML335A3	Distributed Systems	4
			CSML336A3	Optimization Techniques	4
			CSML337A3	Engineering Research Methodology	4
			CSML338A3	Human Computer Interaction	4
			CSML339A3	Augmented Reality	4
			CSML340A3	Blockchain	4
			CSML341A3	Pattern Recognition	4
			CSML342A3	Web Content Management and Web 3.0	4
			CSML343A3	Cyber Physical Systems	4
			CSML344A3	Reinforcement Learning	4
			CSML345A3	Generative AI and Prompt Engineering	4
			CSML346A3	MERN Stack Development	4

List of Choice Based Electives:

Course Code	Course Title	C
CSML401A3	Indian Music System	4
CSML402A3	History of Science	4
CSML403A3	Introduction to Art and Aesthetics	4
CSML404A3	Economic Policies in India	4

List of Minor Specialization/ Open Elective:

Specialization	Semester	Subject Code	Subject name	C
Artificial Intelligence System	III	CSML201A2/CSML201A8	Industry Version 4.0	4
	IV	CSML202A2/CSML202A8	Programming with Data Structures	4
	V	CSML301A2/CSML301A8	Soft Computing	4
	VI	CSML302A2/CSML302A8	Prompt Engineering	4
	VII	CSML401A2/CSML401A8	Future Internet Architecture	4
	VIII	CSML402A2/CSML402A8	Intellectual Property Rights / Human ComputerInteraction	4
Computational Mathematics	III	CSML203A2/CSML203A8	Python	4
	IV	CSML204A2/CSML204A8	Discrete Structures/Graph Theory/SystemSimulation & Modeling	4
	V	CSML303A2/CSML303A8	Latest Trends in Computer Science /SoftComputing/Data Analysis/Big Data/ Computational Number Theory	4
	VI	CSML304A2/CSML304A8	High Performance Computing/ Computational Geometry/Queueing Theory & Modelling/Optimization Techniques	4
	VII	CSML403A2/CSML403A8	Future Internet Architecture	4
	VIII	CSML404A2/CSML404A8	Intellectual Property Rights / HumanComputer Interaction	4

Computer Graphics & Visualization	III	CSML205A2/CSML205A8	Python/User Interaction (UI)-UserExperience (UX)	4
	IV	CSML206A2/CSML206A8	Digital Image Processing	4
	V	CSML305A2/CSML305A8	Latest Trends in Computer Science /SoftComputing/ Artificial Neural Network/ Computer Vision	4
	VI	CSML306A2/CSML306A8	Deep Learning/ Machine Learning	4
	VII	CSML405A2/CSML405A8	Future Internet Architecture	4
	VIII	CSML406A2/CSML406A8	Intellectual Property Rights / HumanComputer Interaction	4
Computational Social Science	III	CSML207A2/CSML207A8	Python	4
	IV	CSML208A2/CSML208A8	Social Network Analysis/InformationRetrieval/Data Mining	4
	V	CSML307A2/CSML307A8	Soft Computing/ Data Analytics/Speech & Natural Language Processing	4
	VI	CSML308A2/CSML308A8	Internet Technology & Society/ BlockChain/Machine Learning	4
	VII	CSML407A2/CSML407A8	Future Internet Architecture	4
	VIII	CSML408A2/CSML408A8	Intellectual Property Rights / Human ComputerInteraction	4
Industry 5.0	III	CSML209A2/CSML209A8	Industry Version 4.0	4
	IV	CSML210A2/CSML210A8	Programming with Data Structures	4
	V	CSML309A2/CSML309A8	Latest Trends in Computer Science	4
	VI	CSML310A2/CSML310A8	Internet Technology & Society	4
	VII	CSML409A2/CSML409A8	Future Internet Architecture	4
	VIII	CSML410A2/CSML410A8	Intellectual Property Rights / Human ComputerInteraction	4

3.2.5 B. Tech CSE (IoT Cyber Security Including Block Chain Technology)

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA205A1	Discrete Mathematics	4	MA206A1	Probability, Statistics and Stochastic Processes	4
CSIC201A1	Digital Design and Computer Organization	4	CSIC204A1	IoT and Microcontrollers	4
CSIC202A1	Data Structures	4	CSIC205A1	Database Management Systems	4
CSIC203A1	Object Oriented Programming Using C++	4	CSIC2**A3	Program Elective-II	4
CSIC2**A3	Program Elective-I	4	CSIC2**A2/ CSIC2**A8	Open Elective-II/Minor/NCC	4
CSIC2**A2/ CSIC2**A8	Open Elective-I/Minor/NCC	4	GN201A1	Universal Human Values- II: Understanding Harmony and Ethical Human Conduct	3
CSIC201A4	Data Structures Laboratory	1	CSIC203A4	IoT and Microcontrollers Laboratory	1
CSIC202A4	Object Oriented Concepts & Programming Laboratory	1	CSIC204A4	Database Management Systems Laboratory	1
CSIC201A5	Project Based Learning-I	1	CSIC202A5	Project Based learning-II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CSIC301A1	Artificial Intelligence	4		Industrial Management	2
CSIC302A1	Automata Theory & Compiler Design	4	CSIC305A1	Cyber Security using Machine Learning	4
CSIC303A1	Operating System	4	CSIC306A1	IoT Communication Protocol	4
CSIC304A1	Computer Networks	4	CSIC3**A3	**Program Elective-IV**	4
CSIC3**A3	**Program Elective-III**	3	CSIC3**A3	**Program Elective-V**	4
CSIC3**A2/ CSIC3**A8	Open Elective-III / Minor / NCC	4	CSIC3**A2/ CSIC3**A8	Open Elective-IV/Minor	4
CSIC301A4	Operating System Laboratory	1	CSIC303A4	Cyber Security using Machine Learning Laboratory	1
CSIC302A4	Computer Network Laboratory	1	CSIC304A4	IoT Communication Protocol Laboratory	1
CSIC301A5	Project Based Learning-III	1	CSIC302A5	Mini Project	1
CSIC301A9	Industrial Training-I	1	GN302A2	Quantitative Aptitude and Logical Reasoning-II	1
GN301A1	Quantitative Aptitude and Logical Reasoning-I	1			
Total		**28**	**Total**		**26**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CSIC4**A2/ CSIC4**A8	Open Elective-V/Minor	4	CSIC4**A2/ CSIC4**A8	Open Elective-VI/Minor	4
CSIC4**A3	Choice-Based Elective	3	CSIC402A6	Major Project -Phase-I	09
CSIC401A6	Major Project -Phase-I	10			
CSIC401A9	Industrial Training-II	1			
Total		**18**	**Total**		**13**

List of Program Elective:

Sub Code	Program Elective -I (3rd Semester)	C	Sub Code	Program Elective-III (5th Semester)	C
CSIC201A3	Java Programming	4	CSIC301A3	Latest Trends in Computer Science	3
CSIC202A3	Fundamentals of Web Technologies	4	CSIC302A3	Design Thinking	3
CSIC203A3	User Interface/User Experience (UI/UX) Design	4	CSIC303A3	Speech and Natural Language Processing	3
CSIC204A3	Information Transmission and Coding Theory	4	CSIC304A3	Remote Sensing	3
CSIC205A3	Computer Graphics	4	CSIC305A3	Autonomous Mobile Robotics and Computational Intelligence	3
CSIC206A3	Microprocessors and Peripheral Devices	4	CSIC306A3	Internet of Things	3
CSIC227A3	Information Systems and Security	4	CSIC307A3	Data Analytics	3
CSIC228A3	E-Commerce	4	CSIC308A3	Big Data	3
CSIC229A3	Digital Signal Processing	4	CSIC309A3	Soft Computing	3
CSIC230A3	Mathematical Foundation for Machine Learning	4	CSIC310A3	Computer Vision	3
			CSIC311A3	Cryptography and Network Security	3
			CSIC312A3	Computational Number Theory	3
			CSIC313A3	Fault Tolerant Computing	3
			CSIC314A3	VLSI System Design	3
			CSIC315A3	Advanced Algorithm	3
			CSIC316A3	Artificial Neural Network	3
			CSIC349A3	ARM controller	3

Program Elective-II (4th Semester)			Program Elective-IV (6th Semester)		
CSIC207A3	Advanced Java Programming	4	CSIC317A3	High Performance Computing	4
CSIC208A3	System Programming	4	CSIC318A3	Parallel and Distributed Algorithm	4
CSIC209A3	Discrete Structure	4	CSIC319A3	Internet Technology and Society	4
CSIC210A3	Graph Theory	4	CSIC320A3	Deep Learning	4
CSIC211A3	System Simulation and Modelling	4	CSIC321A3	Cloud Computing	4
CSIC212A3	Advanced Web Technologies	4	CSIC322A3	Remote Sensing and Geographic Information System	4
CSIC213A3	Embedded Systems	4	CSIC323A3	Ethical Hacking	4
CSIC214A3	Social Network Analysis	4	CSIC324A3	Ad-hoc Wireless Networks	4
CSIC215A3	VLSI	4	CSIC325A3	Mobile Computing	4
CSIC216A3	Signals and Networks	4	CSIC326A3	Distributed Database Systems	4
CSIC217A3	Information Retrieval	4	CSIC327A3	Computational Geometry	4
CSIC218A3	Data Warehousing and Analytics	4	CSIC328A3	Advanced Computer Network	4
CSIC219A3	Advanced Computer Organization and Architecture	4	CSIC329A3	Machine Learning	4
CSIC220A3	Digital Image Processing	4	CSIC346A3	Bio Inspired Computing	4
CSIC221A3	Principles of Programming Languages	4	CSIC347A3	Real Time Systems	4
CSIC222A3	Design and Analysis of Algorithms	4	CSIC348A3	DevOps Engineering	4
CSIC223A3	Speech Processing	4	**Program Elective -V**		
CSIC224A3	Analog Electronic Circuits	4	CSIC330A3	Wireless Sensor Network	4
CSIC225A3	Microcontrollers	4	CSIC331A3	Queueing Theory and Modelling	4

			CSIC332A3	Quantum Computing	4
			CSIC333A3	Future Internet Architecture	4
			CSIC334A3	Distributed Systems	4
			CSIC335A3	Optimization Techniques	4
			CSIC336A3	Engineering Research Methodology	4
			CSIC337A3	Human Computer Interaction	4
			CSIC338A3	Augmented Reality	4
			CSIC339A3	Blockchain	4
			CSIC340A3	Pattern Recognition	4
			CSIC341A3	Web Content Management and Web 3.0	4
			CSIC342A3	Cyber Physical Systems	4
			CSIC343A3	Reinforcement Learning	4
			CSIC344A3	Generative AI and Prompt Engineering	4
			CSIC345A3	MERN Stack Development	4

List of Choice Based Electives:

Course Code	Course Title	C
CSIC401A3	Indian Music System	4
CSIC402A3	History of Science	4
CSIC403A3	Introduction to Art and Aesthetics	4
CSIC404A3	Economic Policies in India	4

List of Minor Specialization/Open Elective:

Specialization	Semester	Subject Code	Subject name	C
Industry 5.0	III	CSIC201A2/ CSIC201A8	Industry Version 4.0	4
	IV	CSIC202A2/ CSIC202A8	Programming with Data Structures	4
	V	CSIC301A2/ CSIC301A8	Latest Trends in Computer Science	4
	VI	CSIC302A2/ CSIC302A8	Internet Technology & Society	4
	VII	CSIC401A2/ CSIC401A8	Future Internet Architecture	4
	VIII	CSIC402A2/ CSIC402A8	Intellectual Property Rights/Human Computer Interaction	4
Computational Mathematics	III	CSIC203A2/ CSIC203A8	Python	4
	IV	CSIC204A2/ CSIC204A8	Social Network Analysis/Information Retrieval/Data Mining	4
	V	CSIC303A2/ CSIC303A8	Soft Computing/ Data Analytics/ Speech & Natural Language Processing	4
	VI	CSIC304A2/ CSIC304A8	Internet Technology & Society/ Block Chain/Machine Learning	4
	VII	CSIC403A2/ CSIC403A8	Future Internet Architecture	4
	VIII	CSIC404A2/ CSIC404A8	Intellectual Property Rights/Human Computer Interaction	4
Computer Graphics & Visualization	III	CSIC205A2/ CSIC205A8	Python/User Interaction (UI)-User Experience (UX)	4
	IV	CSIC206A2/ CSIC206A8	Digital Image Processing	4
	V	CSIC305A2/ CSIC305A8	Latest Trends in Computer Science /Soft Computing/ Artificial Neural Network/ Computer Vision	4
	VI	CSIC306A2/ CSIC306A8	Deep Learning/ Machine Learning	4
	VII	CSIC405A2/ CSIC405A8	Future Internet Architecture	4
	VIII	CSIC406A2/ CSIC406A8	Intellectual Property Rights/Human Computer Interaction	4

Computational Social Science	III	CSIC207A2/ CSIC207A8	Python	4
	IV	CSIC208A2/ CSIC208A8	Discrete Structures/Graph Theory/ System Simulation & Modeling	4
	V	CSIC307A2/ CSIC307A8	Latest Trends in Computer Science /Soft Computing/Data Analysis/Big Data/ Computational Number Theory	4
	VI	CSIC308A2/ CSIC308A8	High Performance Computing/ Computational Geometry/Queueing Theory & Modelling/Optimization Techniques	4
	VII	CSIC407A2/ CSIC407A8	Future Internet Architecture	4
	VIII	CSIC408A2/ CSIC408A8	Intellectual Property Rights/Human Computer Interaction	4
Artificial Intelligence System	III	CSIC209A2/ CSIC209A8	Industry Version 4.0	4
	IV	CSIC210A2/ CSIC210A8	Programming with Data Structures	4
	V	CSIC309A2/ CSIC309A8	Soft Computing	4
	VI	CSIC310A2/ CSIC310A8	Prompt Engineering	4
	VII	CSIC409A2/ CSIC409A8	Future Internet Architecture	4
	VIII	CSIC410A2/ CSIC410A8	Intellectual Property Rights/Human Computer Interaction	4

3.2.6 B. Tech Electronics and Communication Engineering (ECE)

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA10109A	Engineering Mathematics III	4	MA10110A	Engineering Mathematics IV	4
EC201A1	Electronic Devices and Components	4	EC204A1	Electromagnetic Waves	4
EC202A1	Digital Electronics and System Design	4	EC205A1	Analog Electronic Circuits	4
EC203A1	Signals and Systems	4	EC2xxA3	Program Elective-II	4
EC2xxA3	Program Elective-I	4	EC2xxA2	Open Elective-II/Minor/NCC	4
EC2xxA2	Open Elective-I/Minor/NCC	4	GN201A1	Universal Human Values-II: Understanding Harmony and Ethical Human Conduct	3

EC201A4	Electronic Devices and Components Laboratory	1	EC203A4	Analog Electronic Circuits Laboratory	1
EC202A4	Digital Electronics and System Design Laboratory	1	EC204A4	Microprocessor and Microcontroller Laboratory	1
EC201A5	Project Based Learning- I	1	EC202A5	Project Based Learning- II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER			**SIXTH SEMESTER**		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EC301A1	Antenna Theory	4	BA346A1	Industrial Management	4
EC302A1	Analog and Digital Communication	4	EC305A1	Microwave Engineering	4
EC303A1	Digital Signal Processing	4	EC306A1	Microelectronics and VLSI Design	4
EC304A1	Embedded System	4	EC3xxA3	Program Elective-IV	4
EC3xxA3	Program Elective-III	3	EC3xxA3	Program Elective-V	4
EC3xxA2	Open Elective-III/Minor/NCC	4	EC3xxA2	Open Elective-IV/Minor	3
EC301A4	Hardware Descriptive Language (HDL) Laboratory	1	EC303A4	Microwave Engineering Laboratory	1
EC302A4	Digital Signal Processing Laboratory	1	EC304A4	Communication Laboratory	1
EC301A5	Project Based Learning- III	1	EC302A5	Mini Project	1
EC301A9	Industrial Training-I	1	GN302A1	Quantitative Aptitude and Logical Reasoning II	
GN301A1	Quantitative Aptitude and Logical Reasoning I	1			
Total		**28**	**Total**		**26**

SEVENTH SEMESTER			**EIGHTH SEMESTER**		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EC4xxA2	Open Elective - V/Minor	4	EC4xxA2	Open Elective - VI/Minor	4
EC4xxA2	Choice Based Elective	3	EC402A6	Major Project – Phase II	12
EC401A6	Major Project – Phase I	7			
EC401A9	Industrial Training-II	1			
Total		**15**	**Total**		**16**

List of Program Elective:

Sub Code	Program Elective -I (3rd semester)	Sub Code	Program Elective-III (5th Semester)
EC201A3	Network Analysis and Synthesis	EC301A3	Computer Networks
EC202A3	Sensors and Instrumentation	EC302A3	Power Electronics
EC203A3	OOPs with C++	EC303A3	Advanced Electronic Devices
		EC304A3	Digital Image Processing
		EC305A3	Internet of Things
Program Elective-II (4th Semester)		**Program Elective-IV (6th Semester)**	
EC204A3	Microprocessor, Microcontroller and ARM processor	EC306A3	Linear and Digital Control Systems
EC205A3	Data Structure	EC307A3	Information Theory and Coding
EC206A3	Programming in Java	EC308A3	Wireless Sensor Network
EC207A3	Data Science for Engineers	EC309A3	Speech Processing
		EC310A3	MEMS and NEMS
		EC311A3	Automation and Robotics
		Program Elective-V (6th Semester)	
		EC312A3	Mobile Communication
		EC313A3	Advance Computer Networks
		EC314A3	Multimedia Communication
		EC315A3	Detection and Estimation
		EC316A3	Adaptive Signal Processing
		EC317A3	Soft Computing Techniques

List of Choice Based Electives:

Course Code	Course Title
EC409A2	Foreign Language
EC410A2	Essence of Indian Traditional Knowledge

List of Minor Specialization/Open Elective:

Specialization	Semester	Subject Code	Subject name
Signal Processing	III	EC201A2	Introduction to Complex variables
	IV	EC205A2	Signal Processing for Communication
	V	EC305A2	Optimization Techniques
	VI	EC309A2	Pattern Recognition
	VII	EC401A2	Time Frequency Analysis
	VIII	EC405A2	Advance Digital Signal Processing
Semiconductor and Nanotechnology	III	EC202A2	Semiconductor Physics
	IV	EC206A2	Semiconductor Devices and Circuits
	V	EC306A2	Solid State Devices
	VI	EC310A2	Nano Electronic Devices and Materials
	VII	EC402A2	Advance VLSI Design and Applications
	VIII	EC406A2	ASIC Design
5G and Future Generations of Communication	III	EC203A2	Mathematics for Communication Engineering
	IV	EC207A2	Advanced Antenna Design
	V	EC307A2	Advanced Digital Communication
	VI	EC311A2	Modern Wireless Communication System
	VII	EC403A2	Coding for MIMO Communication
	VIII	EC407A2	5G Mobile Communication
Internet of Things	III	EC204A2	Python Programming
	IV	EC208A2	Sensors and Actuators
	V	EC308A2	IOT Gateways and Edge Computing
	VI	EC312A2	Communication Pathways between Cloud and IOT
	VII	EC404A2	Artificial Intelligence and Machine Learning
	VIII	EC408A2	Data Centre and Cloud Computing

3.2.7 B. Tech Electronics Engineering (VLSI Design and Technology)

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA207A1	Engineering Mathematics III	4	MA208A1	Engineering Mathematics IV	4
VT201A1	Electronic Devices and Components	4	VT204A1	Analog Electronic Circuits	4
VT202A1	Digital Electronics and System Design	4	VT205A1	Microprocessor, Microcontroller, and ARM processor	4
VT203A1	Signals and Systems	4	VT2xxA2	Open Elective-II/Minor/NCC	4
VT2xxA3	Program Elective-I	4	VT2xxA3	Program Elective-II	4
VT2xxA2	Open Elective-I/Minor/NCC	4	GN201A1	Universal human values-II: understanding Harmony and ethical human conduct	3
VT201A4	Electronic Devices and Components Lab	1	VT203A4	Analog Electronic Circuits Lab	1
VT202A4	Digital Electronics and System Design Lab	1	VT204A4	Microprocessor and microcontroller LAB	1
VT201A5	Project Based Learning-I	1	VT202A5	Project Based Learning-II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
VT301A1	Communication Engineering	4	BA346A1	Industrial Management	2
VT302A1	Introduction to Microfabrication	4	VT305A1	Semiconductor Materials Synthesis and Characterization	4
VT303A1	VLSI Verification and Testing using EDA tools	4	VT306A1	Micro Electronics and VLSI Design)	4
VT304A1	Embedded System	4	VT3xxA3	Program Elective-IV	4
VT3xxA3	Program Elective-III/MOOC	3	VT3xxA3	Program Elective-V	4
VT3xxA2	Open Elective-III/Minor/NCC	4	VT3xxA2	Open Elective-IV/Minor/NCC	4
VT301A4	HDL simulation LAB	1	VT303A4	Communication Lab	1
VT302A4	Python Scripting Lab	1	VT304A4	ARM based SoC Design Lab {Foundry Familiarization workshop / MOOC virtual Lab}	1
VT301A5	Project Based Learning-III	1	GN302A1	Quantitative aptitude and logical reasoning	1
GN301A1	Quantitative aptitude and logical reasoning	1	VT302A5	Mini Project	1
VT301A9	Industrial Training-I	1			
Total		**28**	**Total**		**26**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
VT4xxA2	Open Elective-V/Minor/NCC	4	VT4xxA2	Open Elective-VI/Minor/NCC	4
VT4xxA2	Choice Based Elective (Open Elective)	3	VT402A6	Major Project work	12
VT401A6	Research based Project / Industrial Project -Phase-I	7			
VT401A9	Industrial Training-II	1			
Total		**15**	**Total**		**16**

List of Elective:-

PROGRAM ELECTIVE -I (3RD SEMESTER)			PROGRAM ELECTIVE-II (4th SEMESTER)		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
VT201A3	Electromagnetic Theory	4	VT206A3	Computer Networks	4
VT202A3	Network Analysis and Synthesis	4	VT207A3	Electronic Instruments and Measurements	12
VT203A3	OOPs with C++	4	VT208A3	Data Structure	
VT204A3	Internet of Things	4	VT209A3	Advanced Electronic Devices	
VT205A3	Computer Organization and Architecture	4			
PROGRAM ELECTIVE -III (5th SEMESTER)			**PROGRAM ELECTIVE -IV (6th SEMESTER)**		
VT301A3	FPGA Architecture	4	VT306A3	Advanced Semiconductor Devices and Flexible Electronics	4
VT302A3	Digital Signal Processing	4	VT307A3	Linear and Digital Control Systems	4
VT303A3	VLSI Physical Design	4	VT308A3	Information Theory and Coding	4
VT304A3	JAVA	4	VT309A3	MEMS and NEMS	4
VT305A3	Database Management System	4			
			PROGRAM ELECTIVE -V		
			VT310A3	Advance VLSI and SoC Design	4
			VT311A3	Semiconductor Device Modelling	4
			VT312A3	Machine Learning	4

List of Choice Based Elective:

Sub Code	COURSE TITLE	C
VT4xxA2	Any subjects related to foreign language or Indian language.	3

List of Minor Specialization/Open Elective:

Semester	Subject Code	Subject name	C
3rd	VT201A2	Introduction to Complex Variables	4
	VT202A2	Computer Organization and Architecture	4
	VT203A2	Python Programming	4
	VT204A2	Mathematics for Communication Engineering	
4th	VT205A2	Signal Processing for Communication	4
	VT206A2	Semiconductor Devices and Circuits	4
	VT207A2	Sensors and Actuators	4
	VT208A2	Advanced Antenna Design	
5th	VT301A2	Optimization Technique	4
	VT302A2	Solid State Devices	4
	VT303A2	IOT Gateways and Edge Computing	4
	VT304A2	Advanced Digital Communication	
6th	VT305A2	Pattern Recognition	4
	VT306A2	Nano Electronic Devices and Materials	4
	VT307A2	Communication Pathways between Cloud and IoT	4
	VT308A2	Modern Wireless Communication System	
7th	VT401A2	Time Frequency Analysis	4
	VT402A2	Adv. VLSI Design and Applications	4
	VT403A2	Artificial Intelligence and Machine Learning	4
	VT404A2	Coding for MIMO Communication	
8th	VT405A2	Advance Digital Signal Processing	4
	VT406A2	ASIC Design	4
	VT407A2	Data Centre and Cloud Computing	4
	VT408A2	5G Mobile Communication	

3.2.8 B. Tech Electrical and Electronics Engineering (EEE)

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA207A1	Engineering Mathematics-III	4	MA208A1	Engineering Mathematics-IV	4
EE201A1	Circuits & Networks	4	EE206A1	Signals & Systems	4
EE202A1	Measurement and Instrumentation	4	EE207A1	Electrical Machines-II	4
EE203A1	Electrical Machines-I	4	EE2XXA3	Program Elective-II*	4
EE2XXA3	Program Elective-I*	4	EE2XXA2	Open Elective-II/Minor/ NCC*	4
EE2XXA2	Open Elective-I/ Minor/ NCC*	4	GN201A1	Universal Human Values-II: Understanding Harmony and Ethical Human Conduct	3
EE201A4	Electric Circuits & PSPICE Lab	1	EE203A4	Electrical Machines Lab	1
EE202A4	Analog & Digital Electronics Lab	1	EE204A4	Measurement and Instrumentation Lab	1
EE201A5	Project Based Learning- I	1	EE202A5	Project Based Learning- II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EE301A1	Power Electronics	4	BA346A1	Industrial Management	2
EE302A1	Linear Control Systems	4	EE305A1	Power System-II	4
EE303A1	Power System-I	4	EE306A1	Advanced Control Theory	4
EE304A1	Digital System Design	4	EE3XXA3	Program Elective-IV*	4
EE3XXA3	Program Elective-III*	3	EE3XXA3	Program Elective-V*	4
EE3XXA2	Open Elective-III/Minor/NCC*	4	EE3XXA2	Open Elective-IV/Minor*	4
EE301A4	Advance programming Lab	1	EE303A4	Power Electronics and Drives Lab	1
EE302A4	Control Lab	1	EE304A4	Power System Lab	1
EE301A5	Project Based Learning- III	1	EE302A5	Mini Project	1
EE301A9	Industrial Training-I #	1	GN302A1	Quantitative Aptitude and Logical Reasoning-II	1
GN301A1	Quantitative Aptitude and Logical Reasoning-I	1			
EE308A2	Data Structures and Algorithms (MAC)	0	EE309A2	Basics of Java (MAC)	0
(MAC : Mandatory Audit Course)		**28**	**Total**		**26**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EE4XXA2	Open Elective - V/Minor*	4	EE4XXA2	Open Elective - VI/Minor*	4
EE4XXAX	Choice Based Elective*	3	EE402A6	Major Project – Phase II	9
EE401A6	Major Project – Phase I	10			
EE401A9	Industrial Training-II #	1			
Total		**18**	**Total**		**13**

List of Program Elective:

Sub Code	Program Elective -I (3rd semester)	C	Sub Code	Program Elective-III (5th Semester)	C
EE201A3	Electromagnetic Theory	4	EE301A3	Latest Trends in Electrical and Electronics Engineering	3
EE202A3	Fundamentals of Nano Electronics	4	EE302A3	EHV AC & DC Transmission	3
EE203A3	Analog and Digital Electronics	4	EE303A3	Embedded Systems	3
Program Elective-II (4th Semester)			**Program Elective-IV (6th Semester)**		
EE204A3	Data Base Management Systems	4	EE304A3	Electrical Drives	4
EE205A3	Process Control and Instrumentation	4	EE305A3	Electrical Machine Design	4
EE206A3	GTD of Electrical Power	4	EE306A3	Flexible AC Transmission Systems	4
			Program Elective -V		
			EE307A3	High Voltage Engineering	4
			EE308A3	Digital Signal Processing	4
			EE309A3	Modern Power Converters	4

OPEN ELECTIVE- I/SPECIALIZATION			OPEN ELECTIVE- II/SPECIALIZATION		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
EE201A2	Analog Systems Design	4	EE205A2	Principles of Communication	4
EE202A2	Data Communication & Computer Networks	4	EE206A2	Software Engineering	4
EE203A2 / EE201A8	Introduction to Hybrid and Electric Vehicles	4	EE207A2	Fuzzy Logic and Evolutionary Algorithms	4
EE204A2 / EE202A8	Computational Intelligence for Power Applications	4	EE208A2 / EE203A8	Sustainable and Renewable Energy Technology	4
EE204A8	Foundations of EV & Hybrid Vehicles ##	4	EE205A8	EV Battery Technology and Powertrain Development ##	4
OPEN ELECTIVE- III/SPECIALIZATION			**OPEN ELECTIVE- IV/SPECIALIZATION**		
EE301A2	Renewable Energy Systems	4	EE305A2	Advanced Methods in Control Theory	4
EE302A2	Wave Guides & Antenna	4	EE306A2	Machine Learning	4
EE303A2	VLSI Design	4	EE307A2	Digital Image Processing	4
EE304A2 / EE301A8	Energy Storage Technology	4	EE310A2 / EE302A8	Foundations of Optimization	4
EE303A8	EV Power Electronics & Embedded Systems ##	4	EE304A8	EV Charging Infrastructure, Vehicle Testing & Homologation ##	4
OPEN ELECTIVE- V/SPECIALIZATION			**OPEN ELECTIVE- VI/SPECIALIZATION**		
EE401A2 / EE401A8	Basics of Data Science with Python Programming	4	EE404A2 / EE403A8	Advance Power Converters	4
EE402A2	Bio Medical Instrumentation	4	EE405A2 / EE404A8	Power Electronics for Renewable Energy Technologies	4
EE403A2 / EE402A8	Smart Grid	4	EE406A8	EV PCB Design & Data Analytics ##	4
EE405A8	EV Vehicle Design & Analysis ##	4			

Advanced Specialization on Electric Vehicles (Electrical) in collaboration with L&T Edu Tech

List of Minor Specialization

Specialization	Semester	Subject Code	Subject name
Electric-Drive Vehicle Engineering	3rd	EE201A8	Introduction to Hybrid and Electric Vehicles
	4th	EE203A8	Sustainable and Renewable Energy Technology
	5th	EE301A8	Energy Storage Technology
	6th	EE302A8	Foundations of Optimization
	7th	EE401A8	Basics of Data Science with Python Programming
	8th	EE403A8	Advance Power Converters
Power and Energy Systems	3rd	EE202A8	Computational Intelligence for Power Applications
	4th	EE203A8	Sustainable and Renewable Energy Technology
	5th	EE301A8	Energy Storage Technology
	6th	EE302A8	Foundations of Optimization
	7th	EE402A8	Smart Grid
	8th	EE404A8	Power Electronics for Renewable Energy Technologies
Advanced Specialization on Electric Vehicles (Electrical) in collaboration with L&T Edu Tech	3rd	EE204A8	Foundations of EV & Hybrid Vehicles
	4th	EE205A8	EV Battery Technology and Powertrain Development
	5th	EE303A8	EV Power Electronics & Embedded Systems
	6th	EE304A8	EV Charging Infrastructure, Vehicle Testing & Homologation
	7th	EE405A8	EV Vehicle Design & Analysis
	8th	EE406A8	EV PCB Design & Data Analytics

3.2.9 B. Tech Information Technology (IT)

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA205A1	Discrete Mathematics	4	MA206A1	Probability, Statistics and Stochastic Processes	4
IT211A1	Digital Design and Computer Organization	4	IT221A1	JAVA Programming	4
IT212A1	Data Structures	4	IT222A1	Database Management Systems	4
IT213A1	Object Oriented Programming using C++	4	IT2**A3	Program Elective-II	4
IT2**A3	Program Elective-I	4	IT2**A2/ IT2**A8	Open Elective-II / Minor / NCC	4
IT2**A2/ IT2**A8	Open Elective-I/Minor /NCC	4	GN201A1	Universal Human Values-II: Understanding Harmony and Ethical human conduct	3
IT214A4	Data Structures Laboratory	1	IT223A4	JAVA Programming Laboratory	1
IT215A4	Object Oriented Programming using C++ Laboratory	1	IT224A4	Database Management Systems Laboratory	1
IT216A5	Project Based Learning - I	1	IT225A5	Project Based Learning - II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
IT311A1	Artificial Intelligence	4	BA346A1	Industrial Management	2
IT312A1	Formal Languages and Automata Theory	4	IT321A1	Operating System	4
IT313A1	Computer Networks	4	IT322A1	Web Technology and Web Services	4
IT314A1	Software Engineering	4	IT3**A3	Program Elective-IV	4
IT3**A3	Program Elective-III	3	IT3**A3	Program Elective-V / MOOC based	4
IT3**A2/ IT3**A8	Open Elective III / Minor / NCC	4	IT3**A2/ IT3**A8	Open Elective - IV / Minor / NCC	4
IT315A4	Artificial Intelligence Laboratory	1	IT323A4	Operating Systems Laboratory	1
IT316A4	Computer Networks Laboratory	1	IT324A4	Web Technology and Web Services Laboratory	1
GN301A1	Quantitative aptitude and logical reasoning -I	1	GN302A1	Quantitative aptitude and logical reasoning -II	1
IT317A5	Project Based Learning - III	1	IT325A5	Mini Project	1
IT318A9	Industrial Training-I	1			
		28		**Total**	**26**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
IT4**A2/ IT4**A8	Open Elective - V / Minor/ MOOC Based	4	IT4**A2/ IT4**A8	Open Elective VI / Minor / MOOC based	4
IT4**A2	Choice Based Elective (Open Elective) / MOOC Based	3	IT421A6	Major Project - Phase-II	9
IT411A6	Major Project - Phase-I	10			
IT412A9	Industrial Training-II	1			
Total		**18**	**Total**		**13**

List of Program Elective:

Sub Code	Program Elective -I (3rd semester)	C	Sub Code	Program Elective-IV (6th Semester)	C
IT211A3	Python Programming	4	IT321A3	Machine Learning	4
IT212A3	System Simulation and Modelling	4	IT322A3	Natural language Processing	4
IT213A3	Information Systems and Security	4	IT323A3	Latest Trends in Information Technology	4
IT214A3	Microprocessors & Peripheral Devices	4	IT324A3	System Programming	4
IT215A3	E-Commerce	4	IT325A3	Bio Inspired Computing	4

IT216A3	Soft Skills and Interpersonal Communication	4	IT326A3	Autonomous Mobile Robotics and Computational Intelligence	4
			IT327A3	Real Time Systems	4
			IT328A3	Cloud Computing	4
			IT337A3	Ad-hoc Wireless Networks	4
			IT338A3	High Performance Computing	4
Program Elective-II (4th Semester)			**Program Elective -V**		
IT221A3	Design and Analysis of Algorithms	4	IT329A3	Deep Learning	4
IT222A3	Microcontrollers	4	IT330A3	Pattern Recognition	4
IT223A3	Computer Graphics	4	IT331A3	Web Content Management and Web 3.0	4
Program Elective-III (5th Semester)			IT332A3	Soft Computing	4
IT311A3	User Interaction(UI)- User Experience(UX)	3	IT333A3	Cyber Physical Systems	4
IT312A3	Digital Image Processing	3	IT334A3	Social Network Analysis	4
IT313A3	Information Retrieval	3	IT335A3	Remote Sensing And Geographic Information System	4
IT314A3	Design Thinking	3	IT336A3	Wireless Sensor Networks	4
IT315A3	Data Warehousing & Data Mining	3	IT339A3	Augmented Reality	4
IT316A3	Big Data Analytics	3			
IT317A3	Optimization Techniques	3			
IT318A3	Internet of Things (IOT)	3			

List of Choice Based Electives:

Course Code	Course Title
IT481A2	Science, Technology and Society
IT482A2	Essence of Indian Traditional Knowledge

List of Minor Specialization /Open Elective:

Specialization	Semester	Subject Code	Subject name
Cyber Security	3rd	IT210A2/ IT210A8	Introduction to Cryptography
	4th	IT220A2/ IT220A8	Introduction to Cyber Security
	5th	IT310A2/ IT310A8	Cyber Security Solutions
	6th	IT320A2/ IT320A8	Cyber Forensics
	7th	IT410A2/ IT410A8	Blockchain Technology
	8th	IT420A2/ IT420A8	Ethical Hacking and Data Privacy
Multimedia Computing & Communications	3rd	IT219A2/ IT219A8	Multimedia fundamentals
	4th	IT229A2/ IT229A8	Mobile Computing and Communication
	5th	IT319A2/ IT319A8	Digital Signal Processing
	6th	IT329A2/ IT329A8	Multimedia Animation and Modeling
	7th	IT419A2/ IT419A8	Speech Processing
	8th	IT429A2/ IT429A8	Information Theory and Error Correcting Codes

3.2.10 B. Tech Mechanical Engineering (ME)

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA203A1	Engineering Mathematics III	4	MA204A1	Engineering Mathematics IV	4
ME201A1	Thermal Engineering- I	4	ME204A1	Mechanics of Solids- II	4
ME202A1	Mechanics of Solids- I	4	ME205A1	Theory of Machines – I	4
ME203A1	Manufacturing Process	4	ME2XXA3	Program Elective II	4
ME2XXA3	Program Elective-I	4	ME2XXA2	Open Elective-II/Minor	4
ME2XXA2	Open Elective-I/Minor	4	GN201A1	Universal human values-II: Understanding Harmony and Ethical Human Conduct	3
ME201A4	Strength of Materials Lab	1	ME203A4	Computational Lab	1
ME202A4	CAE Lab	1	ME204A4	Manufacturing and Metrology Lab	1
ME201A5	Project Based Learning- I	1	ME202A5	Project Based Learning- II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
ME301A1	Thermal Engineering – II	4	BA346A1	Industrial Management	2
ME302A1	Machine Design – I	4	ME305A1	Heat Transfer	4
ME303A1	Theory of Machines - II	4	ME306A1	Machine Design - II	4
ME304A1	Fluid Mechanics & Hydraulic Machines	4	ME3XXA3	Program Elective- IV	4
ME3XXA3	Program Elective-III	3	ME3XXA3	Program Elective- V	4
ME3XXA2	Open Elective-III/Minor/NCC	4	ME3XXA2	Open Elective-IV/Minor	4
ME301A4	Thermal Engineering Lab	1	ME303A4	Machine Dynamics Lab	1
ME302A4	Fluid Mechanics Lab	1	ME304A4	Heat Transfer Lab	1
ME301A5	Project Based Learning- III	1	ME302A5	Mini Project	1
ME301A9	Industrial Training-I	1	GN*****	Quantitative Aptitude and Logical Reasoning - II	1
GN*****	Quantitative Aptitude and Logical Reasoning - I	1			
		28	**Total**		**26**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
ME4XXA2	Open Elective - V/Minor	4	ME4XXA2	Open Elective - VI/Minor	4
	Choice Based Elective	3	ME402A6	Major Project – Phase II	9
ME401A6	Major Project – Phase I	10			
ME401A9	Industrial Training-II	1			
Total		**18**	**Total**		**13**

List of Program Elective:

Sub Code	Program Elective -I (3rd semester)	C	Sub Code	Program Elective-IV (6th Semester)	C
ME201A3	Material Science	4	ME307A3	Turbo Machinery	4
ME202A3	Electric Vehicle Fundamentals	4	ME308A3	Computational Fluid Dynamics	4
			ME309A3	Operation Research	4
Program Elective-II (4th Semester)			**Program Elective -V**		
ME203A3	Manufacturing & Metrology	4	ME310A3	Refrigeration and Air Conditioning	4
ME204A3	Tool Engineering and Design	4	ME311A3	Finite Element Methods	4
ME205A3	Internal Combustion Engine	4	ME312A3	Mechanical Vibration	4
			ME313A3	Production & Operations Management	4
			ME314A3	Power Plant Engineering	4
			ME315A3	Machine Learning	4
Program Elective-III (5th Semester)					
ME301A3	Automobile Engineering	3			
ME302A3	Advanced Manufacturing Processes	3			
ME304A3	Latest Trends in Mechanical Engineering	3			
ME305A3	Computer Integrated Manufacturing	3			
ME306A3	Computer Aided Design and Manufacturing	3			

OPEN ELECTIVE- I			OPEN ELECTIVE- II		
Sub Code	**Sub Name**	**C**	**Sub Code**	**Sub Name**	**C**
ME201A2	Renewable Energy	4	ME207A2	Energy Management	4
ME202A2	Supply Chain Management	4	ME208A2	Automotive Electrical and Electronics Systems	4
ME203A2	Alternative Fuels and Lubrications for Engines	4	ME209A2	Tribology	4
ME204A2	Composite Materials	4	ME210A2	Flexible Manufacturing System	4
ME205A2	Introduction to Nanotechnology and MEMS	4	ME211A2	Automotive Mechanics for Electric Vehicles	4
ME206A2	Foundations of EV & Hybrid Vehicles				

OPEN ELECTIVE- III			OPEN ELECTIVE- IV		
ME301A2	Introduction to Research Publication and Research Ethics	4	ME307A2	Statistical Method for Data Analysis	4
ME302A2	Total Quality Management	4	ME308A2	Financial Planning and Analysis	4
ME303A2	Vehicle Dynamics	4	ME309A2	Automotive Repair and Maintenance	4
ME304A2	Design of Mechanical Systems	4	ME310A2	Fatigue and Fracture	4
ME305A2	Mechatronics	4	ME311A2	Robot Kinematics and Dynamics	4
ME306A2	EV Mechanical Design, Development & Analysis		ME312A2	EV Product Development, Homologation & Hydrogen	
OPEN ELECTIVE- V			**OPEN ELECTIVE- VI**		
ME401A2	Personnel Management & Industrial Relations	4	ME404A2	Decision Making Techniques	4
ME402A2	Robotics and Automation	4	ME405A2	EV Data Analytics & Cyber Security	4
ME403A2	EV FEA Analysis	4			

List of Minor Specialization:

Specialization	Semester	Subject Code	Subject name	C
Automotive Engineering	3rd	ME201A8	Alternative Fuels and Lubrications for Engines	4
	4th	ME202A8	Automotive Electrical and Electronics Systems	4
	5th	ME301A8	Vehicle Dynamics	4
	6th	ME302A8	Automotive Repair and Maintenance	4
	7th	ME401A8	+MOOC Based	4
	8th	ME402A8	+MOOC Based	4
Machine Design	3rd	ME203A8	Composite Materials	4
	4th	ME204A8	Tribology	4
	5th	ME303A8	Design of Mechanical Systems	4
	6th	ME304A8	Fatigue and Fracture	4
	7th	ME403A8	+MOOC Based	4
	8th	ME404A8	+MOOC Based	4

Robotics & Automation	3rd	ME205A8	Introduction to Nanotechnology and MEMS	4
	4th	ME206A8	Flexible Manufacturing System	4
	5th	ME305A8	Mechatronics	4
	6th	ME306A8	Robot Kinematics and Dynamics	4
	7th	ME405A8	+MOOC Based	4
	8th	ME406A8	+MOOC Based	4
Advanced Specialization on Electric Vehicles [Mechanical] in collaboration with L&T Edu Tech	3rd	ME207A8	Foundations of EV & Hybrid Vehicles	4
	4th	ME208A8	Automotive Mechanics for Electric Vehicles	4
	5th	ME307A8	EV Mechanical Design, Development & Analysis	4
	6th	ME308A8	EV Product Development, Homologation & Hydrogen	4
	7th	ME407A8	EV FEA Analysis	4
	8th	ME408A8	EV Data Analytics & Cyber Security	4

3.2.11 B. Tech Computer Science and Technology (CST)

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA205A1	Discrete Mathematics	4	MA206A1	Probability, Statistics and Stochastic Processes	4
CST211A1	Digital Design and Computer Organization	4	CST221A1	Operating System	4
CST212A1	Data Structures	4	CST222A1	Database Management Systems	4
CST213A1	Object Oriented Programming using Java	4	CST2**A3	Program Elective-II	4
CST2**A3	Program Elective-I	4	CST2**A2	Open Elective-II / Minor / NCC	4
CST2**A2	Open Elective-I/Minor /NCC	4	GN201A1	Universal Human Values-II: Understanding Harmony and Ethical human conduct	3
CST214A4	Data Structures Laboratory	1	CST223A4	Operating System Laboratory	1
CST215A4	Object Oriented Programming using Java Laboratory	1	CST224A4	Database Management Systems Laboratory	1
CST216A5	Project Based Learning - I	1	CST225A5	Project Based Learning - II	1
Total		**27**	**Total**		**26**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CST311A1	Artificial Intelligence	4	BA346A1	Industrial Management	2
CST312A1	Formal Languages and Automata Theory	4	CST321A1	Web Technology and Web Services	4
CST313A1	Software Engineering	4	CST322A1	Soft Computing	4
CST314A1	Computer Networks	4	CST3**A3	Program Elective-IV	4
CST3**A3	Program Elective-III	3	CST3**A3	Program Elective-V / MOOC based	4
CST3**A2	Open Elective-III / Minor / NCC	4	CST3**A2	Open Elective-IV / Minor / NCC	4
CST315A4	Artificial Intelligence Laboratory	1	CST323A4	Web Technology and Web Services Laboratory	1
CST316A4	Computer Networks Laboratory	1	CST324A4	Soft Computing Laboratory	1
GN301A1	Quantitative Aptitude and Logical Reasoning-I	1	GN302A1	Quantitative Aptitude and Logical Reasoning-II	1
CST317A5	Project Based Learning - III	1	CST325A5	Mini Project	1
CST318A9	Industrial Training-I	1			
		28	**Total**		**26**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CST4**A2	Open Elective - V / Minor/ MOOC Based	4	CST4**A2	Open Elective VI / Minor / MOOC based	4
CST4**A2	Choice Based Elective (Open Elective) / MOOC Based	3	CST421A6	Major Project - Phase-II	9
CST411A6	Major Project - Phase-I	10			
CST412A9	Industrial Training-II	1			
Total		**18**	**Total**		**13**

List of Program Elective:

Sub Code	Program Elective -I (3rd semester)	C	Sub Code	Program Elective-IV (6th Semester)	C
CST211A3	Communication Techniques	4	CST321A3	Augmented Reality	4
CST212A3	Introduction to Information System and Security	4	CST322A3	Natural Language Processing	4
CST213A3	Soft Skills & Interpersonal Communication	4	CST323A3	Big Data Analytics	4
			CST324A3	Future Internet Architecture	4
			CST325A3	Ad-hoc Wireless Networks	4
			CST326A3	Distributed Systems	4
			CST334A3	High Performance Computing	4
Program Elective-II (4th Semester)			**Program Elective -V (6th Semester)**		
CST221A3	Design and Analysis of Algorithms	4	CST327A3	Social Network Analytics	4
CST222A3	Microprocessor & Peripheral Devices	4	CST328A3	Wireless Sensor Networks	4
CST223A3	Computer Graphics	4	CST329A3	Bio-Inspired Computing	4
			CST330A3	Quantum Computing	4
			CST331A3	Prompt Engineering	4
			CST332A3	Remote Sensing And Geographic Information System	4
			CST333A3	Blockchain Technology	

Program Elective-III (5th Semester)		
CST311A3	Digital Image Processing	3
CST312A3	Data Warehousing & Data Mining	3
CST313A3	User Interaction(UI)- User Experience(UX)	3
CST314A3	Design Thinking	3
CST315A3	Machine Learning	3
CST316A3	Optimization Techniques	3
CST317A3	Internet of Things (IOT)	3

List of Choice Bases Elective:

Subject Code	Choice based Electives (Seventh Semester)
CST481A2	Science, Technology and Society
CST482A2	Essence of Indian Traditional Knowledge

List of Minor Specialization/Open Electives:

Specialization	Semester	Subject Code	Subject name	C
Artificial Intelligence & Machine Learning (AI & ML)	3rd	CST210A2/ CST210A8	Introduction to AI & ML	4
	4th	CST220A2/ CST220A8	Neural Network	4
	5th	CST310A2/ CST310A8	Computer Vision	4
	6th	CST320A2/ CST320A8	Large Language Model	4
	7th	CST410A2/ CST410A8	Deep Learning	4
	8th	CST420A2/ CST420A8	Computational Neuroscience	4
Cloud Computing	3rd	CST219A2/ CST219A8	Introduction to Cloud Computing	4
	4th	CST229A2/ CST229A8	Grid Computing	4
	5th	CST319A2/ CST319A8	Cloud System and Infrastructure	4
	6th	CST329A2/ CST329A8	Big Data and Cloud	4
	7th	CST419A2/ CST419A8	Cloud Networking and Security	4
	8th	CST429A2/ CST429A8	Fog Computing	4

3.3 Bachelor of Computer Application (BCA)

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA****	MATHEMATICS – I	**4**	MA****	Mathematics – II	**4**
CA101A1	HTML and Scripting for Web Page Design	**4**	CA105A1	Database Management System	**4**
CA102A1	C Programming	**4**	CA106A9	WEB Development Using PHP	**4**
BA****	Fundamentals of Business Management	**2**	CA107A3	Universal Human Values	**1**
CA***A2/ CA***A8	Open Elective I/Minor/NCC	**4**	CA***A2/ CA***A8	Open Elective II/Minor/NCC	**4**
CA103A4	HTML and Scripting for WEB Page Design Lab	**1**	CA108A4	Database Management System Lab	**1**
CA104A4	C Programming Lab	**1**	CA109A4	PHP LAB	**1**
			CA110A5	Project Based Learning Lab	**1**
Semester I Total		**20**	**Semester II Total**		**20**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA****	Mathematics -III	**4**	CA206A1	Design & Analysis o f Algorithms (DAA)	**4**
CA201A1	Fundamentals of Data Structures	**4**	CA207A1	JAVA Programming	**4**
CA202A1	Object Oriented Programming Using C++	**4**	CA208A3	Recent Trends in Computer Applications	**4**
CA203A3	Communication Skill	**2**	CA209A1	Data Communication & Networking	**1**
CA***A2/ CA***A8	Open Elective III/Minor/NCC	**4**	CA***A2/ CA***A8	Open Elective IV/MINOR	**4**
CA204A4	Data Structures Lab	**1**	CA210A4	DAA Lab	**1**
CA205A5	C++ LAB	**1**	CA211A4	JAVA Programming Lab	**1**
			CA110A5	Project Based Learning Lab	**1**
Semester III Total		**20**	**Semester IV Total**		**20**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CA301A1	Operating Systems	**4**	CA306A1	Software Engineering	**4**
CA302A3	IT Law and Practices	**2**	CA307A9	Python Programming	**4**
CA303A9	NET Programming	**4**	CA***A3	Prog. Elective II	**4**
CA***A3	Prog. Elective I	**4**	CA***A2/ CA***A8	Open Elective VI/MINOR	**4**
CA***A2/ CA***A8	Open Elective V/MINOR	**4**	CA308A4	Software Engineering Lab	**1**
CA304A4	Operating Systems Lab	**1**	CA309A4	Python Programming Lab	**1**
CA305A4	NET Lab	**1**	CA310A5	Minor Project	**2**
Semester V Total		**20**	**Semester VI Total**		**20**

SEVENTH SEMESTER (BCA HONOURS)			EIGTH SEMESTER (BCA HONOURS)		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CA401A3	Leadership a Behaviour Management	**2**	CA***A2/ CA***A8	Open Elective VIII/MINOR	**4**
CA***A3	PROG. Elective III	**4**	CA404A6	Industrial Project Phase - II	**16**
CA***A2/ CA***A8	Open Elective VII/MINOR	**4**			
CA402A9	Industrial Training	**2**			
CA403A6	Industrial Project Phase – I	**8**			
Semester V Total		**20**	**Semester VI Total**		**20**

SEVENTH SEMESTER (BCA Honours with Research)			EIGTH SEMESTER ((BCA Honours with Research)		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CA405A1	Research Methodology	**4**	CA410A6	Research Based Project [Phase II]	**20**
CA406A3	Publication Ethics	**2**			
CA407A4	Prog. Elective III	**4**			
CA408A7	Research Based Seminar I	**2**			
CA409A6	Research Based Project [Phase I]	**8**			
Semester VII Total		**20**	**Semester VIII Total**		**20**

Program Elective Subjects:

Code	Subjects	Credit
CA341A3	Fundamentals of Digital Electronics	4
CA342A3	E – Commerce	4
CA343A3	WEB Technologies	4
CA344A3	C# Programming	4
CA345A3	UNIX and Shell Programming	4
CA346A3	Mobile Application Development	4
CA347A3	Blockchain & Web 3.0	4
CA348A3	Full-Stack Software Engineering	4
CA441A3	Microservices and Event-Driven Software Architecture (MSA & EDA)	4
CA442A3	5G Communication	4
CA443A3	Devops and Platform Engineering	4
CA444A3	METAVERSE	4

List of Minor Specialization:

Specialization	Semester	Subject Code	Subject name	C
DATA SCIENCE		CA151A2 / CA151A8	Fundamentals of Data Science	4
		CA152A2 / CA152A8	Statistical Foundations OF Data Science	4
		CA251A2 / CA251A8	Data Warehousing and Data Mining	4
		CA252A2 / CA252A8	Data Analytics Using Python	4
		CA351A2 / CA351A8	Machine Learning	4
		CA352A2 / CA352A8	Security and Privacy for Data Science	4
		CA451A2 / CA451A8	Image Analytics and Visualization	4
		CA452A2 / CA452A8	Natural Language Processing	4

CLOUD TECH-NOLOGY		CA153A2 / CA153A8	Fundamentals of Cloud Computing	4
		CA154A2 / CA154A8	Scheduling in Cloud Computing	4
		CA253A2 / CA253A8	Cloud Architecture and Technology	4
		CA254A2 / CA254A8	Big Data and Its Applications in Cloud	4
		CA353A2 / CA353A8	Distributed System	4
		CA354A2 / CA354A8	Cloud Computing and Security	4
		CA453A2 / CA453A8	Edge and Fog Computing	4
		CA554A2 / CA454A8	Virtualization Concepts	4
NETWORK & INFORMATION SECURITY		CA155A2 / CA155A8	Cryptography Fundamentals	4
		CA156A2 / CA156A8	Network and Information Security	4
		CA255A2 / CA255A8	Internet Security and Privacy	4
		CA256A2 / CA256A8	System and Network Administration	4
		CA355A2 / CA355A8	Blockchain Technology	4
		CA356A2 / CA356A8	IOT Security and Privacy	4
		CA455A2 / CA455A8	Network Security Management	4
		CA456A2 / CA456A8	Cloud Computing and Security	4

ARTIFICIAL INTELLIGENCE		CA157A2 / CA157A8	Fundamentals of Artificial Intelligence	4
		CA158A2 / CA158A8	Fundamentals of Soft Computing	4
		CA257A2 / CA257A8	Machine Learning	4
		CA258A2 / CA258A8	Computer Vision	4
		CA357A2 / CA357A8	Artificial Neural Network	4
		CA358A2 / CA358A8	AI for Medical Image Analysis	4
		CA457A2 / CA457A8	AI &ML in Cyber Security	4
		CA458A2 / CA458A8	Applications of AI in Medicine	4
DIGITAL MARKETING		CA159A2 / CA159A8	Introduction to Marketing Essentials	4
		CA160A2 / CA160A8	Basics of Digital Marketing	4
		CA259A2 / CA259A8	Decision Making with Spreadsheet	4
		CA260A2 / CA260A8	Data Warehousing and Data Mining	4
		CA359A2 / CA359A8	Machine Learning	4
		CA360A2 / CA360A8	Business Analytics for Management Decision	4
		CA459A2 / CA459A8	Social Media Marketing	4
		CA460A2 / CA460A8	Marketing Analytics	4

MACHINE LEARNING		CA161A2 / CA161A8	Machine Learning	4
		CA162A2 / CA162A8	Statistics for Machine Learning	4
		CA261A2 / CA261A8	Python for Machine Learning	4
		CA262A2 / CA262A8	Mathematical Foundations for Machine Learning	4
		CA361A2 / CA361A8	Deep Learning	4
		CA362A2 / CA362A8	Computer Vision	4
		CA461A2 / CA461A8	Natural Language Processing	4
		CA462A2 / CA562A8	AI & ML in Cyber Security	4

3.4 Bachelor of Business Administration (BBA)

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
BA102A1	Principles and Practice of Management	3	BA106A1	Human Resources & Organizational Behaviour	3
BA103A1	Financial Accounting	4	BA107A1	Business Environment	3
BA104A1	Business Economics	3	BA108A1	Business Statistics	3
BA105A1	Business Law	3	BA109A1	Business Finance	3
BA101A4	MS Application for Business	1	BA110A1	Business Communication	2
BA101A7/ GN201A1	Research Orientation / UHV	1	BA102A7/ /PE108A4	Research Seminar I/ COI/ Yoga, Sports and Fitness	1
	Pre-placement Training	1		Pre-placement Training	1
Open Elective I/ Discipline Specific Elective	Subjects: I/II/III/IV/V/VI	4	Open Elective II/ Discipline Specific Elective	Subjects: I/II/III/IV/V/VI	4
Total		**20**	**Total**		**20**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
BA201A1	International Business	3	BA205A1	Business Policy and Strategy	3
BA202A1	Entrepreneurship and Small Business	3	BA206A1	Marketing Research	3
BA203A1	Accounting for Management	3	BA207A1	Marketing of Services	3
BA204A1	Marketing Management	4	BA208A1	Consumer Behaviour	2
BA201A7/ GN301A1	Research Seminar II/ Behaviour Management/ Nepali/ Sanskrit	2	BA209A1	Teamwork and Leadership	2
	Pre-placement Training	1	BA202A7/	Research-Based Learning I / Foreign Language	2
Open Elective III/ Discipline Specific Elective	Subjects: I/II/III/IV/V/VI	4		Pre-placement Training	1
			Open Elective IV/ Discipline Specific Elective	Subjects: I/II/III/IV/V/VI	4
Total		**20**	**Total**		**20**

Till Second year total Credit: 80; Promotion Criteria: 50% of total credit earned up to 2nd year. i.e 50%*80= 40 credits

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
BA301A7	Research-Based Learning & Seminar I	**3**	BA303A7	Research-Based Learning & Seminar II	**3**
CA****	E-Commerce	**3**	BA304A1	International Marketing Management	**3**
BA301A1	Marketing Communication and Advertising	**3**	BA305A1	Rural Marketing	**3**
BA302A1	Logistics & Supply Chain Management	**4**	BA307A1	Management of Financial Services	**3**
BA303A1	Banking and Insurance	**2**	BA308A1	Taxation	**3**
	Pre-placement Training	1		Pre-placement Training	**1**
Open Elective V/ Discipline Specific Elective	Subjects: I/II/III/IV/V/VI	4		Subjects: I/II/III/IV/V/VI	**4**
Total		**20**	**Total**		**20**

Till Third year total Credit: 120; Promotion Criteria: 100% of total credit earned up to 3rd year. i.e. 100%*120= 120 Credits

List of Minor Specialization/Open Elective:

Specialization	Semester	Subject Code	Subject name	C
Business Analytics & FinTech	**1st**	BA107A2	Fundamentals of Data Analytics	3
		BA102A4	Data Analytics Lab	1
	2nd	BA117A2	Financial Technology Services and Management	4
	3rd	BA127A2	Business Analytics	4
	4th	BA137A2	Decentralized Finance	4
	5th	BA147A2	Fintech Payment Mechanism	3
		BA301A4	Financial Modelling Lab	1
	6th	BA157A2	FinTech in Financial Planning & Analysis	4
			Total	24

Specialization	Semester	Subject Code	Subject name	C
Enterpreneurship	1st	BA102A2	Fundamentals of Entrepreneurship	4
	2nd	BA112A2	Creating and Starting the Venture	4
	3rd	BA122A2	Planning the Business	4
	4th	BA132A2	Growth and Development of Entrepreneurial Ventures	3
	5th	BA141A2	Industrial Relation	4
	6th	BA151A2	Corporate Governance & Business Ethics	4
			Total	**24**
Digital Marketing	1st	BA103A2	Fundamentals of Digital Marketing	4
	2nd	BA113A2	Social Media Marketing	4
	3rd	BA123A2	Search Engine Optimization	4
	4th	BA133A2	Web Analytics	4
	5th	BA143A2	Advertising Tools & Its Optimization	4
	6th	BA153A2	Content Management System	4
			Total	**24**
Banking & Insurance	1st	BA104A2	Indian Banking System	4
	2nd	BA114A2	Fundamentals of Insurance	4
	3rd	BA124A2	Merchant Banking	4
	4th	BA134A2	Agricultural & Rural Insurance	4
	5th	BA144A2	Ethics in Banking	4
	6th	BA154A2	Life Assurance	4
			Total	**24**

Operation and Supply Chain Management	1st	BA105A2	Operation and Research Management	4
	2nd	BA115A2	Logistics Management	4
	3rd	BA125A2	Supply Chain Management	4
	4th	BA135A2	Materials and Store Management	4
	5th	BA145A2	Quality Management	4
	6th	BA155A2	Global Supply Chain Management	4
			Total	**24**
Event Management & PR	1st	BA106A2	Introduction to Event Management and PRIntroduction to Event Management & PR	4
	2nd	BA116A2	Event Management Planning	4
	3rd	BA126A2	Event Production Process	4
	4th	BA136A2	Event Marketing & Sponsorship	4
	5th	BA146A2	Event Hospitality, Law & Permissions	4
	6th	BA156A2	Event Risk Management	4
			Total Credit	**24**

3.5 Schema of B.Sc Courses:

3.5.1 B.Sc Physics

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PH101A1	Mathematical Physics I	3	PH104A1	Mathematical Physics II	4
PH102A1	Mechanics	4	PH105A1	Wave and Optics	4
BA101A1	Communication Skill	2	XXXXX	English Literature/Functional English/MIL/Hindi/Foreign Language (SWAYAM/NPTEL) (EL-2)	2
GN201A1	Universal Human Values	3	XXXXX	Constitutions of India/Environmental Sc.	1
	*Chemistry-I (3 CR)/Mathematics-I(3,1,0)-4 CR (EL-1)/Minor Specialization (4 CR)	4	XXXXX	*Chemistry-II (3 CR)/Mathematics-II(3,1,0) 4 CR) (EL-3)	4
BC103A1	Computer Programming (C/C++)	4	XXXXX	Minor Specialization	4
	*Chemistry Lab (EL-1)	1	PH107A4	Wave and Optics Lab	1
BC101A4	Computer Programming (C/C++) Lab	1	XXXXX	*Chemistry-II Lab (EL-3)	1
PH103A4	General Physics Lab	1	PE108A4	Sports, Fitness and Yoga	
Total		**22**	**Total**		**22**
* For Chemistry: Theory 3 CR + Lab 1 CR = 4CR (For Mathematics or Minor Specialization 4 CR			*** For Chemistry: Theory 3 CR + Lab 1 CR = 4CR (for Mathematics 4 Cr)**		

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PH201A1	Heat & Thermodynamics	4	PH207A1	Mathematical Physics III	4
PH202A1	Electricity & Magnetism	4	PH208A1	Elements of Modern Physics	4
PH203A1	Analog systems & Applications	4	PH209A1	Digital systems & Applications	4
XXXXX	Leadership and Behaviour Management/Emotional Intelligence/ Alternative English/Nepali/Sanskrit (SWAYAM, NPTEL) EL-4)	2	XXXXX	Minor Elective (EL-6)	4
XXXXX	Minor Elective (EL-5)	4	XXXXX	Community based Participatory Research (FIELD WORK)	2
PH204A4	Heat & Thermodynamics Lab	1	PH210A4	Electronics Lab	1
PH205A4	Electricity, Magnetism Lab	1	PH211A4	Modern Physics/Photonics Lab	1
PH206A5	Project based learning I	1	PH212A5	Project based learning II	1
Total		**21**	**Total**		**21**

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, photo-shop, Computer assembling and networking, Research & Technical writing etc.

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
XXXXX	Quantum Mechanics and Applications	4	XXXXX	Electromagnetic Theory	3
XXXXX	Classical Mechanics & Special Theory of Relativity	4	XXXXX	Statisticsl Mechanics I	4
XXXXX	Interdisciplinary minor/Minor Specialization	4	XXXXX	Solid State Physics	3
XXXXX	Numerical Techniques	3	XXXXX	Open Elective II (EL-11)	4
XXXXX	Numerical Techniques Lab	1	XXXXX	Minor Elective (EL-12)	4
XXXXX	Summer Internship	2	XXXXX	Solid State Physics Lab	1
XXXXX	Project based learning III	1	XXXXX	Mini Project	2
Total		**19**	**Total**		**21**

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, photo-shop, Computer assembling and networking, Research & Technical writing etc.

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
XXXXX	Mathematical Physics IV	4	XXXXX	Classical & Relativistic Electrodynamics	4
XXXXX	Classical Mechanics	4	XXXXX	Quantum Mechanics II	4
XXXXX	Quantum Mechanics I	4	XXXXX	**Project/Dessertation* (1 year project)**	12
XXXXX	Condensed Matter Physics	4	XXXXX	**Paper I (EL-13) (in lieu of project)**	4
XXXXX	Photonics & Spectroscopy Lab/General Physics Lab (EL-14)	3	XXXXX	**Paper II (EL-14) (in lieu of project)**	4
XXXXX	**Project/Dessertation* (1 year project)**	4	XXXXX	**Paper III (EL-15) (in lieu of project)**	4
Total		**19**	**Total**		**20**

Students with minimum 7.5 CGPA (75%) at the end of 6th semester are eligible to take project which is the requirement for

BSc (Hons with Research). Students with below 7.5 CGPA (75%) will take 3 theory subjects of 4 credits each for B.Sc(Hons) degree as per UGC guidelines.

List of Discipline Specific Elective:

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

3.5.2 B.Sc Chemistry

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CH103A1	Inorganic Chemistry - I	3	CH105A1	Organic Chemistry-I	3
CH104A1	Physical Chemistry - I	3	CH106A1	Physical Chemistry-II	3
BA101A1	Communication Skill	2	GN121A2	English Literature/Functional English/MIL/Hindi/Foreign Language (SWAYAM/NPTEL) (EL-2)	2
GN201A1	UHV	3	BP101A1 CH107A1	Constitutions of India / Environmental Studies	1
**	Elective-I	3	**	Elective-3	3
**	Elective - I Lab	1	**	Elective-3 Lab	1
BC103A1	Computer Programming (C)	4	CH108A1	Analytical Tools in Chemistry	4
			CH106A4	Organic Chemistry-I Lab	1
BC101A4	Computer Programming (C) Lab	1	CH107A4	Physical Chemistry-II Lab	1
CH102A4	Physical Chemistry - I Lab	1			
CH103A4	Inorganic Chemistry - I Lab	1	PE108A4	Fitness and Yoga	2
Total Credit in Semester I		**22**	**Total Credit in 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, photo to shop, Computer assembling and network;King, Research & Technical writing etc.			

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CH201A1	Inorganic Chemistry-II	4	CH204A1	Inorganic Chemistry-III	4
CH202A1	Organic Chemistry-II	4	CH205A1	Organic Chemistry-III	4
CH203A1	Physical Chemistry-III	4	CH206A1	Physical Chemistry-IV	4
GN301A1	Leadership and Behavior Management/Emotional Intelligence/Alternative English/ Nepali/Sanskrit (SWAYAM, NPTEL) EL-4)	2	**	Minor specialization (EL-6)	4
**	Minor Specialization (EL-5)	4		Community based Participatory Research (FIELD WORK)	2
CH201A4	Inorganic Chemistry-II Lab	1	CH203A4	Inorganic Chemistry-III Lab	1
CH202A4	Organic Chemistry-II Lab	1	CH204A4	Organic Chemistry-III Lab	1
CH201A5	Project based learning I	1	CH202A5	Project based learning II	1
Total Credit in Semester III		**21**	**Total Credit in Semester – IV**		**21**
Summer internship/Vocational: (2 - 4 CR) (Required for UG diploma)			Workshop skills, Carpentry, Plumbing, Web design, Surveying, Electrical Wiring, Financial s/w, digital photography & editing, Video editing for social media, photoshop, Computer assembling and networking, Research & Technical writting etc.		

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CH301A1	Organic Chemistry-IV	4	CH303A1	Inorganic Chemistry-IV	4
CH302A1	Physical Chemistry-V	3	CH304A1	Organic Chemistry-V	3
**	DSE I (EL-7)	4	**	DSE II (EL-10)	4
**	Open Elective I (EL-8)	3	**	Open Elective II (EL-11)	3
**	Minor specialization (EL-9)	4	**	Minor specialization (EL-12)	4
CH301A4	Physical Chemistry-V Lab	1	CH302A4	Organic Chemistry-V Lab	1
CH301A5	Summer Internship	2	CH303A5	Mini Project	2
CH302A5	Project based learning III	1			
Total Credit in Semester V		**22**	**Total Credit in Semester – VI**		**21**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CH401A1	Principles of Inorganic Chemistry	4	CH405A1	Modern Spectroscopic Technique	4
CH402A1	Principles of Organic Chemistry	4	CH406A1	Organic Reactions and Mechanisms	4
CH403A1	Chemical Thermodynamics	4	CH401A6	Project/Dissertation* (1 year project)	12
CH404A1	Quantum Chemistry-I	4	CH401A3	Paper I (EL-13) **(in lieu of Project)**	4
CH401A4	Analytical Chemistry Lab	2	CH402A3	Paper II (EL-14) **(in lieu of Project)**	4
XXXXX	Research Methodology	3	CH403A3	Paper III (EL-15) **(in lieu of Project)**	4
XXXXX	Project/Dissertation* (1 year)				
* In place of Project, students with honours will take 3 theory subjects of 12 credit					
Total Credit in Semester VII		**21**	**Total Credit in Semester – VIII**		**20**

List of Elective:

Interdisciplinary/Minor

Sub Code	1st Semester	C	Sub Code	2nd Semester	C
MA107A1	Mathematics-I (Theory+Tutorial)	4	MA108A1	Mathematics-II	4
PH1141A	General Physics-I	3	PH1141A	General Physics-I	3
PH1421A	General Physics-I Lab	1	PH1421A	General Physics-I Lab	1
CH101A2	Ecology and Environment-I	3	PH1142A	General Physics-II	3
CH104A4	Ecology and Environment-I Lab	1	PH1422A	General Physics-II Lab	1
CH102A2	Chemistry-I	3	CH103A2	Ecology and Environment II	3
CH105A4	Chemistry-I Lab	1	CH108A4	Ecology and Environment II Lab	1
PY102A1	Fundamentals of Psychology	4	CH104A2	Chemistry-II	3
Note: In case of Mathematics as Elective, the total credit will be 4 which includes both Theory and Tutorial. In case of other Electives, student has to take respective lab.					
3rd Semester			**4th Semester**		
CH201A2	Environmental Science-I	4	CH204A2	Environmental Science-II	4
CH202A2	Medicinal Chemistry-I		CH205A2	Medicinal Chemistry-II	
CH203A2	Interfacial Science-I		CH206A2	Interfacial Science-II	
5th Semester			**6th Semester**		
CH301A3	Application of Computers in Chemistry	4	CH302A3	Novel Inorganic Solids	4

CH301A2	Renewable Energy	3	CH305A2	Inorganic Material of Industrial Importance	3
CH302A2 CH303A2 CH304A2	Environmental Science-III Medicinal Chemistry-III Interfacial Science-III	4	CH306A2 CH307A2 CH308A2	Environmental Science-IV Medicinal Chemistry-IV Interfacial Science-IV	4

Note: If students complete 24 credits of minor paper from same pull of subjects, minor degree will also be awarded along with the main degree.

For example, if a student choose Ecology & Environment in 1st and 2nd semester and Environmental Science - I, II, III & IV in remaining semesters (Total 24 CR), after completion of 4 years, degree will be awarded as B.Sc. Chemistry (Honours) with Minor in Environmental Science.

*Elective may be added depending on the availability of subject.

3.5.3 B.Sc Mathematics

3 years B.Sc. Program /4 Years B.Sc. in Mathematics(Honors/ Honors with research) / 5 years Integrated M.Sc./ 2 years M.Sc. in Mathematics/1 year M.Sc. in Mathematics

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA131A1	Foundation Course in Mathematics	4	MA133A1	Solid Geometry & Vector Calculus	4
MA132A1	Single Variable Calculus	4	MA134A1	Discrete Mathematics	4
BA10101A	English	2	MA135A1	Linear Algebra	4
GN201A1	Universal Human Values	3	******	English Literature/ Functional English/ MIL/ Hindi/ Foreign Language/ Elective-II/MOOC	2
******	Elective-I/MOOC	4	CH107A1/ BP101A1	Environmental Studies/ Constitution of India	1
******	C-Programming	3	******	Elective-III/MOOC	4
******	C-Programming Lab	1	PE108A4	Fitness and Yoga	2
Total Credit in Semester I		**21**	**Total Credit in Semester II (Exit Certificate)**		**21**

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.

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA231A1	Algebra I: Group Theory	4	MA233A1	Algebra II: Ring Theory	4
MA232A1	Elementary Number Theory	4	MA234A1	Multivariable Calculus	4
MA231A8	Probability Theory	4	MA235A1	Ordinary Differential Equations	4
*****	Elective-IV	4	MA232A8	Statistical Methods	4
*****	Leadership and Behavior Management/ Emotional Intelligence/ Al- ternative English/ Nepali/ Sanskrit/ MOOC/ Elective-V	2	*****	Elective-VI/ MOOC	4
MA231A9	Summer Internship/ Vocational	2	MA232A9	Community based participatory research(Field work)	2
Total Credit in Semester III		**20**	**Total Credit in Semester IV (Exit II Diploma)**		**22**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA331A1	Complex Analysis	4	MA333A1	Metric Spaces	4
MA332A1	Numerical Analysis	4	MA334A1	Classical Mechanics	4
MA331A8	Dynamics	4	MA333A8	Theory of Computation	4
MA332A8	Introduction to Machine Learning	4	******	Elective-VIII/ MOOC	4
******	Elective-VII/ MOOC	4	MA331A7	Seminar-I	3
Total Credit in Semester V		**20**	**Total Credit in Semester VI**		**19**
Total Credits after three years		123	EXIT-III(Degree)		

Seventh Semester (B.Sc.)/Semester-I(2 Years M.Sc. Program)(ENTRY-II)			Eighth Semester (B.Sc.)/Semester-II(2 Years M.Sc. Program)		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA431A1/ MA541A1	Real Analysis	4	MA435A1/ MA545A1	Measure and Integration	4
MA432A1/ MA542A1	Abstract Algebra	4	MA436A1/ MA546A1	Graph Theory	4
MA433A1/ MA543A1	Ordinary and Partial Differential Equations	4	MA437A1/ MA547A1	Topology (in lieu of Project)	4
MA434A1/ MA544A1	Advanced Linear Algebra	4	MA438A1/ MA548A1	Advance Complex Analysis(in lieu of Project)	4
MA431A8/ MA541A8	Basics of Financial Mathematics	4	MA4**A3/ MA5**A3	Elective-IX/MOOC(in lieu of Project)	4
MA431A4/ MA541A4	Computational Laboratory	2	MA431A6	Project/Dissertation	12
Total Credit in Semester VII		**22**	**Total Credit in Semester VIII**		**20**
Total Credits after 4 years		165	EXIT-IV (B.Sc. Mathematics (Honors) / B.Sc. Mathematics (Honors with Research))		

Semester IX(Integrated M.Sc.)/ Semester-III(2 Years M.Sc. Program)/ Semester-I(1 Year M.Sc. Program)(ENTRY-III)			Semester X(Integrated M.Sc.)/ Semester-IV(2 Years M.Sc. Program)/ Semester-II(1 Year M.Sc. Program)(ENTRY-III)		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA641A1	Stochastic Processes	4	MA644A1	Variational Calculus	4
MA642A2	Functional Analysis-I	4	MA645A1	Functional Analysis-II	4
MA643A1	Integral Equations and Transforms	4	MA6**A3	Elective-XI (in lieu of Project)	4
MA641A8	Number Theory and Cryptography	4	MA6**A3	Elective-XII (in lieu of Project)	4

MA6***A3	Elective-X/ MOOC	4	MA6**A3	Elective-XIII (in lieu of project)/Mooc	4
			MA641A6	MAJOR PROJECT	12
Total Credit in Semester IX		**20**	**Total Credit in Semester X**		**20**

Total Credits of Integrated M.Sc. Degree	205	EXIT-V(Integrated M.Sc. Degree)	
Total Credits of 2 Years M.Sc. Degree	82	2 Years M.Sc.Degree	
Total Credits of 1 Year M.Sc. Degree	40	1 Year M.Sc.Degree	

List of Elective:

Elective I			Elective III		
1	CH10201A, CH10419A	Chemistry-I, Chemistry Lab - I	1	PH1XXA1, PH1XXA4	Physics-I, Physics Lab-I
2	BA10106A	Business Economics	2	MA132A3	Data Structures
3	MA131A3	Classical Algebra	3		
Elective IV			**Elective VI**		
1	MA231A3	Linear Programming & Game Theory	1	MA232A3	Object Oriented Programming
2	BA10116A	Accounting for Management	2	MA231A4	Object Oriented Programming-Lab
2			3	XXXXA1, XXXXA4	Python Programming, Python Programming Lab
Elective VII			**Elective IX**		
1	MA331A3	Artificial Intelligence	1	MA431A3/ MA541A3	Advance Numerical Analysis
			2	MA432A3/ MA542A3	Artifical Neural Network
Elective X			**Elective XI-XII**		
1	MA641A3	Design and Analysis of Algorithms	1	MA644A3	Plasma Dynamics
2	MA642A3	Fluid Mechanics	2	MA645A3	Algebraic Topology
3	MA643A3	Field and Galois Theory	3	MA646A3	Dynamical Systems

Elective XIII			4	MA647A3	Wavelet Analysis and Signal Processing
1	MA650A3	Queuing Theory and Modeling	5	MA648A3	Representation Theory
2	MA651A3	Optimization Techniques	6	MA649A3	Algebraic Graph Theory
3	MA652A3	Mathematical Finance			

3.5.4 B.Sc Economics

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EN101A1	Introduction to Calculus for Economics	4	EN104A1	Principles of Microeconomics	4
MA106A1	Quantitative Analysis	4	MA503A1	Quantitative Methods in Management	4
GN111A1	Introduction to Sociology	3	EN105A1	Intermediate Calculus for Economics	4
EN102A1	Data Management	4		Business Environment	2
EN103A1	Business Economics	3	BA113A1	Accounting and Business Finance	4
BA101A1	Communication Skills	2	EN101A4	SPSS-LAB	2
Total Credit		**20**	**Total Credit**		**20**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EN201A1	Demography	4	MA212A1	Operation Research	3
EN202A1	Principles of Macroeconomics	4	EN206A1	Intermediate Macroeconomics	4
EN203A1	The Interplay of Economic Theory and Data	2	EN201A4	Econometrics with Case Studies using R and Python	4
EN204A1	Introduction to Theory of Econometrics	4	EN207A1	The Indian Economy: 1947-1991*	3
BA205A1	Marketing Management	2	EN208A1	Development Economics	3
EN205A1	Intermediate Microeconomics	4	MA504A1	Research Methodology	3
Total Credit		**20**	**Total Credit**		**20**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EN301A4	Advanced Analytics (ML, DL, AI and NN) Using R and Python	4	EN305A1	Strategy and Game Theory	4
EN301A1	Pure Theory of Trade	4	EN306A1	Behavioural Economics	3
EN302A1	Urban Economics	4	EN307A1	Schools of Economic Thought	4
EN303A1	The Indian Economy: 1991 - Present Day	3	EN301A3	Energy Economics	4
BA304A1	Banking and Insurance	3	EN302A3	Environmental Economics	3
EN301A5	Project Work	2		Training and Placement	1
	Training and Placement	1			
Total Credit		**21**	**Total Credit**		**19**
			Total Credit for Three Years		**120**

3.5.5 B.Sc Applied Psychology:

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PY101A1	Introduction to Personality	4	PY103A1	Cognitive Psychology	4
PY102A1	Fundamentals of Psychology	4	PY104A1	Foundation of Social Psychology	4
XXXX	Elective-1/Env Sc./OE	4	PY101A4	Cognitive Lab work II	1
XXXX	**UHV**	3	XXXX	Elective-2 /OE	4
GN301A1	**Behaviour Management & Leadership**	3	XXXX	**English Literature/Functional English/MIL/Hindi/Foreign Language (SWAYAM/NPTEL)**	2
PY102A4	**Psychology Lab I**	2	XXXX	**Fitness and Yoga**	2
XXXX	**Communication Skills**	2	XXXX	**Constitution of India**	1
			PY101A7	**Seminar/project based learning (PBL)**	1
Total		**22**	**Total**		**19**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PY201A1	Bio-Psychology	4	PY204A1	Developmental Psychology	4
PY202A1	Statistical Methods for Psychological Research	4	PY205A1	Psychology of Individual Differences	4
PY203A1	Organizational Psychology	4	PY206A1	Fundamental of Clinical Psychology-I	4
PY201A4	Lab Psychology	1	PY203A4	Clinical Psychology Lab Clinical Assessment and Case Study Reports	1
XXXX	Elective-3/OE	4	XXXX	Elective-4/OE	4
PY202A4	SPSS for Data Analysis	2	PY201A9	Summer Internship**	2
PY202A7	Seminar/PBL	1	PY203A7	Seminar/PBL	1
			PY101A7	**Seminar/project based learning (PBL)**	1
Total		**20**	**Total**		**20**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PY301A1	Fundamental of Clinical Psychology-II	4	PY303A1	Applications of Psychology in modern Life	4
PY302A1	Understanding the Human Psyche	4	PY304A1	Psychological Assessment	4
XXXX	Elective-5/OE	4	XXXX	Elective-6/OE	4
XXXX	DSE Elective I (Any two)	4	XXXX	DSE Elective II (Any two)	4
XXXX		4	XXXX		4
			PY301A5	Field based learning/Group Project**	1
			PY301A4	Lab work	1
	Total	**20**		**SEM TOTAL CREDITS**	**22**
				THIRD YEAR TOTAL	**42**
				TOTAL CREDITS OF THREE YEARS	**123**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PY401A1	Psychotherapeutic Interventions	4	PY404A6	Major Research Project/Dissertation (Final Phase) OR DSE**	12
PY402A1	Introduction to Indian Psychological Thought	4	XXXX	DSE III (Any two)***/MOOC	4
PY403A1	Peace Psychology	4	XXXX		4
PY401A4	Lab Work	2			
PY401A6	Systematic Review of Literature (Seminar)	2			
PY402A6	Research Paper writing for publication	2			
PY403A6	Research Proposal	2			
	Total	20		**SEM TOTAL CREDITS**	**20**
				FOURTH YEAR TOTAL	**40**
			SEM I+SEM II+SEM III+SEM IV+SEM V+SEM VI+ SEM VII+SEM VII+ SEM VIII		**162**

***Field visit to NGO/Old age home/Orphanage/Rehabilitation centre/mental health centres evaluated through a report writing and presentation**

****Summer Internship will be carried out in the summer break after IV Sem and will be evaluated in V semester.**

**** In place of Major 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 decided and evaluated by the department in house**

3.5.6 BA Psychology:

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PY101A1	Introduction to Personality	4	PY103A1	Cognitive Psychology	4
PY102A1	Fundamentals of Psychology	4	PY104A1	Foundation of Social Psychology	4
XXXX	Elective-1 (Entrepreneurship/ Physical Education/Fintech/Sociology)	4	PY101A4	Psychology Lab work-I	1
XXXX	UHV	3	XXXX	**Elective-2** (Fintech/Entrepreneurship/Physical Education/Sociology)	4
GN301A1	**Behaviour Management & Leadership**	3	XXXX	English Literature/Functional English/MIL/Hindi/Foreign Language (SWAYAM/NPTEL)	2
PY102A4	**Psychology Lab I**	2	XXXX	Fitness and Yoga	2
XXXX	Communication Skills	2	XXXX	Constitution of India	1
			PY101A7	Seminar/project-based learning	1
Total		22	Total		19
			FIRST YEAR TOTAL		41

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PY201A1	Bio-Psychology	4	PY204A1	Developmental Psychology	4
PY202A1	Statistical Methods for Psychological Research	4	PY205A1	Psychology of Individual Differences	4
PY203A1	Organisational Psychology	4	PY206A1	Fundamental of Clinical Psychology-I	4
PY201A4	Psychology Lab II	1	PY202A4	Clinical Psychology Lab Clinical Assessment and Case Study Reports	1
XXXX	Elective-3 (Fintech/Entrepreneurship/Physical Education/ Sociology)	4	XXXX	Elective-4 (Fintech/Entrepreneurship/Physical Education/ Sociology)	4
PY202A4	SPSS for Data Analysis	2	PY201A9	Summer Internship*	2
PY202A7	Seminar	1	PY203A7	Seminar	1
			PY101A7	Seminar/project-based learning	1
Total		20	Total		20
			SECOND YEAR TOTAL		40

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PY301A1	Fundamental of Clinical Psychology-II	4	PY303A1	Applications of Psychology in modern Life	4
PY302A1	Understanding the Human Psyche	4	PY304A1	Psychological Assessment	4
XXXX	Elective-5/ (Fintech/Entrepreneurship/Physical Education/ Sociology)	4	XXXX	Elective-6 (Fintech/Entrepreneurship/Physical Education/ Sociology)	4
XXXX	DSE I/MOOC	1	XXXX	DSE II/MOOC	3
XXXX	DSE I/MOOC	4	XXXX	DSE II/MOOC	3
XXXX	Soft Skills Training	2	PY301A5	Field based learning/Group Project**	1
PY203A7	Seminar	1	PY301A4	Lab work	1
			XXXX	Soft Skills Training	1
Total		20	Total		21
			SEM TOTAL CREDITS		**21**
			THIRD YEAR TOTAL		**42**
			TOTAL CREDITS OF THREE YEARS		**122**

SEVENTH SEMESTER			EIGHTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PY401A1	Psychotherapeutic Interventions	4	PY404A6	Major Research Project/Dissertation (Final Phase)/DSE***	12
PY402A1	Introduction to Indian Psychological Thought	4	XXXX	DSE III/MOOC	4
PY403A1	Fundamentals of Counselling	4	XXXX	DSE III/MOOC	4
PY401A4	Lab Work	2			
PY401A6	Systematic Review of Literature (Seminar)	2			
PY402A6	Research Paper writing for publication	2			
PY403A6	Research Proposal	2			
Total		20	**SEM TOTAL CREDITS**		20
			SECOND YEAR TOTAL		40
			TOTAL CREDITS OF THREE YEARS		**162**

3.5.7 Batchelor of Physical Education and Sports

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PE101A1	Introduction and History of Physical Education	4	PE103A1	Anatomy and Physiology	4
PE109A4	Football	2	PE113A4	**Volleyball**	2
XXX	**Elective I (OE/MS)**	4	PE114A4	**Cricket**	2
GN201A1	UHV	3	XXXX	Constitution ofIndia/Environmental Science	2
PE110A4	Basketball	2	XXXX	**Elective 2 (OE/MS)**	4
PE111A4	Netball	2	PE108A4	Fitness and Yoga	4
PF109A4	Fundamentals of Computer Lab	1	PE106A4	Gym Training	1
BA101A1	Communication Skills	2	PE115A7	Seminar	1
PE112A7	Seminar/Project based learning	1			
Total		**21**	**Total**		**20**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PE201A1	Kinesiology and Biomechanics	4	PE208A1	Sports Training	4
PE202A1	Test, Measurement and Evaluation	4	PE209A1	Fundamentals of Statistics for Physical Education	2
PE203A1	Basics of Research	4	PE217A4	Kho-Kho	2
PE215A5	Badminton	2	PE213A4	Weightlifting	2
XXXXX	**Elective 3(OE/MS)**	4	XXXX	**Elective 4 (OE/MS)**	4
PE221A4	SPSS for Data Analysis (Lab)	1	PE218A9	Summer Internship (Teaching Practices/ Internship Teaching (4- week School) Teaching Lesson Plans for Racket Sport/ Team Games/Indigenous Sports (out of 10 lessons 5 internal and 5 externals at practicing school)	4
PE216A7	Seminar	1	PE219A4	Tennis	1
			PE220A7	Seminar	1
Total		**20**	**Total**		**20**

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PE301A1	Principles of Officiating	4	PE310A1	Organization and Administration in Physical Education	4
PE302A1	Physical Fitness and Skills: HRF Exercises	4	XXXX	**Elective 6 (OE/MS)**	4
XXXX	**Elective 5 (DSE/OE/MS)**	4	XXXX	DSE II Any two	4
PE316A4	Table Tennis	2	XXXX	Weightlifting	4
PE317A4	Handball	2	PE315A5	Field Based Learning/Group Project**	2
PE318A4	Kabaddi	2	PE314A4	Game Specialization -II Skill Test	2
PE319A4	Swimming	2			
Total		**20**	**Total**		**20**

***A student must choose a 4-credit subject offered by another department or through a MOOC.**
In place of project student may choose 03 theory subjects of 12 credit for honours requirement.

FIFTH SEMESTER			SIXTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PE401A1	The Olympic Values Education	4	PE407A6	Major Research Project/Dissertation (Final Phase)/**DSE	12
PE312A3	Personality Development	4	XXXX	DSE III (Any two) ***/MOOC	4
PE402A6	Systematic Review of Literature (Seminar)	2			
PE403A5	Physical Activity (PA) Analysis	2			
PE404A4	Mass Demonstration Activities -March Past/Wands/Hoop/Umbrella	4			
PE405A5	Research Paper Writing for Publication	2			
PE406A6	Research Proposal/Synopsis	2			
Total		**20**	**Total**		**20**

Pool of Discipline Specific (DSE) -I			Pool of Discipline Specific (DSE) -II		
Sub. Code	**Subject Name**	**C**	**Sub. Code**	**Subject Name**	**C**
PE204A3	Track and Field (Sprint and Middle Distance)	4	PE210A3	Track and Field (Long Distance)	4
PE207A3	Health Education	4	PE313A3	Track and Field (Jumps)	4
PE302A1	Physical Fitness and Skills: HRF Exercises	4	PE309A3	Education Technology and Methods in Physical Education	4
Pool of Discipline Specific (DSE)-III					
PE305A3	Track and Field (Shot-Put and Discuss)	4			
PE304A3	Athletic Care and Rehabilitation	4			
PE104A1	Psychology in Physical Education and Sports	4			

List of Minor Specialization /Open Elective:

Specialization	Semester	Subject Code	Subject name	C
Physical Education Foundation and Practice	I	PE101A1	Introduction and History of Physical Education	4
	II	PE108A4	Fitness and Yoga	4
	III	PE202A1	Test, Measurement and Evaluation	4
	IV	PE208A1	Sports Training	4
	V	PE302A1	Physical Fitness and Skills HRF Exercises	4
	VI	PE310A1	Organization and Administration in Physical Education	4
			Total	**24**

3.6 M.Tech

3.6.1 M.Tech Structural Engineering

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA505A1	Advanced Engineering Mathematics and Optimization	3	CE503A1	Advanced Concrete Technology	3
CE501A1	Structural Dynamics	3	CE504A1	Finite Element Method	3
CE502A1	Advanced Structural Analysis	3	CE505A1	Applied Elasticity for Engineers	3
CE501A3	Program Elective I/ Adv. Design of RC Struc.	3	CE510A3	Program Elective III/ Adv. Foundation Engg.	3
CE507A3	Program Elective II/ Engg. Seismology	3	CE513A3	Program Elective IV/ Adv. Design of Steel str.	3
CE501A4	Concrete and material testing Lab	1.5	CE503A4	Finite Element Analysis Lab	1.5
CE502A4	CAD Lab	1.5	CE504A4	Programming Lab (C/ MATLAB)	1.5
CE501A5	Project Based Learning-I	2	CE502A5	Project Based Learning-II	2
Total		**20**	Total		**20**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CE501A6	Dissertation- Phase-I	15	CE502A6	Dissertation- Phase-II	25
Total		**15**	Total		**25**

List of Program Electives

Sub.Code	Sub. Name
CE501A3	Advanced Design of RC Structures
CE502A3	Design of Masonry Structure
CE503A3	Design of Bridges
CE504A3	Design of Pre-Stress Concrete Structure
CE505A3	Advanced Strength of Materials
CE506A3	Soil Structure Interactions
CE507A3	Engineering Seismology
CE508A3	Composite Materials
CE509A3	Earthquake Resistant Design of Structures
CE510A3	Advanced foundation Engineering
CE511A3	Ground Improvement Techniques
CE512A3	Sustainable Materials and Green Building
CE513A3	Advanced Design of Steel Structures
CE514A3	Structural Health Monitoring
CE515A3	Theory of Plates and Shells
CE516A3	Retrofitting and Rehabilitation of Structures
***MOOC courses as decided by the Department**	

3.6.2 M.Tech Computer Science and Engineering

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CS501A1	Advanced Algorithms	3	CS502A1	THEORY OF COMPUTATION	3
CS5**A3	Elective-I	3	CS5**A3	Elective-V	3
CS5**A3	Elective-II	3	CS5**A3	Elective-VI	3
CS5**A3	Elective-III	3	CS5**A3	Elective-VII	3
CS5**A3	Elective-IV	3	CS5**A3	Elective-VIII	3
CS501A4	MACHINE LEARNING LAB	1.5	CS503A4	ADVANCED PROGRAMMING LAB	1.5
CS502A4	Advanced Algorithms Lab	1.5	CS504A4	Software And Data Analysis Lab	1.5
CS501A5	Project Based Learning- I	2	CS502A5	Project Based Learning- Ii	2
Total		**20**	Total		**20**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CS601A6	Dissertation- Phase-I	15	CS602A6	Dissertation- Phase-II	25
Total		**15**	Total		**25**

LIST OF ELECTIVES (SEMESTER I)

Sub.Code	Sub. Name
CS501A3	Advanced Computer Architecture
CS502A3	Advanced Database System
CS503A3	Bioinformatics
CS504A3	Digital Image Processing
CS505A3	Graph Theory For Computer Engineering Applications
CS506A3	Linux Internals
CS507A3	Real Time Systems
CS508A3	Remote Sensing
CS509A3	System Simulation And Modeling
CS510A3	Advanced Computer Networks
CS511A3	Advanced Software Engineering
CS512A3	Advanced Soft Computing
CS513A3	Object Oriented Analysis And Design Using Uml
CS514A3	Artificial Intelligence
CS515A3	Internet Of Things
CS516A3	Intellectual Property Rights
CS517A3	Machine Learning: Theory And Methods
CS518A3	Advanced Operating Systems
CS519A3	Queuing Theory And Modeling
CS520A3	Computer Vision
CS521A3	Block Chain Coding
CS522A3	Cyber Security
CS523A3	Communication Skills
CS524A3	Social Network Analysis
CS525A3	Parallel And Distributed Algorithms
CS526A3	Quantum Computing
CS527A3	Applications Of Web Technology
CS528A3	Programming In Java
CS529A3	Artificial Neural Network & Applications
CS530A3	User Interface & User Experience

LIST OF ELECTIVE SUBJECTS (SEMESTER II)

Sub. Code	Sub. Name
CS530A3	Advanced Cryptography And Network Security
CS531A3	Big Data
CS532A3	Ad Hoc Wireless Networks
CS533A3	Cloud Computing
CS534A3	Data Warehousing And Data Mining
CS535A3	Geographical Information System
CS536A3	Engineering Research Methodology
CS537A3	Mobile Robotics And Intelligent Systems
CS538A3	Network Security
CS539A3	Optimization Techniques
CS540A3	Vlsi Design
CS541A3	Wireless Sensor Networks
CS542A3	Data Analytics
CS543A3	Distributed Systems
CS544A3	Object Oriented Systems
CS545A3	Software Quality Management
CS546A3	Speech And Natural Language Processing
CS547A3	Deep Learning
CS548A3	Distributed Database Systems
CS549A3	Mobile Computing
CS550A3	High Performance Computing
CS551A3	Human Computer Interaction
CS552A3	Agile Methodology
CS553A3	Security & Ethical Hacking
CS554A3	Soft Skills In Industry
CS555A3	Introduction To Embedded System
CS556A3	Advanced Python Programming
CS557A3	Design Thinking For Engineering

3.6.3 M.Tech Communication and Signal Process

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EC20101A	Statistical Signal Processing	3	EC20103A	Internet of Things	3
EC20102A	VLSI Design	3	EC20104A	Information Theory and Coding	3
EC203XXA	Program Elective-I	3	EC203XXA	Program Elective-IV	3
EC203XXA	Program Elective-II	3	EC203XXA	Program Elective-V	3
EC203XXA	Program Elective-III	3	EC203XXA	Program Elective-VI	3
EC20401A	VLSI Laboratory	1.5	EC20403A	Advanced DSP Laboratory	1.5
EC20402A	Communication Laboratory	1.5	EC20404A	IoT Laboratory	1.5
EC20501A	Project Based Learning- I	2	EC20502A	Project Based Learning- II	2
Total		**20**	Total		**20**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EC20601A	Dissertation- Phase-I	15	EC20602A	Dissertation- Phase-II	25
Total		**15**	Total		**25**

List of Program Elective:

Program Elective-I			Program Elective-II		
Sub. Code	**Subject Name**	**C**	**Sub. Code**	**Subject Name**	**C**
EC20301A	Optimization Techniques in Communication	3	EC20304A	Cognitive Radio in 5G	3
EC20302A	Concepts and Modelling of Semiconductor Devices	3	EC20305A	Wireless Sensor Networks	3
EC20303A	Advance Communication Techniques	3	EC20306A	Speech Processing	3
			EC20307A	VLSI Testing	3
Program Elective-III			**Program Elective-IV**		
EC20308A	Applied Electromagnetics	3	EC20313A	Biomedical Signal Processing	3
EC20309A	Digital Image Processing	3	EC20314A	Low-Power VLSI Design	3
EC20310A	Soft Computing Techniques	3	EC20315A	Mobile and Adhoc Communication Networks	3
EC20311A	Digital Integrated Circuit Design	3	EC20316A	Computational Electromagnetic	3
EC20312A	Machine Learning	3			

Program Elective-V			Program Elective-VI		
EC20317A	Data Science for Engineers	3	EC20322A	Software Defined Networks	3
EC20318A	Cloud Computing	3	EC20323A	High Speed Digital Design	3
EC20319A	Analog Integrated Circuit Design	3	EC20324A	VLSI Fabrication Technology	3
EC20320A	Nanomaterials and Nanoelectronic Devices	3	EC20325A	Radar Systems and Signal Processing	3
EC20321A	Cryptography and Network security	3	EC20326A	Satellite and Optical Communication	3

3.6.4 M.Tech Power Electronics

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EE501A1	Advanced Power Electronics	3	EE503A1	Modeling & Simulation of Power Electronic Converters	3
EE502A1	Electrical Machine Analysis	3	EE504A1	Advanced Methods In Control Theory	3
EE5XXA3	PROGRAM ELECTIVE-I	3	EE5XXA3	PROGRAM ELECTIVE-IV	3
EE5XXA3	PROGRAM ELECTIVE-II	3	EE5XXA3	PROGRAM ELECTIVE-V	3
EE5XXA3	PROGRAM ELECTIVE-III	3	EE5XXA3	PROGRAM ELECTIVE-VI	3
EE501A4	Power Electronics lab-I	1.5	EE503A4	Power Electronics Design & Fabrication Lab	1.5
EE502A4	Programming & Simulation lab	1.5	EE504A4	Control Lab	1.5
EE501A5	Project Based Learning- I	2	EE502A5	Project Based Learning- II	2
Total		**20**	Total		**20**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
EE601A6	Dissertation- Phase-I	15	EE602A6	Dissertation / Thesis / Project	25
Total		**15**	Total		**25**

List of Program Elective

Program Elective-I			Program Elective-II		
Sub. Code	**Subject Name**	**C**	**Sub. Code**	**Subject Name**	**C**
EE501A3	Electric Drive Systems	3	EE504A3	Neural Networks	3
EE502A3	Fuzzy Logic & Evolutionary Algorithms	3	EE505A3	Industrial Automation & Control	3
EE503A3	Flexible AC Transmission Systems (FACTS)	3	EE506A3	Software Engineering	3
Program Elective-III			**Program Elective-IV**		
EE507A3	Programming with JAVA	3	EE510A3	Advanced Machines Drives	3
EE508A3	Data Base Management Systems	3	EE511A3	Computer Aided Power System Analysis	3
EE509A3	Digital Image Processing	3	EE512A3	Real Time Embedded Systems	3

Program Elective-V			Program Elective-VI		
EE513A3	Biomedical Instrumentation	3	EE516A3	Non Linear Dynamical Systems	3
EE514A3	Power Electronic Switching Devices	3	EE517A3	Data Communication & Computer Networks	3
EE515A3	Optimization in Engineering Design	3	EE518A3	Fundamentals of Nano-Electronics	3

3.7 Master of Computer Applications (MCA)

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA***A1	MATHEMATICAL FOUNDATIONS FOR COMPUTING	3	CA508A1	FORMAL LANGUAGES AND AUTOMATA THEORY	3
CA501A1	LATEST TRENDS IN COMPUTER APPLICATION	3	CA509A1	UNIX/LINUX INTERNAL	3
CA502A1	DATABASE MANAGEMENT SYSTEM	3	CA510A1	.NET FRAMEWORK	3
CA503A1	OPERATING SYSTEMS	3	CA511A1	COMPUTER NETWORK	3
CA504A1	JAVA PROGRAMMING	3	CA***A3	ELECTIVE –I	3
BA000A1	ACCOUNTING AND MANAGERIAL ECONOMICS	3	CA***A3	ELECTIVE- II	3
CA505A4	OPERATING SYSTEMS LAB	1	CA512A4	UNIX/LINUX INTERNAL LAB	1

CA506A4	JAVA PROGRAMMING LAB	1	CA513A4	COMPUTER NETWORK LAB	1
CA507A4	DATABASE MANAGEMENT SYSTEM LAB	1	CA514A4	.NET LAB	1
Total		**21**	Total		**21**

THIRD SEMESTER			**FOURTH SEMESTER**		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA000A1	QUANTITATIVE ANALYSIS FOR COMPUTER APPLICATIONS	3	CA607A6	MAJOR PROJECT	16
CA601A1	DESIGN & ANALYSIS OF ALGORITHMS	3			
CA602A1	SOFTWARE ENGINEERING AND UNIFIED MODELLING LANGUAGE	3			
CA***A3	ELECTIVE-III	3			
CA***A3	ELECTIVE-IV	3			
CA603A4	SOFTWARE ENGINEERING AND UML LAB	1			
CA604A4	DESIGN & ANALYSIS OF ALGORITHMS LAB	1			
CA605A5	MINOR PROJECT	6			
CA606A9	INDUSTRIAL TRAINING / COURSEWORK	1			
Total		**24**	Total		**16**

List of Electives:

ELECTIVES II

Specialization	Subject Code	Subject name
DATA SCIENCE	CA561A3	DATA SCIENCE
CLOUD TECHNOLOGY	CA562A3	CLOUD COMPUTING
CYBER SECURITY	CA563A3	PRINCIPLES OF CYBER SECURITY

ELECTIVES III & IV		
DATA SCIENCE	CA651A3	STATISTICAL FOUNDATIONS OF DATA SCIENCE
	CA652A3	DATA WAREHOUSING AND DATA MINING
	CA653A3	DATA ANALYTICS USING PYTHON
	CA654A3	MACHINE LEARNING
	CA655A3	SECURITY AND PRIVACY FOR DATA SCIENCE
	CA656A3	IMAGE ANALYTICS AND VISUALIZATION
	CA657A3	DEEP LEARNING
	CA658A3	NATURAL LANGUAGE PROCESSING
	CA659A3	BIG DATA ANALYTICS
	CA660A3	BUSINESS INTELLIGENCE AND ANALYTICS
CLOUD TECHNOLOGY	CA661A3	SCHEDULING IN CLOUD COMPUTING
	CA662A3	CLOUD ARCHITECTURE AND TECHNOLOGY
	CA663A3	BIG DATA AND ITS APPLICATIONS IN CLOUD
	CA664A3	DISTRIBUTED SYSTEM
	CA665A3	CLOUD COMPUTING AND SECURITY
	CA666A3	EDGE AND FOG COMPUTING
	CA667A3	VIRTUALIZATION CONCEPTS
	CA668A3	CLOUD APPLICATION DEVELOPMENT
	CA669A3	CLOUD ANALYTICS
	CA670A3	PRIVATE CLOUD DEPLOYMENT AND MANAGEMENT

CYBER SECURITY	CA671A3	CRYPTOGRAPHY
	CA672A3	PRIVACY AND SECURITY IN WEB APPLICATION
	CA673A3	NETWORK AND INFORMATION SECURITY
	CA674A3	COMPUTATIONAL NUMBER THEORY & CRYPTOGRAPHY
	CA675A3	INTERNET SECURITY AND PRIVACY
	CA676A3	IOT SECURITY AND PRIVACY
	CA677A3	CLOUD COMPUTING AND SECURITY
	CA678A3	BLOCKCHAIN TECHNOLOGY
	CA679A3	EMBEDDED AND CYBER PHYSICAL SYSTEMS SECURITY
	CA680A3	GAME THEORY

3.8 Master of Business Administration (MBA)

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
BA501A1	Principles of Management and Organizational Behavior	3	MA503A1	Quantitative Methods in Management	4
BA502A1	Marketing Management	3	MA504A1	Research Methodology and Statistical Techniques	4
BA503A1	Accounting for Managers	3	BA507A1	Human Resource Management	3
BA504A1	Business Economics	3	BA508A1	Financial Management	3
BA505A1	Business Communication	2	BA509A1	Productions and Operations Management	3
	Computer Applications in Management	3	BA510A1	Global Economic Environment and Policy	3
BA506A1	Legal Aspects in Business	3		Management Information Systems	3
BA501A7	Research Seminar I	1	BA503A4	SPSS - LAB	2
BA501A4	Managerial Skills and Personality Development- LAB	2			
BA502A4	MS-Office – LAB	2			
Total		**25**	Total		**21**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
BA601A9	Project Management	2	BA605A1	Banking and Insurance Management	3
BA601A1	Research Seminar II	1	BA602A7	Research Trends in Management (Grand Viva Voce)	3
BA601A7	Business strategy	3	BA606A1	Market Research	4
BA602A1	Summer Internship Project *(8-10 weeks)	6	BA607A1	Service Marketing and Global Marketing	4
BA603A1	Consumer Behaviour & Advertisement and Brand Management	4			
BA604A1	Retail and Distribution Management & Supply Chain Management	4			
BA601A4	MS Project Management and Tally- Lab	2			
Specialization (4+4)		8	**Specialization (4+4)**		8
Total		**30**	**Total**		**22**

List of Specialization:

 # Out of the following eight Specializations I/II/III/IV/V/VI/VII/VIII,

anyone must be opted for in Semester-III and Semester-IV

Specialization	Semester	Subject Code	Subject name	C
Specialization-I (Finance)	**3rd**	BA601A3	Security Analysis and Portfolio Management & Derivative Market	4
		BA602A3	Taxation	4
Specialization-II (Human Resource)		BA603A3	Industrial Relation	4
		BA604A3	Competency Mapping & Performance Management	4
Specialization-III (Digital Marketing)		BA605A3	An Overview of Digital Marketing	4
		BA606A3	Social Media Marketing	4
Specialization-IV (Banking & Insurance)		BA607A3	Rural Banking	4
		BA608A3	CRM in Banking and Insurance	4
Specialization-V (Operations & Supply Chain Management)		BA609A3	Total Quality Management for Business Excellence	4
		BA610A3	Service Operations Management	4
Specialization-VI (Event Management & PR)		BA611A3	Principles of Event Management	4
		BA612A3	Event Management and Resource Management	4
Specialization-VII (System)		BA613A3	Object Oriented Programming System & Open Source System	4
		BA614A3	Database Management Systems	4
Specialization-VIII (Business Analytics)		BA615A3	Introduction to Business Analytics	4
		BA616A3	Introduction to R	4

Specialization I (Finance)	**4TH**	BA619A3	Multinational Finance & Risk Exposure Management	4
		BA620A3	Marketing of Financial Services & Mergers and Acquisitions	4
Specialization II (Human Resource)		BA621A3	Organization Development & Human Resource Development	4
		BA622A3	Compensation Management & International Human Resource Management	4
Specialization-III (Digital Marketing)		BA623A3	Advance Search Engine Optimization	4
		BA624A3	Web Analytics	4
Specialization-IV (Banking & Insurance)		BA625A3	International Banking and Finance	4
		BA626A3	Insurance Claim Management	4
Specialization-V (Operations & Supply Chain Management)		BA627A3	Operations Strategy	4
		BA628A3	Sustainable Operations Management	4
Specialization-VI (Event Management & PR)		BA629A3	Event Risk Management	4
		BA630A3	Legal Aspects of Event Management	4
Specialization-VII (System)		BA631A3	E-Commerce	4
		BA632A3	Technology Management and Strategy	4
Specialization-VIII (Business Analytics)		BA633A3	Data Analytics using R	4
		BA634A3	Data Warehousing & Data Mining	4
# 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

3.9 Schema of all M.Sc. courses

3.9.1 Schema of M.Sc. (Physics)

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PH501A1	MATHEMATICAL PHYSICS	4	PH511A1	CLASSICAL AND RELATIVISTIC ELECTRODYNAMICS	4
PH502A1	FUNDAMENTALS OF ELECTRONICS	4	PH512A1	CONDENSED MATTER PHYSICS	4
PH503A1	CLASSICAL MECHANICS	4	PH513A1	COMPUTATIONAL PHYSICS - I	3
PH504A1	QUANTUM MECHANICS I	4	PH514A1	QUANTUM MECHANICS II	3
PH505A4	PHYSICS LAB I (GEN. PHYSICS)	3	PH515A4	PHYSICS LABORATORY III (ELECTRONICS)	3
PH506A4	PHYSICS LAB II (PHOTONICS & SPECTROSCOPY)	3	PH516A4	PHYSICS LABORATORY IV (COMPUTATIONAL PHYSICS LAB - I)	3
			PH517A5	PROJECT BASED LEARNING – I	3
			PH511A1	CLASSICAL AND RELATIVISTIC ELECTRODYNAMICS	2
Total		**22**	Total		**22**

THIRD SEMESTER GROUP A (THEORY)			FOURTH SEMESTER GROUP A (THEORY)		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PH601A1	STATISTICAL MECHANICS	4	PH611A1	ATOMIC & MOLECULAR PHYSICS	4
PH602A1	NUCLEAR & PARTICLE PHYSICS	4	PH612A4	COMPUTATIONAL PHYSICS LAB II	3
PH603A1	COMPUTATIONAL PHYSICS - II	3	PH614A3	ELECTIVE-I: PARTICLE PHYSICS II	4
PH604A3	ELECTIVE-I: PARTICLE PHYSICS I	4	PH615A3	ELECTIVE-I: PLASMA PHYSICS II	4
PH605A3	ELECTIVE-I: PLASMA PHYSICS I	4	PH618A6	*(DISSERTATION/ PROJECT)	5
PH608A5	PROJECT BASED LEARNING – II	2			
Total		**21**	Total		**20**

THIRD SEMESTER GROUP B (EXPERIMENTAL)			FOURTH SEMESTER GROUP B (EXPERIMENTAL)		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
PH601A1	STATISTICAL MECHANICS	4	PH611A1	ATOMIC & MOLECULAR PHYSICS	4
PH602A1	NUCLEAR & PARTICLE PHYSICS	4	PH612A4	COMPUTATIONAL PHYSICS LAB II	3
PH603A1	COMPUTATIONAL PHYSICS - II	3	PH616A3	ELECTIVE-II: ELECTRONICS - II	4
PH606A3	ELECTIVE-II: ELECTRONICS - I	4	PH617A3	ELECTIVE-II: ELECTRONICS LAB - II	4
PH607A3	ELECTIVE-II: ELECTRONICS LAB - I	4	PH618A6	*(DISSERTATION/ PROJECT)	5
PH608A5	PROJECT BASED LEARNING – II	2			
Total		**21**	Total		**20**

3.9.2 Schema of M.Sc. (Chemistry)

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CH501A1	Principles of Inorganic Chemistry	4	CH505A1	Modern Spectroscopic Technique	4
CH502A1	Principles of Organic Chemistry	4	CH506A1	Organic Reactions and Mechanisms	4
CH503A1	Chemical Thermodynamics	4	CH507A1	Computer Fundamentals & Programming	3
CH504A1	Analytical Chemistry	4	CH508A1	Quantum Chemistry- I	3
CH501A4	Analytical Chemistry Lab	3	CH503A4	Computer Programming Lab	2
CH502A4	Physical Chemistry Lab	3	CH504A4	Organic Chemistry Lab	3
			CH501A5	Project Based Seminar	1
Total		**22**	Total		**20**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
CH601A1	Advanced Coordination Chemistry & Inorganic Reaction Mechanism	4	CH605A1	Bio-inorganic Chemistry	3
CH602A1	Concepts in Organic Synthesis	4	CH606A1	Solid State Chemistry and Interface Science	3
CH603A1	Chemical Dynamics and Electro-chemistry	4	CH607A1	Group Theory – A Chemist Approach	3
CH604A1	Biochemistry	3	CH608A1	Quantum Chemistry- II	3
EL-I	Elective I (special paper)	4	EL-II	Elective II (Special Paper)	4
CH601A4	Inorganic Chemistry Lab	3	CH602A5	Research Project Work	4
CH601A5	Project Based Learning	1			
Total		**23**	Total		**20**
				Total	**85**

List of Electives

Elective-I			Elective-II		
Sub. Code	**Subject Name**	**C**	**Sub. Code**	**Subject Name**	**C**
CH601A2	Photoinorganic Chemistry	4	CH604A2	Chemistry of Nanomaterials	4
CH602A2	Synthetic Organic Chemistry	4	CH605A2	Supramolecular Chemistry	4
CH603A2	Advanced Physical Chemistry	4	CH606A2	Medicinal Chemistry	4

3.9.3 Schema of M.Sc. (Mathematics)

FIRST SEMESTER			SECOND SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA531A1	Real Analysis I	4	MA535A1	Real Analysis II	4
MA532A1	Algebra	4	MA536A1	Complex Analysis	4
MA533A1	Ordinary Differential Equation	4	MA537A1	Fluid Mechanics	4
MA534A1	Linear Algebra	4	MA538A1	Topology	4
MA531A4	Computation Lab I	2	MA539A1	Numerical Analysis	4
			MA532A4	Computational Lab II	2
Total		**18**	Total		**22**

THIRD SEMESTER			FOURTH SEMESTER		
Sub Code	**Subject Name**	**C**	**Sub Code**	**Subject Name**	**C**
MA631A1	Functional Analysis	4	MA636A1	Linear and Non-Linear programming problems	4
MA632A1	Probability and Inference Theory	4	MA637A1	Stochastic Processes	4
MA633A1	Discrete Mathematics	4	MA6**A3	(Elective - I)	4
MA634A1	Partial differential equation and Variational Principles.	4	MA6**A3	(Elective - II)	4
MA635A1	Graph Theory	4	MA631A6	Project and Grand Viva	8
			MA532A4	Computational Lab II	2
Total		**20**	Total		**24**

List of Electives

Elective (4TH Semester)		
Sub. Code	**Subject Name**	**C**
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	

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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.”

INSPIRED BY LIFE

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