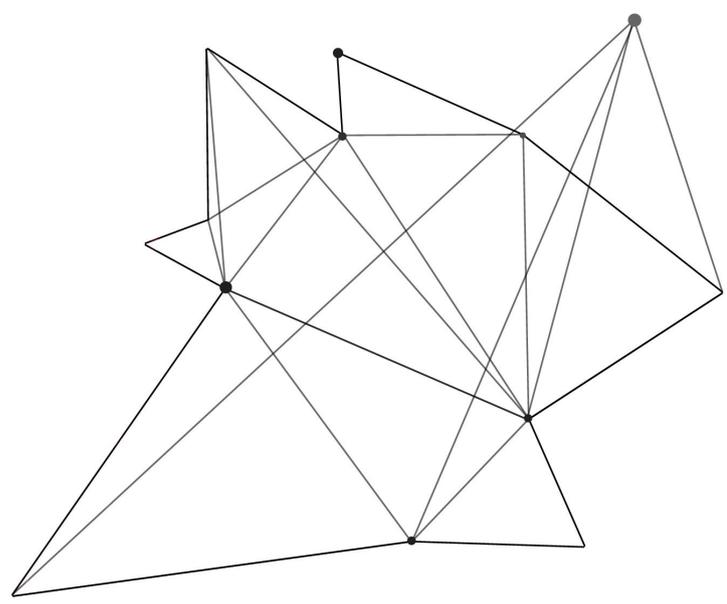




CATEGORY 1 UNIVERSITY BY MHRD, Govt. of India
KL ACCREDITED BY NAAC WITH A++ GRADE

2023 NATIONAL INSTITUTIONAL RANKING FRAMEWORK
RANKED 28 AMONG ALL UNIVERSITIES

43 YEARS OF EDUCATIONAL LEADERSHIP



BACHELOR OF TECHNOLOGY

ARTIFICIAL INTELLIGENCE & DATA SCIENCE

PROGRAM HANDBOOK | 2023

For Students Admitted in Academic Year 2023-24



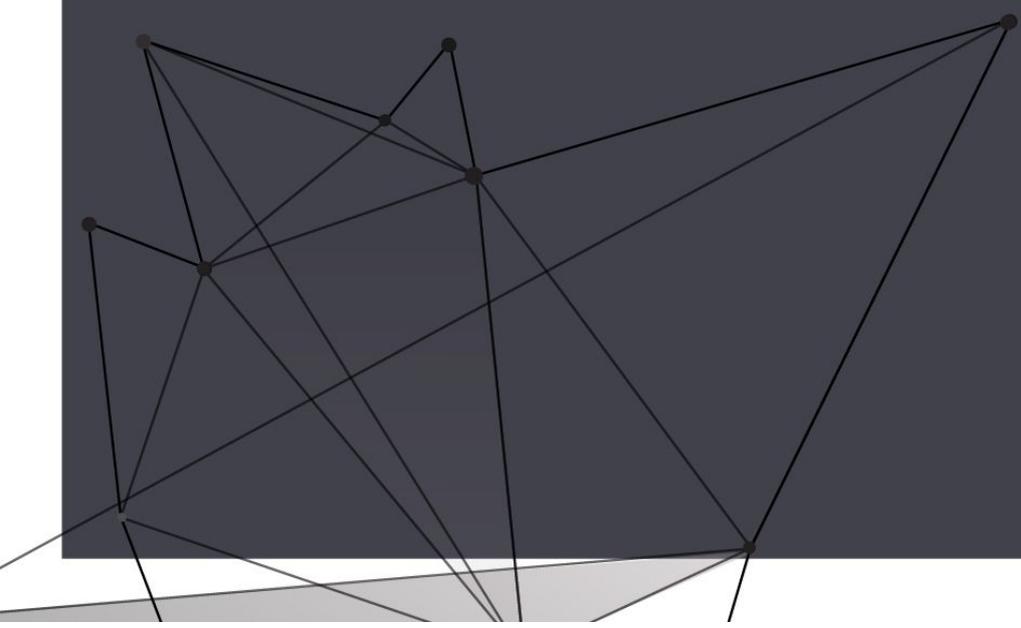


VISION

To be a globally renowned university.

MISSION

To impart quality higher education and to undertake research and extension with emphasis on application and innovation that cater to the emerging societal needs through all-round development of students of all sections enabling them to be globally competitive and socially responsible citizens with intrinsic values.



**CATEGORY 1
UNIVERSITY**

BY MHRD, Govt. of India

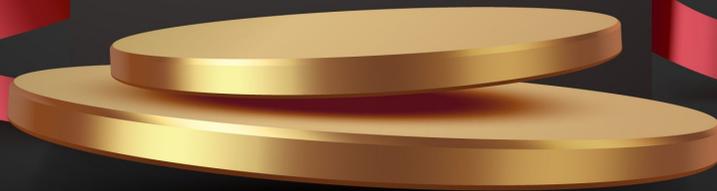
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AWARDS





Koneru Satyanarayana,
Chancellor

Sri Koneru Satyanarayana, BE, FIE, FIETE, MIEEE graduated in Electronics and Communication Engineering in the year 1977. Along with Sri Koneru Lakshmaiah, he is the co-founder of the Institute which was established in the year 1980. He is an educationist of eminence and also an industrialist of great repute. He runs a number of industries in and around Vijayawada.

Dr. K S Jagannatha Rao
Pro Chancellor



Prof. K. S. Jagannatha Rao was one of the leading scientists in neuroscience research in globe. He was the Director on Institute for Scientific Research and Technological Advances (INDICASAT AIP), Republic Panama and contributed lot in building innovation in higher education and research in Panama since 2010. He played a key role in building PRISM (Panamanian Research Institutes of Science and Medicine) in Latin America. Dr. Rao has his research area on Brain Research and established Alzheimer's Centre and published 165 papers in leading Biochemistry and Neuroscience Journals, supervised 19 Ph.D students. He is also adjunct faculty of Biomedical Informatics of UTHS, Houston, and Advisory Board Member of UT- El Paso Minority Health NIH program, USA and Adjunct Faculty, Methodist Research Institute, Houston, USA. He was elected Member of Panamanian Association for the Advancement of Science (APANAC) - Considered as National Science Academy of Panama. He received his undergraduate and Ph.D degrees from Sri Venkateswara University, Tirupati. Later, joined in Central Food Technological Research Institute, Mysore. He received Sir C. V. Raman Award by Karnataka State Council of Science and Technology, 2003.



Prof. G P S Varma
Vice Chancellor

Prof. G P S Varma, Vice-Chancellor, KLEF, is one of the most widely experienced leaders in Indian higher education, known for his commitment to expanding student opportunity, catalyzing academic innovation, and encouraging university's civic engagement and service to society. He adorned the position of Chairman, ISTE (Indian Society for Technical Education)- AP State, TSEM CET Test Committee Member-2021 nominated By Telangana State Govt, APEAMCET Admission Committee Member in 2016 by Andhra Pradesh State Council of Higher Education, Govt. of Andhra Pradesh. He has been a very farsighted Peer Team Visit Member for National Assessment and Accreditation Council (NAAC), Expert Committee Member for University Grants Commission (UGC) Autonomous Visits. He has been an Advisory Council Member for (CEGR) Centre for Education Growth, and Research India International Centre, New Delhi, and Board Member for Big-Data Analytics Forum.

Dr. N Venkatram
Pro-Vice Chancellor



Dr. Venkatram Nidumolu, Pro-Vice Chancellor is High performing, strategic thinking professional with more than 15years of administration experience and 20 years of teaching experience in KLEFand 30 years overall experience in the higher education sector. He graduated in B.Tech (ECE) from Acharya Nagarjuna University, pursued M.S degree from BITS, PILANI in software Systems. He received Ph.D award from Acharya Nagarjuna University. He held the positions like HOD, Joint Register, Principal, and Dean-Academics before becoming Pro-Vice Chancellor. He was core member of all NBA, NAAC, & other accreditations since 2004 and he has good experience in handling of quality issues and assessment related practices.



Dr. A V S Prasad
Pro-Vice Chancellor

Dr. A.V.S.Prasad, M.Eand Ph.D from JNTU, Hyderabad is a professor in Civil Engineering. He has a rich experience of 33 years in academics which includes 26 years in administration at various cadres ranging from Head of Department, Dean, Principal, Director and Pro-Vice Chancellor. Dr. Prasad has served as Director of Audisankara group of institutions and Narayana Group of Institutions for 18 years and was instrumental in getting these institutions accredited by NAAC,NBA, Autonomous and gained many laurels from the State Government, JNTU etc. He has served as Pro-Vice Chancellor of K.L. University for 3 years.

Dr. Prasad has extensive knowledge of administrative system, maintaining statutory norms of bodies like AICTE, UGC etc and has a good understanding of NBA,NAAC procedures and norms. He has to his credit many papers published in indexed journals. He has experience in organizing various National Level Events, Workshops and Conferences. He served as Member, Chairman of Board of Studies at JNTU(A), KLCE(Autonomous) and K.L. University. Above all he is soft spoken, congenial and an effective team worker and team leader.

OFFICE OF DEAN ACADEMICS



Dr. V N Sailaja
Associate Dean Academics
(Curricular Aspects)



Dr. M Kameswara Rao
Associate Dean Academics
(Academic Registrations)



Dr. N V K Ramesh
Associate Dean Academics
(Teaching & Learning Process)



Dr. B Chaitanya Krishna
Associate Dean Academics
(OBE & Evaluation)



Dr. P Vidya Sagar
Associate Dean Academics
(Projects, Academic Research & Internships)



Dr. Fazal Noor Basha
Associate Dean Academics
(Academic Counselling)



Dr. P Kasi Visweswara Rao
Associate Dean Academics
(Curricular Aspects)



Dr. K Uday Kiran
Associate Dean Academics
(Academic Registrations)



Dr. Aravindhan Alagarsamy
Associate Dean Academics
(Teaching & Learning Process)



Dr. E Vamsidhar
Associate Dean Academics
(OBE & Evaluation)



Mr. A Gopi
Assistant Dean Academics
(Projects, Academic Research & Internships)



Dr. M Latha
Associate Dean Academics
(Academic Counselling)



Hari Kiran Vege
Dean (Addl) Academics



Dr. M Venkata Naresh
Associate Dean Academics
(Strategic Planning & Policy Making)



Dr. Padmanabhan K
Associate Professor, CSE



Dr. S Balaji
Associate Dean Academics
(Off-campus Operations)



Dr. A S Chandra Sekhara Sastry
Controller of Examinations



Dr. Ch V Ramana Murthy
Addl. Controller of Examinations



Dr. Chakka Raghava Prasad
Addl. Controller of Examinations



Dr. Chetty Manna Sheela Rani
Addl. Controller of Examinations



Dr. Sreevardhan Cheerla
Addl. Controller of Examinations



Dr. Kallakunta Ravi Kumar
Addl. Controller of Examinations



Dr. M V V K Srinivas Prasad
Asst. Controller of Examinations



Dr. Kallipalli Venkata Raju
Addl. Controller of Examinations

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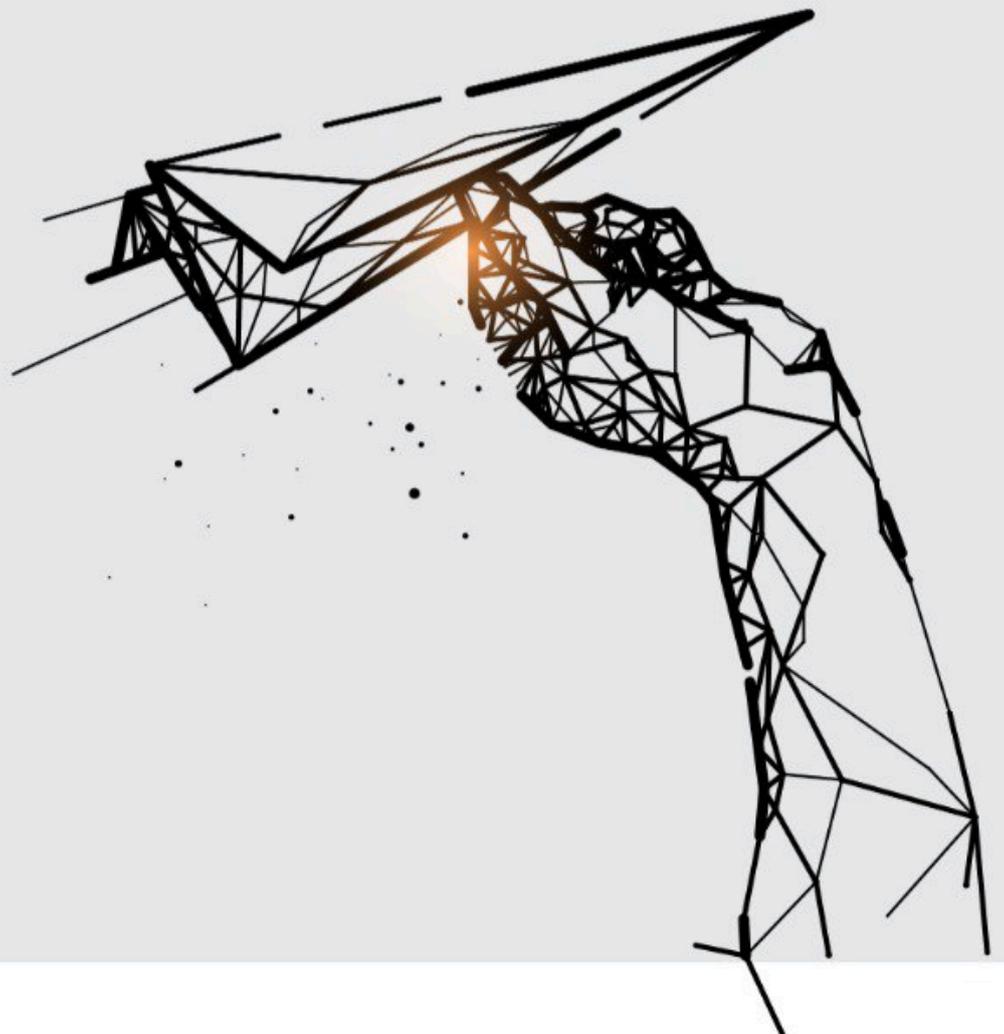
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VISION

To be a department of International repute through continuous research, innovation and industry led curriculum.

MISSION

To Impart Quality Education with social consciousness and make them Globally Competent.





Y23: B.Tech. - Artificial Intelligence and Data Science

Program Handbook

Program Educational Objectives (PEOs)**PEOs**

PEO	PEO Description
1	Practice engineering in a broad range of industrial, societal and real-world applications.
2	Pursue advanced education, research and development, and other creative and innovative efforts in science, engineering, and technology, as well as other professional careers.
3	Conduct themselves in a responsible, professional, and ethical manner.
4	Participate as leaders in their fields of expertise and in activities that support service and economic development throughout the world.

Program Outcomes & Program Specific Outcomes (PO & PSO)

PO & PSO

PO/PSO	PO/PSO Description
P01	Engineering Knowledge: An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization for the solution of complex engineering problems in engineering
P02	Problem Analysis: An ability to identify, formulate, research literature, analyze complex engineering problems in engineering using the first principles of mathematics, natural sciences and engineering sciences
P03	Design/ development of solutions: An ability to design solutions for complex engineering problems and system component or processes that meet the specified needs considering public health & safety and cultural, societal & environment
P04	Conduct investigations of complex problems: An ability to use research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of the information to obtain solutions to engineering problems.
P05	Modern tool usage: Ability to create, select and apply appropriate techniques, resources and modern engineering activities, with an understanding of the limitations.
P06	The engineer and society: Ability to apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
P07	Environment and sustainability Ability to demonstrate the knowledge of engineering solutions, contemporary issues understanding their impacts on societal and environmental contexts, leading towards sustainable development.
P08	Ethics: An ability to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
P09	Individual and team work: An ability to function effectively as an individual, and as a member or leader in diverse teams and in multi- disciplinary settings.
P010	Communication: Ability to communicate effectively oral, written reports and graphical forms on complex engineering activities.
P011	Project management and finance: Ability to demonstrate knowledge and understanding of engineering and management principles and apply those ones own work, as a member and leader in team, to manage projects and in multi-disciplinary environments
P012	Lifelong learning An ability to recognize the need for and having the preparation and ability to engage independent and life-long learning in broadest context of technological change
PSO1	An ability to design and develop Artificial Intelligence technology into innovative products for solving real world problems.
PSO2	An ability to design and develop Data Science methods for analyzing massive datasets to extract insights by applying AI as a tool
PSO3	An ability to apply basic principles and practices of computing supported by mathematics and science to successfully develop software related engineering projects to meet customer business objectives and/or productively engage in research.

Program Rules & Regulations

Admission Eligibility Criteria

A Pass in 10+2 or equivalent examination with 60% in aggregate and 60% and above (or) equivalent CGPA in Group subjects - Physics, Chemistry and Mathematics.

Program Structure and Curriculum

For each academic program, the curriculum serves as a framework that specifies the credits, course category, codes, titles, and delivery methods (Lectures, Tutorials, Practice, Skills, Projects, Self-Study, Capstone Design, etc.) under the **Choice-Based Credit System (CBCS)**. The curriculum is designed, implemented, and assessed following the **Outcome-Based Education (OBE)** framework. In designing the curriculum, we ensure the integration of key contemporary and traditional values by embedding Indian Knowledge Systems (IKS), Sustainable Development Goals (SDGs), and Design Thinking principles into courses at their inception.

- Each **Academic Year** consists of two regular semesters, each approximately 20 weeks including classwork and exams:
 - **Odd Semester:** July to December
 - **Even Semester:** December to May
- A **Summer Term** may be offered from May to June but is not considered a regular semester for calculating program duration.
- Students have the flexibility to choose courses as prescribed by KLEF.
- Each course has a **Lecture-Tutorial-Practice-Skill (L-T-P-S)** component.

Course Credit Structure:

Credits are allocated to courses based on the **L-T-P-S** structure:

- Every **Lecture** or **Tutorial** hour equals **1 credit**.
- Every **Practical** hour equals **0.5 credits**.
- Every **Skill-based practice** hour equals **0.25 credits**.

Course Precedence:

The following are the guidelines for registering into courses with pre-requisites.

- A course may have one or more of its preceding course(s) as pre-requisite(s).
- To register for a course, the student must successfully be promoted in these course(s) earmarked as pre-requisite(s) for that course.

Academic Flexibilities

Major Flexibilities:

- **Honors:** Honors can be awarded if students complete additional courses from their core program and earn 20 extra credits through specified category of courses.
- **Honors through Research:** Honors through Research offers students the chance to explore their chosen field of study in greater depth, cultivate valuable research skills, and make meaningful contributions to their specific area of interest. Students can be awarded this Degree upon fulfilling the requirement of earning an additional 20 credits through specified category of courses.

- **Honors through Innovation:** Honors through Innovation emphasize the exploration of innovative ideas, problem-solving, and creative thinking within a particular field of study. It may provide opportunities for students to engage in innovative projects, research, or entrepreneurial activities. Students can be awarded their degree upon successful completion of additional courses from their core program and earning an extra 20 credits through specified category of courses.
- **Honors through Experiential Learning:** Honors through Experiential Learning focuses on hands-on, practical experiences that complement and enhance traditional classroom learning. Students will be eligible for the degree upon the successful completion of additional courses from their core program and the attainment of 20 extra credits through specified category of courses.

For the above said categories, if a student fails to meet the CGPA and SGPA requirements, at any point after registration, she/he will be dropped from the list of students eligible for the specified Degree, then student will receive B.Tech. Degree only. However, such students will receive a separate grade sheet mentioning the additional courses completed by them.

Program Add-ons:

- **Specialization:** Specialization degree can be awarded if student completes five professional electives and one skill development course in the same track of his/her interest.
- **Minor:** Minor degree can be awarded if student fulfills all the program requirements of their discipline and are successful in completing a specified set of courses from another discipline through which they earn an additional 20 credits are eligible to get minor degree in that discipline.
- **Double Major:** Double Major degree can be awarded if student earns 40 additional credits from the selected second major stream in addition to fulfilling the requirements of their first major.

	No Major Flexibility	Major Flexibility Honors	Major Flexibility Honors through Research	Major Flexibility Honors through Innovation	Major Flexibility Honors through Experiential Learning
No Program Add-On	B.Tech.	B.Tech. (Honors)	B.Tech. (Honors through Research)	B.Tech. (Honors through Innovation)	B.Tech. (Honors through Experiential Learning)
Program Add-On Specialization	B.Tech. with Specialization	B.Tech. (Honors) with Specialization	B.Tech. (Honors through Research) with Specialization	B.Tech. (Honors through innovation) with Specialization	B.Tech. (Honors through Experiential Learning) with Specialization
Program Add-On Minor	B.Tech. with Minor	B.Tech. (Honors) with Minor	B.Tech. (Honors through Research) with Minor	B.Tech. (Honors through Innovation) with Minor	B.Tech. (Honors through Experiential Learning) with Minor
Program Add-on Double Major	B.Tech. with Second Major	B.Tech. (Honors) with Second Major	B.Tech. (Honors through Research) with Second Major	B.Tech. (Honors through innovation) with Second Major	B.Tech. (Honors through Experiential Learning) with Second Major

Registration Process

Key Guidelines:

- **Course Availability:** Students are permitted to register only for courses offered in the specific semester of enrollment.
- **Prerequisites:** Any prerequisite courses must be successfully completed before registering for subsequent courses.
- **Timely Registration:** Students must register on the designated registration day. KLEF reserves the right to deny late registrations.
- **Add/Drop/Change Period:** Students have a one-week window from the start of classes to add a course and two-weeks to drop or change courses.
- **Credit Limits:**
 - The recommended credit load is 22-24.
 - The maximum credit load per semester is 30.
 - If a student finds the standard load overwhelming, they can opt for deceleration, taking fewer courses now and making up the credits in a future summer semester.
 - Students in honors programs or pursuing a minor may be allowed to take on a heavier load through overloading, subject to eligibility criteria.
- **Elective Course Availability:** KLEF may cancel elective courses with low enrollment within the first week. Students will be able to switch to another elective if they meet its prerequisites.
- **Re-registration:** If a student wants to improve their grade in a course, they can re-register for it with approval from the Dean of Academics.
- **Registration Cancellation:** KLEF can cancel a student's registration for disciplinary reasons or plagiarism.
- **Timetable Clashes:** Students are responsible for resolving any timetable conflicts. They should contact their Department Year Coordinator immediately if any clashes arise.
- **Irregularities:** If any irregularities are found in a student's registration later on, KLEF may cancel their registration for a course or even the entire semester.

Registration Flexibilities:

- **Choice of electives:** Students have the flexibility to choose from a diverse set of elective courses that align with their personal interests or career objectives.
- **Choice of faculty:** Students have the flexibility to choose their preferred faculty members for certain courses, depending on departmental policies and course availability.
- **Acceleration & Overloading:** Students can accelerate their progress by taking courses from the next semester in advance, or overload by taking more credits than the standard limit. Prior permission from the Dean of Academics is required for either of these.
- **Deceleration & Underloading:** If students need to lighten their course load, they can decelerate by postponing some courses to the next semester, or underload by taking fewer credits than usual. Students who do not register on time, may also be forced to decelerate to compensate the classwork that they missed due to late registration. In both the cases of deceleration, permission must be sought from Office of Dean Academics through proper channel.

- **Special Purpose Semesters:**

- **Innovation Semester:** An Innovation Semester is a dedicated academic term focused on cultivating a culture of creativity, problem-solving, and entrepreneurial thinking. It provides students with the opportunity to develop innovative solutions to real-world challenges.
- **Product Development Semester:** A Product Development Semester is an academic term dedicated to the process of creating new products or improving existing ones. It provides students with hands-on experience in the entire product lifecycle, from ideation to market launch.
- **Rapid Prototyping Semester:** A Rapid Prototyping Semester is an academic term dedicated to the practical application of rapid prototyping techniques to create physical models or prototypes of products or designs. It provides students with hands-on experience in transforming digital designs into tangible objects.
- **Research Semester:** A research semester is a dedicated period within an academic program focused on independent research or scholarly inquiry. It provides students with the opportunity to delve deep into a specific research topic or project under the guidance of a faculty mentor.

Summer Term Registration:

The Summer Term is designed to help students catch up or get ahead. Here are the guidelines:

- **Eligibility:** Students can register for summer courses if they have backlogs to clear, need to fulfill pre-requisites, or have been approved for acceleration.
- **Credit Limit:** The maximum credit load for the summer term is 12.
- **Timetable Clashes:** Students should ensure there are no conflicts in their summer course schedule.
- **Attendance & Promotion:** The same policies apply as in regular semesters, except that attendance condonation is not available in the summer.

Course Categories

- **Humanities, Arts and Social Sciences (HAS):** The Humanities, Arts, and Social Sciences (HAS) category encompasses a diverse range of academic disciplines designed to broaden students' perspectives beyond their core areas of study. As part of the undergraduate curriculum, students can choose from a variety of courses within this category, including Foreign Language Electives and Management Electives. These courses offer valuable opportunities for students to develop skills in communication, cultural understanding, and management, complementing their technical education and fostering a well-rounded academic experience.
- **Basic Science Courses (BSC):** The Basic Science category covers key courses in subjects like Mathematics, Physics, and Chemistry, providing a strong scientific foundation for undergraduate students. This category includes Mathematics Electives and Science Electives, offering students the flexibility to choose courses that align with their interests. These courses help develop essential problem-solving and analytical skills, which are critical for understanding advanced concepts in their field. Basic Science courses also play a vital role in applying scientific principles to real-world engineering and research challenge.
- **Engineering Science Courses (ESC):** The Engineering Science category comprises foundational engineering courses that introduce students to essential principles and methods used in various engineering fields. These courses provide the necessary technical background and practical knowledge required for more advanced study and specialization in engineering disciplines.
- **Professional Core Courses (PCC):** Professional Core Courses (PCC) are essential courses within each engineering discipline that provide foundational knowledge and skills critical to the field. These courses are integral to the curriculum and ensure that students acquire the core competencies necessary for their professional practice.

- **Flexi Core Courses (FCC):** Flexi Core Courses offer students a degree of flexibility within their core curriculum. These courses are designed to complement the professional core courses while allowing students to select topics that align with their career goals and personal interests. Flexi Core Courses are integral to ensuring that students receive a comprehensive education while exploring specialized areas that may not be covered in the traditional core courses.
- **Skill Development Courses (SDC):** Skill Development Courses are designed to equip students with practical, hands-on skills that enhance their employability and professional capabilities. These courses often focus on soft skills, technical proficiency, and industry-relevant competencies, such as communication, teamwork, leadership, digital literacy, and industry-specific software tools. By offering both theoretical knowledge and practical training, these courses help bridge the gap between academia and the professional world.
- **Professional Elective Courses (PEC):** Professional Elective Courses (PEC) are required for students who wish to pursue a specific specialization within their field of study. These courses allow students to focus on advanced topics and gain in-depth knowledge in their area of interest, tailoring their education to align with their career goals. By completing the designated PECs, students can achieve a degree of specialization that enhances their expertise and prepares them for specific roles or industries in their professional journey.
- **Project Research and Internship (PRI):** Project Research and Internship courses provide students with real-world experience by engaging them in research projects and internships in industry or academia. These courses are essential for developing practical problem-solving skills, fostering innovation, and giving students the opportunity to apply the theoretical knowledge gained in the classroom to real-life scenarios. Through internships and research projects, students can gain industry exposure, improve their technical skills, and prepare themselves for professional careers or advanced studies.
- **Open Elective Courses (OEC):** Open Elective Courses offer students the flexibility to explore subjects outside their core discipline, fostering interdisciplinary learning and intellectual diversity. Available across all university programs, these courses encourage students to integrate knowledge from various fields, promoting innovation and a holistic understanding of global issues. Open Electives play a key role in broadening student academic perspectives and preparing them for multifaceted professional challenges.
- **Value-Added Courses (VAC):** Value-Added Courses are designed to enhance employability by providing students with training that leads to globally recognized certifications or specialized skills. These courses focus on industry-relevant knowledge and practical applications, ensuring students are well-prepared for current job market demands. By offering advanced skills and certifications, Value-Added Courses give students a competitive edge in their careers.
- **Social Immersive Learning (SIL):** Social Immersive Learning (SIL) is an informal learning approach facilitated through the Student Activity Centre, where students earn credits by actively participating in a wide range of events. These include Extension, Social & Outreach Events, Technology Club Events, Literary, Hobby & Cultural Events, Innovation, Incubation & Entrepreneurship Events, and Health & Well-Being Events. SIL emphasizes experiential and activity-based learning, fostering personal growth and social engagement. The course is evaluated based on the points students accumulate through their involvement, offering a flexible, real-world learning experience that complements their formal education.
- **Bridge Courses:** Bridge Courses are designed to address academic gaps and ensure continuity between Basic Sciences, Engineering Sciences, and Professional Courses. These courses, identified through gap analysis and stakeholder feedback, serve as a foundation for students, helping them transition smoothly between academic levels or disciplines. Bridge Courses reinforce fundamental concepts and skills, preparing students for more advanced coursework in their academic programs.
- **Audit Courses (AUC):** Audit courses are courses that students can attend without receiving a formal grade or credit towards their degree. These courses are often chosen by students who want to learn a subject for personal enrichment or to gain knowledge in areas outside of their major.

- **Honors Flexi Core Courses (HFC):** Honors Flexi Core Courses (HFC) provide students pursuing honors programs with the flexibility to choose from a range of core courses tailored to their specific academic interests and career goals. These courses are designed to offer advanced content and greater depth in core subjects, allowing students to personalize their academic journey while fulfilling the requirements of their honors program.
- **Honors Through Research Courses (HRC):** Honors Through Research Courses (HRC) enable students to engage in in-depth research projects as part of their honors curriculum. These courses focus on developing student research skills, critical thinking, and analytical abilities, allowing them to contribute original knowledge to their field of study. Through hands-on research experiences, students gain valuable insights and prepare for advanced academic or professional pursuits.
- **Honors Through Innovation Courses (HIC):** Honors Through Innovation Courses (HIC) emphasize creativity and innovation within the honors program framework. These courses encourage students to explore cutting-edge technologies, develop novel solutions to real-world problems, and engage in entrepreneurial activities. By focusing on innovation, students can apply their learning to create impactful projects and drive advancements in their areas of interest.
- **Honors Through Experiential Learning Courses (HEC):** Honors Through Experiential Learning Courses (HEC) integrate practical, hands-on experiences with academic study. These courses offer students opportunities to apply theoretical knowledge in real-world settings through internships, fieldwork, or community projects. HEC courses aim to enhance student learning by providing experiential opportunities that complement their honors education and contribute to their personal and professional development.
- **Minor Degree Courses (MIN):** Students pursuing a Minor Degree must complete a designated set of Minor Degree Courses. These courses are carefully selected to provide a structured and cohesive understanding of the minor subject, complementing the student's major field of study. By fulfilling these requirements, students gain specialized knowledge and skills in an additional discipline, which enhances their overall academic profile and broadens their career opportunities.
- **Minor Skill Development Courses (MSDC):** Minor Skill Development Courses (MSDC) must be completed as part of the selected minor degree. These courses are designed to provide targeted skill-building opportunities relevant to the minor field, focusing on practical and industry-specific competencies. By engaging in MSDC, students develop specialized skills that complement their major and enhance their overall expertise, making them more versatile and competitive in their chosen career paths.
- **Second Major Flexi Core Courses (SMFC):** Second Major Flexi Core Courses (SMFC) are designed for students pursuing a second major, offering flexibility in selecting core courses that meet the requirements of both their primary and secondary majors. These courses allow students to integrate and balance the demands of two distinct fields of study, providing a comprehensive educational experience across discipline.

Requirements for the award of Degree

To be eligible for the award of a B.Tech. degree, a student must successfully fulfill the following criteria:

- **Credit Requirements:** Earn the minimum number of credits specified in the program structure.
- **Focused Training:** Successfully undertake specific training in focused areas that enable students to be successful in their chosen career tracks. The focused areas are: (a) Employment in MNCs, (b) Civil Services (c) Higher Studies (d) Research and (e) Entrepreneurship.
- **Certifications:** Successfully complete at least three global certifications or value-added courses in the chosen discipline, along with one in yoga, sports & games, or fine arts.
- **Internships:** Complete both a Social Internship and a Technical Internship.

- **Audit Courses:** Successfully complete all audit courses outlined in the program structure.
- **Minimum CGPA:** Achieve a minimum Cumulative Grade Point Average (CGPA) of 5.25 by the end of the program.
- **Extra Courses:** Students with extra courses having 'DT' or 'F' grades can still graduate if they meet all other requirements. However, these courses will be factored into the CGPA calculation.
- **Time Limit:** Complete all requirements within:
 - A minimum of 8 regular semesters (excluding summer terms)
 - A maximum of 8 years

Note: The student is awarded a B.Tech. (Honors / Specialization / Minor / Double Major) degree based on the chosen academic flexibility, provided they fulfill all the credit and outcome requirements specified for each degree (refer to degree-wise requirements under Design your own Degree) in addition to meeting the regular B.Tech. degree requirements mentioned above.

Multiple Entry and Exit System

Multiple Entry and Exit System (MEES) empowers students to make their own academic decisions, allowing them to rejoin their studies at a later point and achieve their career goals. As per NEP guidelines, undergraduate degrees can be three or four years long, with multiple entry and exit points. Students can earn certificates, diplomas, or degrees based on their progress.

Entry and Exit Options:

- 1st Year (Level 5 - Undergraduate Certificate):
 - Entry: Secondary School Leaving Certificate (Grade 12/Intermediate)
 - Exit: Certificate in Computational Thinking & Engineering Science (40 credits + 4 skill development credits)
- 2nd Year (Level 6 - Undergraduate Diploma):
 - Entry: Completion of the first year with a certificate.
 - Exit: Diploma in the respective discipline (80 credits + 4 skill development credits, with at least 40 credits at Level 6)
- 3rd Year (Level 7 - Bachelor's Degree):
 - Entry: Completion of two years with a diploma
 - Exit: Bachelor of Science in the respective discipline (120 credits + 4 skill development credits across Levels 5, 6, and 7)
- 4th Year (Level 8 - Bachelor's Engineering Degree):
 - Entry: Completion of a three-year B.Sc. degree with a minimum CGPA of 7.5.
 - Exit: B.Tech. degree (minimum 160 credits from Levels 5 to 8).

Note: These degree levels align with the NHEQF. While the student is provided with MEES, the maximum time limit for completion of degree must still be adhered for the award of degree.

Branch Transfer

A student admitted to a particular Branch of the B.Tech. Program will normally continue studying in that branch until the completion of the program. However, in special cases the KLEF may permit a student to change from one branch to another after the second semester, provided s/he has fulfilled admission requirement for the branch into which the change is requested.

The rules governing change of branch are as listed below:

- (a) Top 1% (based on CGPA until 2nd semester) students will be permitted to change to any branch of their choice within the program discipline.
- (b) Apart from students mentioned in above clause, those who have successfully completed all the first and second semester courses and with CGPA greater than or equal to 8 are also eligible to apply, but the change of Branch in such case is purely at the discretion of the KLEF.
- (c) All changes of Branch will be effective from third semester. Change of branch shall not be permitted thereafter.
- (d) Change of branch once made will be final and binding on the student. No student will be permitted, under any circumstances, to refuse the change of branch offered.
- (e) Students in clause (a) and (b) may be permitted subject to the availability of seats in the desired branch.

Academic Bank of Credits

- ABC helps the students to digitally store their academic credits from any higher education institute registered under ABC in order to award Certificate/Diploma/Degree/Honors based on the credits earned by the student.
- All the credits acquired by the students are stored digitally by registering into Academic Bank of Credits (ABC) portal. It also supports retaining the credits for a shelf period and continue their program study with multiple breakovers.
- Students may exit from their current program of study due to any unforeseen reasons or to focus on their chosen career path. In such cases, the student may break for a period of time (preferably not in the middle of an academic year) and may continue with the program of study at a later stage.
- Students must be able to complete their program by not exceeding the maximum duration of the program. If not, they may be issued with a Certificate, diploma, degree or honors based on the credits acquired over the period of time for all the programs approved by UGC.

Award of Class

A student having cleared all the courses and met all the requirements for the award of degree with:

- **Pass class:** CGPA greater than or equal to 5.25 and lesser than 5.75.
- **Second class:** CGPA greater than or equal to 5.75 and lesser than 6.75.
- **First class:** CGPA greater than or equal to 6.75 and lesser than 7.75
- **First class with Distinction:** CGPA greater than or equal to 7.75, provided the student has cleared all the courses in first attempt and must have fulfilled all the program requirements in program specified minimum years duration.

Award of Medals

KLEF awards Gold and Silver medals to the top two candidates in each program after successful completion of their study. The medals are awarded based on their CGPA during the Annual Convocation with the following constraints:

- The grade obtained through betterment/ supplementary will not be considered for this award.
- He/She must have obtained first class with distinction for the award of Gold or Silver-medal.

Course Flexibilities

In line with the institution's commitment to personalized learning, courses are offered in multiple modes, allowing students to tailor their academic journey based on personal preferences, career goals, and learning styles. The available modes include:

- **Regular Mode:** It is the traditional method of learning, involving in-person classroom instruction, a structured curriculum, and traditional assessments. This mode provides students with a structured and predictable learning environment, facilitating direct interaction with professors and classmates. It is suitable for students who prefer a traditional learning approach and value face-to-face interaction.
- **Advanced Mode:** This mode is designed for students seeking a more rigorous academic experience, this mode offers additional credits, in-depth theoretical studies, research projects, and complex problem-solving evaluations. It is particularly suitable for students participating in honors programs.

- **Experiential Mode:** This mode emphasizes practical learning through real-world projects, lab work, or industry interactions. It offers variable credits based on the extent of practical involvement and assessments centered around project outcomes and presentations. Honors students pursuing experiential learning often choose this option.
- **MOOCs Mode:** Massive Open Online Courses (MOOCs) are utilized to support independent learners, such as students engaged in internships or practice school. Students can earn credits by completing accredited online courses at their own pace. Assessments in this mode may include online quizzes, certifications, and institutional evaluations.
- **Work-in-lieu Mode:** It allows students to substitute certain coursework with relevant work experience, internships, or on-the-job training. Credits are awarded based on the work performed, and evaluations are typically centered around performance reports, supervisor evaluations, and reflective essays. This mode is ideal for students who want to gain practical experience while fulfilling academic requirements.

Attendance calculation in a course

- **Attendance calculation for LTPS:** Attendance of a student on a course is calculated based on the credit-weighted average of the student's attendance in each of the LTPS components of the course.
- **Attendance start date:** Attendance is counted from the class commencement date. However, for transferred or newly admitted students, attendance in their admitted semester is counted from the date of admission.

Attendance requirements leading to promotion

- **Minimum Attendance:** 85% attendance is required for course promotion and appearing for the semester-end exam.
- **Condonation:** Up to 10% condonation by Principal, College of Engineering, is possible for medical emergencies with proper documentation submitted within a week. Students will be levied a condonation fee to appear for the semester-end exam.
- **Marginal Cases:** Attendance slightly below 75% due to severe medical or valid reasons may be considered for further relaxation by the condonation board appointed and headed by the Vice-Chancellor.

Attendance-based marks

- **Optional Marks:** Course coordinators can allocate up to 5% of the total marks for attendance, clearly stated in the course handout and approved by the Dean of Academics through proper channel.
- **Mark Distribution:** Marks are awarded based on attendance ranges: 85-88% = 1 mark, 89-91% = 2 marks, and so on. Below 85% results in zero marks, even with condonation.
- **Applicability:** Attendance marks, if given, apply to all L-T-P-S components cumulatively, not just the theory part.

Attendance waiver

- **Eligibility:** Students with a CGPA and SGPA of 9.00 or higher in the previous semester can get an attendance waiver for up to three courses in the next semester, with prior approval from the Dean of Academics through proper channel.
- **Conditions:** Students using the attendance waiver can participate in all assessments and evaluation components without being marked ineligible due to attendance-based regulations.

Compensatory (Extra) attendance policy

- **Eligibility:** Students representing KLEF in events or participating in co-curricular / extracurricular activities can get compensatory attendance with prior written approval.
- **Limit:** Compensation is limited to 10% of total classes per course per semester and doesn't apply to the summer term.

Course-based promotion and detention policy

- **Minimum Attendance:** Students must meet the minimum attendance requirement to be promoted in a course. If a student fails to meet this requirement, their grade in the course will be marked as "DT", indicating that the student is detained in the course.
- **Next Steps after detention:** Student must re-register in a detained course and study it completely by attending the classwork, submitting all assessments, taking all evaluation components

Eligibility for appearing Sem-End Examination

A Student registered for a course and got promoted is eligible to write the Semester End Examination for that course unless found ineligible due to one or more of the following reasons:

- Shortfall of attendance.
- Acts of indiscipline.
- Withdrawal from a course.
- Non-payment of examination fees.
- Without a hall ticket.

Assessment & Evaluation

The assessment in each theory subject consists of Sem In Exams, in class quizzes/tutorials/home-assignments/Active Learning Methods (continuous assessment) and the Semester End Examination (SEE). Students are advised to refer to the course handout to get more detailed information on assessment.

- Sem In Examinations and the Semester End Examinations will be conducted as per the Academic Calendar.
- As per the necessity, the Supplementary examinations will be conducted at the discretion of Dean Academics with the approval of the Vice Chancellor.
- Students may have to take more than one examination in a day during Sem In exams, Semester End Examinations /Supplementary examinations.

College / School Name	Semester-In Evaluation (Weightage in percent) (A)	Sem End Examination (Weightage in percent) (B)	Minimum requirement for pass percent	
			(A+B)	B
College of Engineering	60	40	40	40

Semester-In Evaluation

The following guidelines are followed for the Semester In evaluation.

- The process of evaluation is continuous throughout the semester
- The distribution of marks for Semester In evaluation is 60 percent of aggregate marks of the course.
- The distribution of weightage for various evaluation components are decided and notified by the course coordinator through the course handout after approval by the Dean Academics, prior to the beginning of the semester.
- In order to maintain transparency in evaluation, answer scripts are shown to the students for verification, within one week of conduct of exam. If there is any discrepancy in evaluation, the student can request the course coordinator to re-evaluate.
- The solution key and scheme of evaluation for all examinations are displayed by the Course Coordinator in the appropriate web portal of the course, on the day of the conduct of examination.
- In case the student is unable to appear for any evaluation component owing to hospitalization, participation in extra/ co-curricular activities representing KLEF/ state/ country; the Dean Academics can permit to conduct of re-examination for such students.
- In case a student has missed any of the two in semester evaluations, S/he is eligible for and will be provided with an opportunity of appearing for re-examination.
- The pattern and duration of such examination are decided and notified by the Course Coordinator through the Course handout, after approval from the Dean Academic.
- To maintain transparency in evaluation, answer scripts are shown to the students for verification. If there is any discrepancy in evaluation, the student can request the Controller of Examinations to re-evaluate.
- If a student earns F grade in any of the courses of a semester, an instant supplementary exam (for only Semester End Exam component) will be provided within a fortnight of the declaration of the results.

Semester-End Evaluation

The following guidelines are followed for the End Semester evaluation.

- The end-semester evaluation typically includes a variety of components such as Sem End Exams, projects, presentations, or practical assessments, skill assessments as detailed in the course handout.
- Each component is evaluated based on the criteria outlined in the course handout.
- The distribution of weightage for various evaluation components are decided and notified by the course coordinator through the course handout after approval by the Dean Academics, prior to the beginning of the semester.
- To pass in a course, student must meet or exceed the minimum passing marks specified for each end semester summative assessment component mentioned in the course handout.
- The key and scheme of evaluation for all examinations are displayed by the Course Coordinator in the appropriate web portal of the course, on the day of the conduct of examination.
- In case the student is unable to appear for any Sem end summative evaluation component owing to hospitalization, participation in extra/ co-curricular activities representing KLEF/ state/ country; student can request for re-examination by taking prior permission from Dean Academics.
- If a student earns F grade in any of the courses of a semester, an instant supplementary exam (for only Semester End Exam component) will be provided within a fortnight of the declaration of the results.

Absence in Assessment and Examination

If a student misses a formative assessment component (quizzes, assignments, etc.) due to illness or other valid reasons, no retakes will be permitted, and a score of zero will be recorded. However, in cases of an excused absence, the instructor may allow the student to retake the assessment, subject to written approval from both the Principal and the relevant Head of Department.

Make-up Exams:

A student's absence from Semester In or Semester End Exams will only be considered for a make-up exam under the following circumstances.

- Pre-approved participation in university/state/national/international co-curricular or extracurricular activities.
- Illness or medical emergencies resulting in hospitalization, with a doctor's certification explicitly stating the student's inability to attend the exam within the designated period.
- Death of an immediate family member.

Remedial Exams:

- Remedial exams are conducted for students who score less than 60% on Semester In Exam I and have attended at least 85% of the remedial classes.
- For courses without remedial classes, no remedial exam will be scheduled.
- If a student does not take or scores less than 60% on Semester In Exam I, they must attend remedial classes and maintain a minimum 85% attendance to be eligible for the remedial exam. The remedial exam score will then be considered.
- The number of remedial classes will be 33% of the regular classes held prior to Semester In Exam I. However, there are no remedial exams for Semester In Exam II or laboratory exams.

Remedial Classes Policy

The following categories of students are recommended to attend Remedial classes:

- Students who did not attend or obtain a minimum of 60 percent marks in the Sem In exam1.
- Students for whom CO1/CO2 is (are) not attained in Sem In Exam 1
- Any other student may also be permitted to attend remedial classes as per the discretion of the principal.

The following are the guidelines to conduct remedial classes:

- Remedial classes which are scheduled to be conducted usually one or two weeks post conclusion of Sem In exam1.
- The number of remedial classes to be conducted shall be 33 percent of regular classes held till the Sem In exam I.
- Remedial classes MUST NOT be scheduled during regular class work hours.

Assessment of Project/Research based Courses

- All project or research-based subjects must have a defined time limit for completion.
- The specific time limits for completion and schedule for monitoring and evaluation of performance of students will be announced each term.
- The final project report, after getting the plagiarism certificate, only will be considered and evaluated by the panel of examiners.
- Student project reports must follow the guidelines prescribed by the office of Dean Academics.

Grading Process

At the end of all evaluation components based on the performance of the student, each student is awarded based on absolute/relative grading system. Relative grading is only applicable to a section of a course in which the number of registered students is greater than or equal to 25. Choice of grading system is decided by the Course Coordinator with due approval of Dean Academics and is specified in the course handout.

(i) Absolute Grading:

The list of absolute grades and its connotation are given below:

Performance	Letter Grade	Grade Point	Percentage of marks
Outstanding	O	10	90 - 100
Excellent	A+	9	80 - 89
Very Good	A	8	70 - 79
Good	B+	7	60 - 69
Above Average	B	6	50 - 59
Average	C	5	46 - 49
Pass	P	4	40 - 45
Fail	F	0	0 - 39
Absent	AB	0	Absent

(ii) Relative Grading:

The following table lists the grades and its connotation for relative grading:

Letter Grade	Grade Point	Grade Calculation
O	10	total marks $\geq 90\%$ and total marks $\geq \mu + 1.50\sigma$
A+	9	$\mu + 0.50\sigma \leq \text{total marks} < \mu + 1.50\sigma$
A	8	$\mu \leq \text{total marks} < \mu + 0.50\sigma$
B+	7	$\mu - 0.50\sigma \leq \text{total marks} < \mu$
B	6	$\mu - 1.00\sigma \leq \text{total marks} < \mu - 0.50\sigma$
C	5	$\mu - 1.25\sigma \leq \text{total marks} < \mu - 1.00\sigma$
P	4	$\mu - 1.50\sigma \leq \text{total marks} < \mu - 1.25\sigma$ or ≥ 40
F	0	total marks $< \mu - 1.50\sigma$ or total marks ≤ 39
AB	0	Absent

μ is the mean mark of the class excluding the marks of those students who scored greater than or equal 90 percent and less than or equal 40 percent after rounding the percentages to the next highest integer. σ is the standard deviation of the marks.

Course handout

A course handout is a document that provides essential information about a specific course. It's like a roadmap that guides you through the course, helping you understand the expectations, assignments, and grading criteria.

Significance of Course Handout:

- **Clarity and Organization:** Course handouts help you stay organized and focused by outlining the course structure, topics, and deadlines.
- **Expectations:** They communicate the instructor's expectations for your participation, assignments, and overall performance.
- **Grading:** Course handouts outline the grading criteria, so you know exactly how your work will be evaluated.
- **Resources:** They often list valuable resources, such as textbooks, articles, or online tools, that can aid your learning.

Expectations from the course handout:

- **Course Description:** A brief overview of the course, its goals, and its relevance to your studies.
- **Learning Outcomes:** Clear goals for what you should be able to do by the end of the course. These outcomes will help you understand the skills and knowledge that are expected to gain.
- **Instructor Information:** Contact details, office hours, and specific communication preferences.
- **Course Schedule:** A tentative timeline of topics, assignments, and exams.
- **Required Materials:** A list of textbooks, articles, or other materials essential for the course.
- **Assessment Methods:** A breakdown of how your final grade will be determined, including the weight of assignments, exams, and participation.
- **Assignment Guidelines:** Detailed instructions for each assignment, including due dates, submission requirements, and expectations.

Effective use of the course handout:

- **Refer to it regularly:** Check back to keep track of important dates and assignments.
- **Highlight key points:** Make notes or highlight sections that are particularly important to you.
- **Ask questions:** If something isn't clear, bring it up in class or during office hours.

Betterment

- A student may reappear for the semester-end examination for betterment, only in the theory part of a course to improve their grade, provided that the student has passed the course, his/her CGPA is less than or equal to 6.75 and the grade in the respective course is equal to or lower than a 'C'. In case of reappearing for a course, the best of the two grades will be considered.
- A student may re-register for any course in any semester during the program to improve their grade if the current grade in the course is lower than 'B+', with the approval of the Dean Academics and in accordance with academic regulations.
- A student cannot reappear for the semester-end examination in courses with an L-T-P-S structure such as 0-0-X-X, 0-0-X-0, 0-0-0-X, Social Internship, Technical Internship, Seminar, Term Paper, Project, Capstone Project, Practice School, Industrial Internship.
- A student is not eligible for the award of a Degree with Honors if they opt for the betterment option.

Supplementary

- A student is eligible for a supplementary exam if they don't meet the minimum passing marks for a course or if they fail any component of the end-of-semester assessments listed in the course handout.
- If a student has failed courses from a previous odd semester that are not offered in the current semester, the supplementary exams for those courses will be scheduled for the summer supply.

- As per the end semester assessment components listed in the course handout (i.e. end semester summative) if student fail any component, they are eligible for a supplementary exam. Only the component(s) student failed will be considered for this supplementary attempt, though in some cases, you might be allowed to retake all components to improve your marks.
- If a student fails any of the end-of-semester examinations in an odd semester, supplementary exams for the current semester's courses will be conducted within one month after the release of the results. These supplementary exams will only cover the courses offered in that specific odd semester.
- In cases where there is a clash between odd semester supplementary exams and other scheduled exams, students may take the supplementary exams during the summer supply.
- If a student fails any of the end-of-semester examinations in an even semester, supplementary exams will be scheduled either within one month after the release of the results (i.e. summer supply) or during the summer term.
- Student must register for supplementary exams within a specified period after the results are declared.
- Student may be required to pay a supplementary exam fee. Details on the fee structure and payment process will be provided along with the supplementary exam notification.
- A student is not eligible for the award of a degree with first class with Distinction, if they opt for the Supplementary option.

Revaluation

Students desirous of seeing their Semester End Examination answer scripts have to apply online to the COE for the same within the timeframe as declared by the COE by paying the prescribed fee through ERP. Student applications must be forwarded by the Head of the Department and the Principal of the School and then re evaluation fees are to be paid. The application along with the attached fee receipt must be submitted to the office of the COE.

- There is no provision for re evaluation in case of Lab/Practical/skilling exams, project, viva voce exam or seminar / design / mini project courses.
- The final grades awarded to each course shall be announced by the COE and the same will be made available to students through the website/notice boards.

Credit Transfer

Credit transfer between KLEF and other Institution:

Credit transfer from other institutions to KLEF or vice versa is permitted only for undergraduate program.

Credit transfer from KLEF to other institutions: Student studying in KLEF can take transfer to another institution under the following conditions:

- KLEF has signed MOU with the institution
- However, a student, after seeking transfer from KLEF can return to KLEF after a semester or year. Based on courses done in the other institution, equivalent credits shall be awarded to such students.

Credit transfer from another institution to KLEF:

A student studying in another institution can take transfer to KLEF under the following conditions:

- When a student seeks transfer, equivalent credits will be assigned to the student based on the courses studied by the student.

- To determine the equivalent credits for a course from a previous institution on a 10-point scale at KLEF, the number of credits of the course is multiplied by the equivalent grade point of the previous institution and then divided by the number of credits of the corresponding course at KLEF.
- If a course from the previous institution has zero credits and no grade assigned, the student must sit for the final examination for the equivalent course at KLEF.
- A transfer student seeking improvement in any course can take the final examination at KLEF, where the grade received at KLEF becomes the final grade recorded on their grade sheets.
- The student, when transferred from other institutions, must stick to the rules and regulations of KLEF.
- To graduate from KLEF, a student must study at least half of the minimum duration prescribed for a program at KLEF.

Credit Transfer Through MOOCs:

- Undergraduate students can get credits for MOOCs courses recommended by KLEF up to a maximum of 20% of their minimum credits required for graduation. The discretion of allocation of MOOCs courses equivalent to the courses in the curriculum lies with the office of the Dean Academics.
- A student may also be permitted to obtain 20 credits through MOOCs in addition to the minimum credits required for graduation. These 20 credits can also be utilized to acquire a Minor degree or an Honors degree if the courses are pronounced equivalent to those specified for the respective degrees by the office of the Dean Academics. These additional credits through MOOCs if to be considered for CGPA/Minor/Honors degree must be approved by Dean Academics prior to enrollment in the respective MOOCs.
- Students acquiring additional credits for Honors/Minor degree must adhere to the rules governing the award of the respective degree, otherwise, a student applying for registering into additional credits through MOOCs must possess a minimum CGPA of 7.5 till that semester.

Semester Promotion policy

Promotion is only course-based. Semester-based promotion is not applicable for B.Tech. students.

Counselling procedure

KLEF is committed to fostering a supportive and nurturing environment for our students, addressing not only their academic needs but also their psychological well-being. To achieve this, KLEF is implementing a comprehensive Mentor-Mentee Scheme aimed at providing holistic support through academic, career, and psychological counselling. To achieve this, KLEF implement a comprehensive Mentor-Mentee Scheme and establish the Central Academic Counselling Board (CACB) in addressing academic, career and student-psychological issues.

The Mentor-Mentee Scheme aims to provide personalized guidance and support to students throughout their academic journey. Each student shall be assigned a mentor from the faculty, who will act as a guide, counselor, and advocate for the student's academic and personal growth. The mentor-mentee relationship is intended to facilitate communication, goal-setting, and problem-solving.

The primary objectives of the Mentor-Mentee Scheme are:

- To facilitate a strong and positive mentor-mentee relationship that supports students' academic growth, personal development, and psychological well-being.
- To offer career counselling, guiding mentees in exploring career options, developing professional skills, and making informed career-related decisions.

- To provide psychological counselling, offering a safe space for mentees to discuss psychological concerns and providing appropriate support or referrals when needed.
- To provide tailored academic counselling, helping mentees set academic goals, plan their course of study, and navigate academic challenges effectively.

Academic Counselling:

The mentors oversee the following academic counselling activities which are not limited to:

- Providing guidance during academic registration sessions
- Monitoring attendance and addressing attendance-related concerns
- Communicating attendance and marks information to parents/guardians
- Addressing concerns related to backlogs and providing advice
- Advising on domain specializations and academic flexibilities
- Assisting students in exploring study abroad opportunities
- Conducting student and parent meetings to address academic concerns

Career Counselling:

The mentors oversee the following career counselling activities which are not limited to:

- Recommending technical skilling courses and certificate programs
- Facilitating internship opportunities and competitive exam preparations
- Guiding students through term papers, projects, hackathons, and coding challenges
- Providing information on higher education options and entrance exams
- Encouraging entrepreneurship awareness and guiding start-ups initiatives
- Assisting students in preparing for placements and future career goals
- Conducting student and parent meetings to discuss career aspirations

Psychological Counselling:

The Mentors oversee the following psychological counselling activities which are not limited to:

- Providing guidance on time management and classroom activities
- Addressing anti-ragging issues and promoting a positive attitude
- Providing support for managing mental stress and promoting well-being
- Addressing hostel, room, home, and food-related concerns
- Conducting student and parent meetings to address personal well-being

Mentor-Mentee allocation

- The Department Academic Counselling Board (DACB) is responsible for assigning approximately 20 students to each faculty member, who will act as their mentor. The mentors will guide and support their assigned students throughout their academic journey.
- For engineering students, the procedure includes a specific approach: during their first year, faculty members from the Fresh Engineering Department (FED) will be designated as counsellors/mentors. From the second year onwards, counsellors/mentors will be appointed from the students' respective parent departments, and these faculty members will continue as mentors until the students complete their course.
- The counselling program aims to help students develop their character, academic abilities, professional skills, and social responsibilities. Mentors play a vital role in this process by:
 - Maintaining detailed records of mentor-mentee interactions in the ERP system. Mentors are required to update the ERP with counselling remarks for both students and their parents every fortnight.
 - Providing regular updates to parents about students' academic progress, career developments, and physiological status through various communication channels, including phone calls, SMS, WhatsApp, and Telegram.
 - Ensuring that counselling remarks are accurately recorded in the ERP system, and reflecting these updates in DACB monthly reports and CACB semester reports.

Academic Counselling Board

- Academic Counselling Board is constituted by the Dean Academics. This board shall comprise of the Chairman, Convener, Principal/Director, HOD and Professor/Associate Professor. A student will be put under Academic Counselling Board in the following circumstances:
 - Has CGPA of less than 6.00.
 - Has F grade or Detained in multiple courses.
- The first level of Counselling such students will be done by the Mentor of the student and the HoD followed by the ACB and the list of students who have to undergo the ACB counselling be forwarded by the HoD to the Office of Dean Academics.
- The students undergoing the Academic Counselling Board process may be allowed to register only for a few courses based on the recommendation of Academic Counselling Board.

Rustication policy

A student may be rusticated from the KLEF on disciplinary grounds, based on the recommendations of any empowered committee, by the Vice Chancellor.

Malpractice penalty policy

The following actions constitute malpractice during examinations and are subject to disciplinary actions as outlined below:

Clause 1: Possession of unauthorized material in the examination hall (e.g., paper, notebooks, programmable calculators, cell phones, or any material related to the exam subject). This includes any marks on the candidate's body that could be used as an aid.

Penalty: Immediate expulsion from the examination hall, without cancelling the paper.

Clause 2: a) Providing or receiving assistance, or communicating with others via oral means, body language, or electronic devices (such as cell phones), either inside or outside the examination hall. b) Smuggling in or out answer sheets, additional sheets, or arranging to send out the question paper or answer sheets during or after the exam. c) Using objectionable or offensive language in the answer paper or in communication with examiners, or attempting to influence examiners to award passing marks. d) Exchanging answer scripts or additional sheets in the examination hall

Penalty: Expulsion from the examination hall and cancellation of the comprehensive examination performance in that subject only of all the candidates involved. In case of an outsider, he will be handed over to the police and a case is registered against him

Clause 3: Copying from any unauthorized material (e.g., paper, books, programmable calculators, palm computers) during the exam.

Penalty: Expulsion from the examination hall, cancellation of the exam performance in that subject, and a fine of Rs. 1000.

Clause 4: a) Taking the answer script outside the exam hall, tearing the script or any part of it inside or outside the hall. b) Appearing for the exam in a drunken condition.

Penalty: Expulsion from the examination hall and cancellation of comprehensive examination performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining comprehensive examinations of the subjects of that semester/year.

Clause 5: a) Disobeying examination authorities, creating disturbances, organizing or instigating a walk-out, threatening or assaulting officials, or damaging property inside or outside the exam hall. b) Possession of any lethal weapon or firearm in the examination hall.

Penalty: Expulsion from the exam hall and cancellation of exam performance in all subjects. The student will be debarred from future exams and may forfeit their seat. Outsiders will be handed over to the police.

Clause 6: Impersonation during the examination.

Penalty: Both the impersonator and the original candidate will be expelled from the exam hall. The original candidate's performance will be cancelled in all subjects, including practical and project work, and they will be barred from exams for two consecutive semesters. Continuation in the course is subject to academic regulations. The impersonator (if an outsider) will be handed over to the police.

Clause 7: Repeated offenses.

Penalty: For a second offense, the candidate will face expulsion from the exam hall and cancellation of all exam performances for that term, with a fine of Rs. 1000. Repeated academic dishonesty may result in the issuance of a transfer certificate (TC).

Clause 8: Any other form of malpractice not specified.

Penalty: Punishment will be determined by the Examination Malpractice Committee and approved by the Vice-Chancellor.

Plagiarism Penalty Policy

Plagiarism is considered a serious breach of academic integrity, compromising both the ethical standards of the university and the intellectual development of students. The university enforces a strict zero-tolerance policy regarding plagiarism, and all students are expected to uphold the highest standards of academic honesty.

Penalties for plagiarism will be applied as follows:

First Offense:

- Minor Plagiarism (e.g., improper citation, small portions of copied work): The student will receive a warning and be required to resubmit the work with proper citations. Marks may be reduced up to 50%.
- Major Plagiarism (e.g., copying significant portions, submitting another person's work): The assignment will receive a grade of zero. The student may be required to attend a mandatory workshop on academic integrity.

Second Offense:

- Any second offense, regardless of severity, will result in a zero for the assignment and an official letter of reprimand placed in the student's record. The student will be placed on academic probation.

Third Offense:

- The student will face suspension from the university for one academic term. A record of academic misconduct will be permanently placed in the student's academic file.

Repeated Violations:

- Further violations after the third offense may lead to expulsion from the university.

In cases of group work, if plagiarism is identified, all group members will be held equally accountable unless it can be demonstrated that the act of plagiarism was isolated to specific individuals.

Terminology

Absolute Grading: Absolute grading is a method of assigning grades based on predetermined criteria or standards rather than comparing student performance to other students in the class (See: Relative Grading where the performances are compared).

Academic Bank of Credits (ABC): Academic Bank of Credits, an initiative of Government of India, is a digital platform that stores the academic credits earned by a student throughout their educational journey. It's essentially a virtual repository of a student's academic achievements.

Academic Council: The Academic Council is the highest academic body of the University and is responsible for the maintenance of standards of instruction, education and examination within the University. The Academic Council is an authority as per UGC regulations and has the right to decide all academic matters including academic research.

Academic Year: It is the period necessary to complete an actual course of study within a year. It comprises of two consecutive regular semesters i.e., Odd and Even semesters.

Acceleration: Acceleration of courses refers to a student's ability to progress through their academic program at a faster pace than traditional timelines.

Attendance: Attendance refers to the record of a student's presence or absence in educational institutions. It is a critical factor influencing academic performance, overall development, and future success.

Audited Course: It is a course of study which has zero credits and has a "Satisfactory" or an "Unsatisfactory" grade.

Backlog Course: A course is considered to be a backlog if the student has obtained 'F' grade or detained in the course.

Basic Sciences: The courses of foundational nature in the areas of Mathematics, Physics, Chemistry, Biology etc., are offered in this category.

Betterment: Betterment is a way that contributes towards improving the students' grade in any course(s). It can be done by either (a) re-appearing or (b) re-registering for the course.

Board of Studies: Board of Studies (BOS) is an authority as defined in UGC regulations, constituted by Vice Chancellor for each of the department separately. They are responsible for curriculum design and update in respect of all the programs offered by a department.

Branch of Study: It is a branch of knowledge, an area of study or a specific program (like Civil Engineering, Mechanical Engineering, Electrical and Electronics Engineering etc.)

Bridge Courses: Courses which are required to bridge the continuity among the Basic sciences/Engineering Sciences/professional courses (both core and electives) and are identified through gap analysis carried out using feedback obtained from various academic stakeholders are termed as Bridge Courses. These courses also do not yield any credits but require a "Satisfactory" result to register into the attached professional courses.

Capstone Project: A capstone project is the culminating academic experience for many students, typically undertaken in the final year of a degree program. It's designed to integrate and apply the knowledge and skills acquired throughout the course of study.

Certificate course: It is a course that makes a student gain hands-on expertise and skills required for holistic development. It is a mandatory, non-credited course for the award of degree.

Change of Branch: Change of branch means transfer from one's branch of study to another.

Compulsory course: Course required to be undertaken for the award of the degree as per the program.

Course: A course is a subject offered by the University for learning in a particular semester.

Course Handout: Course Handout is a document which gives a complete plan of the course. It contains the details of the course viz. Course title, Course code, Pre-requisite, Credit structure, team of instructors, Course objectives, Course rationale, Course Outcomes and the relevant syllabus, textbook(s) and reference books, Course delivery plan and session plan, evaluation method, chamber consultation hour, course notices and other course related aspects. In essence, course handout is an agreement between students (learners) and the instructor.

Course Outcomes: The essential skills that need to be acquired by every student through a course.

Course Withdrawal: Withdrawing from a Course means that a student can drop from a course within the first two weeks of the odd or even Semester (deadlines are different for summer sessions). However, s/he can choose a substitute course in place of it by exercising the option within 5 working days from the date of withdrawal.

Credit: A credit is a unit that gives weight to the value, level or time requirements of an academic course. The number of 'Contact Hours' in a week of a particular course determines its credit value. One credit is equivalent to one lecture hour per week or two hours per week of tutorials/ self-learning/ practical/ field work during a semester.

Credit point: It is the product of grade point and number of credits for a course.

Credit Transfer: The procedure of granting credit (s) to a student for course(s) undertaken at another institution.

Cumulative Grade Point Average (CGPA): It is a measure of cumulative performance of a student over all the completed semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the sum of the total credits of all courses in all the semesters. It is expressed up to two decimal places.

Curriculum: Curriculum is a standards-based sequence of planned experiences where students practice and achieve proficiency in content and applied learning skills. Curriculum is the central guide for all educators as to what is essential for teaching and learning, so that every student has access to rigorous academic experiences.

Deceleration: Deceleration of courses typically refers to a student's decision to reduce their course load or extend the time taken to complete a degree program.

Degree: A student who fulfills all the Program requirements is eligible to receive a degree.

Degree Requirements: Degree requirements are the specific courses, credits, and academic standards that a student must fulfill to earn a particular degree.

Degree with Specialization: A student who fulfills all the Program requirements of her/his discipline and successfully completes a specified set of Professional elective courses in a specialized area is eligible to receive a degree with specialization.

Department: An academic entity that conducts relevant curricular and co-curricular activities, involving both teaching and non-teaching staff and other resources.

Designing Your Own Degree: Designing your own degree is a revolutionary concept that empowers students to create a customized educational path aligned with their passions, career goals, and unique learning styles.

Dissertation: Dissertation is a substantial piece of original research written and defended by a candidate for a degree.

Detention in a course: Student who does not obtain minimum prescribed marks in continuous in-semester evaluation and /or minimum prescribed attendance in a course shall be detained in that course.

Double Major Degree: A double major degree allows students to specialize in two academic fields while earning a single bachelor's degree.

Dropping from the Semester: A student who doesn't want to register for the semester should do so in writing in a prescribed format before commencement of the semester.

End-semester Evaluation: End-semester evaluation is a summative assessment conducted at the conclusion of an academic term to measure students' overall performance.

Elective Course: A course that can be chosen from a set of courses. An elective can be Professional Elective, Open Elective, Management Elective and Humanities Elective.

Engineering Sciences: The courses belonging to basic evolutionary aspects of engineering from Mechanical Sciences, Electrical Sciences and Computing like Engineering Mechanics, Data structures, Network Theory, Signal Analysis.

EPICS: EPICS stands for Engineering Projects in Community Service. It's a unique program that combines engineering education with community service.

Evaluation: Evaluation is the process of judging the academic work done by the student in her/his courses. It is done through a combination of continuous in-semester assessment and semester end examinations.

Experiential Learning: Experiential learning is a process through which students develop knowledge, skills, and values from direct experiences outside a traditional academic setting. It involves learning by doing, where students engage in hands-on activities, real-world problem-solving, and reflective practices to gain deeper understanding and practical application of the concepts they are studying.

Flexi-Core course: A Flexi-Core course typically refers to an elective or optional course within a degree program that offers students flexibility in choosing subjects based on their interests and career goals.

Formative Assessment: Formative assessment is ongoing evaluation of student understanding to inform instruction and facilitate learning.

Flipped Learning: Flipped learning is an instructional strategy that reverses the traditional teaching model. In flipped learning, students are introduced to new content outside of class, usually through video lectures, readings, or other materials. The in-class time is then used for more interactive activities, such as discussions, problem-solving, group work, and applying the concepts learned at home.

Grade: It is an index of the performance of the students in a said course. Grades are denoted by alphabets.

Grade Point: It is a numerical weight allotted to each letter grade on a 10 - point scale.

Grade Point Average (GPA): Grade Point Average is a numerical representation of a student's academic performance. It is calculated by averaging the numerical equivalents of letter grades earned in courses, considering the number of credit hours for each course.

Honors Degree: A student who fulfills all the Program requirements of her/his discipline and successfully completes a specified set of additional courses within the same program is eligible to receive an Honors degree.

Humanities, Arts and Social Sciences (HAS): It is a broad term that groups together the academic disciplines of humanities, arts and social sciences.

Industrial Training: Training program undergone by the student as per the academic requirement in any company/firm.

Industrial Visit: Visit to a company/firm as per the academic requirement.

Internship: Internship is a temporary work experience offered by an organization for a limited period. It provides students, graduates, or career changers with an opportunity to gain practical skills and experience in a specific field.

In-Semester Evaluation: Summative assessments used to evaluate student learning, acquired skills, and academic attainment during a course.

Induction Courses: Student who gets admitted into B.Tech. program must complete a set of Induction courses for a minimum period of 3 weeks and obtain a "Satisfactory" result prior to registering into 1st Semester of the Program.

Innovation Semester: An Innovation Semester is a dedicated academic term focused on cultivating a culture of creativity, problem-solving, and entrepreneurial thinking.

Lecture: A lecture is a formal instructional session where an instructor presents information to a large group of students.

Make-up Test: An additional test scheduled on a date other than the originally scheduled date.

Malpractice: Malpractice typically refers to academic dishonesty or misconduct during examinations or coursework. This can include a wide range of behaviors that compromise the integrity of the evaluation process.

Management elective: A course that develops managerial skills and inculcates entrepreneurial skills.

Minor Degree: A student who fulfills all the Program requirements of her/his discipline and successfully completes a specified set of courses from another discipline is eligible to receive a minor degree in that discipline.

Multiple Entry and Multiple Exit (MEME): It is an educational framework designed to provide flexibility in learning pathways, allowing students to enter and exit educational programs at various stages based on their individual needs, prior knowledge, and career goals.

National Education Policy (NEP): NEP 2020 is a comprehensive framework for transforming India's Education System. It aims to create an equitable and vibrant knowledge society by providing high-quality education to all.

NHEQF: NHEQF stands for National Higher Education Qualifications Framework. It's a comprehensive framework designed to standardize and classify higher education qualifications in India. The primary goal of NHEQF is to ensure that qualifications from different institutions are comparable and recognized nationally and internationally.

Open Elective: This is a course of interdisciplinary nature. It is offered across the University for all Programs.

Overloading: Registering for more number of credits than normally prescribed by the Program in a semester.

Peer Learning: Peer learning is a collaborative learning process where students learn from each other. It involves sharing knowledge, skills, and experiences among peers.

Practical: A practical is a hands-on session where students apply theoretical knowledge in a real-world or laboratory setting. Practical sessions are designed to develop students' technical skills, problem-solving abilities, and understanding of experimental procedures.

Practice School: It is a part of the total program and takes one full semester in a professional location, where the students and the faculty get involved in finding solutions to real-world problems. A student can choose Project/Practice School during his/her final year to meet the final requirements for the award of degree.

Pre-requisite: A course, the knowledge required for registration into higher level course.

Product Development Semester: A Product Development Semester is an academic term dedicated to the process of creating new products or improving existing ones.

Professional Core: The courses that are essential constituents of each engineering discipline are categorized as Professional Core courses for that discipline.

Professional Elective: A course that is discipline centric. An appropriate choice of minimum number of such electives as specified in the program will lead to a degree with specialization.

Program: A set of courses offered by the Department. A student can opt and complete the stipulated minimum credits to qualify for the award of a degree in that Program.

Program Educational Objectives: The broad career, professional, personal goals that every student will achieve through a strategic and sequential action plan.

Program Outcome (PO): Program outcomes are statements that describe what students are expected to know, understand, and be able to do upon completing a specific academic program.

Project: Course that a student must undergo during his/her final year which involves the student to undertake a research or design, which is carefully planned to achieve a particular aim. It is a credit-based course.

Project-Based Learning (PBL): Project-Based Learning is an instructional approach where students actively engage in real-world and personally meaningful projects.

Rapid Prototyping Semester: A Rapid Prototyping Semester is an academic term dedicated to the practical application of rapid prototyping techniques to create physical models or prototypes of products or designs.

Registration: Process of enrolling into a set of courses in a semester/ term of the Program.

- Re-Registration:** Student who are detained in courses due to attendance or marks criteria as per their regulation are given a chance to re-register for the same and complete it during the summer term.
- Relative Grading:** Relative grading is a method of assigning grades based on a student's performance compared to the rest of the class.
- Remedial Exam:** A remedial Exam is an assessment designed to identify specific areas of weakness or gaps in a student's knowledge or skills. It is typically administered after a student has performed poorly on a regular assessment.
- Research Project:** A research project is a systematic investigation undertaken to answer a specific question or address a particular problem.
- Research Semester:** A research semester is a dedicated period within an academic program focused on independent research or scholarly inquiry.
- Research Seminar:** A research seminar is a formal academic gathering where researchers present their ongoing work to a group of peers, faculty, and other interested individuals.
- Self-learning:** Self-learning is the process of acquiring knowledge and skills independently without formal instruction.
- Semester:** It is a period of study consisting of 15+1 weeks of academic work equivalent to normally 90 working days including examination and preparation holidays. The odd Semester starts normally in July and even semester in December.
- Semester End Examinations:** It is an examination conducted at the end of a course of study.
- Skilling:** It is a process of developing and enhancing specific skills that are essential for performing particular tasks or activities effectively. It involves structured training and practice aimed at equipping individuals with the practical abilities, knowledge, and competencies required for professional success and personal development.
- Social Immersive Learning (SIL):** Social Immersive Learning is a pedagogical approach that combines the power of social interaction with immersive technologies to create engaging and impactful learning experiences.
- Social Service:** An activity designed to promote social awareness and generate well-being; to improve the life and living conditions of society.
- Student Outcomes:** The essential skill sets that need to be acquired by every student during her/his program of study. These skill sets are in the areas of employability, entrepreneurial, social and behavioral.
- Substitution of Elective course:** Replacing an elective course with another elective course as opted by the student.
- Summative Assessment:** Summative Assessment is a type of evaluation that occurs at the end of a learning period.
- Summer term:** The term during which courses are offered from May to July. Summer term is not a student's right and will be offered at the discretion of the University.
- Supplementary:** A student can reappear only in the semester end examination for the Theory component of a course, subject to the regulations contained herein.
- Term paper:** A 'term paper' is a research report written by students that evolves their course-based knowledge, accounting for a grade. Term paper is a written original research work discussing a topic in detail. It is a credit-based course.
- Tutorial:** A tutorial is a small group session designed to provide personalized guidance and support to students. Tutorials often involve discussions, problem-solving activities, and hands-on practice to reinforce concepts learned in lectures.
- Under-loading:** Registering for lesser number of credits than normally prescribed for a semester in that Program.
- Value-Added Courses:** Courses leading to global certification and those which are conducted exclusively for employability are referred to as value added courses.

FAQs

Q: What is the Choice-Based Credit System (CBCS) and how does it work?

A: CBCS allows student to choose courses from various categories based on your interests and career goals. Each course has a credit value assigned to it, and you need to earn a minimum number of credits in each category and in total to complete your program.

Q: Can I choose electives based on my interests?

A: Yes, student has the flexibility to choose electives that align with your personal interests and career objectives.

Q: Can I choose my preferred faculty members for certain courses?

A: During registrations prior to commencement of each semester, if a course is offered for multiple sections and if multiple faculty are teaching the same course, you will then have a choice of selecting the section being taught by that faculty under whom you wish to study.

Q: When and how do I register for courses?

A: Student must register for courses on the designated registration day. There is a one-week window for adding courses and a two-week window for dropping or changing them.

Q: Can I get an attendance waiver?

A: Students with a CGPA and SGPA of 9.00 or higher in the previous semester can get an attendance waiver for up to three courses with prior approval.

Q: What is the minimum attendance requirement for promotion?

A: 85% attendance is required for course promotion and appearing for the semester-end exam.

Q: Can I transfer to a different branch?

A: Under special circumstances, you may be permitted to transfer branches after the second semester based on your CGPA and seat availability.

Q: Can I pursue a minor degree?

A: Yes, any student can pursue a minor degree by completing a specified set of courses from another discipline.

Q: Can I study some semesters in abroad?

A: KLEF University may have exchange programs or partnerships with foreign universities, allowing you to study abroad for a semester or year.

Q: Are there any extracurricular activities or clubs available?

A: Yes, KLEF offers various extracurricular activities and clubs, such as sports, cultural events, and student organizations.

Q: What happens if I have less than 85% attendance?

A: Upto 75% attendance, student may be eligible for condonation or marginal case consideration, but need to provide proper documentation and may be subject to fees. But falling below 75% will make you detain in the course.

Q: What happens if I detain a course?

A: Student who detained in a course must re-register for the course and study it again in summer term. If the detained course is not offered by the department, then the student can study other equivalent course from the same category upon taking approval from office of Dean Academics.

Q: What is ABC?

A: ABC enables you to digitally store your earned credits and potentially use them towards future studies at other institutions.

Q: Can I accelerate or decelerate my studies?

A: Students are generally recommended to register for 20 to 24 credits in each semester. Students who cannot cope up with such load, may consult their counsellor and Head of the Department to register in lower number of credits. This process is called "Deceleration". Students who do not register on time, may also be forced to decelerate to compensate the classwork that they missed due to late registration. In both the cases of deceleration, permission must be sought from Office of Dean Academics through proper channel. On the contrary, Students who wish to accelerate can register for upto 30 credits by selecting courses that are usually offered in later semesters and complete them in advance. Students may also use the optional Summer Term for accelerating courses upto 12 credits. In Similarly, a student may also register for credits lower than. However, you'll need approval from the Dean of Academics.

Q: Will I get my degree upon acquiring all the required credits?

A: Apart from fulfilling the total credit requirement, it is required to fulfill category and sub-category wise credit requirements and outcome requirements (which are clearly mentioned in the degree-wise credit requirements section) to be eligible for award of specific degree.

Q: Can I register for a course without promoting in its pre-requisite course?

A: No, student must promote in the pre-requisite course in order to register for a course having pre-requisite.

Program - Degrees(Design your own Degree)

S#	Major Flexibility	Program Addon
1	Honors through Experiential Learning	Minor
2	Honors through Experiential Learning	Double Major
3	Honors through Experiential Learning	Specialization
4	Honors through Experiential Learning	No Add-on
5	Honors through Innovation	Minor
6	Honors through Innovation	Double Major
7	Honors through Innovation	Specialization
8	Honors through Innovation	No Add-on
9	Honors through Research	Minor
10	Honors through Research	Double Major
11	Honors through Research	Specialization
12	Honors through Research	No Add-on
13	Honors	Minor
14	Honors	Double Major
15	Honors	Specialization
16	Honors	No Add-on
17	No Flexibility	Minor
18	No Flexibility	Double Major
19	No Flexibility	Specialization
20	No Flexibility	No Add-on

Degree-wise Credit Requirements

1. Honors through Experiential Learning with Minor

a) Credit Requirement

Total Credit Required: 206

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	0	16	0	4	
15	HEC	HEC-CORE	8	16	2	4	
16	SDC	SDP-1	2	4	1	1	
17	SDC	SDP-2	2	4	1	1	
18	SDC	SDP-3	2	4	1	1	
19	PEC	PE-1	5	5	1	1	
20	PEC	PE-2	3	3	1	1	
21	PEC	PE-3	5	5	1	1	
22	PEC	PE-4	3	3	1	1	
23	PRI	PRI-CORE	20	20	4	4	PROJECT
24	OEC	OE-1	4	4	1	1	
25	OEC	OE-2	4	4	1	1	
26	OEC	OE-3	4	4	1	1	
27	VAC	VAC-SPORTS	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
28	VAC	VAC-CERT	0	0	4	4	
29	AUC	AUC-CORE	0	0	5	6	
30	AUC	AUC-CAREER	0	0	1	1	
31	SIL	SIL-CORE	3	3	3	3	
32	MIN	MIN-CORE	16	16	4	4	MINOR
33	MSDC	MIN-SDP	4	4	1	1	MINOR

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HEC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum One Scopus Journal Publication
- Minimum One Design Patents
- Two Consultancy Projects
- All MIN & MSDC Credits (16 + 4) must be from selected MINOR Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

2. Honors through Experiential Learning with Double Major

a) Credit Requirement

Total Credit Required: 211

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	DOUBLE MAJOR
14	HFC	HFC-CORE	0	16	0	4	
15	HEC	HEC-CORE	8	16	2	4	
16	SDC	SDP-1	2	4	1	1	
17	SDC	SDP-2	2	4	1	1	
18	SDC	SDP-3	2	4	1	1	
19	PEC	PE-1	5	5	1	1	
20	PEC	PE-2	3	3	1	1	
21	PEC	PE-3	5	5	1	1	
22	PEC	PE-4	3	3	1	1	
23	PRI	PRI-CORE	20	20	4	4	PROJECT
24	OEC	OE-1	4	4	1	1	DOUBLE MAJOR
25	OEC	OE-2	4	4	1	1	DOUBLE MAJOR
26	OEC	OE-3	4	4	1	1	DOUBLE MAJOR
27	VAC	VAC-SPORTS	0	0	1	1	
28	VAC	VAC-CERT	0	0	4	4	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	AUC	AUC-CORE	0	0	5	6	
30	AUC	AUC-CAREER	0	0	1	1	
31	SIL	SIL-CORE	3	3	3	3	
32	SMFC	SMFC-CORE	21	21	5	5	DOUBLE MAJOR
33	SMFC	SMFC-SDP	4	4	1	1	DOUBLE MAJOR

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HEC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum One Scopus Journal Publication
- Minimum One Design Patents
- Two Consultancy Projects
- All 40 Credits (SMFC+OEC+FCC) must be from selected Second Major Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

3. Honors through Experiential Learning with Specialization

a) Credit Requirement

Total Credit Required: 196

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	0	16	0	4	
15	HEC	HEC-CORE	8	16	2	4	
16	SDC	SDP-1	2	4	1	1	
17	SDC	SDP-2	2	4	1	1	
18	SDC	SDP-3	2	4	1	1	
19	SDC	SDP-4	4	4	1	1	SPECIALIZATION
20	PEC	PE-1	7	7	1	1	SPECIALIZATION
21	PEC	PE-2	3	3	1	1	SPECIALIZATION
22	PEC	PE-3	7	7	1	1	SPECIALIZATION
23	PEC	PE-4	3	3	1	1	SPECIALIZATION
24	PEC	PE-5	3	3	1	1	SPECIALIZATION
25	PRI	PRI-CORE	20	20	4	4	PROJECT
26	OEC	OE-1	4	4	1	1	
27	OEC	OE-2	4	4	1	1	
28	OEC	OE-3	4	4	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	VAC	VAC-SPORTS	0	0	1	1	
30	VAC	VAC-CERT	0	0	4	4	
31	AUC	AUC-CORE	0	0	5	6	
32	AUC	AUC-CAREER	0	0	1	1	
33	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HEC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum One Scopus Journal Publication
- Minimum One Design Patents
- Two Consultancy Projects
- All PEC and SDP-4 Credits must be from selected specialization
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

4. Honors through Experiential Learning with No Add-on**a) Credit Requirement****Total Credit Required: 186**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	0	16	0	4	
15	HEC	HEC-CORE	8	16	2	4	
16	SDC	SDP-1	2	4	1	1	
17	SDC	SDP-2	2	4	1	1	
18	SDC	SDP-3	2	4	1	1	
19	PEC	PE-1	5	5	1	1	
20	PEC	PE-2	3	3	1	1	
21	PEC	PE-3	5	5	1	1	
22	PEC	PE-4	3	3	1	1	
23	PRI	PRI-CORE	20	20	4	4	PROJECT
24	OEC	OE-1	4	4	1	1	
25	OEC	OE-2	4	4	1	1	
26	OEC	OE-3	4	4	1	1	
27	VAC	VAC-SPORTS	0	0	1	1	
28	VAC	VAC-CERT	0	0	4	4	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	AUC	AUC-CORE	0	0	5	6	
30	AUC	AUC-CAREER	0	0	1	1	
31	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HEC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum One Scopus Journal Publication
- Minimum One Design Patents
- Two Consultancy Projects
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

5. Honors through Innovation with Minor

a) Credit Requirement

Total Credit Required: 206

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	0	16	0	4	
15	HIC	HIC-CORE	8	16	2	4	
16	HEC	HEC-CORE	0	16	0	4	
17	SDC	SDP-1	2	4	1	1	
18	SDC	SDP-2	2	4	1	1	
19	SDC	SDP-3	2	4	1	1	
20	PEC	PE-1	5	5	1	1	
21	PEC	PE-2	3	3	1	1	
22	PEC	PE-3	5	5	1	1	
23	PEC	PE-4	3	3	1	1	
24	PRI	PRI-CORE	20	20	4	4	PROJECT
25	OEC	OE-1	4	4	1	1	
26	OEC	OE-2	4	4	1	1	
27	OEC	OE-3	4	4	1	1	
28	VAC	VAC-SPORTS	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	VAC	VAC-CERT	0	0	3	3	
30	AUC	AUC-CORE	0	0	5	6	
31	AUC	AUC-CAREER	0	0	1	1	
32	SIL	SIL-CORE	3	3	3	3	
33	MIN	MIN-CORE	16	16	4	4	MINOR
34	MSDC	MIN-SDP	4	4	1	1	MINOR

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses HFC, HIC, HEC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum One Web of Science Journal Publications
- Minimum Two Design Patents & One Utility Patent
- LLP Establishment
- All MIN & MSDC Credits (16 + 4) must be from selected MINOR Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

6. Honors through Innovation with Double Major

a) Credit Requirement

Total Credit Required: 211

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	DOUBLE MAJOR
14	HFC	HFC-CORE	0	16	0	4	
15	HIC	HIC-CORE	8	16	2	4	
16	HEC	HEC-CORE	0	16	0	4	
17	SDC	SDP-1	2	4	1	1	
18	SDC	SDP-2	2	4	1	1	
19	SDC	SDP-3	2	4	1	1	
20	PEC	PE-1	5	5	1	1	
21	PEC	PE-2	3	3	1	1	
22	PEC	PE-3	5	5	1	1	
23	PEC	PE-4	3	3	1	1	
24	PRI	PRI-CORE	20	20	4	4	PROJECT
25	OEC	OE-1	4	4	1	1	DOUBLE MAJOR
26	OEC	OE-2	4	4	1	1	DOUBLE MAJOR
27	OEC	OE-3	4	4	1	1	DOUBLE MAJOR
28	VAC	VAC-SPORTS	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	VAC	VAC-CERT	0	0	3	3	
30	AUC	AUC-CORE	0	0	5	6	
31	AUC	AUC-CAREER	0	0	1	1	
32	SIL	SIL-CORE	3	3	3	3	
33	SMFC	SMFC-CORE	21	21	5	5	DOUBLE MAJOR
34	SMFC	SMFC-SDP	4	4	1	1	DOUBLE MAJOR

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses HFC, HIC, HEC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum One Web of Science Journal Publications
- Minimum Two Design Patents & One Utility Patent
- LLP Establishment
- All 40 Credits (SMFC+OEC+FCC) must be from selected Second Major Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

7. Honors through Innovation with Specialization

a) Credit Requirement

Total Credit Required: 196

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	0	16	0	4	
15	HIC	HIC-CORE	8	16	2	4	
16	HEC	HEC-CORE	0	16	0	4	
17	SDC	SDP-1	2	4	1	1	
18	SDC	SDP-2	2	4	1	1	
19	SDC	SDP-3	2	4	1	1	
20	SDC	SDP-4	4	4	1	1	SPECIALIZATION
21	PEC	PE-1	7	7	1	1	SPECIALIZATION
22	PEC	PE-2	3	3	1	1	SPECIALIZATION
23	PEC	PE-3	7	7	1	1	SPECIALIZATION
24	PEC	PE-4	3	3	1	1	SPECIALIZATION
25	PEC	PE-5	3	3	1	1	SPECIALIZATION
26	PRI	PRI-CORE	20	20	4	4	PROJECT
27	OEC	OE-1	4	4	1	1	
28	OEC	OE-2	4	4	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	OEC	OE-3	4	4	1	1	
30	VAC	VAC-SPORTS	0	0	1	1	
31	VAC	VAC-CERT	0	0	3	3	
32	AUC	AUC-CORE	0	0	5	6	
33	AUC	AUC-CAREER	0	0	1	1	
34	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses HFC, HIC, HEC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum One Web of Science Journal Publications
- Minimum Two Design Patents & One Utility Patent
- LLP Establishment
- All PEC and SDP-4 Credits must be from selected specialization
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

8. Honors through Innovation with No Add-on**a) Credit Requirement****Total Credit Required: 186**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	0	16	0	4	
15	HIC	HIC-CORE	8	16	2	4	
16	HEC	HEC-CORE	0	16	0	4	
17	SDC	SDP-1	2	4	1	1	
18	SDC	SDP-2	2	4	1	1	
19	SDC	SDP-3	2	4	1	1	
20	PEC	PE-1	5	5	1	1	
21	PEC	PE-2	3	3	1	1	
22	PEC	PE-3	5	5	1	1	
23	PEC	PE-4	3	3	1	1	
24	PRI	PRI-CORE	20	20	4	4	PROJECT
25	OEC	OE-1	4	4	1	1	
26	OEC	OE-2	4	4	1	1	
27	OEC	OE-3	4	4	1	1	
28	VAC	VAC-SPORTS	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	VAC	VAC-CERT	0	0	3	3	
30	AUC	AUC-CORE	0	0	5	6	
31	AUC	AUC-CAREER	0	0	1	1	
32	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses HFC, HIC, HEC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum One Web of Science Journal Publications
- Minimum Two Design Patents & One Utility Patent
- LLP Establishment
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

9. Honors through Research with Minor

a) Credit Requirement

Total Credit Required: 206

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	0	16	0	4	
15	HRC	HRC-CORE	9	12	3	4	
16	HEC	HEC-CORE	0	16	0	4	
17	SDC	SDP-1	2	4	1	1	
18	SDC	SDP-2	2	4	1	1	
19	SDC	SDP-3	2	4	1	1	
20	PEC	PE-1	5	5	1	1	
21	PEC	PE-2	3	3	1	1	
22	PEC	PE-3	5	5	1	1	
23	PEC	PE-4	3	3	1	1	
24	PRI	PRI-CORE	20	20	4	4	PROJECT
25	OEC	OE-1	4	4	1	1	
26	OEC	OE-2	4	4	1	1	
27	OEC	OE-3	4	4	1	1	
28	VAC	VAC-SPORTS	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	VAC	VAC-CERT	0	0	3	3	
30	AUC	AUC-CORE	0	0	5	6	
31	AUC	AUC-CAREER	0	0	1	1	
32	SIL	SIL-CORE	3	3	3	3	
33	MIN	MIN-CORE	16	16	4	4	MINOR
34	MSDC	MIN-SDP	4	4	1	1	MINOR

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HRC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum Three Web of Science Journal Publications
- Minimum One Design Patent
- All MIN & MSDC Credits (16 + 4) must be from selected MINOR Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

10. Honors through Research with Double Major

a) Credit Requirement

Total Credit Required: 211

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	DOUBLE MAJOR
14	HFC	HFC-CORE	0	16	0	4	
15	HRC	HRC-CORE	9	12	3	4	
16	HEC	HEC-CORE	0	16	0	4	
17	SDC	SDP-1	2	4	1	1	
18	SDC	SDP-2	2	4	1	1	
19	SDC	SDP-3	2	4	1	1	
20	PEC	PE-1	5	5	1	1	
21	PEC	PE-2	3	3	1	1	
22	PEC	PE-3	5	5	1	1	
23	PEC	PE-4	3	3	1	1	
24	PRI	PRI-CORE	20	20	4	4	PROJECT
25	OEC	OE-1	4	4	1	1	DOUBLE MAJOR
26	OEC	OE-2	4	4	1	1	DOUBLE MAJOR
27	OEC	OE-3	4	4	1	1	DOUBLE MAJOR
28	VAC	VAC-SPORTS	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	VAC	VAC-CERT	0	0	3	3	
30	AUC	AUC-CORE	0	0	5	6	
31	AUC	AUC-CAREER	0	0	1	1	
32	SIL	SIL-CORE	3	3	3	3	
33	SMFC	SMFC-CORE	21	21	5	5	DOUBLE MAJOR
34	SMFC	SMFC-SDP	4	4	1	1	DOUBLE MAJOR

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HRC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum Three Web of Science Journal Publications
- Minimum One Design Patent
- All 40 Credits (SMFC+OEC+FCC) must be from selected Second Major Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

11. Honors through Research with Specialization

a) Credit Requirement

Total Credit Required: 196

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	0	16	0	4	
15	HRC	HRC-CORE	9	12	3	4	
16	HEC	HEC-CORE	0	16	0	4	
17	SDC	SDP-1	2	4	1	1	
18	SDC	SDP-2	2	4	1	1	
19	SDC	SDP-3	2	4	1	1	
20	SDC	SDP-4	4	4	1	1	SPECIALIZATION
21	PEC	PE-1	7	7	1	1	SPECIALIZATION
22	PEC	PE-2	3	3	1	1	SPECIALIZATION
23	PEC	PE-3	7	7	1	1	SPECIALIZATION
24	PEC	PE-4	3	3	1	1	SPECIALIZATION
25	PEC	PE-5	3	3	1	1	SPECIALIZATION
26	PRI	PRI-CORE	20	20	4	4	PROJECT
27	OEC	OE-1	4	4	1	1	
28	OEC	OE-2	4	4	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	OEC	OE-3	4	4	1	1	
30	VAC	VAC-SPORTS	0	0	1	1	
31	VAC	VAC-CERT	0	0	3	3	
32	AUC	AUC-CORE	0	0	5	6	
33	AUC	AUC-CAREER	0	0	1	1	
34	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HRC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum Three Web of Science Journal Publications
- Minimum One Design Patent
- All PEC and SDP-4 Credits must be from selected specialization
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

12. Honors through Research with No Add-on**a) Credit Requirement****Total Credit Required: 186**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	0	16	0	4	
15	HRC	HRC-CORE	9	12	3	4	
16	HEC	HEC-CORE	0	16	0	4	
17	SDC	SDP-1	2	4	1	1	
18	SDC	SDP-2	2	4	1	1	
19	SDC	SDP-3	2	4	1	1	
20	PEC	PE-1	5	5	1	1	
21	PEC	PE-2	3	3	1	1	
22	PEC	PE-3	5	5	1	1	
23	PEC	PE-4	3	3	1	1	
24	PRI	PRI-CORE	20	20	4	4	PROJECT
25	OEC	OE-1	4	4	1	1	
26	OEC	OE-2	4	4	1	1	
27	OEC	OE-3	4	4	1	1	
28	VAC	VAC-SPORTS	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	VAC	VAC-CERT	0	0	3	3	
30	AUC	AUC-CORE	0	0	5	6	
31	AUC	AUC-CAREER	0	0	1	1	
32	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HRC, SDC, PRI
- No History of Backlogs & No History of Betterment
- Minimum Three Web of Science Journal Publications
- Minimum One Design Patent
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

13. Honors with Minor**a) Credit Requirement****Total Credit Required: 206**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	8	16	2	4	
15	HEC	HEC-CORE	0	16	0	4	
16	SDC	SDP-1	2	4	1	1	
17	SDC	SDP-2	2	4	1	1	
18	SDC	SDP-3	2	4	1	1	
19	PEC	PE-1	5	5	1	1	
20	PEC	PE-2	3	3	1	1	
21	PEC	PE-3	5	5	1	1	
22	PEC	PE-4	3	3	1	1	
23	PRI	PRI-CORE	16	16	4	4	
24	OEC	OE-1	4	4	1	1	
25	OEC	OE-2	4	4	1	1	
26	OEC	OE-3	4	4	1	1	
27	VAC	VAC-SPORTS	0	0	1	1	
28	VAC	VAC-CERT	0	0	4	4	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	AUC	AUC-CORE	0	0	5	6	
30	AUC	AUC-CAREER	0	0	1	1	
31	SIL	SIL-CORE	3	3	3	3	
32	MIN	MIN-CORE	16	16	4	4	MINOR
33	MSDC	MIN-SDP	4	4	1	1	MINOR

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HEC, SDC
- No History of Backlogs & No History of Betterment
- Minimum one Scopus Journal Publication
- All MIN & MSDC Credits (16 + 4) must be from selected MINOR Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

14. Honors with Double Major**a) Credit Requirement****Total Credit Required: 211**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	DOUBLE MAJOR
14	HFC	HFC-CORE	8	16	2	4	
15	HEC	HEC-CORE	0	16	0	4	
16	SDC	SDP-1	2	4	1	1	
17	SDC	SDP-2	2	4	1	1	
18	SDC	SDP-3	2	4	1	1	
19	PEC	PE-1	5	5	1	1	
20	PEC	PE-2	3	3	1	1	
21	PEC	PE-3	5	5	1	1	
22	PEC	PE-4	3	3	1	1	
23	PRI	PRI-CORE	16	16	4	4	
24	OEC	OE-1	4	4	1	1	DOUBLE MAJOR
25	OEC	OE-2	4	4	1	1	DOUBLE MAJOR
26	OEC	OE-3	4	4	1	1	DOUBLE MAJOR
27	VAC	VAC-SPORTS	0	0	1	1	
28	VAC	VAC-CERT	0	0	4	4	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	AUC	AUC-CORE	0	0	5	6	
30	AUC	AUC-CAREER	0	0	1	1	
31	SIL	SIL-CORE	3	3	3	3	
32	SMFC	SMFC-CORE	21	21	5	5	DOUBLE MAJOR
33	SMFC	SMFC-SDP	4	4	1	1	DOUBLE MAJOR

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HEC, SDC
- No History of Backlogs & No History of Betterment
- Minimum one Scopus Journal Publication
- All 40 Credits (SMFC+OEC+FCC) must be from selected Second Major Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

15. Honors with Specialization**a) Credit Requirement****Total Credit Required: 196**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	8	16	2	4	
15	HEC	HEC-CORE	0	16	0	4	
16	SDC	SDP-1	2	4	1	1	
17	SDC	SDP-2	2	4	1	1	
18	SDC	SDP-3	2	4	1	1	
19	SDC	SDP-4	4	4	1	1	SPECIALIZATION
20	PEC	PE-1	7	7	1	1	SPECIALIZATION
21	PEC	PE-2	3	3	1	1	SPECIALIZATION
22	PEC	PE-3	7	7	1	1	SPECIALIZATION
23	PEC	PE-4	3	3	1	1	SPECIALIZATION
24	PEC	PE-5	3	3	1	1	SPECIALIZATION
25	PRI	PRI-CORE	16	16	4	4	
26	OEC	OE-1	4	4	1	1	
27	OEC	OE-2	4	4	1	1	
28	OEC	OE-3	4	4	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	VAC	VAC-SPORTS	0	0	1	1	
30	VAC	VAC-CERT	0	0	4	4	
31	AUC	AUC-CORE	0	0	5	6	
32	AUC	AUC-CAREER	0	0	1	1	
33	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HEC, SDC
- No History of Backlogs & No History of Betterment
- Minimum one Scopus Journal Publication
- All PEC and SDP-4 Credits must be from selected specialization
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

16. Honors with No Add-on**a) Credit Requirement****Total Credit Required: 186**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	43	8	8	
13	FCC	FC-1	3	3	1	1	
14	HFC	HFC-CORE	8	16	2	4	
15	HEC	HEC-CORE	0	16	0	4	
16	SDC	SDP-1	2	4	1	1	
17	SDC	SDP-2	2	4	1	1	
18	SDC	SDP-3	2	4	1	1	
19	PEC	PE-1	5	5	1	1	
20	PEC	PE-2	3	3	1	1	
21	PEC	PE-3	5	5	1	1	
22	PEC	PE-4	3	3	1	1	
23	PRI	PRI-CORE	16	16	4	4	
24	OEC	OE-1	4	4	1	1	
25	OEC	OE-2	4	4	1	1	
26	OEC	OE-3	4	4	1	1	
27	VAC	VAC-SPORTS	0	0	1	1	
28	VAC	VAC-CERT	0	0	4	4	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	AUC	AUC-CORE	0	0	5	6	
30	AUC	AUC-CAREER	0	0	1	1	
31	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 8.00
- Additional credits must be acquired from specified category of courses PCC, HFC, HEC, SDC
- No History of Backlogs & No History of Betterment
- Minimum one Scopus Journal Publication
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

17. No Flexibility with Minor**a) Credit Requirement****Total Credit Required: 186**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	31	8	8	
13	FCC	FC-1	3	3	1	1	
14	SDC	SDP-1	2	2	1	1	
15	SDC	SDP-2	2	2	1	1	
16	SDC	SDP-3	2	2	1	1	
17	PEC	PE-1	5	5	1	1	
18	PEC	PE-2	3	3	1	1	
19	PEC	PE-3	5	5	1	1	
20	PEC	PE-4	3	3	1	1	
21	PRI	PRI-CORE	16	16	4	4	
22	OEC	OE-1	4	4	1	1	
23	OEC	OE-2	4	4	1	1	
24	OEC	OE-3	4	4	1	1	
25	VAC	VAC-SPORTS	0	0	1	1	
26	VAC	VAC-CERT	0	0	3	3	
27	AUC	AUC-CORE	0	0	5	6	
28	AUC	AUC-CAREER	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	SIL	SIL-CORE	3	3	3	3	
30	MIN	MIN-CORE	16	16	4	4	MINOR
31	MSDC	MIN-SDP	4	4	1	1	MINOR

b) Outcome Requirement

- Minimum CGPA 6.75
- All MIN & MSDC Credits (16 + 4) must be from selected MINOR Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

18. No Flexibility with Double Major**a) Credit Requirement****Total Credit Required: 191**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	31	8	8	
13	FCC	FC-1	3	3	1	1	DOUBLE MAJOR
14	SDC	SDP-1	2	2	1	1	
15	SDC	SDP-2	2	2	1	1	
16	SDC	SDP-3	2	2	1	1	
17	PEC	PE-1	5	5	1	1	
18	PEC	PE-2	3	3	1	1	
19	PEC	PE-3	5	5	1	1	
20	PEC	PE-4	3	3	1	1	
21	PRI	PRI-CORE	16	16	4	4	
22	OEC	OE-1	4	4	1	1	DOUBLE MAJOR
23	OEC	OE-2	4	4	1	1	DOUBLE MAJOR
24	OEC	OE-3	4	4	1	1	DOUBLE MAJOR
25	VAC	VAC-SPORTS	0	0	1	1	
26	VAC	VAC-CERT	0	0	3	3	
27	AUC	AUC-CORE	0	0	5	6	
28	AUC	AUC-CAREER	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	SIL	SIL-CORE	3	3	3	3	
30	SMFC	SMFC-CORE	21	21	5	5	DOUBLE MAJOR
31	SMFC	SMFC-SDP	4	4	1	1	DOUBLE MAJOR

b) Outcome Requirement

- Minimum CGPA 7.75
- All 40 Credits (SMFC+OEC+FCC) must be from selected Second Major Degree
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

19. No Flexibility with Specialization**a) Credit Requirement****Total Credit Required: 171**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	31	8	8	
13	FCC	FC-1	3	3	1	1	
14	SDC	SDP-1	2	2	1	1	
15	SDC	SDP-2	2	2	1	1	
16	SDC	SDP-3	2	2	1	1	
17	SDC	SDP-4	2	2	1	1	SPECIALIZATION
18	PEC	PE-1	5	5	1	1	SPECIALIZATION
19	PEC	PE-2	3	3	1	1	SPECIALIZATION
20	PEC	PE-3	5	5	1	1	SPECIALIZATION
21	PEC	PE-4	3	3	1	1	SPECIALIZATION
22	PEC	PE-5	3	3	1	1	SPECIALIZATION
23	PRI	PRI-CORE	16	16	4	4	
24	OEC	OE-1	4	4	1	1	
25	OEC	OE-2	4	4	1	1	
26	OEC	OE-3	4	4	1	1	
27	VAC	VAC-SPORTS	0	0	1	1	
28	VAC	VAC-CERT	0	0	3	3	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	AUC	AUC-CORE	0	0	5	6	
30	AUC	AUC-CAREER	0	0	1	1	
31	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 6.75
- All PEC and SDP-4 Credits must be from selected specialization
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

20. No Flexibility with No Add-on**a) Credit Requirement****Total Credit Required: 166**

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
1	HAS	HAS-CORE	10	10	5	5	
2	HAS	HAS-FLE	3	3	1	1	
3	HAS	HAS-MGE	4	4	1	1	
4	BSC	BSC-CORE	8	8	2	2	
5	BSC	BSC-ME-1	4	4	1	1	
6	BSC	BSC-ME-2	4	4	1	1	
7	BSC	BSC-ME-3	4	4	1	1	
8	BSC	BSC-SE-1	4	4	1	1	
9	BSC	BSC-SE-2	4	4	1	1	
10	BSC	BSC-SE-3	4	4	1	1	
11	ESC	ESC-CORE	30	30	8	8	
12	PCC	PCC-CORE	31	31	8	8	
13	FCC	FC-1	3	3	1	1	
14	SDC	SDP-1	2	2	1	1	
15	SDC	SDP-2	2	2	1	1	
16	SDC	SDP-3	2	2	1	1	
17	PEC	PE-1	5	5	1	1	
18	PEC	PE-2	3	3	1	1	
19	PEC	PE-3	5	5	1	1	
20	PEC	PE-4	3	3	1	1	
21	PRI	PRI-CORE	16	16	4	4	
22	OEC	OE-1	4	4	1	1	
23	OEC	OE-2	4	4	1	1	
24	OEC	OE-3	4	4	1	1	
25	VAC	VAC-SPORTS	0	0	1	1	
26	VAC	VAC-CERT	0	0	3	3	
27	AUC	AUC-CORE	0	0	5	6	
28	AUC	AUC-CAREER	0	0	1	1	

S#	Category	Sub-Category	Min-Credit	Max-Credit	Min-Courses	Max-Courses	Grouping
29	SIL	SIL-CORE	3	3	3	3	

b) Outcome Requirement

- Minimum CGPA 5.25
- Must have finished all the above-mentioned requirements in less than twice the period of the program, which includes deceleration period chosen by the student, deceleration imposed by KLEF or debarred from the KLEF.

Program Structure

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	HAS	HAS-CORE	23UC0026	HUMAN VALUES, GENDER EQUALITY & PROFESSIONAL ETHICS	R	HGP	2	0	0	0	2	2	
2	HAS	HAS-CORE	23UC1203	DESIGN THINKING AND INNOVATION	R	DTI	0	0	4	0	2	4	
3	HAS	HAS-CORE	23UC1101	INTEGRATED PROFESSIONAL ENGLISH	R	IPE	0	0	4	0	2	4	
4	HAS	HAS-CORE	23UC1202	ENGLISH PROFICIENCY	R	EP	0	0	4	0	2	4	
5	HAS	HAS-CORE	23UC0027	LEADERSHIP AND MANAGEMENT SKILLS	R	LAMS	0	0	4	0	2	4	
6	HAS	HAS-FLE	23FL3054	FRENCH LANGUAGE	R	FLG	3	0	0	0	3	3	
7	HAS	HAS-FLE	23FL3055	GERMAN LANGUAGE	R	GLG	3	0	0	0	3	3	
8	HAS	HAS-FLE	23FL3058	JAPANESE LANGUAGE	R	JLG	3	0	0	0	3	3	
9	HAS	HAS-MGE	23MB0003	FINANCIAL MANAGEMENT FOR ENGINEERS	R	FMFE	4	0	0	0	4	4	
10	HAS	HAS-MGE	23MB0005	MANAGING PERSONAL FINANCE	R	MPF	4	0	0	0	4	4	
11	HAS	HAS-MGE	23MB0001	BASICS OF MARKETING FOR ENGINEERS	R	BME	4	0	0	0	4	4	
12	HAS	HAS-MGE	23MB0002	PARADIGMS IN MANAGEMENT THOUGHT	R	PIMT	4	0	0	0	4	4	
13	HAS	HAS-MGE	23MB0004	ORGANIZATION MANAGEMENT	R	OMG	4	0	0	0	4	4	
14	HAS	HAS-MGE	23MB4067	INDUSTRIAL MANAGEMENT & PRODUCTION PLANNING	R	IMPP	4	0	0	0	4	4	
15	HAS	HAS-MGE	23MB4064	SEO AND DIGITAL MARKETING	R	SDM	4	0	0	0	4	4	
16	HAS	HAS-MGE	23MB4065	DIGITAL ECONOMICS AND TOKENOMICS	R	DET	4	0	0	0	4	4	
17	HAS	HAS-MGE	23MB4066	DECENTRALISED FINANCE AND DIGITAL FINANCIAL SYSTEMS	R	DFDFS	4	0	0	0	4	4	
18	HAS	HAS-MGE	23MB4062	CONSTRUCTION PROJECT MANAGEMENT	R	CPM	4	0	0	0	4	4	
19	HAS	HAS-MGE	23MB4063	RESOURCES SAFETY AND QUALITY MANAGEMENT	R	RSQM	4	0	0	0	4	4	
20	HAS	HAS-MGE	23MB4068	INNOVATION MANAGEMENT	R	IMG	4	0	0	0	4	4	
21	BSC	BSC-CORE	23MT1001	LINEAR ALGEBRA AND CALCULUS FOR ENGINEERS	R	LACE	2	2	0	0	4	4	
22	BSC	BSC-CORE	23MT1002	DISCRETE STRUCTURES	R	DIS	2	2	0	0	4	4	
23	BSC	BSC-ME-1	23SC3201	DATA SCIENCE AND STATISTICS	R	DSS	2	2	0	0	4	4	
24	BSC	BSC-ME-2	23MT2013	RELATIONAL ALGEBRA AND INFORMATION THEORY	R	RAI	2	2	0	0	4	4	
25	BSC	BSC-ME-3	23MT2004	MATHEMATICAL PROGRAMMING	R	MPG	2	2	0	0	4	4	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
26	BSC	BSC-SE-1	23CS3203	QUANTUM COMPUTING	R	QCP	2	2	0	0	4	4	
27	BSC	BSC-SE-1	22PH4101	QUANTUM PHYSICS FOR ENGINEERS	R	QPFE	3	0	2	0	4	5	
28	BSC	BSC-SE-1	23PH1011	COMPUTATIONAL MECHANICS FOR ROBOTICS	R	CMR	3	0	2	0	4	5	
29	BSC	BSC-SE-1	23CS3202	NATURE INSPIRED SOFT COMPUTING	R	NSC	2	2	0	0	4	4	
30	BSC	BSC-SE-1	22PH4102	APPLIED PHYSICS	R	APY	3	0	2	0	4	5	
31	BSC	BSC-SE-2	23PH1009	COMPUTATIONAL PHYSICS	R	CMP	3	0	2	0	4	5	
32	BSC	BSC-SE-2	23PH1010	ELECTROMAGNETISM	R	EMT	3	0	2	0	4	5	
33	BSC	BSC-SE-3	23CY1002	PHYSICAL CHEMISTRY AND THERMODYNAMICS	R	PCT	3	0	2	0	4	5	
34	BSC	BSC-SE-3	23CY1003	COMPUTATIONAL CHEMISTRY	R	CPC	3	0	2	0	4	5	
35	BSC	BSC-SE-3	23CY1001	ENGINEERING CHEMISTRY	R	ECY	3	0	2	0	4	5	
36	BSC	BSC-SE-3	23BT2103	BIOCHEMISTRY	R	BCM	3	0	2	0	4	5	
37	ESC	ESC-CORE	23SC1202	DATA STRUCTURES	R	DS	2	0	2	4	4	8	CTSD(1) Rule:1
38	ESC	ESC-CORE	23EC1202	DIGITAL DESIGN & COMPUTER ARCHITECTURE	R	DDCA	3	0	2	0	4	5	
39	ESC	ESC-CORE	23EC1203	BASIC ELECTRICAL AND ELECTRONIC CIRCUITS	R	BEEC	2	0	0	0	2	2	
40	ESC	ESC-CORE	23CS1207	OBJECT ORIENTED PROGRAMMING	O	OOP	2	0	2	4	4	8	CTSD(1)
41	ESC	ESC-CORE	23EC1101	FUNDAMENTALS OF IOT AND SENSORS	R	FITS	3	0	4	0	5	7	
42	ESC	ESC-CORE	23ME1103	DESIGN TOOL WORKSHOP	R	DTW	0	0	4	0	2	4	
43	ESC	ESC-CORE	23SC1101	COMPUTATIONAL THINKING FOR STRUCTURED DESIGN	R	CTSD	3	0	2	4	5	9	
44	ESC	ESC-CORE	23SC1203O	COMPUTATIONAL THINKING FOR OBJECT-ORIENTED DESIGN	O	CTOD	3	0	2	0	4	5	CTSD(1) Rule:1
45	PCC	PCC-CORE	23AD2204A	DATA MANAGEMENT AND WAREHOUSING	A	DMW	4	0	4	0	6	8	RAI(1) Rule:1
46	PCC	PCC-CORE	23AD2204E	DATA MANAGEMENT AND WAREHOUSING	E	DMW	4	0	4	0	6	8	RAI(1) Rule:1
47	PCC	PCC-CORE	23AD2204R	DATA MANAGEMENT AND WAREHOUSING	R	DMW	3	0	2	0	4	5	RAI(1) Rule:1
48	PCC	PCC-CORE	23AD3106A	BIG DATA ENGINEERING	A	BDE	4	0	4	0	6	8	DWHM(1) Rule:1
49	PCC	PCC-CORE	23AD3106E	BIG DATA ENGINEERING	E	BDE	4	0	4	0	6	8	DWHM(1) Rule:1
50	PCC	PCC-CORE	23AD3106R	BIG DATA ENGINEERING	R	BDE	3	0	2	0	4	5	DWHM(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
51	PCC	PCC-CORE	23CS2205O	DESIGN AND ANALYSIS OF ALGORITHMS	O	DAA	3	0	2	0	4	5	DS(1) Rule:1
52	PCC	PCC-CORE	23AD2103A	SYSTEM DESIGN & INTRODUCTION TO CLOUD	A	SDC	4	0	4	0	6	8	DDCA(1) Rule:1
53	PCC	PCC-CORE	23AD2103E	SYSTEM DESIGN & INTRODUCTION TO CLOUD	E	SDC	4	0	4	0	6	8	DDCA(1) Rule:1
54	PCC	PCC-CORE	23AD2103R	SYSTEM DESIGN & INTRODUCTION TO CLOUD	R	SDC	3	0	2	0	4	5	DDCA(1) Rule:1
55	PCC	PCC-CORE	23AD2001A	ARTIFICIAL INTELLIGENCE & MACHINE LEARNING	A	AIML	4	0	4	4	7	12	CTSD(1) Rule:1
56	PCC	PCC-CORE	23AD2001E	ARTIFICIAL INTELLIGENCE & MACHINE LEARNING	E	AIML	4	0	4	4	7	12	CTSD(1) Rule:1
57	PCC	PCC-CORE	23AD2001R	ARTIFICIAL INTELLIGENCE & MACHINE LEARNING	R	AIML	3	0	2	4	5	9	CTSD(1) Rule:1
58	PCC	PCC-CORE	23AD2205A	DEEP LEARNING	A	DL	4	0	4	4	7	12	AIML(1) Rule:1
59	PCC	PCC-CORE	23AD2205E	DEEP LEARNING	E	DL	4	0	4	4	7	12	AIML(1) Rule:1
60	PCC	PCC-CORE	23AD2205R	DEEP LEARNING	R	DL	3	0	2	4	5	9	AIML(1) Rule:1
61	PCC	PCC-CORE	23AD3207A	NATURAL LANGUAGE PROCESSING	A	NLP	4	0	4	0	6	8	AIML(1) Rule:1
62	PCC	PCC-CORE	23AD3207E	NATURAL LANGUAGE PROCESSING	E	NLP	4	0	4	0	6	8	AIML(1) Rule:1
63	PCC	PCC-CORE	23AD3207R	NATURAL LANGUAGE PROCESSING	R	NLP	3	0	2	0	4	5	AIML(1) Rule:1
64	PCC	PCC-CORE	23AD4108	ETHICS FOR ARTIFICIAL INTELLIGENCE	R	EAI	1	0	0	0	1	1	
65	FCC	FC-1	23AIP3202F	SOFT COMPUTING	F	SC	2	0	2	0	3	4	
66	FCC	FC-1	23AD2229F	AI FOR HEALTH CARE	F	RTOS	2	0	2	0	3	4	
67	FCC	FC-1	23BT2224F	BIOREACTOR OPERATIONS	F	BO	2	0	2	0	3	4	
68	FCC	FC-1	23BT2228F	CLINICAL DATA SCIENCE	F	CDS	2	0	2	0	3	4	
69	FCC	FC-1	23BT2239F	COMPUTATIONAL BIOLOGY	F	CB	2	0	2	0	3	4	
70	FCC	FC-1	23ME1001F	ENGINEERING MECHANICS	F	EM	2	1	0	0	3	3	
71	FCC	FC-1	23IN2222F	CLOUD COMPUTING FOR IOT	F	CCIOT	2	0	2	0	3	4	
72	FCC	FC-1	23EC2224F	DEEP NETWORK ARCHITECTURES	F	DNA	2	0	2	0	3	4	
73	FCC	FC-1	23EC2221F	EMBEDDED SYSTEM DESIGN	F	ESD	2	0	2	0	3	4	
74	FCC	FC-1	23ME1005F	MATERIAL SCIENCE & METALLURGY	F	MSM	2	0	2	0	3	4	
75	FCC	FC-1	23AD2203F	MACHINE LEARNING	F	ML	2	0	2	0	3	4	

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76	FCC	FC-1	23EE2225F	POWER QUALITY	F	PQ	3	0	0	0	3	3	
77	FCC	FC-1	23EE2227F	ELECTRICAL POWER ENGINEERING	F	EPE	3	0	0	0	3	3	
78	FCC	FC-1	23EE2102F	ELECTRICAL MACHINES	F	ELM	2	0	2	0	3	4	
79	FCC	FC-1	23EC2223F	FUNDAMENTALS OF ROBOTICS	F	FOR	2	0	2	0	3	4	
80	FCC	FC-1	23EE2230F	ESSENTIALS OF AUTONOMOUS SYSTEMS	F	EAS	2	0	2	0	3	4	
81	HFC	HFC-CORE	23AD02HF	DATA ENGINEERING AND ARCHITECTURE	R	DEA	3	0	2	0	4	5	
82	HFC	HFC-CORE	23EC2106A	PROCESSORS AND CONTROLLERS	A	PRC	4	0	4	0	6	8	
83	HFC	HFC-CORE	23EC2106E	PROCESSORS AND CONTROLLERS	E	PRC	4	0	4	0	6	8	
84	HFC	HFC-CORE	23EC2106R	PROCESSORS AND CONTROLLERS	R	PRC	3	0	2	0	4	5	
85	HFC	HFC-CORE	23AD01HF	MACHINE LEARNING FOR HEALTHCARE	R	MLH	3	0	2	0	4	5	
86	HFC	HFC-CORE	23AD03HF	REINFORCEMENT LEARNING	R	RIL	3	0	2	0	4	5	
87	HFC	HFC-CORE	23AD04HF	EXPLAINABLE AI	R	EAI	3	0	2	0	4	5	
88	HRC	HRC-CORE	23AD04RF	GRAPH NEURAL NETWORKS	R	GNN	2	0	2	0	3	4	
89	HRC	HRC-CORE	23AD03RF	MACHINE LEARNING FOR CYBERSECURITY	R	MLCS	2	0	2	0	3	4	
90	HRC	HRC-CORE	23AD01RF	RESEARCH METHODOLOGY FOR AI AND DATA SCIENCE	R	RMAIDS	2	0	2	0	3	4	
91	HRC	HRC-CORE	23AD02RF	STATISTICAL METHODS FOR DATA ANALYTICS	R	SMDA	2	0	2	0	3	4	
92	HIC	HIC-CORE	23DT011F	ENTREPRENEURIAL TECHNOLOGY DEVELOPMENT AND PROTOTYPING	E	ETDP	0	0	6	4	4	10	
93	HIC	HIC-CORE	23DT021F	CUSTOMER DISCOVERY FOR STARTUPS	E	CDFS	0	0	6	4	4	10	
94	HIC	HIC-CORE	23DT031F	CUSTOMER VALIDATION FOR STARTUPS	E	CVFS	0	0	6	4	4	10	
95	HIC	HIC-CORE	23DT041F	CUSTOMER CREATION AND MARKETING FOR ENTREPRENEURS	E	CCME	0	0	6	4	4	10	
96	HEC	HEC-CORE	23AD02EF	AI FOR BUSINESS SOLUTIONS	E	AIBS	0	0	6	4	4	10	
97	HEC	HEC-CORE	23AD03EF	EXPERIENTIAL DATA ANALYTICS	E	EDA	0	0	6	4	4	10	
98	HEC	HEC-CORE	23AD01EF	DATA SCIENCE PRACTICUM	E	DSP	0	0	6	4	4	10	
99	HEC	HEC-CORE	23CS03EF	OPEN SOURCE ENGINEERING	E	OSE	0	0	6	4	4	10	
100	SDC	SDP-1	23SDME01A	VISUALIZATION AND MODELLING FOR ENGINEERING DESIGN	A	VMED	0	0	6	4	4	10	
101	SDC	SDP-1	23SDME01E	VISUALIZATION AND MODELLING FOR ENGINEERING DESIGN	E	VMED	0	0	6	4	4	10	

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102	SDC	SDP-1	23SDME01R	VISUALIZATION AND MODELLING FOR ENGINEERING DESIGN	R	VMED	0	0	2	4	2	6	
103	SDC	SDP-1	23SDBT01A	MEDICAL LAB TECHNOLOGY	A	MLT	0	0	6	4	4	10	
104	SDC	SDP-1	23SDBT01E	MEDICAL LAB TECHNOLOGY	E	MLT	0	0	6	4	4	10	
105	SDC	SDP-1	23SDBT01R	MEDICAL LAB TECHNOLOGY	R	MLT	0	0	2	4	2	6	
106	SDC	SDP-1	23SDBT02A	ANALYTICAL AND OPTICAL INSTRUMENTATION	A	AOI	0	0	6	4	4	10	
107	SDC	SDP-1	23SDBT02E	ANALYTICAL AND OPTICAL INSTRUMENTATION	E	AOI	0	0	6	4	4	10	
108	SDC	SDP-1	23SDBT02R	ANALYTICAL AND OPTICAL INSTRUMENTATION	R	AOI	0	0	2	4	2	6	
109	SDC	SDP-1	23SDEE01A	VISUALIZATION AND MODELING OF CIRCUITS	A	VAMC	0	0	6	4	4	10	
110	SDC	SDP-1	23SDEE01E	VISUALIZATION AND MODELING OF CIRCUITS	E	VAMC	0	0	6	4	4	10	
111	SDC	SDP-1	23SDEE01R	VISUALIZATION AND MODELING OF CIRCUITS	R	VAMC	0	0	2	4	2	6	
112	SDC	SDP-1	23SDCE01A	VISUALIZATION AND MODELLING FOR STRUCTURAL DESIGN	A	VMSD	0	0	6	4	4	10	
113	SDC	SDP-1	23SDCE01E	VISUALIZATION AND MODELLING FOR STRUCTURAL DESIGN	E	VMSD	0	0	6	4	4	10	
114	SDC	SDP-1	23SDCE01R	VISUALIZATION AND MODELLING FOR STRUCTURAL DESIGN	R	VMSD	0	0	2	4	2	6	
115	SDC	SDP-1	23SDIN01A	IOT HARDWARE PROGRAMMING	A	IOTHP	0	0	6	4	4	10	
116	SDC	SDP-1	23SDIN01E	IOT HARDWARE PROGRAMMING	E	IOTHP	0	0	6	4	4	10	
117	SDC	SDP-1	23SDIN01R	IOT HARDWARE PROGRAMMING	R	IOTHP	0	0	2	4	2	6	
118	SDC	SDP-1	23SDEC01A	ELECTRONIC SYSTEM DESIGN	A	ESD	0	0	6	4	4	10	
119	SDC	SDP-1	23SDEC01E	ELECTRONIC SYSTEM DESIGN	E	ESD	0	0	6	4	4	10	
120	SDC	SDP-1	23SDEC01R	ELECTRONIC SYSTEM DESIGN	R	ESD	0	0	2	4	2	6	
121	SDC	SDP-1	23SDAD01A	DATA ANALYTICS AND VISUALIZATION	A	DAV	0	0	6	4	4	10	
122	SDC	SDP-1	23SDAD01E	DATA ANALYTICS AND VISUALIZATION	E	DAV	0	0	6	4	4	10	
123	SDC	SDP-1	23SDAD01R	DATA ANALYTICS AND VISUALIZATION	R	DAV	0	0	2	4	2	6	
124	SDC	SDP-1	23SDCS11A	LINUX ADMINISTRATION AND AUTOMATION	A	LAA	0	0	6	4	4	10	
125	SDC	SDP-1	23SDCS11E	LINUX ADMINISTRATION AND AUTOMATION	E	LAA	0	0	6	4	4	10	
126	SDC	SDP-1	23SDCS11R	LINUX ADMINISTRATION AND AUTOMATION	R	LAA	0	0	2	4	2	6	

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127	SDC	SDP-2	23SDBT03A	BIO-INSTRUMENTATION	A	BI	0	0	6	4	4	10	
128	SDC	SDP-2	23SDBT03E	BIO-INSTRUMENTATION	E	BI	0	0	6	4	4	10	
129	SDC	SDP-2	23SDBT03R	BIO-INSTRUMENTATION	R	BI	0	0	2	4	2	6	
130	SDC	SDP-2	23SDBT04A	PROCESS ENGINEERING TOOLS	A	PET	0	0	6	4	4	10	
131	SDC	SDP-2	23SDBT04E	PROCESS ENGINEERING TOOLS	E	PET	0	0	6	4	4	10	
132	SDC	SDP-2	23SDBT04R	PROCESS ENGINEERING TOOLS	R	PET	0	0	2	4	2	6	
133	SDC	SDP-2	23SDCE02A	BUILDING INFORMATION MODELLING	A	BIM	0	0	6	4	4	10	
134	SDC	SDP-2	23SDCE02E	BUILDING INFORMATION MODELLING	E	BIM	0	0	6	4	4	10	
135	SDC	SDP-2	23SDCE02R	BUILDING INFORMATION MODELLING	R	BIM	0	0	2	4	2	6	
136	SDC	SDP-2	23SDEC02A	EMBEDDED SYSTEM AUTOMATION	A	ESDA	0	0	6	4	4	10	
137	SDC	SDP-2	23SDEC02E	EMBEDDED SYSTEM AUTOMATION	E	ESDA	0	0	6	4	4	10	
138	SDC	SDP-2	23SDEC02R	EMBEDDED SYSTEM AUTOMATION	R	ESDA	0	0	2	4	2	6	
139	SDC	SDP-2	23SDEE02A	EMBEDDED SYSTEM DESIGN WITH ARM	A	ESDA	0	0	6	4	4	10	
140	SDC	SDP-2	23SDEE02E	EMBEDDED SYSTEM DESIGN WITH ARM	E	ESDA	0	0	6	4	4	10	
141	SDC	SDP-2	23SDEE02R	EMBEDDED SYSTEM DESIGN WITH ARM	R	ESDA	0	0	2	4	2	6	
142	SDC	SDP-2	23SDIN03A	IOT FULL STACK DEVELOPMENT	A	IOTSDF	0	0	6	4	4	10	
143	SDC	SDP-2	23SDIN03E	IOT FULL STACK DEVELOPMENT	E	IOTSDF	0	0	6	4	4	10	
144	SDC	SDP-2	23SDIN03R	IOT FULL STACK DEVELOPMENT	R	IOTSDF	0	0	2	4	2	6	
145	SDC	SDP-2	23SDME02A	COMPUTER INTEGRATED MANUFACTURING	A	CIDM	0	0	6	4	4	10	
146	SDC	SDP-2	23SDME02E	COMPUTER INTEGRATED MANUFACTURING	E	CIDM	0	0	6	4	4	10	
147	SDC	SDP-2	23SDME02R	COMPUTER INTEGRATED MANUFACTURING	R	CIDM	0	0	2	4	2	6	
148	SDC	SDP-2	23SDCS12A	FULL STACK APPLICATION DEVELOPMENT	A	FSD	0	0	6	4	4	10	
149	SDC	SDP-2	23SDCS12E	FULL STACK APPLICATION DEVELOPMENT	E	FSD	0	0	6	4	4	10	
150	SDC	SDP-2	23SDCS12R	FULL STACK APPLICATION DEVELOPMENT	R	FSD	0	0	2	4	2	6	
151	SDC	SDP-3	23SDME03A	FINITE ELEMENT ANALYSIS	A	FEA	0	0	6	4	4	10	
152	SDC	SDP-3	23SDME03E	FINITE ELEMENT ANALYSIS	E	FEA	0	0	6	4	4	10	

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153	SDC	SDP-3	23SDME03R	FINITE ELEMENT ANALYSIS	R	FEA	0	0	2	4	2	6	
154	SDC	SDP-3	23SDCS10A	IT VENTURE MANAGEMENT	A	ITVM	0	0	6	4	4	10	
155	SDC	SDP-3	23SDCS10E	IT VENTURE MANAGEMENT	E	ITVM	0	0	6	4	4	10	
156	SDC	SDP-3	23SDCS10R	IT VENTURE MANAGEMENT	R	ITVM	0	0	2	4	2	6	
157	SDC	SDP-3	23SDEC08A	PLANAR ANTENNA DESIGN	A	PAD	0	0	6	4	4	10	
158	SDC	SDP-3	23SDEC08E	PLANAR ANTENNA DESIGN	E	PAD	0	0	6	4	4	10	
159	SDC	SDP-3	23SDEC08R	PLANAR ANTENNA DESIGN	R	PAD	0	0	2	4	2	6	
160	SDC	SDP-3	23SDEC09A	ROBOTICS AND AUTOMATION WITH WEBOTS	A	RAW	0	0	6	4	4	10	
161	SDC	SDP-3	23SDEC09E	ROBOTICS AND AUTOMATION WITH WEBOTS	E	RAW	0	0	6	4	4	10	
162	SDC	SDP-3	23SDEC09R	ROBOTICS AND AUTOMATION WITH WEBOTS	R	RAW	0	0	2	4	2	6	
163	SDC	SDP-3	23SDCE03A	ANALYSIS & DESIGN OF MULTI-STORIED STRUCTURES USING ETABS	A	ADMSS	0	0	6	4	4	10	
164	SDC	SDP-3	23SDCE03E	ANALYSIS & DESIGN OF MULTI-STORIED STRUCTURES USING ETABS	E	ADMSS	0	0	6	4	4	10	
165	SDC	SDP-3	23SDCE03R	ANALYSIS & DESIGN OF MULTI-STORIED STRUCTURES USING ETABS	R	ADMSS	0	0	2	4	2	6	
166	SDC	SDP-3	23SDEC10A	INTEGRATED SYSTEM DESIGN AUTOMATION	A	ISDA	0	0	6	4	4	10	
167	SDC	SDP-3	23SDEC10E	INTEGRATED SYSTEM DESIGN AUTOMATION	E	ISDA	0	0	6	4	4	10	
168	SDC	SDP-3	23SDEC10R	INTEGRATED SYSTEM DESIGN AUTOMATION	R	ISDA	0	0	2	4	2	6	
169	SDC	SDP-3	23SDIN04A	CLOUD COMPUTING FOR IOT	A	IOTPD	0	0	6	4	4	10	
170	SDC	SDP-3	23SDIN04E	CLOUD COMPUTING FOR IOT	E	IOTPD	0	0	6	4	4	10	
171	SDC	SDP-3	23SDIN04R	CLOUD COMPUTING FOR IOT	R	IOTPD	0	0	2	4	2	6	
172	SDC	SDP-3	23SDEC06A	EMBEDDED DESIGN	A	EBD	0	0	6	4	4	10	
173	SDC	SDP-3	23SDEC06E	EMBEDDED DESIGN	E	EBD	0	0	6	4	4	10	
174	SDC	SDP-3	23SDEC06R	EMBEDDED DESIGN	R	EBD	0	0	2	4	2	6	
175	SDC	SDP-3	23SDAD10A	COMPUTER VISION USING OPENCV	A	CVOCV	0	0	6	4	4	10	
176	SDC	SDP-3	23SDAD10E	COMPUTER VISION USING OPENCV	E	CVOCV	0	0	6	4	4	10	
177	SDC	SDP-3	23SDAD10R	COMPUTER VISION USING OPENCV	R	CVOCV	0	0	2	4	2	6	
178	SDC	SDP-3	23SDEC07A	DEEP LEARNING WITH TENSORFLOW FRAMEWORK	A	DLTF	0	0	6	4	4	10	

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179	SDC	SDP-3	23SDEC07E	DEEP LEARNING WITH TENSORFLOW FRAMEWORK	E	DLTF	0	0	6	4	4	10	
180	SDC	SDP-3	23SDEC07R	DEEP LEARNING WITH TENSORFLOW FRAMEWORK	R	DLTF	0	0	2	4	2	6	
181	SDC	SDP-3	23SDAD03A	TENSOR FLOW DEVELOPER	A	TFD	0	0	6	4	4	10	
182	SDC	SDP-3	23SDAD03E	TENSOR FLOW DEVELOPER	E	TFD	0	0	6	4	4	10	
183	SDC	SDP-3	23SDAD03R	TENSOR FLOW DEVELOPER	R	TFD	0	0	2	4	2	6	
184	SDC	SDP-3	23SDEC05A	4G - LTE COMMUNICATION SYSTEMS	A	LCS	0	0	6	4	4	10	
185	SDC	SDP-3	23SDEC05E	4G - LTE COMMUNICATION SYSTEMS	E	LCS	0	0	6	4	4	10	
186	SDC	SDP-3	23SDEC05R	4G - LTE COMMUNICATION SYSTEMS	R	LCS	0	0	2	4	2	6	
187	SDC	SDP-3	23SDCS13A	CI/CD & CLOUD DEVOPS	A	CICD	0	0	6	4	4	10	
188	SDC	SDP-3	23SDCS13E	CI/CD & CLOUD DEVOPS	E	CICD	0	0	6	4	4	10	
189	SDC	SDP-3	23SDCS13R	CI/CD & CLOUD DEVOPS	R	CICD	0	0	2	4	2	6	
190	SDC	SDP-3	23SDEC04A	DESIGN OF NETWORKS USING NS-3	A	DNN	0	0	6	4	4	10	
191	SDC	SDP-3	23SDEC04E	DESIGN OF NETWORKS USING NS-3	E	DNN	0	0	6	4	4	10	
192	SDC	SDP-3	23SDEC04R	DESIGN OF NETWORKS USING NS-3	R	DNN	0	0	2	4	2	6	
193	SDC	SDP-3	23SDEC03A	BIOSENSOR SYSTEM DESIGN	A	BSD	0	0	6	4	4	10	
194	SDC	SDP-3	23SDEC03E	BIOSENSOR SYSTEM DESIGN	E	BSD	0	0	6	4	4	10	
195	SDC	SDP-3	23SDEC03R	BIOSENSOR SYSTEM DESIGN	R	BSD	0	0	2	4	2	6	
196	SDC	SDP-3	23SDBT05A	COMPUTER AIDED DRUG DESIGN	A	CADD	0	0	6	4	4	10	
197	SDC	SDP-3	23SDBT05E	COMPUTER AIDED DRUG DESIGN	E	CADD	0	0	6	4	4	10	
198	SDC	SDP-3	23SDBT05R	COMPUTER AIDED DRUG DESIGN	R	CADD	0	0	2	4	2	6	
199	SDC	SDP-3	23SDBT06A	GENOMICS DATA SCIENCE & CLUSTERING	A	CADD	0	0	6	4	4	10	
200	SDC	SDP-3	23SDBT06E	GENOMICS DATA SCIENCE & CLUSTERING	E	CADD	0	0	6	4	4	10	
201	SDC	SDP-3	23SDBT06R	GENOMICS DATA SCIENCE & CLUSTERING	R	CADD	0	0	2	4	2	6	
202	SDC	SDP-3	23SDEE03A	AI TECHNIQUES FOR ELECTRICAL ENGINEERING	A	AITFEE	0	0	6	4	4	10	
203	SDC	SDP-3	23SDEE03E	AI TECHNIQUES FOR ELECTRICAL ENGINEERING	E	AITFEE	0	0	6	4	4	10	
204	SDC	SDP-3	23SDEE03R	AI TECHNIQUES FOR ELECTRICAL ENGINEERING	R	AITFEE	0	0	2	4	2	6	
205	SDC	SDP-4	23SDCS07A	CLOUD BASED AI/ML SPECIALITY	A	CBAIMLS	0	0	6	4	4	10	

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206	SDC	SDP-4	23SDCS07E	CLOUD BASED AI/ML SPECIALITY	E	CBAIMLS	0	0	6	4	4	10	
207	SDC	SDP-4	23SDCS07R	CLOUD BASED AI/ML SPECIALITY	R	CBAIMLS	0	0	2	4	2	6	
208	SDC	SDP-4	23SDBT08A	DRUG DESIGN: PRINCIPLES AND ENGINEERING	A	DDPE	0	0	6	4	4	10	
209	SDC	SDP-4	23SDBT08E	DRUG DESIGN: PRINCIPLES AND ENGINEERING	E	DDPE	0	0	6	4	4	10	
210	SDC	SDP-4	23SDBT08R	DRUG DESIGN: PRINCIPLES AND ENGINEERING	R	DDPE	0	0	2	4	2	6	
211	SDC	SDP-4	23SDEC11A	BIOMEDICAL SYSTEM INTERFACING AND SIGNAL ANALYSIS	A	BSIS	0	0	6	4	4	10	
212	SDC	SDP-4	23SDEC11E	BIOMEDICAL SYSTEM INTERFACING AND SIGNAL ANALYSIS	E	BSIS	0	0	6	4	4	10	
213	SDC	SDP-4	23SDEC11R	BIOMEDICAL SYSTEM INTERFACING AND SIGNAL ANALYSIS	R	BSIS	0	0	2	4	2	6	
214	SDC	SDP-4	23SDEC12A	NETWORK PROGRAMMABILITY AND AUTOMATION	A	NPA	0	0	6	4	4	10	
215	SDC	SDP-4	23SDEC12E	NETWORK PROGRAMMABILITY AND AUTOMATION	E	NPA	0	0	6	4	4	10	
216	SDC	SDP-4	23SDEC12R	NETWORK PROGRAMMABILITY AND AUTOMATION	R	NPA	0	0	2	4	2	6	
217	SDC	SDP-4	23SDCS04A	CLOUD BASED SOLUTIONS ARCHITECT	A	CBSA	0	0	6	4	4	10	
218	SDC	SDP-4	23SDCS04E	CLOUD BASED SOLUTIONS ARCHITECT	E	CBSA	0	0	6	4	4	10	
219	SDC	SDP-4	23SDCS04R	CLOUD BASED SOLUTIONS ARCHITECT	R	CBSA	0	0	2	4	2	6	
220	SDC	SDP-4	23SDBT07A	ASPECTS OF BIOCHEMICAL ENGINEERING	A	ABCE	0	0	6	4	4	10	
221	SDC	SDP-4	23SDBT07E	ASPECTS OF BIOCHEMICAL ENGINEERING	E	ABCE	0	0	6	4	4	10	
222	SDC	SDP-4	23SDBT07R	ASPECTS OF BIOCHEMICAL ENGINEERING	R	ABCE	0	0	2	4	2	6	
223	SDC	SDP-4	23SDEC13A	5G PRIVATE AND INDUSTRIAL AUTOMATION NETWORKS	A	5PIA	0	0	6	4	4	10	
224	SDC	SDP-4	23SDEC13E	5G PRIVATE AND INDUSTRIAL AUTOMATION NETWORKS	E	5PIA	0	0	6	4	4	10	
225	SDC	SDP-4	23SDEC13R	5G PRIVATE AND INDUSTRIAL AUTOMATION NETWORKS	R	5PIA	0	0	2	4	2	6	
226	SDC	SDP-4	23SDCS05A	CLOUD BASED SECURITY SPECIALITY	A	CBSS	0	0	6	4	4	10	
227	SDC	SDP-4	23SDCS05E	CLOUD BASED SECURITY SPECIALITY	E	CBSS	0	0	6	4	4	10	
228	SDC	SDP-4	23SDCS05R	CLOUD BASED SECURITY SPECIALITY	R	CBSS	0	0	2	4	2	6	

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229	SDC	SDP-4	23SDAD06A	ANALYSIS OF DIGITAL MARKETING	A	ADM	0	0	6	4	4	10	
230	SDC	SDP-4	23SDAD06E	ANALYSIS OF DIGITAL MARKETING	E	ADM	0	0	6	4	4	10	
231	SDC	SDP-4	23SDAD06R	ANALYSIS OF DIGITAL MARKETING	R	ADM	0	0	2	4	2	6	
232	SDC	SDP-4	23SDCS08A	CLOUD BASED DATA ANALYTICS SPECIALITY	A	CBDAS	0	0	6	4	4	10	
233	SDC	SDP-4	23SDCS08E	CLOUD BASED DATA ANALYTICS SPECIALITY	E	CBDAS	0	0	6	4	4	10	
234	SDC	SDP-4	23SDCS08R	CLOUD BASED DATA ANALYTICS SPECIALITY	R	CBDAS	0	0	2	4	2	6	
235	SDC	SDP-4	23SDCE04A	PLANNING AND SCHEDULING OF RESIDENTIAL BUILDING USING PRIMAVERA SOFTWARE	A	PSRBPS	0	0	6	4	4	10	
236	SDC	SDP-4	23SDCE04E	PLANNING AND SCHEDULING OF RESIDENTIAL BUILDING USING PRIMAVERA SOFTWARE	E	PSRBPS	0	0	6	4	4	10	
237	SDC	SDP-4	23SDCE04R	PLANNING AND SCHEDULING OF RESIDENTIAL BUILDING USING PRIMAVERA SOFTWARE	R	PSRBPS	0	0	2	4	2	6	
238	SDC	SDP-4	23SDEC15A	NATURAL LANGUAGE PROCESSING USING TENSOR FLOW	A	NLPTF	0	0	6	4	4	10	
239	SDC	SDP-4	23SDEC15E	NATURAL LANGUAGE PROCESSING USING TENSOR FLOW	E	NLPTF	0	0	6	4	4	10	
240	SDC	SDP-4	23SDEC15R	NATURAL LANGUAGE PROCESSING USING TENSOR FLOW	R	NLPTF	0	0	2	4	2	6	
241	SDC	SDP-4	23SDEC14A	EMBEDDED PROTOTYPE	A	EPT	0	0	6	4	4	10	
242	SDC	SDP-4	23SDEC14E	EMBEDDED PROTOTYPE	E	EPT	0	0	6	4	4	10	
243	SDC	SDP-4	23SDEC14R	EMBEDDED PROTOTYPE	R	EPT	0	0	2	4	2	6	
244	SDC	SDP-4	23SDME04A	ANALYSIS OF ENERGY SYSTEMS	A	AES	0	0	6	4	4	10	
245	SDC	SDP-4	23SDME04E	ANALYSIS OF ENERGY SYSTEMS	E	AES	0	0	6	4	4	10	
246	SDC	SDP-4	23SDME04R	ANALYSIS OF ENERGY SYSTEMS	R	AES	0	0	2	4	2	6	
247	SDC	SDP-4	23SDIN05A	IOT ANALYTICS FOR THE CLOUD	A	IOTAC	0	0	6	4	4	10	
248	SDC	SDP-4	23SDIN05E	IOT ANALYTICS FOR THE CLOUD	E	IOTAC	0	0	6	4	4	10	
249	SDC	SDP-4	23SDIN05R	IOT ANALYTICS FOR THE CLOUD	R	IOTAC	0	0	2	4	2	6	
250	SDC	SDP-4	23SDIN06A	EMBEDDED AND IOT ROGRAMMING	A	IOTHP	0	0	6	4	4	10	
251	SDC	SDP-4	23SDIN06E	EMBEDDED AND IOT ROGRAMMING	E	IOTHP	0	0	6	4	4	10	
252	SDC	SDP-4	23SDIN06R	EMBEDDED AND IOT ROGRAMMING	R	IOTHP	0	0	2	4	2	6	
253	SDC	SDP-4	23SDEC18A	VLSI SUBMICRON DESIGN AND VERIFICATION	A	VSDV	0	0	6	4	4	10	

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254	SDC	SDP-4	23SDEC18E	VLSI SUBMICRON DESIGN AND VERIFICATION	E	VSDV	0	0	6	4	4	10	
255	SDC	SDP-4	23SDEC18R	VLSI SUBMICRON DESIGN AND VERIFICATION	R	VSDV	0	0	2	4	2	6	
256	SDC	SDP-4	23SDCE07A	ARC-GIS (PRO)	A	ARC	0	0	6	4	4	10	
257	SDC	SDP-4	23SDCE07E	ARC-GIS (PRO)	E	ARC	0	0	6	4	4	10	
258	SDC	SDP-4	23SDCE07R	ARC-GIS (PRO)	R	ARC	0	0	2	4	2	6	
259	SDC	SDP-4	23SDAD08A	EMERGING BLOCKCHAIN MODELS FOR DIGITAL CURRENCIES	A	EBCMDC	0	0	6	4	4	10	
260	SDC	SDP-4	23SDAD08E	EMERGING BLOCKCHAIN MODELS FOR DIGITAL CURRENCIES	E	EBCMDC	0	0	6	4	4	10	
261	SDC	SDP-4	23SDAD08R	EMERGING BLOCKCHAIN MODELS FOR DIGITAL CURRENCIES	R	EBCMDC	0	0	2	4	2	6	
262	SDC	SDP-4	23SDAD09A	AUTONOMOUS VEHICLE SYSTEMS	A	AVS	0	0	6	4	4	10	
263	SDC	SDP-4	23SDAD09E	AUTONOMOUS VEHICLE SYSTEMS	E	AVS	0	0	6	4	4	10	
264	SDC	SDP-4	23SDAD09R	AUTONOMOUS VEHICLE SYSTEMS	R	AVS	0	0	2	4	2	6	
265	SDC	SDP-4	23SDCS14A	CLOUD ARCHITECTURES FOR SCIENTIFIC WORKLOADS	A	CASW	0	0	6	4	4	10	
266	SDC	SDP-4	23SDCS14E	CLOUD ARCHITECTURES FOR SCIENTIFIC WORKLOADS	E	CASW	0	0	6	4	4	10	
267	SDC	SDP-4	23SDCS14R	CLOUD ARCHITECTURES FOR SCIENTIFIC WORKLOADS	R	CASW	0	0	2	4	2	6	
268	SDC	SDP-4	23SDCS15A	SOFTWARE DESIGN WITH CLOUD NATIVE COMPUTING	A	SDCNC	0	0	6	4	4	10	
269	SDC	SDP-4	23SDCS15E	SOFTWARE DESIGN WITH CLOUD NATIVE COMPUTING	E	SDCNC	0	0	6	4	4	10	
270	SDC	SDP-4	23SDCS15R	SOFTWARE DESIGN WITH CLOUD NATIVE COMPUTING	R	SDCNC	0	0	2	4	2	6	
271	SDC	SDP-4	23SDCS16A	CLOUD INFRASTRUCTURE DESIGN	A	CISD	0	0	6	4	4	10	
272	SDC	SDP-4	23SDCS16E	CLOUD INFRASTRUCTURE DESIGN	E	CISD	0	0	6	4	4	10	
273	SDC	SDP-4	23SDCS16R	CLOUD INFRASTRUCTURE DESIGN	R	CISD	0	0	2	4	2	6	
274	SDC	SDP-4	23SDCS17A	GENERATIVE ADVERSARIAL NETWORKS FOR IMAGES	A	GANI	0	0	6	4	4	10	
275	SDC	SDP-4	23SDCS17E	GENERATIVE ADVERSARIAL NETWORKS FOR IMAGES	E	GANI	0	0	6	4	4	10	
276	SDC	SDP-4	23SDCS17R	GENERATIVE ADVERSARIAL NETWORKS FOR IMAGES	R	GANI	0	0	2	4	2	6	
277	SDC	SDP-4	23SDCS18A	TEXT ANALYTICS	A	TAT	0	0	6	4	4	10	
278	SDC	SDP-4	23SDCS18E	TEXT ANALYTICS	E	TAT	0	0	6	4	4	10	

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279	SDC	SDP-4	23SDCS18R	TEXT ANALYTICS	R	TAT	0	0	2	4	2	6	
280	SDC	SDP-4	23SDCS19A	VISUAL RECOGNITION AND SCENE UNDERSTANDING	A	VRSU	0	0	6	4	4	10	
281	SDC	SDP-4	23SDCS19E	VISUAL RECOGNITION AND SCENE UNDERSTANDING	E	VRSU	0	0	6	4	4	10	
282	SDC	SDP-4	23SDCS19R	VISUAL RECOGNITION AND SCENE UNDERSTANDING	R	VRSU	0	0	2	4	2	6	
283	SDC	SDP-4	23SDCS20A	SMART IOT AND SENSOR NETWORKS	A	SISN	0	0	6	4	4	10	
284	SDC	SDP-4	23SDCS20E	SMART IOT AND SENSOR NETWORKS	E	SISN	0	0	6	4	4	10	
285	SDC	SDP-4	23SDCS20R	SMART IOT AND SENSOR NETWORKS	R	SISN	0	0	2	4	2	6	
286	SDC	SDP-4	23SDCE06A	DESIGN & ANALYSIS OF DIFFERENT STRUCTURAL COMPONENTS USING SAFE	A	SAFE	0	0	6	4	4	10	
287	SDC	SDP-4	23SDCE06E	DESIGN & ANALYSIS OF DIFFERENT STRUCTURAL COMPONENTS USING SAFE	E	SAFE	0	0	6	4	4	10	
288	SDC	SDP-4	23SDCE06R	DESIGN & ANALYSIS OF DIFFERENT STRUCTURAL COMPONENTS USING SAFE	R	SAFE	0	0	2	4	2	6	
289	SDC	SDP-4	23SDEE06A	EVT HARDWARE PROTOTYPING	A	EVTHP	0	0	6	4	4	10	
290	SDC	SDP-4	23SDEE06E	EVT HARDWARE PROTOTYPING	E	EVTHP	0	0	6	4	4	10	
291	SDC	SDP-4	23SDEE06R	EVT HARDWARE PROTOTYPING	R	EVTHP	0	0	2	4	2	6	
292	SDC	SDP-4	23SDCI05A	CLOUD DEVOPS	A	CDP	0	0	6	4	4	10	
293	SDC	SDP-4	23SDCI05E	CLOUD DEVOPS	E	CDP	0	0	6	4	4	10	
294	SDC	SDP-4	23SDCI05R	CLOUD DEVOPS	R	CDP	0	0	2	4	2	6	
295	SDC	SDP-4	23SDAD11A	AI-DRIVEN DATA ENGINEERING	A	ADDE	0	0	6	4	4	10	
296	SDC	SDP-4	23SDAD11E	AI-DRIVEN DATA ENGINEERING	E	ADDE	0	0	6	4	4	10	
297	SDC	SDP-4	23SDAD11R	AI-DRIVEN DATA ENGINEERING	R	ADDE	0	0	2	4	2	6	
298	SDC	SDP-4	23SDEC17A	ROBOT DESIGN AND ANALYSIS	A	RDA	0	0	6	4	4	10	
299	SDC	SDP-4	23SDEC17E	ROBOT DESIGN AND ANALYSIS	E	RDA	0	0	6	4	4	10	
300	SDC	SDP-4	23SDEC17R	ROBOT DESIGN AND ANALYSIS	R	RDA	0	0	2	4	2	6	
301	SDC	SDP-4	23SDEE07A	IA HARDWARE PROTOTYPING	A	IAHP	0	0	6	4	4	10	
302	SDC	SDP-4	23SDEE07E	IA HARDWARE PROTOTYPING	E	IAHP	0	0	6	4	4	10	
303	SDC	SDP-4	23SDEE07R	IA HARDWARE PROTOTYPING	R	IAHP	0	0	2	4	2	6	
304	SDC	SDP-4	23SDEC16A	ADVANCED RADIATING SYSTEM MODELING	A	ARSM	0	0	6	4	4	10	

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305	SDC	SDP-4	23SDEC16E	ADVANCED RADIATING SYSTEM MODELING	E	ARSM	0	0	6	4	4	10	
306	SDC	SDP-4	23SDEC16R	ADVANCED RADIATING SYSTEM MODELING	R	ARSM	0	0	2	4	2	6	
307	SDC	SDP-4	23SDBT09A	CELL CULTURE TECHNOLOGIES	A	CCT	0	0	6	4	4	10	
308	SDC	SDP-4	23SDBT09E	CELL CULTURE TECHNOLOGIES	E	CCT	0	0	6	4	4	10	
309	SDC	SDP-4	23SDBT09R	CELL CULTURE TECHNOLOGIES	R	CCT	0	0	2	4	2	6	
310	SDC	SDP-4	23SDBT10A	MASS SPECTROMETRY BASED PROTEOMICS	A	MSBP	0	0	6	4	4	10	
311	SDC	SDP-4	23SDBT10E	MASS SPECTROMETRY BASED PROTEOMICS	E	MSBP	0	0	6	4	4	10	
312	SDC	SDP-4	23SDBT10R	MASS SPECTROMETRY BASED PROTEOMICS	R	MSBP	0	0	2	4	2	6	
313	SDC	SDP-4	23SDBT11A	ANIMAL PHYSIOLOGY	A	AP	0	0	6	4	4	10	
314	SDC	SDP-4	23SDBT11E	ANIMAL PHYSIOLOGY	E	AP	0	0	6	4	4	10	
315	SDC	SDP-4	23SDBT11R	ANIMAL PHYSIOLOGY	R	AP	0	0	2	4	2	6	
316	SDC	SDP-4	23SDME06A	GEOMETRIC DIMENSIONING AND TOLERANCING	A	GDAT	0	0	6	4	4	10	
317	SDC	SDP-4	23SDME06E	GEOMETRIC DIMENSIONING AND TOLERANCING	E	GDAT	0	0	6	4	4	10	
318	SDC	SDP-4	23SDME06R	GEOMETRIC DIMENSIONING AND TOLERANCING	R	GDAT	0	0	2	4	2	6	
319	SDC	SDP-4	23SDEE04A	AI & ML FOR SMART GRIDS	A	AIMLSG	0	0	6	4	4	10	
320	SDC	SDP-4	23SDEE04E	AI & ML FOR SMART GRIDS	E	AIMLSG	0	0	6	4	4	10	
321	SDC	SDP-4	23SDEE04R	AI & ML FOR SMART GRIDS	R	AIMLSG	0	0	2	4	2	6	
322	SDC	SDP-4	23SDCE05A	DESIGN OF THE PAVEMENT BY USING MX ROADS	A	DPMX	0	0	6	4	4	10	
323	SDC	SDP-4	23SDCE05E	DESIGN OF THE PAVEMENT BY USING MX ROADS	E	DPMX	0	0	6	4	4	10	
324	SDC	SDP-4	23SDCE05R	DESIGN OF THE PAVEMENT BY USING MX ROADS	R	DPMX	0	0	2	4	2	6	
325	SDC	SDP-4	23SDCS06A	CERTIFIED GAME DEVELOPER	A	CGD	0	0	6	4	4	10	
326	SDC	SDP-4	23SDCS06E	CERTIFIED GAME DEVELOPER	E	CGD	0	0	6	4	4	10	
327	SDC	SDP-4	23SDCS06R	CERTIFIED GAME DEVELOPER	R	CGD	0	0	2	4	2	6	
328	SDC	SDP-4	23SDME05A	3D MODELLING AND DIGITAL PROTOTYPING	A	3DMDP	0	0	6	4	4	10	
329	SDC	SDP-4	23SDME05E	3D MODELLING AND DIGITAL PROTOTYPING	E	3DMDP	0	0	6	4	4	10	

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330	SDC	SDP-4	23SDME05R	3D MODELLING AND DIGITAL PROTOTYPING	R	3DMDP	0	0	2	4	2	6	
331	SDC	SDP-4	23SDCI04A	ADVANCED ANDROID MOBILE APPLICATION WITH CLOUD-BASED WEB SERVICES	A	AAMA	0	0	6	4	4	10	
332	SDC	SDP-4	23SDCI04E	ADVANCED ANDROID MOBILE APPLICATION WITH CLOUD-BASED WEB SERVICES	E	AAMA	0	0	6	4	4	10	
333	SDC	SDP-4	23SDCI04R	ADVANCED ANDROID MOBILE APPLICATION WITH CLOUD-BASED WEB SERVICES	R	AAMA	0	0	2	4	2	6	
334	SDC	SDP-4	23SDEE05A	MODELING AND SIMULATION OF GREEN ENERGY SYSTEMS	A	GML	0	0	6	4	4	10	
335	SDC	SDP-4	23SDEE05E	MODELING AND SIMULATION OF GREEN ENERGY SYSTEMS	E	GML	0	0	6	4	4	10	
336	SDC	SDP-4	23SDEE05R	MODELING AND SIMULATION OF GREEN ENERGY SYSTEMS	R	GML	0	0	2	4	2	6	
337	SDC	SDP-4	23SDCS21A	HARDWARE SOFTWARE CODESIGN IMPLEMENTATION FOR SECURITY SPECILAITY	A	HSCISS	0	0	6	4	4	10	
338	SDC	SDP-4	23SDCS21E	HARDWARE SOFTWARE CODESIGN IMPLEMENTATION FOR SECURITY SPECILAITY	E	HSCISS	0	0	6	4	4	10	
339	SDC	SDP-4	23SDCS21R	HARDWARE SOFTWARE CODESIGN IMPLEMENTATION FOR SECURITY SPECILAITY	R	HSCISS	0	0	2	4	2	6	
340	PEC	PE-1	23ASS3102A	AI AND CONTROLS FOR AUTONOMUS FUTURE VEHICLE	A	AICAFT	4	0	4	4	7	12	
341	PEC	PE-1	23ASS3102E	AI AND CONTROLS FOR AUTONOMUS FUTURE VEHICLE	E	AICAFT	4	0	4	4	7	12	
342	PEC	PE-1	23ASS3102R	AI AND CONTROLS FOR AUTONOMUS FUTURE VEHICLE	R	AICAFT	3	0	2	4	5	9	
343	PEC	PE-1	23GET3101A	SOLAR PV AND MICRO ENERGY TECHNOLOGIES	A	SPMET	4	0	4	4	7	12	EPE(1) Rule:1
344	PEC	PE-1	23GET3101E	SOLAR PV AND MICRO ENERGY TECHNOLOGIES	E	SPMET	4	0	4	4	7	12	EPE(1) Rule:1
345	PEC	PE-1	23GET3101R	SOLAR PV AND MICRO ENERGY TECHNOLOGIES	R	SPMET	3	0	2	4	5	9	EPE(1) Rule:1
346	PEC	PE-1	23GEG3101A	MOLECULAR GENETICS	A	MG	4	0	4	4	7	12	
347	PEC	PE-1	23GEG3101E	MOLECULAR GENETICS	E	MG	4	0	4	4	7	12	
348	PEC	PE-1	23GEG3101R	MOLECULAR GENETICS	R	MG	3	0	2	4	5	9	
349	PEC	PE-1	23MBT3101A	STEM CELL TECHNOLOGY	A	SCT	4	0	4	4	7	12	RACT(1) Rule:1
350	PEC	PE-1	23MBT3101E	STEM CELL TECHNOLOGY	E	SCT	4	0	4	4	7	12	RACT(1) Rule:1

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351	PEC	PE-1	23MBT3101R	STEM CELL TECHNOLOGY	R	SCT	3	0	2	4	5	9	RACT(1) Rule:1
352	PEC	PE-1	23GDU3101A	PROGRAMMING FOR GAME DEVELOPMENT	A	PGD	4	0	4	4	7	12	GN(1) Rule:1
353	PEC	PE-1	23GDU3101E	PROGRAMMING FOR GAME DEVELOPMENT	E	PGD	4	0	4	4	7	12	GN(1) Rule:1
354	PEC	PE-1	23GDU3101R	PROGRAMMING FOR GAME DEVELOPMENT	R	PGD	3	0	2	4	5	9	GN(1) Rule:1
355	PEC	PE-1	23CPD3101A	FUNDAMENTALS OF MOBILE APPLICATION DEVELOPMENT	A	FMAD	4	0	4	4	7	12	
356	PEC	PE-1	23CPD3101E	FUNDAMENTALS OF MOBILE APPLICATION DEVELOPMENT	E	FMAD	4	0	4	4	7	12	
357	PEC	PE-1	23CPD3101R	FUNDAMENTALS OF MOBILE APPLICATION DEVELOPMENT	R	FMAD	3	0	2	4	5	9	
358	PEC	PE-1	23SCI3101A	SPATIAL DATA VISUALIZATION	A	SDV	4	0	4	4	7	12	
359	PEC	PE-1	23SCI3101E	SPATIAL DATA VISUALIZATION	E	SDV	4	0	4	4	7	12	
360	PEC	PE-1	23SCI3101R	SPATIAL DATA VISUALIZATION	R	SDV	3	0	2	4	5	9	
361	PEC	PE-1	23GTE3101A	ADVANCED FOUNDATION ENGINEERING	A	AFE	4	0	4	4	7	12	SM(1) Rule:1
362	PEC	PE-1	23GTE3101E	ADVANCED FOUNDATION ENGINEERING	E	AFE	4	0	4	4	7	12	SM(1) Rule:1
363	PEC	PE-1	23GTE3101R	ADVANCED FOUNDATION ENGINEERING	R	AFE	3	0	2	4	5	9	SM(1) Rule:1
364	PEC	PE-1	23SGT3101A	DISTRIBUTED ENERGY RESOURCES AND SMART GRIDS	A	DERSG	4	0	4	4	7	12	
365	PEC	PE-1	23SGT3101E	DISTRIBUTED ENERGY RESOURCES AND SMART GRIDS	E	DERSG	4	0	4	4	7	12	
366	PEC	PE-1	23SGT3101R	DISTRIBUTED ENERGY RESOURCES AND SMART GRIDS	R	DERSG	3	0	2	4	5	9	
367	PEC	PE-1	23SMF3101A	REVERSE ENGINEERING & RAPID PROTOTYPING	A	MMC	4	0	4	4	7	12	
368	PEC	PE-1	23SMF3101E	REVERSE ENGINEERING & RAPID PROTOTYPING	E	MMC	4	0	4	4	7	12	
369	PEC	PE-1	23SMF3101R	REVERSE ENGINEERING & RAPID PROTOTYPING	R	MMC	3	0	2	4	5	9	
370	PEC	PE-1	23AEA3101A	AUTOMOTIVE SENSOR AND APPLICATIONS	A	ASA	4	0	4	4	7	12	ELM(1) Rule:1
371	PEC	PE-1	23AEA3101E	AUTOMOTIVE SENSOR AND APPLICATIONS	E	ASA	4	0	4	4	7	12	ELM(1) Rule:1
372	PEC	PE-1	23AEA3101R	AUTOMOTIVE SENSOR AND APPLICATIONS	R	ASA	3	0	2	4	5	9	ELM(1) Rule:1
373	PEC	PE-1	23ASS3101A	AUTONOMOUS DRIVER ASSISTIVE SYSTEMS	A	ADAS	4	0	4	4	7	12	

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374	PEC	PE-1	23ASS3101E	AUTONOMOUS DRIVER ASSISTIVE SYSTEMS	E	ADAS	4	0	4	4	7	12	
375	PEC	PE-1	23ASS3101R	AUTONOMOUS DRIVER ASSISTIVE SYSTEMS	R	ADAS	3	0	2	4	5	9	
376	PEC	PE-1	23RFM3101A	MICROWAVE ENGINEERING	A	ME	4	0	4	4	7	12	
377	PEC	PE-1	23RFM3101E	MICROWAVE ENGINEERING	E	ME	4	0	4	4	7	12	
378	PEC	PE-1	23RFM3101R	MICROWAVE ENGINEERING	R	ME	3	0	2	4	5	9	
379	PEC	PE-1	23RAN3101A	ROBOT MOTION PLANNING, DYNAMICS AND CONTROL	A	RMPDC	4	0	4	4	7	12	
380	PEC	PE-1	23RAN3101E	ROBOT MOTION PLANNING, DYNAMICS AND CONTROL	E	RMPDC	4	0	4	4	7	12	
381	PEC	PE-1	23RAN3101R	ROBOT MOTION PLANNING, DYNAMICS AND CONTROL	R	RMPDC	3	0	2	4	5	9	
382	PEC	PE-1	23RAN3102A	AUTONOMOUS MOBILE ROBOT SYSTEMS	A	AMRS	4	0	4	4	7	12	
383	PEC	PE-1	23RAN3102E	AUTONOMOUS MOBILE ROBOT SYSTEMS	E	AMRS	4	0	4	4	7	12	
384	PEC	PE-1	23RAN3102R	AUTONOMOUS MOBILE ROBOT SYSTEMS	R	AMRS	3	0	2	4	5	9	
385	PEC	PE-1	23DEA3101A	FUNDAMENTALS OF DATA ENGINEERING	A	FDE	4	0	4	4	7	12	
386	PEC	PE-1	23DEA3101E	FUNDAMENTALS OF DATA ENGINEERING	E	FDE	4	0	4	4	7	12	
387	PEC	PE-1	23DEA3101R	FUNDAMENTALS OF DATA ENGINEERING	R	FDE	3	0	2	4	5	9	
388	PEC	PE-1	23AIP3101A	DEEP LEARNING	A	DL	4	0	4	4	7	12	
389	PEC	PE-1	23AIP3101E	DEEP LEARNING	E	DL	4	0	4	4	7	12	
390	PEC	PE-1	23AIP3101R	DEEP LEARNING	R	DL	3	0	2	4	5	9	
391	PEC	PE-1	23SMD3101A	SOFTWARE VERIFICATION & VALIDATION	A	SVV	4	0	4	4	7	12	
392	PEC	PE-1	23SMD3101E	SOFTWARE VERIFICATION & VALIDATION	E	SVV	4	0	4	4	7	12	
393	PEC	PE-1	23SMD3101R	SOFTWARE VERIFICATION & VALIDATION	R	SVV	3	0	2	4	5	9	
394	PEC	PE-1	23EME3101A	POWER TRAIN DESIGN FOR ELECTRIC VEHICLE	A	PTDEV	4	0	4	4	7	12	ELM(1) Rule:1
395	PEC	PE-1	23EME3101E	POWER TRAIN DESIGN FOR ELECTRIC VEHICLE	E	PTDEV	4	0	4	4	7	12	ELM(1) Rule:1
396	PEC	PE-1	23EME3101R	POWER TRAIN DESIGN FOR ELECTRIC VEHICLE	R	PTDEV	3	0	2	4	5	9	ELM(1) Rule:1
397	PEC	PE-1	23STE3101A	ADVANCED CONCRETE TECHNOLOGY	A	ACT	4	0	4	4	7	12	EM(1) Rule:1

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398	PEC	PE-1	23STE3101E	ADVANCED CONCRETE TECHNOLOGY	E	ACT	4	0	4	4	7	12	EM(1) Rule:1
399	PEC	PE-1	23STE3101R	ADVANCED CONCRETE TECHNOLOGY	R	ACT	3	0	2	4	5	9	EM(1) Rule:1
400	PEC	PE-1	23WRE3101A	RIVER ENGINEERING	A	RE	4	0	4	4	7	12	FMH(1) Rule:1
401	PEC	PE-1	23WRE3101E	RIVER ENGINEERING	E	RE	4	0	4	4	7	12	FMH(1) Rule:1
402	PEC	PE-1	23WRE3101R	RIVER ENGINEERING	R	RE	3	0	2	4	5	9	FMH(1) Rule:1
403	PEC	PE-1	23VLS3101A	ANALOG VLSI DESIGN	A	AVD	4	0	4	4	7	12	
404	PEC	PE-1	23VLS3101E	ANALOG VLSI DESIGN	E	AVD	4	0	4	4	7	12	
405	PEC	PE-1	23VLS3101R	ANALOG VLSI DESIGN	R	AVD	3	0	2	4	5	9	
406	PEC	PE-1	23IOT3101A	INDUSTRIAL INTERNET OF THINGS	A	I IOT	4	0	4	4	7	12	
407	PEC	PE-1	23IOT3101E	INDUSTRIAL INTERNET OF THINGS	E	I IOT	4	0	4	4	7	12	
408	PEC	PE-1	23IOT3101R	INDUSTRIAL INTERNET OF THINGS	R	I IOT	3	0	2	4	5	9	
409	PEC	PE-1	23CPS3101A	IOT SENSING AND ACTUATING DEVICES	A	ISAD	4	0	4	4	7	12	NPS(1) Rule:1
410	PEC	PE-1	23CPS3101E	IOT SENSING AND ACTUATING DEVICES	E	ISAD	4	0	4	4	7	12	NPS(1) Rule:1
411	PEC	PE-1	23CPS3101R	IOT SENSING AND ACTUATING DEVICES	R	ISAD	3	0	2	4	5	9	NPS(1) Rule:1
412	PEC	PE-1	23EDS3101A	ADVANCED EMBEDDED SYSTEMS	A	AES	4	0	4	4	7	12	ESD(1) Rule:1
413	PEC	PE-1	23EDS3101E	ADVANCED EMBEDDED SYSTEMS	E	AES	4	0	4	4	7	12	ESD(1) Rule:1
414	PEC	PE-1	23EDS3101R	ADVANCED EMBEDDED SYSTEMS	R	AES	3	0	2	4	5	9	ESD(1) Rule:1
415	PEC	PE-1	23ILA3101A	INTRODUCTION TO INDUSTRIAL INTERNET OF THINGS	A	IIIoT	4	0	4	4	7	12	
416	PEC	PE-1	23ILA3101E	INTRODUCTION TO INDUSTRIAL INTERNET OF THINGS	E	IIIoT	4	0	4	4	7	12	
417	PEC	PE-1	23ILA3101R	INTRODUCTION TO INDUSTRIAL INTERNET OF THINGS	R	IIIoT	3	0	2	4	5	9	
418	PEC	PE-1	23EGD3101A	MODELING ANALYSIS & DESIGN OF ROBOTIC SYSTEMS	A	MADRS	4	0	4	4	7	12	EM(1) Rule:1
419	PEC	PE-1	23EGD3101E	MODELING ANALYSIS & DESIGN OF ROBOTIC SYSTEMS	E	MADRS	4	0	4	4	7	12	EM(1) Rule:1
420	PEC	PE-1	23EGD3101R	MODELING ANALYSIS & DESIGN OF ROBOTIC SYSTEMS	R	MADRS	3	0	2	4	5	9	EM(1) Rule:1
421	PEC	PE-1	23IMP3101A	NATURAL LANGUAGE PROCESSING & APPLICATIONS	A	NLPA	4	0	4	4	7	12	

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422	PEC	PE-1	23IMP3101E	NATURAL LANGUAGE PROCESSING & APPLICATIONS	E	NLPA	4	0	4	4	7	12	
423	PEC	PE-1	23IMP3101R	NATURAL LANGUAGE PROCESSING & APPLICATIONS	R	NLPA	3	0	2	4	5	9	
424	PEC	PE-1	23ECF3101A	AUTOMOBILE ENGINEERING	A	AE	4	0	4	4	7	12	TD(1) Rule:1
425	PEC	PE-1	23ECF3101E	AUTOMOBILE ENGINEERING	E	AE	4	0	4	4	7	12	TD(1) Rule:1
426	PEC	PE-1	23ECF3101R	AUTOMOBILE ENGINEERING	R	AE	3	0	2	4	5	9	TD(1) Rule:1
427	PEC	PE-1	23BEW3101A	INTRODUCTION TO BLOCKCHAIN TECHNOLOGY, CRYPTOCURRENCIES AND TOKENS	A	ITBTCT	4	0	4	4	7	12	
428	PEC	PE-1	23BEW3101E	INTRODUCTION TO BLOCKCHAIN TECHNOLOGY, CRYPTOCURRENCIES AND TOKENS	E	ITBTCT	4	0	4	4	7	12	
429	PEC	PE-1	23BEW3101R	INTRODUCTION TO BLOCKCHAIN TECHNOLOGY, CRYPTOCURRENCIES AND TOKENS	R	ITBTCT	3	0	2	4	5	9	
430	PEC	PE-1	23CNS3101A	INTRODUCTION TO CLOUD NATIVE COMPUTING	A	ITCNC	4	0	4	4	7	12	OS(1) Rule:1
431	PEC	PE-1	23CNS3101E	INTRODUCTION TO CLOUD NATIVE COMPUTING	E	ITCNC	4	0	4	4	7	12	OS(1) Rule:1
432	PEC	PE-1	23CNS3101R	INTRODUCTION TO CLOUD NATIVE COMPUTING	R	ITCNC	3	0	2	4	5	9	OS(1) Rule:1
433	PEC	PE-1	23CSB3101A	CRYPT ANALYSIS & CYBER DEFENSE	A	CACD	4	0	4	4	7	12	NPS(1) Rule:1
434	PEC	PE-1	23CSB3101E	CRYPT ANALYSIS & CYBER DEFENSE	E	CACD	4	0	4	4	7	12	NPS(1) Rule:1
435	PEC	PE-1	23CSB3101R	CRYPT ANALYSIS & CYBER DEFENSE	R	CACD	3	0	2	4	5	9	NPS(1) Rule:1
436	PEC	PE-1	23DLA3101A	SYSTEM & NETWORK TRAFFIC SECURITY ANALYTICS	A	SNTSA	4	0	4	4	7	12	
437	PEC	PE-1	23DLA3101E	SYSTEM & NETWORK TRAFFIC SECURITY ANALYTICS	E	SNTSA	4	0	4	4	7	12	
438	PEC	PE-1	23DLA3101R	SYSTEM & NETWORK TRAFFIC SECURITY ANALYTICS	R	SNTSA	3	0	2	4	5	9	
439	PEC	PE-1	23SDM3101A	SENTIMENT ANALYSIS	A	SA	4	0	4	4	7	12	
440	PEC	PE-1	23SDM3101E	SENTIMENT ANALYSIS	E	SA	4	0	4	4	7	12	
441	PEC	PE-1	23SDM3101R	SENTIMENT ANALYSIS	R	SA	3	0	2	4	5	9	
442	PEC	PE-1	23DSB3101A	DATA ANALYTICS AND VISUALIZATION	A	DAV	4	0	4	4	7	12	
443	PEC	PE-1	23DSB3101E	DATA ANALYTICS AND VISUALIZATION	E	DAV	4	0	4	4	7	12	

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444	PEC	PE-1	23DSB3101R	DATA ANALYTICS AND VISUALIZATION	R	DAV	3	0	2	4	5	9	
445	PEC	PE-1	23DCS3101A	4G WIRELESS TECHNOLOGIES AND CELLULAR COMMUNICATION	A	4GW	4	0	4	4	7	12	WC(1) Rule:1
446	PEC	PE-1	23DCS3101E	4G WIRELESS TECHNOLOGIES AND CELLULAR COMMUNICATION	E	4GW	4	0	4	4	7	12	WC(1) Rule:1
447	PEC	PE-1	23DCS3101R	4G WIRELESS TECHNOLOGIES AND CELLULAR COMMUNICATION	R	4GW	3	0	2	4	5	9	WC(1) Rule:1
448	PEC	PE-1	23CCF3101A	TCP/IP & OTHER PROTOCOL SUITE	A	TCP	4	0	4	4	7	12	RNW(1) Rule:1
449	PEC	PE-1	23CCF3101E	TCP/IP & OTHER PROTOCOL SUITE	E	TCP	4	0	4	4	7	12	RNW(1) Rule:1
450	PEC	PE-1	23CCF3101R	TCP/IP & OTHER PROTOCOL SUITE	R	TCP	3	0	2	4	5	9	RNW(1) Rule:1
451	PEC	PE-1	23ACI3101A	GENERATIVE ADVERSARIAL NETWORKS	A	GANS	4	0	4	4	7	12	
452	PEC	PE-1	23ACI3101E	GENERATIVE ADVERSARIAL NETWORKS	E	GANS	4	0	4	4	7	12	
453	PEC	PE-1	23ACI3101R	GENERATIVE ADVERSARIAL NETWORKS	R	GANS	3	0	2	4	5	9	
454	PEC	PE-1	23ABT3101A	BIOSENSORS AND BIOELECTRONICS	A	BSBE	4	0	4	4	7	12	GN(1) Rule:1
455	PEC	PE-1	23ABT3101E	BIOSENSORS AND BIOELECTRONICS	E	BSBE	4	0	4	4	7	12	GN(1) Rule:1
456	PEC	PE-1	23ABT3101R	BIOSENSORS AND BIOELECTRONICS	R	BSBE	3	0	2	4	5	9	GN(1) Rule:1
457	PEC	PE-1	23IBT3101A	PHARMACEUTICAL BIOTECHNOLOGY	A	PBT	4	0	4	4	7	12	BO(1) Rule:1
458	PEC	PE-1	23IBT3101E	PHARMACEUTICAL BIOTECHNOLOGY	E	PBT	4	0	4	4	7	12	BO(1) Rule:1
459	PEC	PE-1	23IBT3101R	PHARMACEUTICAL BIOTECHNOLOGY	R	PBT	3	0	2	4	5	9	BO(1) Rule:1
460	PEC	PE-1	23ADE3101A	EDGE COMPUTING FUNDAMENTALS	A	ECF	4	0	4	4	7	12	OS(1) Rule:1
461	PEC	PE-1	23ADE3101E	EDGE COMPUTING FUNDAMENTALS	E	ECF	4	0	4	4	7	12	OS(1) Rule:1
462	PEC	PE-1	23ADE3101R	EDGE COMPUTING FUNDAMENTALS	R	ECF	3	0	2	4	5	9	OS(1) Rule:1
463	PEC	PE-1	23ALT3101A	APPLIED MACHINE LEARNING FOR TEXT ANALYSIS	A	AMLFTA	4	0	4	4	7	12	
464	PEC	PE-1	23ALT3101E	APPLIED MACHINE LEARNING FOR TEXT ANALYSIS	E	AMLFTA	4	0	4	4	7	12	
465	PEC	PE-1	23ALT3101R	APPLIED MACHINE LEARNING FOR TEXT ANALYSIS	R	AMLFTA	3	0	2	4	5	9	
466	PEC	PE-1	23AVI3101A	DEEP LEARNING	A	DL	4	0	4	4	7	12	

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467	PEC	PE-1	23AVI3101E	DEEP LEARNING	E	DL	4	0	4	4	7	12	
468	PEC	PE-1	23AVI3101R	DEEP LEARNING	R	DL	3	0	2	4	5	9	
469	PEC	PE-1	23HSS3101A	INTRODUCTION TO HARDWARE-SOFTWARE CO-DESIGN	A	ITHSCD	4	0	4	4	7	12	NPS(1) Rule:1
470	PEC	PE-1	23HSS3101E	INTRODUCTION TO HARDWARE-SOFTWARE CO-DESIGN	E	ITHSCD	4	0	4	4	7	12	NPS(1) Rule:1
471	PEC	PE-1	23HSS3101R	INTRODUCTION TO HARDWARE-SOFTWARE CO-DESIGN	R	ITHSCD	3	0	2	4	5	9	NPS(1) Rule:1
472	PEC	PE-1	23CSC3101A	FUNDAMENTALS OF CLOUD-BASED SCIENTIFIC COMPUTING	A	FCS	4	0	4	4	7	12	OS(1) Rule:1
473	PEC	PE-1	23CSC3101E	FUNDAMENTALS OF CLOUD-BASED SCIENTIFIC COMPUTING	E	FCS	4	0	4	4	7	12	OS(1) Rule:1
474	PEC	PE-1	23CSC3101R	FUNDAMENTALS OF CLOUD-BASED SCIENTIFIC COMPUTING	R	FCS	3	0	2	4	5	9	OS(1) Rule:1
475	PEC	PE-1	23CTM3101A	BUILDING INFORMATION MODELLING	A	BIM	4	0	4	4	7	12	
476	PEC	PE-1	23CTM3101E	BUILDING INFORMATION MODELLING	E	BIM	4	0	4	4	7	12	
477	PEC	PE-1	23CTM3101R	BUILDING INFORMATION MODELLING	R	BIM	3	0	2	4	5	9	
478	PEC	PE-1	23CEC3101A	CLOUD INFRASTRUCTURE AND SERVICES	A	CIS	4	0	4	4	7	12	OS(1) Rule:1
479	PEC	PE-1	23CEC3101E	CLOUD INFRASTRUCTURE AND SERVICES	E	CIS	4	0	4	4	7	12	OS(1) Rule:1
480	PEC	PE-1	23CEC3101R	CLOUD INFRASTRUCTURE AND SERVICES	R	CIS	3	0	2	4	5	9	OS(1) Rule:1
481	PEC	PE-1	23CID3101A	CLOUD INFRASTRUCTURE ENGINEERING	A	CIE	4	0	4	4	7	12	OS(1) Rule:1
482	PEC	PE-1	23CID3101E	CLOUD INFRASTRUCTURE ENGINEERING	E	CIE	4	0	4	4	7	12	OS(1) Rule:1
483	PEC	PE-1	23CID3101R	CLOUD INFRASTRUCTURE ENGINEERING	R	CIE	3	0	2	4	5	9	OS(1) Rule:1
484	PEC	PE-1	23CNE3101A	FOUNDATIONS OF CLOUD NATIVE COMPUTING	A	FCNC	4	0	4	4	7	12	OS(1) Rule:1
485	PEC	PE-1	23CNE3101E	FOUNDATIONS OF CLOUD NATIVE COMPUTING	E	FCNC	4	0	4	4	7	12	OS(1) Rule:1
486	PEC	PE-1	23CNE3101R	FOUNDATIONS OF CLOUD NATIVE COMPUTING	R	FCNC	3	0	2	4	5	9	OS(1) Rule:1
487	PEC	PE-1	23BMI3101A	BIOMEDICAL SIGNAL AND IMAGE PROCESSING	A	BSIP	4	0	4	4	7	12	
488	PEC	PE-1	23BMI3101E	BIOMEDICAL SIGNAL AND IMAGE PROCESSING	E	BSIP	4	0	4	4	7	12	
489	PEC	PE-1	23BMI3101R	BIOMEDICAL SIGNAL AND IMAGE PROCESSING	R	BSIP	3	0	2	4	5	9	

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490	PEC	PE-1	23HDA3101A	INTELLIGENT SYSTEMS FOR DISEASE PREDICTION & DRUG DISCOVERY	A	ISDPDD	4	0	4	4	7	12	
491	PEC	PE-1	23HDA3101E	INTELLIGENT SYSTEMS FOR DISEASE PREDICTION & DRUG DISCOVERY	E	ISDPDD	4	0	4	4	7	12	
492	PEC	PE-1	23HDA3101R	INTELLIGENT SYSTEMS FOR DISEASE PREDICTION & DRUG DISCOVERY	R	ISDPDD	3	0	2	4	5	9	
493	PEC	PE-1	23BIS3101A	MOLECULAR MODELLING AND DRUG DESIGN	A	MMDD	4	0	4	4	7	12	
494	PEC	PE-1	23BIS3101E	MOLECULAR MODELLING AND DRUG DESIGN	E	MMDD	4	0	4	4	7	12	
495	PEC	PE-1	23BIS3101R	MOLECULAR MODELLING AND DRUG DESIGN	R	MMDD	3	0	2	4	5	9	
496	PEC	PE-2	23BIS3202A	BIOMEDICAL INFORMATICS	A	BMI	5	0	0	0	5	5	
497	PEC	PE-2	23BIS3202E	BIOMEDICAL INFORMATICS	E	BMI	5	0	0	0	5	5	
498	PEC	PE-2	23BIS3202R	BIOMEDICAL INFORMATICS	R	BMI	3	0	0	0	3	3	
499	PEC	PE-2	23BIS3203A	PYTHON AND R PROGRAMMING	A	P&RP	5	0	0	0	5	5	
500	PEC	PE-2	23BIS3203E	PYTHON AND R PROGRAMMING	E	P&RP	5	0	0	0	5	5	
501	PEC	PE-2	23BIS3203R	PYTHON AND R PROGRAMMING	R	P&RP	3	0	0	0	3	3	
502	PEC	PE-2	23BIM3202A	ADVANCED BIOMEDICAL SIGNAL PROCESSING	A	ABSP	5	0	0	0	5	5	
503	PEC	PE-2	23BIM3202E	ADVANCED BIOMEDICAL SIGNAL PROCESSING	E	ABSP	5	0	0	0	5	5	
504	PEC	PE-2	23BIM3202R	ADVANCED BIOMEDICAL SIGNAL PROCESSING	R	ABSP	3	0	0	0	3	3	
505	PEC	PE-2	23AIP3202A	SOFT COMPUTING	A	SC	5	0	0	0	5	5	
506	PEC	PE-2	23AIP3202E	SOFT COMPUTING	E	SC	5	0	0	0	5	5	
507	PEC	PE-2	23HDA3202A	BIO MEDICAL INFORMATICS	A	BMI	5	0	0	0	5	5	
508	PEC	PE-2	23HDA3202E	BIO MEDICAL INFORMATICS	E	BMI	5	0	0	0	5	5	
509	PEC	PE-2	23HDA3202R	BIO MEDICAL INFORMATICS	R	BMI	3	0	0	0	3	3	
510	PEC	PE-2	23HDA3203A	GENETIC PROGRAMMING	A	GP	5	0	0	0	5	5	
511	PEC	PE-2	23HDA3203E	GENETIC PROGRAMMING	E	GP	5	0	0	0	5	5	
512	PEC	PE-2	23HDA3203R	GENETIC PROGRAMMING	R	GP	3	0	0	0	3	3	
513	PEC	PE-2	23CNE3202A	CLOUD NATIVE APPLICATION DEVELOPMENT	A	CNAD	5	0	0	0	5	5	OS(1) Rule:1
514	PEC	PE-2	23CNE3202E	CLOUD NATIVE APPLICATION DEVELOPMENT	E	CNAD	5	0	0	0	5	5	OS(1) Rule:1
515	PEC	PE-2	23CNE3202R	CLOUD NATIVE APPLICATION DEVELOPMENT	R	CNAD	3	0	0	0	3	3	OS(1) Rule:1

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516	PEC	PE-2	23CID3202A	ENTERPRISE CLOUD COMPUTING: TECHNOLOGY, ARCHITECTURE, APPLICATIONS	A	ECT	5	0	0	0	5	5	OS(1) Rule:1
517	PEC	PE-2	23CID3202E	ENTERPRISE CLOUD COMPUTING: TECHNOLOGY, ARCHITECTURE, APPLICATIONS	E	ECT	5	0	0	0	5	5	OS(1) Rule:1
518	PEC	PE-2	23CID3202R	ENTERPRISE CLOUD COMPUTING: TECHNOLOGY, ARCHITECTURE, APPLICATIONS	R	ECT	3	0	0	0	3	3	OS(1) Rule:1
519	PEC	PE-2	23CEC3202A	ADVANCED OPERATING SYSTEMS	A	AOS	5	0	0	0	5	5	OS(1) Rule:1
520	PEC	PE-2	23CEC3202E	ADVANCED OPERATING SYSTEMS	E	AOS	5	0	0	0	5	5	OS(1) Rule:1
521	PEC	PE-2	23CEC3202R	ADVANCED OPERATING SYSTEMS	R	AOS	3	0	0	0	3	3	OS(1) Rule:1
522	PEC	PE-2	23CEC3203A	FUNCTIONAL & CONCURRENT PROGRAMMING	A	FCP	5	0	0	0	5	5	OS(1) Rule:1
523	PEC	PE-2	23CEC3203E	FUNCTIONAL & CONCURRENT PROGRAMMING	E	FCP	5	0	0	0	5	5	OS(1) Rule:1
524	PEC	PE-2	23CEC3203R	FUNCTIONAL & CONCURRENT PROGRAMMING	R	FCP	3	0	0	0	3	3	OS(1) Rule:1
525	PEC	PE-2	23CEC3204A	CLOUD DEVOPS	A	CD	5	0	0	0	5	5	OS(1) Rule:1
526	PEC	PE-2	23CEC3204E	CLOUD DEVOPS	E	CD	5	0	0	0	5	5	OS(1) Rule:1
527	PEC	PE-2	23CEC3204R	CLOUD DEVOPS	R	CD	3	0	0	0	3	3	OS(1) Rule:1
528	PEC	PE-2	23CTM3202A	ADVANCED CONSTRUCTION TECHNOLOGY	A	ACT	5	0	0	0	5	5	
529	PEC	PE-2	23CTM3202E	ADVANCED CONSTRUCTION TECHNOLOGY	E	ACT	5	0	0	0	5	5	
530	PEC	PE-2	23CTM3202R	ADVANCED CONSTRUCTION TECHNOLOGY	R	ACT	3	0	0	0	3	3	
531	PEC	PE-2	23CTM3203A	SUSTAINABLE CONSTRUCTION TECHNOLOGY	A	SCT	5	0	0	0	5	5	
532	PEC	PE-2	23CTM3203E	SUSTAINABLE CONSTRUCTION TECHNOLOGY	E	SCT	5	0	0	0	5	5	
533	PEC	PE-2	23CTM3203R	SUSTAINABLE CONSTRUCTION TECHNOLOGY	R	SCT	3	0	0	0	3	3	
534	PEC	PE-2	23CSC3202A	DEVELOPMENT OF SCIENTIFIC APPLICATIONS USING CLOUD-BASED TECHNOLOGY	A	DSA	5	0	0	0	5	5	OS(1) Rule:1
535	PEC	PE-2	23CSC3202E	DEVELOPMENT OF SCIENTIFIC APPLICATIONS USING CLOUD-BASED TECHNOLOGY	E	DSA	5	0	0	0	5	5	OS(1) Rule:1

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536	PEC	PE-2	23CSC3202R	DEVELOPMENT OF SCIENTIFIC APPLICATIONS USING CLOUD-BASED TECHNOLOGY	R	DSA	3	0	0	0	3	3	OS(1) Rule:1
537	PEC	PE-2	23HSS3202A	FUNDAMENTALS OF COMPUTER SECURITY	A	FOCS	5	0	0	0	5	5	NPS(1) Rule:1
538	PEC	PE-2	23HSS3202E	FUNDAMENTALS OF COMPUTER SECURITY	E	FOCS	5	0	0	0	5	5	NPS(1) Rule:1
539	PEC	PE-2	23HSS3202R	FUNDAMENTALS OF COMPUTER SECURITY	R	FOCS	3	0	0	0	3	3	NPS(1) Rule:1
540	PEC	PE-2	23AVI3202A	COMPUTER VISION	A	CV	5	0	0	0	5	5	
541	PEC	PE-2	23AVI3202E	COMPUTER VISION	E	CV	5	0	0	0	5	5	
542	PEC	PE-2	23AVI3202R	COMPUTER VISION	R	CV	3	0	0	0	3	3	
543	PEC	PE-2	23ALT3202A	DEEP LEARNING FOR NATURAL LANGUAGE PROCESSING	A	DLFNLP	5	0	0	0	5	5	
544	PEC	PE-2	23ALT3202E	DEEP LEARNING FOR NATURAL LANGUAGE PROCESSING	E	DLFNLP	5	0	0	0	5	5	
545	PEC	PE-2	23ALT3202R	DEEP LEARNING FOR NATURAL LANGUAGE PROCESSING	R	DLFNLP	3	0	0	0	3	3	
546	PEC	PE-2	23ADE3202A	AI AT THE EDGE	A	AIAE	5	0	0	0	5	5	OS(1) Rule:1
547	PEC	PE-2	23ADE3202E	AI AT THE EDGE	E	AIAE	5	0	0	0	5	5	OS(1) Rule:1
548	PEC	PE-2	23ADE3202R	AI AT THE EDGE	R	AIAE	3	0	0	0	3	3	OS(1) Rule:1
549	PEC	PE-2	23AIP3202R	SOFT COMPUTING	R	SC	3	0	0	0	3	3	
550	PEC	PE-2	23AIP3203A	MULTI MODAL INFORMATION PROCESSING	A	MMIP	3	0	4	0	5	7	
551	PEC	PE-2	23AIP3203E	MULTI MODAL INFORMATION PROCESSING	E	MMIP	3	0	4	0	5	7	
552	PEC	PE-2	23AIP3203R	MULTI MODAL INFORMATION PROCESSING	R	MMIP	2	0	2	0	3	4	
553	PEC	PE-2	23AIP3204A	ARTIFICIAL NEURAL NETWORKS	A	ANN	5	0	0	0	5	5	
554	PEC	PE-2	23AIP3204E	ARTIFICIAL NEURAL NETWORKS	E	ANN	5	0	0	0	5	5	
555	PEC	PE-2	23AIP3204R	ARTIFICIAL NEURAL NETWORKS	R	ANN	3	0	0	0	3	3	
556	PEC	PE-2	23IBT3202A	PHARMACOVIGILANCE AND SAFETY	A	PCS	5	0	0	0	5	5	BO(1) Rule:1
557	PEC	PE-2	23IBT3202E	PHARMACOVIGILANCE AND SAFETY	E	PCS	5	0	0	0	5	5	BO(1) Rule:1
558	PEC	PE-2	23IBT3202R	PHARMACOVIGILANCE AND SAFETY	R	PCS	3	0	0	0	3	3	BO(1) Rule:1
559	PEC	PE-2	23ABT3202A	IOT APPLICATIONS IN PRECISION AGRICULTURE	A	IOTAPA	5	0	0	0	5	5	GN(1) Rule:1

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560	PEC	PE-2	23ABT3202E	IOT APPLICATIONS IN PRECISION AGRICULTURE	E	IOTAPA	5	0	0	0	5	5	GN(1) Rule:1
561	PEC	PE-2	23ABT3202R	IOT APPLICATIONS IN PRECISION AGRICULTURE	R	IOTAPA	3	0	0	0	3	3	GN(1) Rule:1
562	PEC	PE-2	23ACI3202A	EXPLAINABLE AI AND COMMUNICATIONS	A	EAIC	5	0	0	0	5	5	
563	PEC	PE-2	23ACI3202E	EXPLAINABLE AI AND COMMUNICATIONS	E	EAIC	5	0	0	0	5	5	
564	PEC	PE-2	23ACI3202R	EXPLAINABLE AI AND COMMUNICATIONS	R	EAIC	3	0	0	0	3	3	
565	PEC	PE-2	23CCF3202A	CLOUD COMPUTING AND NETWORKS SECURITY	A	CCNS	5	0	0	0	5	5	RNW(1) Rule:1
566	PEC	PE-2	23CCF3202E	CLOUD COMPUTING AND NETWORKS SECURITY	E	CCNS	5	0	0	0	5	5	RNW(1) Rule:1
567	PEC	PE-2	23CCF3202R	CLOUD COMPUTING AND NETWORKS SECURITY	R	CCNS	3	0	0	0	3	3	RNW(1) Rule:1
568	PEC	PE-2	23DCS3202A	MODERN SATELLITE COMMUNICATION SYSTEMS	A	MSCS	5	0	0	0	5	5	WC(1) Rule:1
569	PEC	PE-2	23DCS3202E	MODERN SATELLITE COMMUNICATION SYSTEMS	E	MSCS	5	0	0	0	5	5	WC(1) Rule:1
570	PEC	PE-2	23DCS3202R	MODERN SATELLITE COMMUNICATION SYSTEMS	R	MSCS	3	0	0	0	3	3	WC(1) Rule:1
571	PEC	PE-2	23DSB3202A	DATA WAREHOUSING AND MINING	A	DWHM	5	0	0	0	5	5	
572	PEC	PE-2	23DSB3202E	DATA WAREHOUSING AND MINING	E	DWHM	5	0	0	0	5	5	
573	PEC	PE-2	23DSB3202R	DATA WAREHOUSING AND MINING	R	DWHM	3	0	0	0	3	3	
574	PEC	PE-2	23SDM3202A	OPINION MINING & RECOMMENDER SYSTEMS	A	OMRS	5	0	0	0	5	5	
575	PEC	PE-2	23SDM3202E	OPINION MINING & RECOMMENDER SYSTEMS	E	OMRS	5	0	0	0	5	5	
576	PEC	PE-2	23SDM3202R	OPINION MINING & RECOMMENDER SYSTEMS	R	OMRS	3	0	0	0	3	3	
577	PEC	PE-2	23SDM3203A	META SOCIAL MEDIA ANALYTICS	A	MSMA	5	0	0	0	5	5	
578	PEC	PE-2	23SDM3203E	META SOCIAL MEDIA ANALYTICS	E	MSMA	5	0	0	0	5	5	
579	PEC	PE-2	23SDM3203R	META SOCIAL MEDIA ANALYTICS	R	MSMA	3	0	0	0	3	3	
580	PEC	PE-2	23DLA3202A	AUTOMATED NETWORK ANALYSIS	A	ANA	5	0	0	0	5	5	
581	PEC	PE-2	23DLA3202E	AUTOMATED NETWORK ANALYSIS	E	ANA	5	0	0	0	5	5	
582	PEC	PE-2	23DLA3202R	AUTOMATED NETWORK ANALYSIS	R	ANA	3	0	0	0	3	3	
583	PEC	PE-2	23DLA3203A	BLOCKCHAIN TECHNOLOGY FOR DIGITAL TRANSFORMATION	A	BTDT	5	0	0	0	5	5	
584	PEC	PE-2	23DLA3203E	BLOCKCHAIN TECHNOLOGY FOR DIGITAL TRANSFORMATION	E	BTDT	5	0	0	0	5	5	

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585	PEC	PE-2	23DLA3203R	BLOCKCHAIN TECHNOLOGY FOR DIGITAL TRANSFORMATION	R	BTD	3	0	0	0	3	3	
586	PEC	PE-2	23CSB3202A	NETWORK AND INFRASTRUCTURE SECURITY	A	NIS	5	0	0	0	5	5	NPS(1) Rule:1
587	PEC	PE-2	23CSB3202E	NETWORK AND INFRASTRUCTURE SECURITY	E	NIS	5	0	0	0	5	5	NPS(1) Rule:1
588	PEC	PE-2	23CSB3202R	NETWORK AND INFRASTRUCTURE SECURITY	R	NIS	3	0	0	0	3	3	NPS(1) Rule:1
589	PEC	PE-2	23CSB3203A	INTRODUCTION TO BLOCKCHAIN AND CRYPTO CURRENCIES	A	IBCC	3	0	4	0	5	7	NPS(1) Rule:1
590	PEC	PE-2	23CSB3203E	INTRODUCTION TO BLOCKCHAIN AND CRYPTO CURRENCIES	E	IBCC	3	0	4	0	5	7	NPS(1) Rule:1
591	PEC	PE-2	23CSB3203R	INTRODUCTION TO BLOCKCHAIN AND CRYPTO CURRENCIES	R	IBCC	2	0	2	0	3	4	NPS(1) Rule:1
592	PEC	PE-2	23CNS3202A	FUNDAMENTALS OF CLOUD SECURITY	A	FOCS	5	0	0	0	5	5	OS(1) Rule:1
593	PEC	PE-2	23CNS3202E	FUNDAMENTALS OF CLOUD SECURITY	E	FOCS	5	0	0	0	5	5	OS(1) Rule:1
594	PEC	PE-2	23CNS3202R	FUNDAMENTALS OF CLOUD SECURITY	R	FOCS	3	0	0	0	3	3	OS(1) Rule:1
595	PEC	PE-2	23BEW3202A	SMART CONTRACTS	A	SCR	5	0	0	0	5	5	
596	PEC	PE-2	23BEW3202E	SMART CONTRACTS	E	SCR	5	0	0	0	5	5	
597	PEC	PE-2	23BEW3202R	SMART CONTRACTS	R	SCR	3	0	0	0	3	3	
598	PEC	PE-2	23ECF3202A	AUTOTRONICS & SAFETY	A	ATS	5	0	0	0	5	5	TD(1) Rule:1
599	PEC	PE-2	23ECF3202E	AUTOTRONICS & SAFETY	E	ATS	5	0	0	0	5	5	TD(1) Rule:1
600	PEC	PE-2	23ECF3202R	AUTOTRONICS & SAFETY	R	ATS	3	0	0	0	3	3	TD(1) Rule:1
601	PEC	PE-2	23ECF3203A	AUTONOMOUS VEHICLES	A	AV	5	0	0	0	5	5	TD(1) Rule:1
602	PEC	PE-2	23ECF3203E	AUTONOMOUS VEHICLES	E	AV	5	0	0	0	5	5	TD(1) Rule:1
603	PEC	PE-2	23ECF3203R	AUTONOMOUS VEHICLES	R	AV	3	0	0	0	3	3	TD(1) Rule:1
604	PEC	PE-2	23EGD3202A	CREEP, FATIGUE AND FRACTURE MECHANICS	A	CFFM	5	0	0	0	5	5	EM(1) Rule:1
605	PEC	PE-2	23EGD3202E	CREEP, FATIGUE AND FRACTURE MECHANICS	E	CFFM	5	0	0	0	5	5	EM(1) Rule:1
606	PEC	PE-2	23EGD3202R	CREEP, FATIGUE AND FRACTURE MECHANICS	R	CFFM	3	0	0	0	3	3	EM(1) Rule:1
607	PEC	PE-2	23EGD3203A	THEORY OF ELASTICITY AND PLASTICITY	A	TEP	5	0	0	0	5	5	EM(1) Rule:1

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608	PEC	PE-2	23EGD3203E	THEORY OF ELASTICITY AND PLASTICITY	E	TEP	5	0	0	0	5	5	EM(1) Rule:1
609	PEC	PE-2	23EGD3203R	THEORY OF ELASTICITY AND PLASTICITY	R	TEP	3	0	0	0	3	3	EM(1) Rule:1
610	PEC	PE-2	23ILA3202A	INDUSTRIAL AUTOMATION AND ROBOTICS	A	IAR	5	0	0	0	5	5	
611	PEC	PE-2	23ILA3202E	INDUSTRIAL AUTOMATION AND ROBOTICS	E	IAR	5	0	0	0	5	5	
612	PEC	PE-2	23ILA3202R	INDUSTRIAL AUTOMATION AND ROBOTICS	R	IAR	3	0	0	0	3	3	
613	PEC	PE-2	23ILA3203A	EDGE COMPUTING FOR INDUSTRY 4.0	A	ECI	5	0	0	0	5	5	
614	PEC	PE-2	23ILA3203E	EDGE COMPUTING FOR INDUSTRY 4.0	E	ECI	5	0	0	0	5	5	
615	PEC	PE-2	23ILA3203R	EDGE COMPUTING FOR INDUSTRY 4.0	R	ECI	3	0	0	0	3	3	
616	PEC	PE-2	23EDS3202A	EMBEDDED SYSTEMS FOR IOT	A	ESIOT	5	0	0	0	5	5	ESD(1) Rule:1
617	PEC	PE-2	23EDS3202E	EMBEDDED SYSTEMS FOR IOT	E	ESIOT	5	0	0	0	5	5	ESD(1) Rule:1
618	PEC	PE-2	23EDS3202R	EMBEDDED SYSTEMS FOR IOT	R	ESIOT	3	0	0	0	3	3	ESD(1) Rule:1
619	PEC	PE-2	23CPS3202A	INTERNET OF THINGS ARCHITECTURES AND PROTOCOLS	A	IOTAP	5	0	0	0	5	5	NPS(1) Rule:1
620	PEC	PE-2	23CPS3202E	INTERNET OF THINGS ARCHITECTURES AND PROTOCOLS	E	IOTAP	5	0	0	0	5	5	NPS(1) Rule:1
621	PEC	PE-2	23CPS3202R	INTERNET OF THINGS ARCHITECTURES AND PROTOCOLS	R	IOTAP	3	0	0	0	3	3	NPS(1) Rule:1
622	PEC	PE-2	23IMP3202A	DATA ENGINEERING	A	DE	5	0	0	0	5	5	
623	PEC	PE-2	23IMP3202E	DATA ENGINEERING	E	DE	5	0	0	0	5	5	
624	PEC	PE-2	23IMP3202R	DATA ENGINEERING	R	DE	3	0	0	0	3	3	
625	PEC	PE-2	23HDA3204A	PYTHON FOR GENOMIC DATA SCIENCE	A	PFGDS	5	0	0	0	5	5	
626	PEC	PE-2	23HDA3204E	PYTHON FOR GENOMIC DATA SCIENCE	E	PFGDS	5	0	0	0	5	5	
627	PEC	PE-2	23HDA3204R	PYTHON FOR GENOMIC DATA SCIENCE	R	PFGDS	3	0	0	0	3	3	
628	PEC	PE-2	23IOT3202A	EDGE COMPUTING	A	EC	5	0	0	0	5	5	
629	PEC	PE-2	23IOT3202E	EDGE COMPUTING	E	EC	5	0	0	0	5	5	
630	PEC	PE-2	23IOT3202R	EDGE COMPUTING	R	EC	3	0	0	0	3	3	
631	PEC	PE-2	23VLS3202A	TESTING AND VERIFICATION OF VLSI CIRCUITS	A	TVVC	5	0	0	0	5	5	

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632	PEC	PE-2	23VLS3202E	TESTING AND VERIFICATION OF VLSI CIRCUITS	E	TVVC	5	0	0	0	5	5	
633	PEC	PE-2	23VLS3202R	TESTING AND VERIFICATION OF VLSI CIRCUITS	R	TVVC	3	0	0	0	3	3	
634	PEC	PE-2	23WRE3202A	SOLID WASTE MANAGEMENT AND LANDFILLS	A	SWML	5	0	0	0	5	5	FMH(1) Rule:1
635	PEC	PE-2	23WRE3202E	SOLID WASTE MANAGEMENT AND LANDFILLS	E	SWML	5	0	0	0	5	5	FMH(1) Rule:1
636	PEC	PE-2	23WRE3202R	SOLID WASTE MANAGEMENT AND LANDFILLS	R	SWML	3	0	0	0	3	3	FMH(1) Rule:1
637	PEC	PE-2	23WRE3203A	DESIGN OF HYDRAULIC STRUCTURES	A	DHS	5	0	0	0	5	5	FMH(1) Rule:1
638	PEC	PE-2	23WRE3203E	DESIGN OF HYDRAULIC STRUCTURES	E	DHS	5	0	0	0	5	5	FMH(1) Rule:1
639	PEC	PE-2	23WRE3203R	DESIGN OF HYDRAULIC STRUCTURES	R	DHS	3	0	0	0	3	3	FMH(1) Rule:1
640	PEC	PE-2	23STE3202A	ADVANCED STRUCTURAL ANALYSIS	A	ASA	5	0	0	0	5	5	EM(1) Rule:1
641	PEC	PE-2	23STE3202E	ADVANCED STRUCTURAL ANALYSIS	E	ASA	5	0	0	0	5	5	EM(1) Rule:1
642	PEC	PE-2	23STE3202R	ADVANCED STRUCTURAL ANALYSIS	R	ASA	3	0	0	0	3	3	EM(1) Rule:1
643	PEC	PE-2	23STE3203A	ADVANCED DESIGN OF STEEL STRUCTURE	A	ADSS	5	0	0	0	5	5	EM(1) Rule:1
644	PEC	PE-2	23STE3203E	ADVANCED DESIGN OF STEEL STRUCTURE	E	ADSS	5	0	0	0	5	5	EM(1) Rule:1
645	PEC	PE-2	23STE3203R	ADVANCED DESIGN OF STEEL STRUCTURE	R	ADSS	3	0	0	0	3	3	EM(1) Rule:1
646	PEC	PE-2	23EME3202A	COMMUNICATION PROTOCOLS & TESTING OF ELECTRIC VEHICLE	A	CPTEV	5	0	0	0	5	5	ELM(1) Rule:1
647	PEC	PE-2	23EME3202E	COMMUNICATION PROTOCOLS & TESTING OF ELECTRIC VEHICLE	E	CPTEV	5	0	0	0	5	5	ELM(1) Rule:1
648	PEC	PE-2	23EME3202R	COMMUNICATION PROTOCOLS & TESTING OF ELECTRIC VEHICLE	R	CPTEV	3	0	0	0	3	3	ELM(1) Rule:1
649	PEC	PE-2	23EME3203A	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	A	AVAE	5	0	0	0	5	5	ELM(1) Rule:1
650	PEC	PE-2	23EME3203E	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	E	AVAE	5	0	0	0	5	5	ELM(1) Rule:1
651	PEC	PE-2	23EME3203R	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	R	AVAE	3	0	0	0	3	3	ELM(1) Rule:1
652	PEC	PE-2	23SMD3202A	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	A	DPCT	5	0	0	0	5	5	
653	PEC	PE-2	23SMD3202E	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	E	DPCT	5	0	0	0	5	5	
654	PEC	PE-2	23SMD3202R	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	R	DPCT	3	0	0	0	3	3	

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655	PEC	PE-2	23CNE3203A	CLOUD NATIVE DESIGN PROCESS	A	CNDP	5	0	0	0	5	5	OS(1) Rule:1
656	PEC	PE-2	23CNE3203E	CLOUD NATIVE DESIGN PROCESS	E	CNDP	5	0	0	0	5	5	OS(1) Rule:1
657	PEC	PE-2	23CNE3203R	CLOUD NATIVE DESIGN PROCESS	R	CNDP	3	0	0	0	3	3	OS(1) Rule:1
658	PEC	PE-2	23CSC3203A	DISTRIBUTED SCIENTIFIC COMPUTING IN THE CLOUD	A	DSCC	5	0	0	0	5	5	OS(1) Rule:1
659	PEC	PE-2	23CSC3203E	DISTRIBUTED SCIENTIFIC COMPUTING IN THE CLOUD	E	DSCC	5	0	0	0	5	5	OS(1) Rule:1
660	PEC	PE-2	23CSC3203R	DISTRIBUTED SCIENTIFIC COMPUTING IN THE CLOUD	R	DSCC	3	0	0	0	3	3	OS(1) Rule:1
661	PEC	PE-2	23CID3203A	ARCHITECTING HIGHLY AVAILABLE AND SCALABLE CLOUD ENVIRONMENTS	A	AHASCE	5	0	0	0	5	5	OS(1) Rule:1
662	PEC	PE-2	23CID3203E	ARCHITECTING HIGHLY AVAILABLE AND SCALABLE CLOUD ENVIRONMENTS	E	AHASCE	5	0	0	0	5	5	OS(1) Rule:1
663	PEC	PE-2	23CID3203R	ARCHITECTING HIGHLY AVAILABLE AND SCALABLE CLOUD ENVIRONMENTS	R	AHASCE	3	0	0	0	3	3	OS(1) Rule:1
664	PEC	PE-2	23DEA3202A	DATA EXPLORATION AND PREPARATION	A	DEP	5	0	0	0	5	5	
665	PEC	PE-2	23DEA3202E	DATA EXPLORATION AND PREPARATION	E	DEP	5	0	0	0	5	5	
666	PEC	PE-2	23DEA3202R	DATA EXPLORATION AND PREPARATION	R	DEP	3	0	0	0	3	3	
667	PEC	PE-2	23RAN3202A	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	A	AVAE	5	0	0	0	5	5	
668	PEC	PE-2	23RAN3202E	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	E	AVAE	5	0	0	0	5	5	
669	PEC	PE-2	23RAN3202R	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	R	AVAE	3	0	0	0	3	3	
670	PEC	PE-2	23RAN3203A	ROBOT MANIPULATION AND WHEELED MOBILE ROBOTS	A	RMWR	5	0	0	0	5	5	
671	PEC	PE-2	23RAN3203E	ROBOT MANIPULATION AND WHEELED MOBILE ROBOTS	E	RMWR	5	0	0	0	5	5	
672	PEC	PE-2	23RAN3203R	ROBOT MANIPULATION AND WHEELED MOBILE ROBOTS	R	RMWR	3	0	0	0	3	3	
673	PEC	PE-2	23IOT3203A	PRECISION AGRICULTURE	A	PA	5	0	0	0	5	5	
674	PEC	PE-2	23IOT3203E	PRECISION AGRICULTURE	E	PA	5	0	0	0	5	5	
675	PEC	PE-2	23IOT3203R	PRECISION AGRICULTURE	R	PA	3	0	0	0	3	3	
676	PEC	PE-2	23IOT3204A	SMART FARMING	A	SF	5	0	0	0	5	5	

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677	PEC	PE-2	23IOT3204E	SMART FARMING	E	SF	5	0	0	0	5	5	
678	PEC	PE-2	23IOT3204R	SMART FARMING	R	SF	3	0	0	0	3	3	
679	PEC	PE-2	23RFM3202A	ADVANCED ANTENNA DESIGN FOR WIRELESS AND 5G APPLICATIONS	A	AADWA	5	0	0	0	5	5	
680	PEC	PE-2	23RFM3202E	ADVANCED ANTENNA DESIGN FOR WIRELESS AND 5G APPLICATIONS	E	AADWA	5	0	0	0	5	5	
681	PEC	PE-2	23RFM3202R	ADVANCED ANTENNA DESIGN FOR WIRELESS AND 5G APPLICATIONS	R	AADWA	3	0	0	0	3	3	
682	PEC	PE-2	23ASS3202A	INTRODUCTION TO INTELLIGENT DRONES	A	IID	5	0	0	0	5	5	
683	PEC	PE-2	23ASS3202E	INTRODUCTION TO INTELLIGENT DRONES	E	IID	5	0	0	0	5	5	
684	PEC	PE-2	23ASS3202R	INTRODUCTION TO INTELLIGENT DRONES	R	IID	3	0	0	0	3	3	
685	PEC	PE-2	23ASS3203A	AI AND IOT FOR AUTONOMOUS VEHICLE	A	AIAV	5	0	0	0	5	5	
686	PEC	PE-2	23ASS3203E	AI AND IOT FOR AUTONOMOUS VEHICLE	E	AIAV	5	0	0	0	5	5	
687	PEC	PE-2	23ASS3203R	AI AND IOT FOR AUTONOMOUS VEHICLE	R	AIAV	3	0	0	0	3	3	
688	PEC	PE-2	23AEA3202A	AUTOTRONICS	A	AT	5	0	0	0	5	5	ELM(1) Rule:1
689	PEC	PE-2	23AEA3202E	AUTOTRONICS	E	AT	5	0	0	0	5	5	ELM(1) Rule:1
690	PEC	PE-2	23AEA3202R	AUTOTRONICS	R	AT	3	0	0	0	3	3	ELM(1) Rule:1
691	PEC	PE-2	23AEA3203A	AUTOMOTIVE POLLUTION AND ITS CONTROL	A	APC	5	0	0	0	5	5	ELM(1) Rule:1
692	PEC	PE-2	23AEA3203E	AUTOMOTIVE POLLUTION AND ITS CONTROL	E	APC	5	0	0	0	5	5	ELM(1) Rule:1
693	PEC	PE-2	23AEA3203R	AUTOMOTIVE POLLUTION AND ITS CONTROL	R	APC	3	0	0	0	3	3	ELM(1) Rule:1
694	PEC	PE-2	23SMF3202A	ADVANCED MATERIALS MANUFACTURING & TESTING	A	AMMT	5	0	0	0	5	5	
695	PEC	PE-2	23SMF3202E	ADVANCED MATERIALS MANUFACTURING & TESTING	E	AMMT	5	0	0	0	5	5	
696	PEC	PE-2	23SMF3202R	ADVANCED MATERIALS MANUFACTURING & TESTING	R	AMMT	3	0	0	0	3	3	
697	PEC	PE-2	23SMF3203A	MODERN MANUFACTURING PROCESSES	A	MMP	5	0	0	0	5	5	
698	PEC	PE-2	23SMF3203E	MODERN MANUFACTURING PROCESSES	E	MMP	5	0	0	0	5	5	
699	PEC	PE-2	23SMF3203R	MODERN MANUFACTURING PROCESSES	R	MMP	3	0	0	0	3	3	

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700	PEC	PE-2	23SGT3202A	DISTRIBUTION SYSTEM PRACTICES	A	DSP	5	0	0	0	5	5	
701	PEC	PE-2	23SGT3202E	DISTRIBUTION SYSTEM PRACTICES	E	DSP	5	0	0	0	5	5	
702	PEC	PE-2	23SGT3202R	DISTRIBUTION SYSTEM PRACTICES	R	DSP	3	0	0	0	3	3	
703	PEC	PE-2	23SGT3203A	MICROGRID DYNAMICS AND CONTROL	A	MDC	5	0	0	0	5	5	
704	PEC	PE-2	23SGT3203E	MICROGRID DYNAMICS AND CONTROL	E	MDC	5	0	0	0	5	5	
705	PEC	PE-2	23SGT3203R	MICROGRID DYNAMICS AND CONTROL	R	MDC	3	0	0	0	3	3	
706	PEC	PE-2	23GTE3202A	INTELLIGENT TRANSPORTATION SYSTEMS	A	ITS	5	0	0	0	5	5	SM(1) Rule:1
707	PEC	PE-2	23GTE3202E	INTELLIGENT TRANSPORTATION SYSTEMS	E	ITS	5	0	0	0	5	5	SM(1) Rule:1
708	PEC	PE-2	23GTE3202R	INTELLIGENT TRANSPORTATION SYSTEMS	R	ITS	3	0	0	0	3	3	SM(1) Rule:1
709	PEC	PE-2	23GTE3203A	GROUND IMPROVEMENT TECHNIQUES	A	GIT	5	0	0	0	5	5	SM(1) Rule:1
710	PEC	PE-2	23GTE3203E	GROUND IMPROVEMENT TECHNIQUES	E	GIT	5	0	0	0	5	5	SM(1) Rule:1
711	PEC	PE-2	23GTE3203R	GROUND IMPROVEMENT TECHNIQUES	R	GIT	3	0	0	0	3	3	SM(1) Rule:1
712	PEC	PE-2	23SCI3202A	SPATIAL COMPUTING FOR MULTIPLAYER GAMES	A	SCMG	5	0	0	0	5	5	
713	PEC	PE-2	23SCI3202E	SPATIAL COMPUTING FOR MULTIPLAYER GAMES	E	SCMG	5	0	0	0	5	5	
714	PEC	PE-2	23SCI3202R	SPATIAL COMPUTING FOR MULTIPLAYER GAMES	R	SCMG	3	0	0	0	3	3	
715	PEC	PE-2	23CPD3202A	REACT NATIVE FOR ANDROID AND IOS DEVELOPMENT	A	RNA	5	0	0	0	5	5	
716	PEC	PE-2	23CPD3202E	REACT NATIVE FOR ANDROID AND IOS DEVELOPMENT	E	RNA	5	0	0	0	5	5	
717	PEC	PE-2	23CPD3202R	REACT NATIVE FOR ANDROID AND IOS DEVELOPMENT	R	RNA	3	0	0	0	3	3	
718	PEC	PE-2	23CPD3203A	FRAMEWORK BASED CROSS PLATFORM APP DEVELOPMENT	A	FBCPD	5	0	0	0	5	5	
719	PEC	PE-2	23CPD3203E	FRAMEWORK BASED CROSS PLATFORM APP DEVELOPMENT	E	FBCPD	5	0	0	0	5	5	
720	PEC	PE-2	23CPD3203R	FRAMEWORK BASED CROSS PLATFORM APP DEVELOPMENT	R	FBCPD	3	0	0	0	3	3	
721	PEC	PE-2	23GDU3202A	UX DESIGN	A	UD	5	0	0	0	5	5	GN(1) Rule:1
722	PEC	PE-2	23GDU3202E	UX DESIGN	E	UD	5	0	0	0	5	5	GN(1) Rule:1

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723	PEC	PE-2	23GDU3202R	UX DESIGN	R	UD	3	0	0	0	3	3	GN(1) Rule:1
724	PEC	PE-2	23MBT3202A	VIROLOGY	A	VR	5	0	0	0	5	5	RACT(1) Rule:1
725	PEC	PE-2	23MBT3202E	VIROLOGY	E	VR	5	0	0	0	5	5	RACT(1) Rule:1
726	PEC	PE-2	23MBT3202R	VIROLOGY	R	VR	3	0	0	0	3	3	RACT(1) Rule:1
727	PEC	PE-2	23MBT3203A	NANOBIOTECHNOLOGY	A	NBT	5	0	0	0	5	5	RACT(1) Rule:1
728	PEC	PE-2	23MBT3203E	NANOBIOTECHNOLOGY	E	NBT	5	0	0	0	5	5	RACT(1) Rule:1
729	PEC	PE-2	23MBT3203R	NANOBIOTECHNOLOGY	R	NBT	3	0	0	0	3	3	RACT(1) Rule:1
730	PEC	PE-2	23GEG3202A	MOLECULAR EXPRESSION TECHNOLOGY	A	MET	5	0	0	0	5	5	
731	PEC	PE-2	23GEG3202E	MOLECULAR EXPRESSION TECHNOLOGY	E	MET	5	0	0	0	5	5	
732	PEC	PE-2	23GEG3202R	MOLECULAR EXPRESSION TECHNOLOGY	R	MET	3	0	0	0	3	3	
733	PEC	PE-2	23GEG3203A	TRANSGENIC TECHNOLOGY	A	TT	5	0	0	0	5	5	
734	PEC	PE-2	23GEG3203E	TRANSGENIC TECHNOLOGY	E	TT	5	0	0	0	5	5	
735	PEC	PE-2	23GEG3203R	TRANSGENIC TECHNOLOGY	R	TT	3	0	0	0	3	3	
736	PEC	PE-2	23GET3202A	WIND AND ENERGY STORAGE TECHNOLOGIES	A	WEST	5	0	0	0	5	5	EPE(1) Rule:1
737	PEC	PE-2	23GET3202E	WIND AND ENERGY STORAGE TECHNOLOGIES	E	WEST	5	0	0	0	5	5	EPE(1) Rule:1
738	PEC	PE-2	23GET3202R	WIND AND ENERGY STORAGE TECHNOLOGIES	R	WEST	3	0	0	0	3	3	EPE(1) Rule:1
739	PEC	PE-2	23GET3203A	ENERGY ECONOMICS AND POLICY	A	EEP	5	0	0	0	5	5	EPE(1) Rule:1
740	PEC	PE-2	23GET3203E	ENERGY ECONOMICS AND POLICY	E	EEP	5	0	0	0	5	5	EPE(1) Rule:1
741	PEC	PE-2	23GET3203R	ENERGY ECONOMICS AND POLICY	R	EEP	3	0	0	0	3	3	EPE(1) Rule:1
742	PEC	PE-2	23ASS3205A	AUTONOMOUS VEHICLE ECU DESIGN WITH AUTOSAR	A	AVECUDA	3	0	4	0	5	7	
743	PEC	PE-2	23ASS3205E	AUTONOMOUS VEHICLE ECU DESIGN WITH AUTOSAR	E	AVECUDA	3	0	4	0	5	7	
744	PEC	PE-2	23ASS3205R	AUTONOMOUS VEHICLE ECU DESIGN WITH AUTOSAR	R	AVECUDA	2	0	2	0	3	4	
745	PEC	PE-3	23ASS3309A	AUTONOMOUS ELECTRIC MOBILITY - SYSTEMS AND APPLICATIONS	A	AAAV	4	0	4	4	7	12	

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746	PEC	PE-3	23ASS3309E	AUTONOMOUS ELECTRIC MOBILITY - SYSTEMS AND APPLICATIONS	E	AAAV	4	0	4	4	7	12	
747	PEC	PE-3	23ASS3309R	AUTONOMOUS ELECTRIC MOBILITY - SYSTEMS AND APPLICATIONS	R	AAAV	3	0	2	4	5	9	
748	PEC	PE-3	23GET3304A	GRID INTEGRATION OF RENEWABLE ENERGY SOURCES	A	GIRES	4	0	4	4	7	12	EPE(1) Rule:1
749	PEC	PE-3	23GET3304E	GRID INTEGRATION OF RENEWABLE ENERGY SOURCES	E	GIRES	4	0	4	4	7	12	EPE(1) Rule:1
750	PEC	PE-3	23GET3304R	GRID INTEGRATION OF RENEWABLE ENERGY SOURCES	R	GIRES	3	0	2	4	5	9	EPE(1) Rule:1
751	PEC	PE-3	23GEG3304A	MOLECULAR MARKERS AND DIAGNOSTICS	A	MMD	4	0	4	4	7	12	
752	PEC	PE-3	23GEG3304E	MOLECULAR MARKERS AND DIAGNOSTICS	E	MMD	4	0	4	4	7	12	
753	PEC	PE-3	23GEG3304R	MOLECULAR MARKERS AND DIAGNOSTICS	R	MMD	3	0	2	4	5	9	
754	PEC	PE-3	23MBT3304A	HEALTHCARE BIOTECHNOLOGY	A	HBT	4	0	4	4	7	12	RACT(1) Rule:1
755	PEC	PE-3	23MBT3304E	HEALTHCARE BIOTECHNOLOGY	E	HBT	4	0	4	4	7	12	RACT(1) Rule:1
756	PEC	PE-3	23MBT3304R	HEALTHCARE BIOTECHNOLOGY	R	HBT	3	0	2	4	5	9	RACT(1) Rule:1
757	PEC	PE-3	23GDU3303A	AR & VR APPLICATION DEVELOPMENT	A	AR&VR	4	0	4	4	7	12	GN(1) Rule:1
758	PEC	PE-3	23GDU3303E	AR & VR APPLICATION DEVELOPMENT	E	AR&VR	4	0	4	4	7	12	GN(1) Rule:1
759	PEC	PE-3	23GDU3303R	AR & VR APPLICATION DEVELOPMENT	R	AR&VR	3	0	2	4	5	9	GN(1) Rule:1
760	PEC	PE-3	23CPD3304A	SECURE MOBILE APPLICATION DEVELOPMENT	A	SMAD	4	0	4	4	7	12	
761	PEC	PE-3	23CPD3304E	SECURE MOBILE APPLICATION DEVELOPMENT	E	SMAD	4	0	4	4	7	12	
762	PEC	PE-3	23CPD3304R	SECURE MOBILE APPLICATION DEVELOPMENT	R	SMAD	3	0	2	4	5	9	
763	PEC	PE-3	23SCI3303A	SPATIAL COMPUTING PLATFORMS AND DEVELOPMENT	A	SCPD	4	0	4	4	7	12	
764	PEC	PE-3	23SCI3303E	SPATIAL COMPUTING PLATFORMS AND DEVELOPMENT	E	SCPD	4	0	4	4	7	12	
765	PEC	PE-3	23SCI3303R	SPATIAL COMPUTING PLATFORMS AND DEVELOPMENT	R	SCPD	3	0	2	4	5	9	
766	PEC	PE-3	23GTE3304A	PAVEMENT MATERIALS &DESIGN	A	PMD	4	0	4	4	7	12	SM(1) Rule:1
767	PEC	PE-3	23GTE3304E	PAVEMENT MATERIALS &DESIGN	E	PMD	4	0	4	4	7	12	SM(1) Rule:1
768	PEC	PE-3	23GTE3304R	PAVEMENT MATERIALS &DESIGN	R	PMD	3	0	2	4	5	9	SM(1) Rule:1

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769	PEC	PE-3	23SGT3304A	ENERGY MANAGEMENT SYSTEMS AND SCADA	A	EMS&SCADA	4	0	4	4	7	12	
770	PEC	PE-3	23SGT3304E	ENERGY MANAGEMENT SYSTEMS AND SCADA	E	EMS&SCADA	4	0	4	4	7	12	
771	PEC	PE-3	23SGT3304R	ENERGY MANAGEMENT SYSTEMS AND SCADA	R	EMS&SCADA	3	0	2	4	5	9	
772	PEC	PE-3	23SMF3304A	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN SMART MANUFACTURING	A	SDSISM	4	0	4	4	7	12	
773	PEC	PE-3	23SMF3304E	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN SMART MANUFACTURING	E	SDSISM	4	0	4	4	7	12	
774	PEC	PE-3	23SMF3304R	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN SMART MANUFACTURING	R	SDSISM	3	0	2	4	5	9	
775	PEC	PE-3	23AEA3304A	ALTERNATE DRIVES, TRACTION AND CONTROLS	A	ADTC	4	0	4	4	7	12	ELM(1) Rule:1
776	PEC	PE-3	23AEA3304E	ALTERNATE DRIVES, TRACTION AND CONTROLS	E	ADTC	4	0	4	4	7	12	ELM(1) Rule:1
777	PEC	PE-3	23AEA3304R	ALTERNATE DRIVES, TRACTION AND CONTROLS	R	ADTC	3	0	2	4	5	9	ELM(1) Rule:1
778	PEC	PE-3	23ASS3304A	APPLIED DEEP LEARNING FOR AUTONOMOUS SYSTEMS	A	ADLAS	4	0	4	4	7	12	
779	PEC	PE-3	23ASS3304E	APPLIED DEEP LEARNING FOR AUTONOMOUS SYSTEMS	E	ADLAS	4	0	4	4	7	12	
780	PEC	PE-3	23ASS3304R	APPLIED DEEP LEARNING FOR AUTONOMOUS SYSTEMS	R	ADLAS	3	0	2	4	5	9	
781	PEC	PE-3	23RFM3303A	MODERN RADAR SYSTEMS & NAVIGATIONAL AIDS	A	MRSNA	4	0	4	4	7	12	
782	PEC	PE-3	23RFM3303E	MODERN RADAR SYSTEMS & NAVIGATIONAL AIDS	E	MRSNA	4	0	4	4	7	12	
783	PEC	PE-3	23RFM3303R	MODERN RADAR SYSTEMS & NAVIGATIONAL AIDS	R	MRSNA	3	0	2	4	5	9	
784	PEC	PE-3	23RAN3304A	ADVANCED ROBOTICS	A	AR	4	0	4	4	7	12	
785	PEC	PE-3	23RAN3304E	ADVANCED ROBOTICS	E	AR	4	0	4	4	7	12	
786	PEC	PE-3	23RAN3304R	ADVANCED ROBOTICS	R	AR	3	0	2	4	5	9	
787	PEC	PE-3	23DEA3303A	BIG DATA TECHNOLOGIES	A	BDT	4	0	4	4	7	12	
788	PEC	PE-3	23DEA3303E	BIG DATA TECHNOLOGIES	E	BDT	4	0	4	4	7	12	
789	PEC	PE-3	23DEA3303R	BIG DATA TECHNOLOGIES	R	BDT	3	0	2	4	5	9	
790	PEC	PE-3	23SMD3303A	CONTINUOUS DELIVERY & DEVOPS	A	CDD	4	0	4	4	7	12	
791	PEC	PE-3	23SMD3303E	CONTINUOUS DELIVERY & DEVOPS	E	CDD	4	0	4	4	7	12	

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792	PEC	PE-3	23SMD3303R	CONTINUOUS DELIVERY & DEVOPS	R	CDD	3	0	2	4	5	9	
793	PEC	PE-3	23EME3304A	CHARGING STATIONS FOR ELECTRIC VEHICLES	A	CSEV	4	0	4	4	7	12	ELM(1) Rule:1
794	PEC	PE-3	23EME3304E	CHARGING STATIONS FOR ELECTRIC VEHICLES	E	CSEV	4	0	4	4	7	12	ELM(1) Rule:1
795	PEC	PE-3	23EME3304R	CHARGING STATIONS FOR ELECTRIC VEHICLES	R	CSEV	3	0	2	4	5	9	ELM(1) Rule:1
796	PEC	PE-3	23STE3304A	BRIDGE ENGINEERING	A	BE	4	0	4	4	7	12	EM(1) Rule:1
797	PEC	PE-3	23STE3304E	BRIDGE ENGINEERING	E	BE	4	0	4	4	7	12	EM(1) Rule:1
798	PEC	PE-3	23STE3304R	BRIDGE ENGINEERING	R	BE	3	0	2	4	5	9	EM(1) Rule:1
799	PEC	PE-3	23ILA3304A	INDUSTRIAL DRIVES AND CONTROL	A	ID&C	4	0	4	4	7	12	
800	PEC	PE-3	23ILA3304E	INDUSTRIAL DRIVES AND CONTROL	E	ID&C	4	0	4	4	7	12	
801	PEC	PE-3	23ILA3304R	INDUSTRIAL DRIVES AND CONTROL	R	ID&C	3	0	2	4	5	9	
802	PEC	PE-3	23WRE3304A	WATER RESOURCES FIELD METHODS	A	WRFM	4	0	4	4	7	12	FMH(1) Rule:1
803	PEC	PE-3	23WRE3304E	WATER RESOURCES FIELD METHODS	E	WRFM	4	0	4	4	7	12	FMH(1) Rule:1
804	PEC	PE-3	23WRE3304R	WATER RESOURCES FIELD METHODS	R	WRFM	3	0	2	4	5	9	FMH(1) Rule:1
805	PEC	PE-3	23VLS3303A	VLSI PHYSICAL DESIGN AUTOMATION	A	VPDA	4	0	4	4	7	12	
806	PEC	PE-3	23VLS3303E	VLSI PHYSICAL DESIGN AUTOMATION	E	VPDA	4	0	4	4	7	12	
807	PEC	PE-3	23VLS3303R	VLSI PHYSICAL DESIGN AUTOMATION	R	VPDA	3	0	2	4	5	9	
808	PEC	PE-3	23IOT3305A	DEEP LEARNING	A	DL	4	0	4	4	7	12	
809	PEC	PE-3	23IOT3305E	DEEP LEARNING	E	DL	4	0	4	4	7	12	
810	PEC	PE-3	23IOT3305R	DEEP LEARNING	R	DL	3	0	2	4	5	9	
811	PEC	PE-3	23CPS3303A	CYBER PHYSICAL SYSTEMS	A	CPS	4	0	4	4	7	12	NPS(1) Rule:1
812	PEC	PE-3	23CPS3303E	CYBER PHYSICAL SYSTEMS	E	CPS	4	0	4	4	7	12	NPS(1) Rule:1
813	PEC	PE-3	23CPS3303R	CYBER PHYSICAL SYSTEMS	R	CPS	3	0	2	4	5	9	NPS(1) Rule:1
814	PEC	PE-3	23EDS3303A	EMBEDDED AND REAL-TIME SYSTEMS	A	ERTS	4	0	4	4	7	12	ESD(1) Rule:1
815	PEC	PE-3	23EDS3303E	EMBEDDED AND REAL-TIME SYSTEMS	E	ERTS	4	0	4	4	7	12	ESD(1) Rule:1

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816	PEC	PE-3	23EDS3303R	EMBEDDED AND REAL-TIME SYSTEMS	R	ERTS	3	0	2	4	5	9	ESD(1) Rule:1
817	PEC	PE-3	23EGD3304A	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN ENGINEERING DESIGN	A	SDSIED	4	0	4	4	7	12	EM(1) Rule:1
818	PEC	PE-3	23EGD3304E	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN ENGINEERING DESIGN	E	SDSIED	4	0	4	4	7	12	EM(1) Rule:1
819	PEC	PE-3	23EGD3304R	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN ENGINEERING DESIGN	R	SDSIED	3	0	2	4	5	9	EM(1) Rule:1
820	PEC	PE-3	23ECF3304A	HYBRID AND ELECTRIC VEHICLE DESIGN	A	HEVD	4	0	4	4	7	12	TD(1) Rule:1
821	PEC	PE-3	23ECF3304E	HYBRID AND ELECTRIC VEHICLE DESIGN	E	HEVD	4	0	4	4	7	12	TD(1) Rule:1
822	PEC	PE-3	23ECF3304R	HYBRID AND ELECTRIC VEHICLE DESIGN	R	HEVD	3	0	2	4	5	9	TD(1) Rule:1
823	PEC	PE-3	23IMP3303A	BIO MEDICAL SIGNAL AND IMAGE ANALYSIS	A	AMSIA	4	0	4	4	7	12	
824	PEC	PE-3	23IMP3303E	BIO MEDICAL SIGNAL AND IMAGE ANALYSIS	E	AMSIA	4	0	4	4	7	12	
825	PEC	PE-3	23IMP3303R	BIO MEDICAL SIGNAL AND IMAGE ANALYSIS	R	AMSIA	3	0	2	4	5	9	
826	PEC	PE-3	23BEW3303A	DECENTRALIZED APPLICATIONS AND DECENTRALIZED WEB	A	DADW	4	0	4	4	7	12	
827	PEC	PE-3	23BEW3303E	DECENTRALIZED APPLICATIONS AND DECENTRALIZED WEB	E	DADW	4	0	4	4	7	12	
828	PEC	PE-3	23BEW3303R	DECENTRALIZED APPLICATIONS AND DECENTRALIZED WEB	R	DADW	3	0	2	4	5	9	
829	PEC	PE-3	23CNS3303A	CONTAINER SECURITY	A	CTSY	4	0	4	4	7	12	OS(1) Rule:1
830	PEC	PE-3	23CNS3303E	CONTAINER SECURITY	E	CTSY	4	0	4	4	7	12	OS(1) Rule:1
831	PEC	PE-3	23CNS3303R	CONTAINER SECURITY	R	CTSY	3	0	2	4	5	9	OS(1) Rule:1
832	PEC	PE-3	23CSB3304A	DIGITAL FORENSICS	A	DF	4	0	4	4	7	12	NPS(1) Rule:1
833	PEC	PE-3	23CSB3304E	DIGITAL FORENSICS	E	DF	4	0	4	4	7	12	NPS(1) Rule:1
834	PEC	PE-3	23CSB3304R	DIGITAL FORENSICS	R	DF	3	0	2	4	5	9	NPS(1) Rule:1
835	PEC	PE-3	23DLA3304A	MULTI AGENT SYSTEMS	A	MAS	4	0	4	4	7	12	
836	PEC	PE-3	23DLA3304E	MULTI AGENT SYSTEMS	E	MAS	4	0	4	4	7	12	
837	PEC	PE-3	23DLA3304R	MULTI AGENT SYSTEMS	R	MAS	3	0	2	4	5	9	

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838	PEC	PE-3	23SDM3304A	SOCIAL MEDIA MARKETING ANALYTICS	A	SMMA	4	0	4	4	7	12	
839	PEC	PE-3	23SDM3304E	SOCIAL MEDIA MARKETING ANALYTICS	E	SMMA	4	0	4	4	7	12	
840	PEC	PE-3	23SDM3304R	SOCIAL MEDIA MARKETING ANALYTICS	R	SMMA	3	0	2	4	5	9	
841	PEC	PE-3	23DSB3303A	BIG DATA ANALYTICS	A	BDA	4	0	4	4	7	12	
842	PEC	PE-3	23DSB3303E	BIG DATA ANALYTICS	E	BDA	4	0	4	4	7	12	
843	PEC	PE-3	23DSB3303R	BIG DATA ANALYTICS	R	BDA	3	0	2	4	5	9	
844	PEC	PE-3	23DCS3303A	5G WIRELESS TECHNOLOGIES	A	5GWT	4	0	4	4	7	12	WC(1) Rule:1
845	PEC	PE-3	23DCS3303E	5G WIRELESS TECHNOLOGIES	E	5GWT	4	0	4	4	7	12	WC(1) Rule:1
846	PEC	PE-3	23DCS3303R	5G WIRELESS TECHNOLOGIES	R	5GWT	3	0	2	4	5	9	WC(1) Rule:1
847	PEC	PE-3	23CCF3303A	VOIP AND BROADBAND NETWORKS	A	VBN	4	0	4	4	7	12	RNW(1) Rule:1
848	PEC	PE-3	23CCF3303E	VOIP AND BROADBAND NETWORKS	E	VBN	4	0	4	4	7	12	RNW(1) Rule:1
849	PEC	PE-3	23CCF3303R	VOIP AND BROADBAND NETWORKS	R	VBN	3	0	2	4	5	9	RNW(1) Rule:1
850	PEC	PE-3	23ACI3303A	FUZZY LOGIC WITH SET THEORY	A	FLST	4	0	4	4	7	12	
851	PEC	PE-3	23ACI3303E	FUZZY LOGIC WITH SET THEORY	E	FLST	4	0	4	4	7	12	
852	PEC	PE-3	23ACI3303R	FUZZY LOGIC WITH SET THEORY	R	FLST	3	0	2	4	5	9	
853	PEC	PE-3	23ABT3203A	MACHINE LEARNING FOR PRECISION AGRICULTURE	A	MLPA	5	0	0	0	5	5	GN(1) Rule:1
854	PEC	PE-3	23ABT3203E	MACHINE LEARNING FOR PRECISION AGRICULTURE	E	MLPA	5	0	0	0	5	5	GN(1) Rule:1
855	PEC	PE-3	23ABT3203R	MACHINE LEARNING FOR PRECISION AGRICULTURE	R	MLPA	3	0	0	0	3	3	GN(1) Rule:1
856	PEC	PE-3	23ABT3304A	IMAGE PROCESSING FOR AGRICULTURAL APPLICATIONS	A	IPAA	4	0	4	4	7	12	GN(1) Rule:1
857	PEC	PE-3	23IBT3203A	BIOPROCESS ECONOMICS AND PLANT DESIGN	A	BEPD	5	0	0	0	5	5	BO(1) Rule:1
858	PEC	PE-3	23IBT3203E	BIOPROCESS ECONOMICS AND PLANT DESIGN	E	BEPD	5	0	0	0	5	5	BO(1) Rule:1
859	PEC	PE-3	23IBT3203R	BIOPROCESS ECONOMICS AND PLANT DESIGN	R	BEPD	3	0	0	0	3	3	BO(1) Rule:1
860	PEC	PE-3	23AIP3305A	GENERATIVE DEEP LEARNING	A	GDL	4	0	4	4	7	12	
861	PEC	PE-3	23AIP3305E	GENERATIVE DEEP LEARNING	E	GDL	4	0	4	4	7	12	
862	PEC	PE-3	23AIP3305R	GENERATIVE DEEP LEARNING	R	GDL	3	0	2	4	5	9	

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863	PEC	PE-3	23ADE3303A	EDGE AI ARCHITECTURES AND APPLICATIONS	A	EAIAA	4	0	4	4	7	12	OS(1) Rule:1
864	PEC	PE-3	23ADE3303E	EDGE AI ARCHITECTURES AND APPLICATIONS	E	EAIAA	4	0	4	4	7	12	OS(1) Rule:1
865	PEC	PE-3	23ADE3303R	EDGE AI ARCHITECTURES AND APPLICATIONS	R	EAIAA	3	0	2	4	5	9	OS(1) Rule:1
866	PEC	PE-3	23ALT3303A	CONVERSATIONAL AI AND CHATBOT DEVELOPMENT	A	CAICBD	4	0	4	4	7	12	
867	PEC	PE-3	23ALT3303E	CONVERSATIONAL AI AND CHATBOT DEVELOPMENT	E	CAICBD	4	0	4	4	7	12	
868	PEC	PE-3	23ALT3303R	CONVERSATIONAL AI AND CHATBOT DEVELOPMENT	R	CAICBD	3	0	2	4	5	9	
869	PEC	PE-3	23AVI3303A	OBJECT DETECTION	A	OD	4	0	4	4	7	12	
870	PEC	PE-3	23AVI3303E	OBJECT DETECTION	E	OD	4	0	4	4	7	12	
871	PEC	PE-3	23AVI3303R	OBJECT DETECTION	R	OD	3	0	2	4	5	9	
872	PEC	PE-3	23HSS3303A	HARDWARE SECURITY MECHANISMS	A	HSM	4	0	4	4	7	12	NPS(1) Rule:1
873	PEC	PE-3	23HSS3303E	HARDWARE SECURITY MECHANISMS	E	HSM	4	0	4	4	7	12	NPS(1) Rule:1
874	PEC	PE-3	23HSS3303R	HARDWARE SECURITY MECHANISMS	R	HSM	3	0	2	4	5	9	NPS(1) Rule:1
875	PEC	PE-3	23CSC3304A	CLOUD BASED HIGH PERFORMANCE COMPUTING	A	CHC	4	0	4	4	7	12	OS(1) Rule:1
876	PEC	PE-3	23CSC3304E	CLOUD BASED HIGH PERFORMANCE COMPUTING	E	CHC	4	0	4	4	7	12	OS(1) Rule:1
877	PEC	PE-3	23CSC3304R	CLOUD BASED HIGH PERFORMANCE COMPUTING	R	CHC	3	0	2	4	5	9	OS(1) Rule:1
878	PEC	PE-3	23CTM3304A	CONSTRUCTION PLANNING & SCHEDULING	A	CPS	4	0	4	4	7	12	
879	PEC	PE-3	23CTM3304E	CONSTRUCTION PLANNING & SCHEDULING	E	CPS	4	0	4	4	7	12	
880	PEC	PE-3	23CTM3304R	CONSTRUCTION PLANNING & SCHEDULING	R	CPS	3	0	2	4	5	9	
881	PEC	PE-3	23CEC3305A	CLOUD & SERVERLESS COMPUTING	A	CSC	4	0	4	4	7	12	OS(1) Rule:1
882	PEC	PE-3	23CEC3305E	CLOUD & SERVERLESS COMPUTING	E	CSC	4	0	4	4	7	12	OS(1) Rule:1
883	PEC	PE-3	23CEC3305R	CLOUD & SERVERLESS COMPUTING	R	CSC	3	0	2	4	5	9	OS(1) Rule:1
884	PEC	PE-3	23CID3304A	CLOUD INFRASTRUCTURE ARCHITECTURE AND ENGINEERING	A	CIA	4	0	4	4	7	12	OS(1) Rule:1
885	PEC	PE-3	23CID3304E	CLOUD INFRASTRUCTURE ARCHITECTURE AND ENGINEERING	E	CIA	4	0	4	4	7	12	OS(1) Rule:1

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886	PEC	PE-3	23CID3304R	CLOUD INFRASTRUCTURE ARCHITECTURE AND ENGINEERING	R	CIA	3	0	2	4	5	9	OS(1) Rule:1
887	PEC	PE-3	23CNE3304A	SOFTWARE ENGINEERING FOR CLOUD COMPUTING	A	SEC	4	0	4	4	7	12	OS(1) Rule:1
888	PEC	PE-3	23CNE3304E	SOFTWARE ENGINEERING FOR CLOUD COMPUTING	E	SEC	4	0	4	4	7	12	OS(1) Rule:1
889	PEC	PE-3	23CNE3304R	SOFTWARE ENGINEERING FOR CLOUD COMPUTING	R	SEC	3	0	2	4	5	9	OS(1) Rule:1
890	PEC	PE-3	23BMI3303A	MATERIALS FOR BIO-MEDICAL APPLICATIONS	A	MBMA	4	0	4	4	7	12	
891	PEC	PE-3	23BMI3303E	MATERIALS FOR BIO-MEDICAL APPLICATIONS	E	MBMA	4	0	4	4	7	12	
892	PEC	PE-3	23BMI3303R	MATERIALS FOR BIO-MEDICAL APPLICATIONS	R	MBMA	3	0	2	4	5	9	
893	PEC	PE-3	23BIS3304A	STRUCTURAL BIOLOGY	A	SB	4	0	4	4	7	12	
894	PEC	PE-3	23BIS3304E	STRUCTURAL BIOLOGY	E	SB	4	0	4	4	7	12	
895	PEC	PE-3	23BIS3304R	STRUCTURAL BIOLOGY	R	SB	3	0	2	4	5	9	
896	PEC	PE-3	23HDA3305A	COMPUTATIONAL NEUROSCIENCE	A	CNSE	4	0	4	4	7	12	
897	PEC	PE-3	23HDA3305E	COMPUTATIONAL NEUROSCIENCE	E	CNSE	4	0	4	4	7	12	
898	PEC	PE-3	23HDA3305R	COMPUTATIONAL NEUROSCIENCE	R	CNSE	3	0	2	4	5	9	
899	PEC	PE-4	23HDA3407M	INTRODUCTION TO GENOMIC TECHNOLOGIES	M	IGT	3	0	0	0	3	3	
900	PEC	PE-4	23BIS3405M	APPLIED BIOINFORMATICS	M	ABI	3	0	0	0	3	3	
901	PEC	PE-4	23BIS3406M	NGS SEQUENCING AND DATA ANALYSIS	M	NGSDA	3	0	0	0	3	3	
902	PEC	PE-4	23BMI3404M	NANOTECHNOLOGY AND NANOSENSORS	M	NTNS	3	0	0	0	3	3	
903	PEC	PE-4	23HDA3406M	NGS SEQUENCING AND DATA ANALYSIS	M	NGSDA	3	0	0	0	3	3	
904	PEC	PE-4	23CNE3405M	SERVERLESS COMPUTING AND EVENT-DRIVEN ARCHITECTURES	M	SCEDA	3	0	0	0	3	3	OS(1) Rule:1
905	PEC	PE-4	23CID3405M	RELIABLE CLOUD INFRASTRUCTURE: DESIGN & PROCESS	M	RID	3	0	0	0	3	3	OS(1) Rule:1
906	PEC	PE-4	23CEC3406M	ADVANCED COMPUTER ARCHITECTURE	M	ACA	3	0	0	0	3	3	OS(1) Rule:1
907	PEC	PE-4	23CEC3407M	PARALLEL ALGORITHMS	M	PA	3	0	0	0	3	3	OS(1) Rule:1
908	PEC	PE-4	23CEC3408M	CLOUD SECURITY	M	CS	3	0	0	0	3	3	OS(1) Rule:1
909	PEC	PE-4	23CEC3409M	ARCHITECTING CLOUD SOLUTIONS*	M	ACS	3	0	0	0	3	3	

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910	PEC	PE-4	23CTM3405M	CONSTRUCTION CONTRACTS	M	CC	3	0	0	0	3	3	
911	PEC	PE-4	23CTM3406M	CONSTRUCTION FORMULATION APPRAISAL	M	CFA	3	0	0	0	3	3	
912	PEC	PE-4	23CSC3405M	CLOUD-BASED GRID COMPUTING	M	CGC	3	0	0	0	3	3	OS(1) Rule:1
913	PEC	PE-4	23HSS3404M	SOFTWARE SECURITY PRINCIPLES	M	SSP	3	0	0	0	3	3	NPS(1) Rule:1
914	PEC	PE-4	23HSS3405M	SECURE CO-DESIGN METHODOLOGIES	M	SCDM	3	0	0	0	3	3	NPS(1) Rule:1
915	PEC	PE-4	23HSS3406M	HARDWARE TROJAN DETECTION AND PREVENTION	M	HTDAP	3	0	0	0	3	3	NPS(1) Rule:1
916	PEC	PE-4	23AVI3404M	VISUAL RECOGNITION AND SCENE UNDERSTANDING	M	VRASU	3	0	0	0	3	3	
917	PEC	PE-4	23AVI3405M	DEEP REINFORCEMENT LEARNING FOR VISION	M	DRLV	3	0	0	0	3	3	
918	PEC	PE-4	23ALT3404M	TEXT UNDERSTANDING	M	TUS	3	0	0	0	3	3	
919	PEC	PE-4	23ALT3405M	NATURAL LANGUAGE PROCESSING	M	NLP	3	0	0	0	3	3	
920	PEC	PE-4	23ADE3404M	EDGE AI AND 5G	M	EAI5G	3	0	0	0	3	3	OS(1) Rule:1
921	PEC	PE-4	23ADE3405M	EDGE AI SECURITY AND PROTECTION	M	EAI5P	3	0	0	0	3	3	OS(1) Rule:1
922	PEC	PE-4	23AIP3406M	COGNITIVE COMPUTING	M	CC	3	0	0	0	3	3	
923	PEC	PE-4	23AIP3407M	PERCEPTION AND COMPUTER VISION	M	PCV	3	0	0	0	3	3	
924	PEC	PE-4	23AIP3408M	MACHINE LEARNING ON CLOUD	M	MLC	3	0	0	0	3	3	
925	PEC	PE-4	23IBT3304A	ENZYME ENGINEERING	A	EE	4	0	4	4	7	12	BO(1) Rule:1
926	PEC	PE-4	23IBT3304E	ENZYME ENGINEERING	E	EE	4	0	4	4	7	12	BO(1) Rule:1
927	PEC	PE-4	23IBT3304R	ENZYME ENGINEERING	R	EE	3	0	2	4	5	9	BO(1) Rule:1
928	PEC	PE-4	23ABT3406M	DATA ACQUISITION AND COMMUNICATION SYSTEMS FOR AGRICULTURE	M	DACSA	3	0	0	0	3	3	GN(1) Rule:1
929	PEC	PE-4	23ABT3304E	IMAGE PROCESSING FOR AGRICULTURAL APPLICATIONS	E	IPAA	4	0	4	4	7	12	GN(1) Rule:1
930	PEC	PE-4	23ABT3304R	IMAGE PROCESSING FOR AGRICULTURAL APPLICATIONS	R	IPAA	3	0	2	4	5	9	GN(1) Rule:1
931	PEC	PE-4	23ACI3404M	HEURISTIC ALGORITHMS	M	HAG	3	0	0	0	3	3	
932	PEC	PE-4	23IBT3406M	FOOD TECHNOLOGY	M	FT	3	0	0	0	3	3	BO(1) Rule:1
933	PEC	PE-4	23CCF3404M	5G MOBILE AND IEEE STANDARDS	M	5GMI	3	0	0	0	3	3	RNW(1) Rule:1

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934	PEC	PE-4	23DCS3404M	OPTICAL WIRELESS COMMUNICATIONS	M	PWC	3	0	0	0	3	3	WC(1) Rule:1
935	PEC	PE-4	23DSB3404M	BIG DATA OPTIMIZATION	M	BDO	3	0	0	0	3	3	
936	PEC	PE-4	23DSB3407M	DATA ANALYTICS ON CLOUD	M	DAC	3	0	0	0	3	3	
937	PEC	PE-4	23DSB3408M	DIGITAL MEDIA ANALYTICS	M	DMA	3	0	0	0	3	3	
938	PEC	PE-4	23SDM3405M	DIGITAL MEDIA ANALYTICS	M	DMA	3	0	0	0	3	3	
939	PEC	PE-4	23SDM3406M	ETHICAL SOCIAL MEDIA	M	ESM	3	0	0	0	3	3	
940	PEC	PE-4	23DLA3405M	BLOCKCHAIN ANALYTICS	M	BCA	3	0	0	0	3	3	
941	PEC	PE-4	23DLA3406M	CRYPTOCURRENCY AND BLOCKCHAIN TECHNOLOGY	M	CBT	3	0	0	0	3	3	
942	PEC	PE-4	23CSB3405M	DATABASE SYSTEM AND SECURITY	M	DSS	3	0	0	0	3	3	NPS(1) Rule:1
943	PEC	PE-4	23CSB3406M	PROGRAMMING FOR SMART CONTRACTS	M	PSC	3	0	0	0	3	3	NPS(1) Rule:1
944	PEC	PE-4	23CSB3407M	CLOUD SECURITY	M	CS	3	0	0	0	3	3	NPS(1) Rule:1
945	PEC	PE-4	23CNS3404M	MICROSERVICES SECURITY	M	MSS	3	0	0	0	3	3	OS(1) Rule:1
946	PEC	PE-4	23CNS3405M	INFRASTRUCTURE AS CODE SECURITY	M	ISACS	3	0	0	0	3	3	OS(1) Rule:1
947	PEC	PE-4	23CNS3406M	IDENTITY AND ACCESS MANAGEMENT IN CLOUD NATIVE ENVIRONMENTS	M	IAMCNE	3	0	0	0	3	3	OS(1) Rule:1
948	PEC	PE-4	23CNS3407M	NETWORK SECURITY IN CLOUD NATIVE ARCHITECTURES	M	NSCNA	3	0	0	0	3	3	OS(1) Rule:1
949	PEC	PE-4	23BEW3404M	BLOCKCHAIN PLATFORMS AND PROTOCOLS	M	BCPAP	3	0	0	0	3	3	
950	PEC	PE-4	23BEW3405M	BLOCKCHAIN SECURITY	M	BCS	3	0	0	0	3	3	
951	PEC	PE-4	23BEW3406M	ORACLES AND DATA FEEDS	M	ODF	3	0	0	0	3	3	
952	PEC	PE-4	23IMP3404M	DATA VISUALIZATION	M	DV	3	0	0	0	3	3	
953	PEC	PE-4	23ECF3405M	SPECIAL PURPOSE VEHICLES	M	SPV	3	0	0	0	3	3	TD(1) Rule:1
954	PEC	PE-4	23ECF3406M	VEHICLE DYNAMICS	M	VD	3	0	0	0	3	3	TD(1) Rule:1
955	PEC	PE-4	23EGD3405M	ADVANCED VIBRATIONS	M	AV	3	0	0	0	3	3	EM(1) Rule:1
956	PEC	PE-4	23EGD3406M	MECHANICS OF COMPOSITE MATERIALS	M	MOCM	3	0	0	0	3	3	EM(1) Rule:1
957	PEC	PE-4	23EDS3404M	CLOUD ARCHITECTURE IN IOT	M	CAIOT	3	0	0	0	3	3	ESD(1) Rule:1

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958	PEC	PE-4	23CPS3404M	FOUNDATIONS OF HYBRID AND EMBEDDED SYSTEMS	M	DVP	3	0	0	0	3	3	NPS(1) Rule:1
959	PEC	PE-4	23IOT3406M	DATA VISUALIZATION TECHNIQUES	M	DVT	3	0	0	0	3	3	
960	PEC	PE-4	23DSB3406M	DIGITAL VIDEO PROCESSING	M	DVP	3	0	0	0	3	3	
961	PEC	PE-4	23VLS3404M	SYSTEM-ON-CHIP	M	SOC	3	0	0	0	3	3	
962	PEC	PE-4	23WRE3405M	URBAN WATER HYDROLOGY AND HYDRAULICS	M	UWHH	3	0	0	0	3	3	FMH(1) Rule:1
963	PEC	PE-4	23WRE3406M	ENVIRONMENTAL IMPACT ASSESSMENT AND LIFE CYCLE ANALYSES	M	EIALCA	3	0	0	0	3	3	FMH(1) Rule:1
964	PEC	PE-4	23ILA3406M	DIGITAL MANUFACTURING AND DESIGN	M	DMD	3	0	0	0	3	3	
965	PEC	PE-4	23ILA3405M	INDUSTRIAL COMMUNICATION PROTOCOLS AND CYBER SECURITY	M	ICPCS	3	0	0	0	3	3	
966	PEC	PE-4	23STE3405M	PRESTRESSED CONCRETE	M	PC	3	0	0	0	3	3	EM(1) Rule:1
967	PEC	PE-4	23STE3406M	PRECAST AND PREFABRICATED STRUCTURES	M	PPS	3	0	0	0	3	3	EM(1) Rule:1
968	PEC	PE-4	23EME3405M	INTRODUCTION TO BATTERY-MANAGEMENT SYSTEMS	M	IBMS	3	0	0	0	3	3	ELM(1) Rule:1
969	PEC	PE-4	23EME3406M	BATTERY STATE ESTIMATION ALGORITHMS FOR ELECTRIC VEHICLE	M	BSAEV	3	0	0	0	3	3	ELM(1) Rule:1
970	PEC	PE-4	23SMD3404M	SOFTWARE PROJECT MANAGEMENT	M	SPM	3	0	0	0	3	3	
971	PEC	PE-4	23SMD3405M	SOFTWARE ARCHITECTURE & DESIGN	M	SAD	3	0	0	0	3	3	
972	PEC	PE-4	23DEA3404M	DATA WAREHOUSING AND BUSINESS INTELLIGENCE	M	DWBI	3	0	0	0	3	3	
973	PEC	PE-4	23CID3406M	HYBRID CLOUD INTEGRATION AND MANAGEMENT	M	HCIM	3	0	0	0	3	3	OS(1) Rule:1
974	PEC	PE-4	23CSC3406M	CLOUD COMPUTING FOR SCIENTIFIC DISCOVERY	M	CCFSD	3	0	0	0	3	3	OS(1) Rule:1
975	PEC	PE-4	23CNE3406M	CLOUD NATIVE SOFTWARE ARCHITECTURES	M	CNSA	3	0	0	0	3	3	OS(1) Rule:1
976	PEC	PE-4	23RAN3405M	ARTIFICIAL INTELLIGENCE FOR ROBOTICS	M	AIR	3	0	0	0	3	3	
977	PEC	PE-4	23RAN3406M	HUMAN MACHINE INTERFACE & BRAIN MACHINE INTERFACE	M	HMIBMI	3	0	0	0	3	3	
978	PEC	PE-4	23IOT3407M	APPLIED MACHINE LEARNING FOR AGRICULTURE	M	AMLA	3	0	0	0	3	3	
979	PEC	PE-4	23RFM3404M	RF AND MILLIMETER-WAVE CIRCUIT DESIGN	M	RFMECD	3	0	0	0	3	3	
980	PEC	PE-4	23ASS3405M	EXPERT SYSTEMS	M	ES	3	0	0	0	3	3	

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981	PEC	PE-4	23ASS3406M	SELF-DRIVING CARS	M	SDC	3	0	0	0	3	3	
982	PEC	PE-4	23AEA3405M	VEHICLE CONTROL SYSTEMS	M	VCS	3	0	0	0	3	3	ELM(1) Rule:1
983	PEC	PE-4	23AEA3406M	AUTOMOTIVE ELECTRICAL AND ELECTRONIC SYSTEMS	M	AEES	3	0	0	0	3	3	ELM(1) Rule:1
984	PEC	PE-4	23SMF3405M	ROBOTICS & INDUSTRIAL AUTOMATION	M	RIA	3	0	0	0	3	3	
985	PEC	PE-4	23SMF3406M	MECHANICAL MEASUREMENTS AND METROLOGY	M	MMM	3	0	0	0	3	3	
986	PEC	PE-4	23SGT3405M	SMART GRID COMMUNICATION AND CYBERSECURITY	M	SGCCS	3	0	0	0	3	3	
987	PEC	PE-4	23SGT3406M	SMART METERS AND SMART CITIES	M	SMSC	3	0	0	0	3	3	
988	PEC	PE-4	23GTE3405M	URBAN TRANSPORTATION SYSTEMS PLANNING	M	UTSP	3	0	0	0	3	3	SM(1) Rule:1
989	PEC	PE-4	23GTE3406M	GEOTECHNICAL EARTHQUAKE ENGINEERING	M	BIE	3	0	0	0	3	3	SM(1) Rule:1
990	PEC	PE-4	23SCI3404M	SPATIAL AND SOCIAL IMPLICATIONS OF IMMERSIVE TECHNOLOGIES	M	SSIIT	3	0	0	0	3	3	
991	PEC	PE-4	23SCI3405M	SPATIAL AUDIO DESIGN FOR GAMES	M	SADG	3	0	0	0	3	3	
992	PEC	PE-4	23CPD3406M	META REACT NATIVE SPECIALIZATION	M	MRNS	3	0	0	0	3	3	
993	PEC	PE-4	23GDU3404M	COMPUTER GRAPHICS	M	CG	3	0	0	0	3	3	GN(1) Rule:1
994	PEC	PE-4	23GDU3405M	3D MODELLING & ANIMATION	M	3DMA	3	0	0	0	3	3	GN(1) Rule:1
995	PEC	PE-4	23CPD3405M	UX DESIGN	M	UXD	3	0	0	0	3	3	
996	PEC	PE-4	23MBT3405M	CANCER BIOLOGY	M	CB	3	0	0	0	3	3	RACT(1) Rule:1
997	PEC	PE-4	23MBT3406M	NEUROBIOLOGY	M	NB	3	0	0	0	3	3	RACT(1) Rule:1
998	PEC	PE-4	23GEG3405M	GENOMICS AND PROTEOMICS	M	GP	3	0	0	0	3	3	
999	PEC	PE-4	23GEG3406M	DNA FORENSICS	M	DNF	3	0	0	0	3	3	
1000	PEC	PE-4	23GET3405M	ENERGY MANAGEMENT AND GREEN BUILDING	M	EMGB	3	0	0	0	3	3	EPE(1) Rule:1
1001	PEC	PE-4	23GET3406M	HYDROGEN FUEL CELL TECHNOLOGY	M	HFCT	3	0	0	0	3	3	EPE(1) Rule:1
1002	PEC	PE-4	23ASS3410M	CYBERSECURITY IN AUTONOMOUS VEHICLE	M	CAV	3	0	0	0	3	3	
1003	PEC	PE-5	23ASS3511	AI DRIVEN ECU DESIGN FOR AUTONOMOUS VEHICLES	R	AEDATT	2	0	2	0	3	4	
1004	PEC	PE-5	23GET3507	AI AND IOT FOR GREEN ENERGY INTEGRATION	R	AIGEI	3	0	0	0	3	3	EPE(1) Rule:1

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1005	PEC	PE-5	23GET3508	POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS	R	PERES	3	0	0	0	3	3	EPE(1) Rule:1
1006	PEC	PE-5	23GEG3507	MICROBIAL GENETICS	R	MBG	3	0	0	0	3	3	
1007	PEC	PE-5	23GEG3508	GENE AND ENVIRONMENT	R	BI	3	0	0	0	3	3	
1008	PEC	PE-5	23MBT3507	BIOELECTRONICS & BIOSENSORS	R	BB	3	0	0	0	3	3	RACT(1) Rule:1
1009	PEC	PE-5	23MBT3508	TISSUE ENGINEERING	R	NBT	3	0	0	0	3	3	RACT(1) Rule:1
1010	PEC	PE-5	23GDU3506	PRINCIPLES OF GAME DESIGN	R	PRGD	3	0	0	0	3	3	GN(1) Rule:1
1011	PEC	PE-5	23GDU3507	BUSINESS OF GAMES & ENTREPRENEURSHIP	R	BGE	3	0	0	0	3	3	GN(1) Rule:1
1012	PEC	PE-5	23CPD3507	ADVANCED MOBILE APPLICATION DEVELOPMENT	R	AMAD	3	0	0	0	3	3	
1013	PEC	PE-5	23CPD3508	CROSS PLATFORM USER INTERFACE DESIGN	R	CPED	3	0	0	0	3	3	
1014	PEC	PE-5	23SCI3506	SPATIAL USER INTERFACE DESIGN	R	SUID	3	0	0	0	3	3	
1015	PEC	PE-5	23SCI3507	INTRODUCTION TO SPATIAL COMPUTING	R	ITSC	3	0	0	0	3	3	
1016	PEC	PE-5	23GTE3507	TRAFFIC ENGINEERING AND MANAGEMENT	R	TEM	3	0	0	0	3	3	SM(1) Rule:1
1017	PEC	PE-5	23GTE3508	DESIGN OF EARTH RETAINING STRUCTURES	R	DERS	3	0	0	0	3	3	SM(1) Rule:1
1018	PEC	PE-5	23SGT3507	INTERNET OF THINGS AND SMART GRID ANALYTICS	R	IOT&SGA	3	0	0	0	3	3	
1019	PEC	PE-5	23SGT3508	SMART GRID PROTECTION	R	SGP	3	0	0	0	3	3	
1020	PEC	PE-5	23SMF3507	MACHINE TO MACHINE COMMUNICATION	R	MMC	3	0	0	0	3	3	
1021	PEC	PE-5	23SMF3508	FLEXIBLE MANUFACTURING SYSTEMS	R	FMS	3	0	0	0	3	3	
1022	PEC	PE-5	23AEA3507	SOFT COMPUTING TECHNIQUES FOR AUTOMOTIVE APPLICATIONS	R	SCTAA	3	0	0	0	3	3	ELM(1) Rule:1
1023	PEC	PE-5	23AEA3508	AUTOMOTIVE NETWORKING AND PROTOCOLS	R	ANP	3	0	0	0	3	3	ELM(1) Rule:1
1024	PEC	PE-5	23ASS3507	LOCALIZATION & PROGRAMMING REAL-TIME AUTONOMOUS SYSTEMS	R	LPRAS	3	0	0	0	3	3	
1025	PEC	PE-5	23ASS3508	REINFORCEMENT LEARNING FOR AUTONOMOUS SYSTEM	R	RLA	3	0	0	0	3	3	
1026	PEC	PE-5	23RFM3505	SATELLITE DESIGN	R	SD	3	0	0	0	3	3	
1027	PEC	PE-5	23RAN3507	COMPUTER VISION & APPLICATIONS	R	CVA	3	0	0	0	3	3	
1028	PEC	PE-5	23CNE3508	CLOUD INFRASTRUCTURE AND VIRTUALIZATION	R	CIAV	3	0	0	0	3	3	OS(1) Rule:1

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1029	PEC	PE-5	23CSC3508	PARALLEL COMPUTING FOR SCIENTISTS USING CLOUD PLATFORMS	R	PCSCP	3	0	0	0	3	3	OS(1) Rule:1
1030	PEC	PE-5	23CSC3507	CLOUD-BASED SCALABLE COMPUTING AND BIG DATA ANALYTICS	R	CSCBD	3	0	0	0	3	3	OS(1) Rule:1
1031	PEC	PE-5	23CID3508	CLOUD DATA MANAGEMENT AND STORAGE SOLUTIONS	R	CDMSS	3	0	0	0	3	3	OS(1) Rule:1
1032	PEC	PE-5	23DEA3505R	MACHINE LEARNING ENGINEERING FOR BIG DATA	R	MLEBD	3	0	0	0	3	3	
1033	PEC	PE-5	23SMD3506	SOFTWARE RELIABILITY	R	SR	3	0	0	0	3	3	
1034	PEC	PE-5	23SMD3507	CROSS-PLATFORM USER INTERFACE DESIGN	R	CPUIF	3	0	0	0	3	3	
1035	PEC	PE-5	23EME3507	AI AND IOT FOR ELECTRIC VEHICLE	R	AIEV	3	0	0	0	3	3	ELM(1) Rule:1
1036	PEC	PE-5	23EME3508	EV SYSTEM AND WIRING DESIGN	R	ESWS	3	0	0	0	3	3	ELM(1) Rule:1
1037	PEC	PE-5	23STE3507	PRE ENGINEERING STRUCTURES	R	PES	3	0	0	0	3	3	EM(1) Rule:1
1038	PEC	PE-5	23STE3508	ADVANCED DESIGN OF REINFORCED CONCRETE STRUCTURES	R	ADRCS	3	0	0	0	3	3	EM(1) Rule:1
1039	PEC	PE-5	23ILA3507	SMART SENSORS AND SENSOR NETWORKING	R	SSSN	3	0	0	0	3	3	
1040	PEC	PE-5	23WRE3507	PHYSICO-CHEMICAL PROCESSES FOR WATER AND WASTEWATER TREATMENT	R	PCPWWT	3	0	0	0	3	3	FMH(1) Rule:1
1041	PEC	PE-5	23WRE3508	SUSTAINABLE ENGINEERING AND TECHNOLOGY	R	SET	3	0	0	0	3	3	FMH(1) Rule:1
1042	PEC	PE-5	23VLS3505	MIXED SIGNAL IC DESIGN	R	MSID	3	0	0	0	3	3	
1043	PEC	PE-5	23IOT3508	BIG DATA ANALYTICS	R	BDA	3	0	0	0	3	3	
1044	PEC	PE-5	23CPS3505	CLOUD COMPUTING FOR IOT ENGINEERS	R	CCIOTE	3	0	0	0	3	3	NPS(1) Rule:1
1045	PEC	PE-5	23CPS3506	WIRELESS SENSOR NETWORKS	R	WSN	3	0	0	0	3	3	NPS(1) Rule:1
1046	PEC	PE-5	23CPS3507	EDGE COMPUTING	R	EC	3	0	0	0	3	3	NPS(1) Rule:1
1047	PEC	PE-5	23HDA3510	GENOMIC DATA SCIENCE & CLUSTERING	R	GDSC	3	0	0	0	3	3	
1048	PEC	PE-5	23EDS3505	EDGE COMPUTING & DATA ANALYTICS IN IOT	R	ECDAI	3	0	0	0	3	3	ESD(1) Rule:1
1049	PEC	PE-5	23ILA3508	PLC PROGRAMMING & CONTROL	R	PLCPC	3	0	0	0	3	3	
1050	PEC	PE-5	23EGD3507	ADVANCED STRENGTH OF MATERIALS	R	ASM	3	0	0	0	3	3	EM(1) Rule:1

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1051	PEC	PE-5	23EGD3508	HYBRID AND ELECTRIC VEHICLE DESIGN	R	HEVD	3	0	0	0	3	3	EM(1) Rule:1
1052	PEC	PE-5	23ECF3507	THERMAL MANAGEMENT OF ELECTRIC AND ELECTRONIC SYSTEMS	R	TMEES	3	0	0	0	3	3	TD(1) Rule:1
1053	PEC	PE-5	23ECF3508	ALTERNATE ENERGY SOURCES FOR AUTOMOBILES	R	AESFA	3	0	0	0	3	3	TD(1) Rule:1
1054	PEC	PE-5	23IMP3505	MULTI MEDIA PROCESSING	R	MMP	3	0	0	0	3	3	
1055	PEC	PE-5	23IMP3506	INTRODUCTION TO QUANTUM COMPUTING	R	MMP	3	0	0	0	3	3	
1056	PEC	PE-5	23BEW3507	BLOCKCHAIN SCALABILITY AND LAYER 2 SOLUTIONS	R	BCSALS	3	0	0	0	3	3	
1057	PEC	PE-5	23BEW3508	REGULATORY LANDSCAPE AND COMPLIANCE	R	RLAC	3	0	0	0	3	3	
1058	PEC	PE-5	23BEW3509	FUTURE TRENDS IN BLOCKCHAIN AND WEB3	R	FTBCAW	3	0	0	0	3	3	
1059	PEC	PE-5	23CNS3508	MONITORING AND LOGGING FOR CLOUD NATIVE SECURITY	R	MLCNS	3	0	0	0	3	3	OS(1) Rule:1
1060	PEC	PE-5	23CNS3509	COMPLIANCE AND GOVERNANCE IN CLOUD NATIVE ENVIRONMENTS	R	CGCNE	3	0	0	0	3	3	OS(1) Rule:1
1061	PEC	PE-5	23CNS3510	SERVERLESS SECURITY	R	SLSY	3	0	0	0	3	3	OS(1) Rule:1
1062	PEC	PE-5	23CNS3511	CLOUD NATIVE SECURITY TOOLS AND SOLUTIONS	R	CNSTAS	3	0	0	0	3	3	OS(1) Rule:1
1063	PEC	PE-5	23CNS3512	FUTURE TRENDS IN CLOUD NATIVE SECURITY	R	FTCNS	3	0	0	0	3	3	OS(1) Rule:1
1064	PEC	PE-5	23CSB3508	SECURE SOFTWARE ENGINEERING	R	SSE	3	0	0	0	3	3	NPS(1) Rule:1
1065	PEC	PE-5	23CSB3509	WEB SECURITY	R	WS	3	0	0	0	3	3	NPS(1) Rule:1
1066	PEC	PE-5	23CSB3510	SECURITY GOVERNANCE & MANAGEMENT	R	SGM	3	0	0	0	3	3	NPS(1) Rule:1
1067	PEC	PE-5	23DLA3507	DISTRIBUTED LEDGER ARCHITECTURE FOR AUTOMATION	R	DLAA	3	0	0	0	3	3	
1068	PEC	PE-5	23DLA3508	PERMISSIONED DISTRIBUTED LEDGER	R	PDL	3	0	0	0	3	3	
1069	PEC	PE-5	23SDM3507	INTELLIGENT SOCIAL MEDIA MONITORING SYSTEMS	R	ISMMS	3	0	0	0	3	3	
1070	PEC	PE-5	23DSB3509	ADVANCED DATABASES	R	AD	3	0	0	0	3	3	
1071	PEC	PE-5	23DSB3510	BUSINESS ANALYTICS	R	BA	3	0	0	0	3	3	
1072	PEC	PE-5	23DSB3511	GRAPH & WEB ANALYTICS	R	GWA	3	0	0	0	3	3	
1073	PEC	PE-5	23DSB3512	DATA GOVERNANCE ON CLOUD	R	DGC	3	0	0	0	3	3	

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1074	PEC	PE-5	23DCS3505	MACHINE LEARNING FOR WIRELESS COMMUNICATION	R	MLWC	3	0	0	0	3	3	WC(1) Rule:1
1075	PEC	PE-5	23CCF3505	IP MULTIMEDIA SUB-SYSTEM & EMERGING TECHNOLOGIES	R	IMSET	3	0	0	0	3	3	RNW(1) Rule:1
1076	PEC	PE-5	23CCF3506	IT SECURITY: DEFENCE AGAINST THE DIGITAL DARK ARTS	R	IMSET	3	0	0	0	3	3	RNW(1) Rule:1
1077	PEC	PE-5	23IBT3507	MICROBIAL TECHNOLOGY	R	MBT	3	0	0	0	3	3	BO(1) Rule:1
1078	PEC	PE-5	23IBT3508	METABOLIC ENGINEERING	R	MBE	3	0	0	0	3	3	BO(1) Rule:1
1079	PEC	PE-5	23ACI3405M	SWARM INTELLIGENCE APPROCAHES	M	SIA	3	0	0	0	3	3	
1080	PEC	PE-5	23ACI3506	DATA MANIPULATION	R	DMP	3	0	0	0	3	3	
1081	PEC	PE-5	23ACI3507	REINFORCEMENT LEARNING	R	RLG	3	0	0	0	3	3	
1082	PEC	PE-5	23ACI3508	EVOLUTIONARY COMPUTATION	R	ECP	3	0	0	0	3	3	
1083	PEC	PE-5	23ABT3405M	BIOINSTRUMENTATION	M	BIM	4	0	0	0	4	4	GN(1) Rule:1
1084	PEC	PE-5	23ABT3507	MICROFLUIDICS FOR AGRICULTURAL APPLICATIONS	R	MAP	3	0	0	0	3	3	GN(1) Rule:1
1085	PEC	PE-5	23ABT3508	BIOINFORMATICS FOR AGRICULTURE	R	BIA	3	0	0	0	3	3	GN(1) Rule:1
1086	PEC	PE-5	23IBT3405M	BIOPROCESS VALIDATION AND CGMP	M	BVcGMP	3	0	0	0	3	3	BO(1) Rule:1
1087	PEC	PE-5	23AIP3509	COMPUTATIONAL EPIDEMIOLOGY	R	CE	3	0	0	0	3	3	
1088	PEC	PE-5	23AIP3510	NATURAL LANGUAGE PROCESSING	R	NLP	3	0	0	0	3	3	
1089	PEC	PE-5	23AIP3511	SPEECH PROCESSING	R	SP	2	0	2	0	3	4	
1090	PEC	PE-5	23AIP3512	DESIGN & MANAGEMENT OF DISTRIBUTED APPLICATIONS FOR AI ON CLOUD	R	DMDAAC	3	0	0	0	3	3	
1091	PEC	PE-5	23AIP3513	ARCHITECTING DEEP LEARNING WORKLOADS ON CLOUD	R	ADLWC	3	0	0	0	3	3	
1092	PEC	PE-5	23ADE3506	EDGE AI DEVELOPMENT FRAMEWORKS AND TOOLS	R	EADFT	3	0	0	0	3	3	OS(1) Rule:1
1093	PEC	PE-5	23ADE3507	EDGE AI ANALYTICS AND DATA MANAGEMENT	R	EAIADM	3	0	0	0	3	3	OS(1) Rule:1
1094	PEC	PE-5	23ADE3508	EDGE AI AND SUSTAINABILITY	R	EAIAS	3	0	0	0	3	3	OS(1) Rule:1
1095	PEC	PE-5	23ALT3506	LANGUAGE UNDERSTANDING WITH PRE-TRAINED MODELS	R	LUWPTM	3	0	0	0	3	3	
1096	PEC	PE-5	23ALT3507	LARGE LANGUAGE MODEL FOR SPEECH PROCESSING	R	LLMFSP	3	0	0	0	3	3	
1097	PEC	PE-5	23AVI3506	HUMAN COMPUTER INTERACTION	R	HCI	3	0	0	0	3	3	

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1098	PEC	PE-5	23AVI3507	OBJECT LOCALIZATION	R	OL	3	0	0	0	3	3	
1099	PEC	PE-5	23AVI3508	ADVANCED IMAGE PROCESSING AND ANALYSIS	R	AIPA	3	0	0	0	3	3	
1100	PEC	PE-5	23HSS3507	SIDE-CHANNEL ATTACKS AND COUNTERMEASURES	R	SCACM	3	0	0	0	3	3	NPS(1) Rule:1
1101	PEC	PE-5	23HSS3508	FORMAL METHODS FOR HARDWARE-SOFTWARE SECURITY	R	FMHSS	3	0	0	0	3	3	NPS(1) Rule:1
1102	PEC	PE-5	23HSS3509	TRUSTED PLATFORM MODULES AND SECURE ELEMENTS	R	TPMASE	3	0	0	0	3	3	NPS(1) Rule:1
1103	PEC	PE-5	23HSS3510	SECURE COMMUNICATION PROTOCOLS AND APIS	R	SCPA	3	0	0	0	3	3	NPS(1) Rule:1
1104	PEC	PE-5	23HSS3511	HARDWARE-SOFTWARE CO-DESIGN	R	HSCCS	3	0	0	0	3	3	NPS(1) Rule:1
1105	PEC	PE-5	23HSS3512	FUTURE TRENDS IN HARDWARE-SOFTWARE CO-DESIGN FOR SECURITY	R	FTHSCS	3	0	0	0	3	3	NPS(1) Rule:1
1106	PEC	PE-5	23CTM3507	QUALITY AND SAFETY IN CONSTRUCTION	R	QSC	3	0	0	0	3	3	
1107	PEC	PE-5	23CTM3508	GREEN BUILDING	R	GB	3	0	0	0	3	3	
1108	PEC	PE-5	23CEC3510	EDGE COMPUTING	R	EC	3	0	0	0	3	3	
1109	PEC	PE-5	23CEC3511	HIGH PERFORMANCE COMPUTING	R	HPC	3	0	0	0	3	3	
1110	PEC	PE-5	23CEC3512	DESIGN OF DISTRIBUTED APPLICATIONS ON CLOUD (DDA)	R	DDAC	3	0	0	0	3	3	
1111	PEC	PE-5	23CEC3513	CLOUD NETWORKING	R	CN	3	0	0	0	3	3	
1112	PEC	PE-5	23CID3507	CLOUD ENGINEERING	R	CE	3	0	0	0	3	3	OS(1) Rule:1
1113	PEC	PE-5	23CNE3507	CLOUD NATIVE NETWORKING AND STORAGE SYSTEMS	R	CNNSS	3	0	0	0	3	3	OS(1) Rule:1
1114	PEC	PE-5	23HDA3509	MOLECULAR MODELING AND DRUG DESIGN	R	MMDD	3	0	0	0	3	3	
1115	PEC	PE-5	23BMI3505	BIOSENSING AND BIOELECTRONICS	R	BSBE	3	0	0	0	3	3	
1116	PEC	PE-5	23BIS3507	SYSTEMS BIOLOGY	R	SSB	3	0	0	0	3	3	
1117	PEC	PE-5	23BIS3508	DATABASE MANAGEMENT SYSTEM FOR BIOLOGIST	R	DBMS	3	0	0	0	3	3	
1118	PEC	PE-5	23HDA3511	EPI GENETIC CONTROL OF GENE EXPRESSION	R	ECBI	3	0	0	0	3	3	
1119	PEC	PE-5	23SDM3508	SEARCH ENGINE OPTIMIZATION	R	SEO	3	0	0	0	3	3	
1120	PRI		23IE2040	SOCIAL INTERNSHIP	R	SIP	0	0	0	4	0	4	
1121	PRI		23IE3041	TECHNICAL INTERNSHIP	R	TIP	0	0	0	4	0	4	
1122	PRI		23IE4053A	CAPSTONE PROJECT - 1	A	CP-1	0	0	10	20	10	30	

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1123	PRI		23IE4053R	CAPSTONE PROJECT - 1	R	CP-1	0	0	8	16	8	24	
1124	PRI		23IE4054A	CAPSTONE PROJECT - 2	A	CP-2	0	0	10	20	10	30	
1125	PRI		23IE4054R	CAPSTONE PROJECT - 2	R	CP-2	0	0	8	16	8	24	
1126	PRI	PRI-CORE	23IE4042	INDUSTRIAL INTERNSHIP	R	IIP	0	0	8	16	8	24	
1127	OEC		23OECE05	DISASTER MANAGEMENT	R	RSGIS	4	0	0	0	4	4	
1128	OEC		23OEEC06	INTRODUCTION TO MEMS	R	IMEMS	4	0	0	0	4	4	
1129	OEC		23OEEC12	NANO ELECTRONICS	R	NEN	4	0	0	0	4	4	
1130	OEC		23OECE02	ENVIRONMENTAL POLLUTION CONTROL METHODS	R	EPCM	4	0	0	0	4	4	
1131	OEC		23OECE03	SOLID AND HAZARDOUS WASTE MANAGEMENT	R	SHWM	4	0	0	0	4	4	
1132	OEC		23OECE04	REMOTE SENSING & GIS	R	RSGIS	4	0	0	0	4	4	
1133	OEC		23OECE06M	EXPLORING OUR RESPONSES TO CLIMATE CHANGE	M	EORCC	4	0	0	0	4	4	
1134	OEC		23OECE08M	GEOGRAPHIC INFORMATION SYSTEMS	M	GIS	4	0	0	0	4	4	
1135	OEC		23OEME01M	ROBOTICS	M	RBT	4	0	0	0	4	4	
1136	OEC		23OEME01	ROBOTICS	R	RBT	4	0	0	0	4	4	
1137	OEC		23OEME02	MECHATRONICS	R	MCT	4	0	0	0	4	4	
1138	OEC		23OEME03M	OPERATIONS RESEARCH	M	ORS	4	0	0	0	4	4	
1139	OEC		23OEME03	OPERATIONS RESEARCH	R	ORS	4	0	0	0	4	4	
1140	OEC		23OEBT04	BIOLOGY FOR ENGINEERS	R	BFE	4	0	0	0	4	4	
1141	OEC		23OEEC08	ELECTRONIC WARFARE, EMI & EMC	R	EWEE	4	0	0	0	4	4	
1142	OEC		23OEEE01	RENEWABLE ENERGY RESOURCES	R	RER	4	0	0	0	4	4	
1143	OEC		23OEEE02	ENERGY ESTIMATION & AUDIT	R	EEA	4	0	0	0	4	4	
1144	OEC		23OEEE05M	SELF-DRIVING CARS	M	SDC	4	0	0	0	4	4	
1145	OEC		23OEEE06M	ENERGY PRODUCTION, DISTRIBUTION & SAFETY	M	EPD&S	4	0	0	0	4	4	
1146	OEC		23OECE07M	CONSTRUCTION MANAGEMENT	M	CMT	4	0	0	0	4	4	
1147	OEC		23OEEC04	SATELLITE SUB-SYSTEMS	R	SSS	4	0	0	0	4	4	
1148	OEC		23OEEC05	ML FOR ENGINEERING AND SCIENTIFIC APPLICATIONS	R	MLESA	4	0	0	0	4	4	
1149	OEC		23OEEC11	IMAGE PROCESSING	R	IMP	4	0	0	0	4	4	
1150	OEC		23OEEC07	ENERGY HARVESTING TECHNOLOGIES FOR IOT	R	EHTI	4	0	0	0	4	4	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1151	OEC		23OEIN01	FUNDAMENTALS OF IOT	R	FIOT	4	0	0	0	4	4	
1152	OEC	OE-1	23IN2101R	IOT SYSTEM DESIGN	R	IOTPA	3	0	2	0	4	5	
1153	OEC	OE-1	23ME2106R	MECHANICS OF SOLIDS	R	MOS	3	0	2	0	4	5	
1154	OEC	OE-1	23OEEC03	DATA SCIENCE: DL AND NN	R	DSAINN	4	0	0	0	4	4	
1155	OEC	OE-1	23OEEC01	WIRELESS AD-HOC NETWORKS	R	WAHN	4	0	0	0	4	4	
1156	OEC	OE-1	23EC2105R	SIGNALS & COMMUNICATION SYSTEMS	R	SCS	3	0	2	0	4	5	
1157	OEC	OE-1	23OEGN04	NATIONAL SERVICE SCHEME-1	R	NSS1	3	0	2	0	4	5	
1158	OEC	OE-1	23BT2209R	BIOCHEMICAL REACTION ENGINEERING	R	BCRE	3	0	2	0	4	5	
1159	OEC	OE-1	23OEGN01	NATIONAL CADET CORPS - 1	R	NCC1	3	0	2	0	4	5	
1160	OEC	OE-1	23OEBT01	IPR AND PATENT LAWS	R	IPR	4	0	0	0	4	4	
1161	OEC	OE-1	23OEEO03	ELECTRICAL POWER ENGINEERING	R	EPE	4	0	0	0	4	4	
1162	OEC	OE-1	23CE2208R	GEOTECHNICAL ENGINEERING	R	GTE	3	0	2	0	4	5	
1163	OEC	OE-1	23OEEO02	SWAM ROBOTICS CONTROL SYSTEMS	R	SRCS	4	0	0	0	4	4	
1164	OEC	OE-1	23ACCABT	BUSINESS TECHNOLOGY	R	BT	4	0	0	0	4	4	
1165	OEC	OE-1	22FT2212R	PROCESSING OF AQUATIC FOODS	R	PAF	3	0	2	0	4	5	
1166	OEC	OE-1	23OEDT01	INNOVATIVE PRODUCT DEVELOPMENT FOR ENTREPRENEURS	R	IPDFE	4	0	0	0	4	4	
1167	OEC	OE-2	23OEDT02	STRATEGIC FINANCIAL AND MARKETING PLANNING FOR ENTREPRENEURS	R	SFMPE	4	0	0	0	4	4	
1168	OEC	OE-2	23ACCAFA	FINANCIAL ACCOUNTING	R	FA	3	2	0	0	5	5	
1169	OEC	OE-2	23EE2207R	CONTROL SYSTEMS	R	CS	3	0	2	0	4	5	
1170	OEC	OE-2	22FT22C1R	FOOD ANALYSIS AND QUALITY ASSURANCE	R	FAQA	3	0	2	0	4	5	
1171	OEC	OE-2	23CE2209R	TRANSPORTATION ENGINEERING	R	TPE	3	0	2	0	4	5	
1172	OEC	OE-2	23BT3212	PLANT AND ANIMAL BIOTECHNOLOGY	R	PABT	3	0	2	0	4	5	
1173	OEC	OE-2	23OEBT02	BIOMATERIALS	R	BIM	4	0	0	0	4	4	
1174	OEC	OE-2	23OEGN02	NATIONAL CADET CORPS - 2	R	NCC2	3	0	2	0	4	5	
1175	OEC	OE-2	23OEGN05	NATIONAL SERVICE SCHEME-2	R	NSS2	3	0	2	0	4	5	
1176	OEC	OE-2	23EC2208R	DIGITAL COMMUNICATION	R	DC	3	0	2	0	4	5	

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1177	OEC	OE-2	23ME2116	FLUID MECHANICS & HYDRAULIC MACHINES	R	FMHM	3	0	2	0	4	5	
1178	OEC	OE-2	23IN2102	ELECTRONIC DEVICES AND INTEGRATED CIRCUITS	R	EDAIC	3	0	2	0	4	5	
1179	OEC	OE-2	23OEA02	DATA SCIENCE AND VISUALIZATION	R	DSV	4	0	0	0	4	4	
1180	OEC	OE-3	23EC3112R	DISCRETE TIME SIGNAL PROCESSING	R	DTSP	3	0	2	0	4	5	
1181	OEC	OE-3	23IN2203	WIRELESS TECHNOLOGIES FOR IOT	R	WTIOT	3	0	2	0	4	5	
1182	OEC	OE-3	23OEGN06	NATIONAL SERVICE SCHEME-3	R	NSS3	3	0	2	0	4	5	
1183	OEC	OE-3	23OEGN03	NATIONAL CADET CORPS - 3	R	NCC3	3	0	2	0	4	5	
1184	OEC	OE-3	23OEBT03	ENVIRONMENTAL BIOTECHNOLOGY	R	EBT	4	0	0	0	4	4	
1185	OEC	OE-3	23BT3213R	DOWNSTREAM PROCESSING	R	DSP	2	0	4	0	4	6	
1186	OEC	OE-3	23EE2205R	POWER ELECTRONICS	R	PES	3	0	2	0	4	5	
1187	OEC	OE-3	22FT3215R	TECHNOLOGY OF MEAT AND POULTRY	R	TMP	3	0	2	0	4	5	
1188	OEC	OE-3	23CE3109	ENVIRONMENTAL ENGINEERING	R	EVE	3	0	2	0	4	5	
1189	OEC	OE-3	23ACCAMA	MANAGEMENT ACCOUNTING	R	MA	3	2	0	0	5	5	
1190	OEC	OE-3	23ME2208	MANUFACTURING PROCESSES	R	MP	3	0	2	0	4	5	
1191	OEC	OE-3	23OEDT03	LEADERSHIP IN ENTREPRENEURIAL VENTURES	R	LEV	4	0	0	0	4	4	
1192	VAC	VAC-	23SP2101	ATHLETICS	R	ATH	0	0	0	2	0	2	
1193	VAC	VAC-	23SP2103	BADMINTON	R	BMT	0	0	0	2	0	2	
1194	VAC	VAC-	23SP2102	BASKETBALL	R	BKB	0	0	0	2	0	2	
1195	VAC	VAC-	23SP2105	CHESS	R	CHS	0	0	0	2	0	2	
1196	VAC	VAC-	23SP2104	CRICKET	R	CRKT	0	0	0	2	0	2	
1197	VAC	VAC-	23SP2108	KABADDI	R	KBD	0	0	0	2	0	2	
1198	VAC	VAC-	23SP2109	KHO-KHO	R	KHO	0	0	0	2	0	2	
1199	VAC	VAC-	23SP2111	TABLE TENNIS	R	TTS	0	0	0	2	0	2	
1200	VAC	VAC-	23SP2110	TENNIS	R	TNS	0	0	0	2	0	2	
1201	VAC	VAC-	23SP2113	THROW BALL	R	THB	0	0	0	2	0	2	
1202	VAC	VAC-	23SP2114	VOLLEYBALL	R	VOB	0	0	0	2	0	2	
1203	VAC	VAC-	23SP2116	YOGA	R	YOG	0	0	0	2	0	2	
1204	VAC	VAC-CERT	23CC3010	AWS CERTIFIED CLOUD PRACTITIONER	R	AWS-CCP	0	0	0	8	0	0	

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1205	VAC	VAC-CERT	23CC3033	GOOGLE : ASSOCIATE CLOUD ENGINEER	R	GACE	0	0	0	8	0	0	
1206	VAC	VAC-CERT	23CC3035	GOOGLE TENSORFLOW DEVELOPER CERTIFICATE	R	GTFDC	0	0	0	8	0	0	
1207	VAC	VAC-CERT	23CC3045	MICROSOFT CERTIFIED : AZURE DEVELOPER ASSOCIATE	R	MC-ADA	0	0	0	8	0	0	
1208	VAC	VAC-CERT	23CC3048	MICROSOFT CERTIFIED: AZURE DATA ENGINEER ASSOCIATE	R	MC-ADEA	0	0	0	8	0	0	
1209	VAC	VAC-CERT	23CC3050	MICROSOFT CERTIFIED: AZURE FUNDAMENTALS	R	MC-AF	0	0	0	8	0	0	
1210	VAC	VAC-CERT	23CC3060	PCAP - CERTIFIED ASSOCIATE IN PYTHON PROGRAMMING	R	PCAP	0	0	0	8	0	0	
1211	VAC	VAC-CERT	23CC3087	TABLEAU CERTIFIED DATA ANALYST	R	TAB-	0	0	0	8	0	0	
1212	AUC	AUC-CORE	22UC0009	ECOLOGY AND ENVIRONMENT	R	E&E	2	0	0	0	0	2	
1213	AUC	AUC-CORE	23UC0013	GLOBAL LOGIC BUILDING CONTEST PRACTICUM	R	GLBCP	0	0	0	2	0	2	
1214	AUC	AUC-CORE	23UC0014	GLOBAL LOGIC BUILDING CONTEST PRACTICUM	R	GLBCP	0	0	0	2	0	2	
1215	AUC	AUC-CORE	23UC0017	INDIAN KNOWLEDGE SYSTEMS: VEDIC MATHEMATICS	R	IKSVM	0	0	0	2	0	2	
1216	AUC	AUC-CORE	23UC0018	FUNDAMENTALS OF MATHEMATICS	R	FOM	3	0	0	0	0	3	
1217	AUC	AUC-CORE	23UC0008	INDIAN CONSTITUTION	R	IC	2	0	0	0	0	2	
1218	AUC	AUC-CAREER	CRTCODL2V2	CAMPUS RECRUITMENT: CODING SKILLS TRAINING - DATA STRUCTURES	R	CRT: CST-DS	0	0	0	8	0	8	
1219	AUC	AUC-CAREER	CRTCODL3V3	CAMPUS RECRUITMENT: CODING SKILLS TRAINING - ALGORITHMS	R	CRT: CST-	0	0	0	8	0	8	
1220	AUC	AUC-CAREER	CRTVQRL1V1	CAMPUS RECRUITMENT: VERBAL APTITUDE TRAINING	R	CRT: VAT	0	0	0	8	0	8	
1221	AUC	AUC-CAREER	CRTVQRL2V2	CAMPUS RECRUITMENT: QUANTITATIVE APTITUDE TRAINING	R	CRT: QAT	0	0	0	8	0	8	
1222	AUC	AUC-CAREER	CRTVQRL3V3	CAMPUS RECRUITMENT: REASONING APTITUDE TRAINING	R	CRT: RAT	0	0	0	8	0	8	
1223	AUC	AUC-CAREER	CRTCSSL1V1	CAMPUS RECRUITMENT: COMMUNICATION SKILLS TRAINING	R	CRT: CST	0	0	0	8	0	8	
1224	AUC	AUC-CAREER	CRTCSSL2V2	CAMPUS RECRUITMENT: SOFT SKILLS TRAINING	R	CRT: SST	0	0	0	8	0	8	
1225	AUC	AUC-CAREER	CRTTOLL1V1	CAMPUS RECRUITMENT: TOOL BASED TRAINING	R	CRT: TBT	0	0	0	8	0	8	
1226	AUC	AUC-CAREER	CRTTOLL2V2	CAMPUS RECRUITMENT: TOOL BASED TRAINING	R	CRT: TBT	0	0	0	8	0	8	
1227	AUC	AUC-CAREER	CRTINDL1V1	CAMPUS RECRUITMENT: INDUSTRY-SPECIFIC TRAINING	R	CRT: IST	0	0	0	8	0	8	

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1228	AUC	AUC-CAREER	CRTINDL2V2	CAMPUS RECRUITMENT: INDUSTRY-SPECIFIC TRAINING	R	CRT:IST	0	0	0	8	0	8	
1229	AUC	AUC-CAREER	CADCORL1V1	CAREER ADVANCEMENT: TRAINING IN CORE DOMAIN	R	CAD:TICD	0	0	0	8	0	8	
1230	AUC	AUC-CAREER	CADCORL2V2	CAREER ADVANCEMENT: TRAINING IN CORE DOMAIN	R	CAD:TICD	0	0	0	8	0	8	
1231	AUC	AUC-CAREER	CADUPSL1V1	CAREER ADVANCEMENT: UPSC-CIVIL SERVICES EXAM TRAINING	R	CAD:UPSC	0	0	0	8	0	8	
1232	AUC	AUC-CAREER	CADUPSL2V2	CAREER ADVANCEMENT: UPSC-CIVIL SERVICES EXAM TRAINING	R	CAD:UPSC	0	0	0	8	0	8	
1233	AUC	AUC-CAREER	CADGATL1V1	CAREER ADVANCEMENT: GATE TRAINING	R	CAD:GATE	0	0	0	8	0	8	
1234	AUC	AUC-CAREER	CADGREL1V1	CAREER ADVANCEMENT: GRE, TOEFL & IELTS TRAINING	R	CAD:GRE-	0	0	0	8	0	8	
1235	AUC	AUC-CAREER	CADCATL1V1	CAREER ADVANCEMENT: CAT, GMAT TRAINING	R	CAD:CAT-	0	0	0	8	0	8	
1236	AUC	AUC-CAREER	CADENTL1V1	CAREER ADVANCEMENT:ENTREPRENEURIAL CAREER PATHWAY TRAINING	R	CAD:ECPT	0	0	0	8	0	8	
1237	AUC	AUC-CAREER	CRTCODL1V1	CAMPUS RECRUITMENT: LOGIC BUILDING SKILLS TRAINING	R	CRT:LBST	0	0	0	8	0	8	
1238	SIL	SIL-CORE	22UC0021	SOCIAL IMMERSIVE LEARNING	R	SIL-1	0	0	0	4	1	4	
1239	SIL	SIL-CORE	22UC0022	SOCIAL IMMERSIVE LEARNING	R	SIL-2	0	0	0	4	1	4	
1240	SIL	SIL-CORE	22UC0023	SOCIAL IMMERSIVE LEARNING	R	SIL-3	0	0	0	4	1	4	
1241	MIN	MIN-CORE	23MRPA01	FUNDAMENTALS OF AGRONOMY	R	FOA	3	0	2	0	4	5	
1242	MIN	MIN-CORE	23MRPA02	INTRODUCTORY AGROMETEOROLOGY AND CLIMATE CHANGE	R	IACC	3	0	2	0	4	5	
1243	MIN	MIN-CORE	23MRPA03	GEOINFORMATICS AND NANOTECHNOLOGY FOR PRECISION FARMING	R	GNPF	3	0	2	0	4	5	
1244	MIN	MIN-CORE	23MRPA04	PROTECTED CULTIVATION AND POST-HARVEST TECHNOLOGIES	R	PCPHT	3	0	2	0	4	5	
1245	MIN	MIN-CORE	23MRAP01M	INTRODUCTION TO ANTHROPOLOGY	M	ITA	4	0	0	0	4	4	
1246	MIN	MIN-CORE	23MRAP02M	CULTURAL EVOLUTION	M	CET	4	0	0	0	4	4	
1247	MIN	MIN-CORE	23MRAP03M	HUMAN ECOLOGY AND ECOLOGICAL ANTHROPOLOGY	M	HEEA	4	0	0	0	4	4	
1248	MIN	MIN-CORE	23MRAP04M	FUNDAMENTALS IN ARCHEOLOGICAL ANTHROPOLOGY CHRONOLOGY	M	FAAC	4	0	0	0	4	4	
1249	MIN	MIN-CORE	23MRWS02	SOIL AND WATER CONSERVATION ENGINEERING	R	SWCE	3	0	2	0	4	5	

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1250	MIN	MIN-CORE	23MRWS03	IRRIGATION WATER MANAGEMENT	R	IWM	3	0	2	0	4	5	
1251	MIN	MIN-CORE	23MRWS04	RAINFED AGRICULTURE AND WATERSHED MANAGEMENT	R	RAWM	3	0	2	0	4	5	
1252	MIN	MIN-CORE	23MRID01	INTRODUCTION TO INTERIOR DESIGN	R	IID	3	0	2	0	4	5	
1253	MIN	MIN-CORE	23MRID02	SPACE PLANNING AND LAYOUT	R	SPL	3	0	2	0	4	5	
1254	MIN	MIN-CORE	23MRID03	INTERIOR MATERIAL AND FINISHES	R	IMF	3	0	2	0	4	5	
1255	MIN	MIN-CORE	23MRID04	FURNITURE AND ACCESSORIES DESIGN	R	FAD	3	0	2	0	4	5	
1256	MIN	MIN-CORE	23MRAR01	FUNDAMENTALS OF MACRO-ECONOMICS	R	FME	4	0	0	0	4	4	
1257	MIN	MIN-CORE	23MRAR02	BASICS OF ECONOMETRICS	R	BOE	4	0	0	0	4	4	
1258	MIN	MIN-CORE	23MRAR03	INTERNATIONAL RELATIONS: THEORIES AND CONCEPTS	R	IRTC	4	0	0	0	4	4	
1259	MIN	MIN-CORE	23MRAR04	BEHAVIOURAL ECONOMICS AND POLICY	R	BEP	4	0	0	0	4	4	
1260	MIN	MIN-CORE	23MRFT01	INTRODUCTION TO FOOD SCIENCE AND TECHNOLOGY	R	IFST	3	0	2	0	4	5	
1261	MIN	MIN-CORE	23MRFT02	FOOD ANALYSIS AND QUALITY ASSURANCE	R	FAQA	3	0	2	0	4	5	
1262	MIN	MIN-CORE	23MRFT03	FOOD SAFETY AND REGULATIONS	R	FSR	3	1	0	0	4	4	
1263	MIN	MIN-CORE	23MRFT04	FOOD ENGINEERING	R	FEG	3	0	2	0	4	5	
1264	MIN	MIN-CORE	23MRBA01M	ORGANIZATIONAL BEHAVIOUR	M	OBR	4	0	0	0	4	4	
1265	MIN	MIN-CORE	23MRBA02M	MARKETING MANAGEMENT	M	MMG	4	0	0	0	4	4	
1266	MIN	MIN-CORE	23MRBA03M	FINANCIAL MANAGEMENT	M	FMG	4	0	0	0	4	4	
1267	MIN	MIN-CORE	23MRBA04M	HUMAN RESOURCE MANAGEMENT	M	HRM	4	0	0	0	4	4	
1268	MIN	MIN-CORE	23MRAC01M	AI FOR BUSINESS STRATEGY	M	ABS	4	0	0	0	4	4	
1269	MIN	MIN-CORE	23MRAC02M	AI STRATEGY AND GOVERNANCE	M	ASG	4	0	0	0	4	4	
1270	MIN	MIN-CORE	23MRAC03M	SUCCESSFUL AI STRATEGIES : A CEO'S PERSPECTIVES	M	SAI	4	0	0	0	4	4	
1271	MIN	MIN-CORE	23MRAC04M	CRAFTING A COMPETITIVE ADVANTAGE	M	CCA	4	0	0	0	4	4	
1272	MIN	MIN-CORE	23MRAG01	INTRODUCTION TO GAME MATH	R	IGM	0	0	6	4	4	10	
1273	MIN	MIN-CORE	23MRAG02	DRAWING BASICS	R	DBS	0	0	6	4	4	10	
1274	MIN	MIN-CORE	23MRAG03	GRAPHIC DESIGN	R	GDS	0	0	6	4	4	10	
1275	MIN	MIN-CORE	23MRAG04	CONCEPTS OF 3D	R	C3D	0	0	6	4	4	10	
1276	MIN	MIN-CORE	23MRFM01	FILM AESTHETICS	R	FAS	0	0	6	4	4	10	

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1277	MIN	MIN-CORE	23MRFM02	SCREEN WRITING	R	SWT	0	0	6	4	4	10	
1278	MIN	MIN-CORE	23MRFM04	SOUND DESIGN	R	SDS	0	0	6	4	4	10	
1279	MIN	MIN-CORE	23MRGD01	INTRODUCTION TO GRAPHIC DESIGN	R	IGD	0	0	6	4	4	10	
1280	MIN	MIN-CORE	23MRGD02	TYPOGRAPHY	R	TPY	0	0	6	4	4	10	
1281	MIN	MIN-CORE	23MRGD03	VISUAL IDENTITY AND BRANDING	R	VIB	0	0	6	4	4	10	
1282	MIN	MIN-CORE	23MRGD04	PRINT DESIGN	R	PRDG	0	0	6	4	4	10	
1283	MIN	MIN-CORE	23MRCM01	LINEAR ALGEBRA	R	LAG	2	2	0	0	4	4	
1284	MIN	MIN-CORE	23MRCM02	ADVANCED NUMERICAL ANALYSIS	R	ANA	2	2	0	0	4	4	
1285	MIN	MIN-CORE	23MRCM03	MATHEMATICAL MODELLING	R	MML	3	0	2	0	4	5	
1286	MIN	MIN-CORE	23MRCM04	STOCHASTIC PROCESSES & OPTIMIZATION	R	SPO	2	2	0	0	4	4	
1287	MIN	MIN-CORE	23MRCM05	FUZZY MATHEMATICS AND ITS APPLICATIONS	R	FMAA	2	2	0	0	4	4	
1288	MIN	MIN-CORE	23MRPY01	BASICS OF PHARMACOLOGY	R	BOP	3	0	2	0	4	5	
1289	MIN	MIN-CORE	23MRPY02	ADVANCED PHARMACOLOGY - I	R	AP-I	3	0	2	0	4	5	
1290	MIN	MIN-CORE	23MRPY03	EXPERIMENTAL PHARMACOLOGY	R	EPC	3	0	2	0	4	5	
1291	MIN	MIN-CORE	23MRPY04	ADVANCED PHARMACOLOGY - II	R	AP-II	3	0	2	0	4	5	
1292	MIN	MIN-CORE	23MRCA01	INTRODUCTION TO CREATIVE ARTS	R	ICA	0	0	6	4	4	10	
1293	MIN	MIN-CORE	23MRCA02	DRAWING AND SKETCHING	R	DAS	0	0	6	4	4	10	
1294	MIN	MIN-CORE	23MRCA03	PAINTING	R	PNT	0	0	6	4	4	10	
1295	MIN	MIN-CORE	23MRCA04	CREATIVE WRITING	R	CWT	0	0	6	4	4	10	
1296	MIN	MIN-CORE	23MRDM01M	FUNDAMENTALS OF DIGITAL MARKETING	M	FDM	4	0	0	0	4	4	
1297	MIN	MIN-CORE	23MRDM02M	SOCIAL MEDIA MARKETING	M	SMM	4	0	0	0	4	4	
1298	MIN	MIN-CORE	23MRDM03M	SEARCH ENGINE OPTIMIZATION	M	SEO	4	0	0	0	4	4	
1299	MIN	MIN-CORE	23MRDM04M	ARTIFICIAL INTELLIGENCE IN MARKETING	M	AIM	4	0	0	0	4	4	
1300	MIN	MIN-CORE	23MRFA01M	FOUNDATIONS AND APPLICATIONS OF FINANCIAL TECHNOLOGY	M	AFT	4	0	0	0	4	4	
1301	MIN	MIN-CORE	23MRFA02M	DECENTRALISED FINANCE: THE FUTURE OF FINANCE	M	DFFF	4	0	0	0	4	4	
1302	MIN	MIN-CORE	23MRFA03M	FINTECH INNOVATIONS	M	FIV	4	0	0	0	4	4	
1303	MIN	MIN-CORE	23MRFA04M	USING MACHINE LEARNING IN TRADING AND FINANCE	M	ML	4	0	0	0	4	4	

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1304	MIN	MIN-CORE	23MRIB01M	INTERNATIONAL BUSINESS ESSENTIALS	M	IBET	4	0	0	0	4	4	
1305	MIN	MIN-CORE	23MRIB02M	INTERNATIONAL BUSINESS ENVIRONMENT	M	IBEV	4	0	0	0	4	4	
1306	MIN	MIN-CORE	23MRIB03M	INTERNATIONAL BUSINESS OPERATIONS	M	IBO	4	0	0	0	4	4	
1307	MIN	MIN-CORE	23MRIB04M	INTERNATIONAL BUSINESS MODELS	M	IBM	4	0	0	0	4	4	
1308	MIN	MIN-CORE	23MROB01M	ORGANIZATIONAL BEHAVIOUR	M	POM	4	0	0	0	4	4	
1309	MIN	MIN-CORE	23MROB02M	ORGANIZATIONAL BEHAVIOUR MODELS	M	OBM	4	0	0	0	4	4	
1310	MIN	MIN-CORE	23MROB03M	ORGANIZATIONAL CHANGE AND DEVELOPMENT	M	OCD	4	0	0	0	4	4	
1311	MIN	MIN-CORE	23MROB04M	LEADERSHIP IN ORGANIZATION	M	LIO	4	0	0	0	4	4	
1312	MIN	MIN-CORE	23MRIM01	APPLIED DESIGN THINKING	R	ADT	3	0	2	0	4	5	
1313	MIN	MIN-CORE	23MRIM02	BUSINESS MODEL INNOVATION	R	BMI	3	0	2	0	4	5	
1314	MIN	MIN-CORE	23MRIM03	VENTURE MANAGEMENT	R	VMT	3	0	2	0	4	5	
1315	MIN	MIN-CORE	23MRIM04	BUSINESS AND LEADERSHIP	R	BL	3	0	2	0	4	5	
1316	MIN	MIN-CORE	23MRTP01	INTRODUCTION TO TECHNOLOGICAL ENTREPRENEURSHIP	R	ITEP	3	0	2	0	4	5	
1317	MIN	MIN-CORE	23MRTP02	LEAN STARTUP LAUNCHPAD	R	LSP	3	0	2	0	4	5	
1318	MIN	MIN-CORE	23MRTP03	ENTREPRENEURSHIP AND VENTURE CAPITAL	R	EVC	3	0	2	0	4	5	
1319	MIN	MIN-CORE	23MRTP04	BUILDING AND SUSTAINING A SUCCESSFUL ENTERPRISE	R	BSSE	3	0	2	0	4	5	
1320	MIN	MIN-CORE	23MRCL01	PRINCIPLES OF COMPANIES ACT AND CORPORATE GOVERNANCE	R	PCACG	3	0	2	0	4	5	
1321	MIN	MIN-CORE	23MRCL02	MERGERS, ACQUISITIONS AND PRIVATE EQUITY	R	MAPE	3	0	2	0	4	5	
1322	MIN	MIN-CORE	23MRCL03	INSOLVENCY AND BANKRUPTCY LAW	R	IBL	3	0	2	0	4	5	
1323	MIN	MIN-CORE	23MRCL04	COMPETITION LAW AND PRACTICE	R	CLP	3	0	2	0	4	5	
1324	MIN	MIN-CORE	23MRIP01	EMERGENCE AND DEVELOPMENT OF IPR	R	EDIPR	3	0	2	0	4	5	
1325	MIN	MIN-CORE	23MRIP02	LAW OF COPYRIGHT	R	LOCR	3	0	2	0	4	5	
1326	MIN	MIN-CORE	23MRIP03	LAW OF PATENTS	R	LOPS	3	0	2	0	4	5	
1327	MIN	MIN-CORE	23MRIP04	LAW OF TRADEMARK	R	LOTM	3	0	2	0	4	5	
1328	MSDC	MIN-SDP	23MRIP05	LAW OF DESIGNS, GEOGRAPHICAL INDICATIONS AND PLANT VARIETIES	R	LODGP	0	0	6	4	4	10	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1329	MSDC	MIN-SDP	23MRCL05	COMMERCIAL CONTRACT DRAFTING	R	CCD	0	0	6	4	4	10	
1330	MSDC	MIN-SDP	23MRTP05	TECH INNOVATION PROJECT FOR ENTREPRENEURS	R	TIPFE	0	0	6	4	4	10	
1331	MSDC	MIN-SDP	23MRIM05	PROJECT INNOVATE: STRATEGIES FOR ENTREPRENEURIAL GROWTH	R	PISEG	0	0	6	4	4	10	
1332	MSDC	MIN-SDP	23MROB05	TEAM BUILDING AND COLLABORATION SKILLS FOR MANAGERS	M	TBCM	0	0	6	4	4	10	
1333	MSDC	MIN-SDP	23MRIB05	PROFESSIONAL SKILLS FOR INTERNATIONAL BUSINESS	M	PIB	0	0	6	4	4	10	
1334	MSDC	MIN-SDP	23MRFA05	TRADING ALGORITHMNS	M	TA	0	0	6	4	4	10	
1335	MSDC	MIN-SDP	23MRDM05	CONTENT MARKETING	M	CM	0	0	6	4	4	10	
1336	MSDC	MIN-SDP	23MRCA05	SCULPTURE	R	SCP	0	0	6	4	4	10	
1337	MSDC	MIN-SDP	23MRPY05	PRACTICAL PHARMACOLOGY	R	PRI	0	0	6	4	4	10	
1338	MSDC	MIN-SDP	23MRCM06	TRANSFORM TECHNIQUES FOR ENGINEERING	R	TTE	2	0	2	4	4	8	
1339	MSDC	MIN-SDP	23MRCM07	STATISTICS WITH R PROGRAMMING	R	SWRP	2	0	2	4	4	8	
1340	MSDC	MIN-SDP	23MRCM08	MATRIX COMPUTATION	R	MCT	2	0	2	4	4	8	
1341	MSDC	MIN-SDP	23MRGD05	PUBLICATION DESIGN	R	PUDG	0	0	6	4	4	10	
1342	MSDC	MIN-SDP	23MRFM05	DIGITAL PHOTOGRAPHY	R	DPG	0	0	6	4	4	10	
1343	MSDC	MIN-SDP	23MRAG05	DIGITAL ART	R	DTA	0	0	6	4	4	10	
1344	MSDC	MIN-SDP	23MRBA05M	LOGISTICS AND SUPPLY CHAIN MANAGEMENT	M	LSCM	0	0	6	4	4	10	
1345	MSDC	MIN-SDP	23MRAC05	AI APPLICATIONS FOR BUSINESS SUCCESS	M	AIA	0	0	6	4	4	10	
1346	MSDC	MIN-SDP	23MRFT05	FOOD PACKAGING TECHNOLOGY	R	FPT	2	0	2	4	4	8	
1347	MSDC	MIN-SDP	23MRAR05	SOCIAL GEOGRAPHY AND CARTOGRAPHY	R	SGC	0	0	6	4	4	10	
1348	MSDC	MIN-SDP	23MRID05	DESIGN PRESENTATION AND COMMUNICATION	R	DPC	0	0	6	4	4	10	
1349	MSDC	MIN-SDP	23MRAP05	SOCIAL CULTURE ANTHROPOLOGY	M	SCA	0	0	6	4	4	10	
1350	MSDC	MIN-SDP	23MRPA05	MODERN FARMING TECHNIQUES AND INNOVATIONS	R	AELP	0	0	6	4	4	10	
1351	SMFC	SMFC-	23ACCAPM	PERFORMANCE MANAGEMENT	R	PM	3	2	0	0	5	5	
1352	SMFC	SMFC-	22CM1206	ADVANCED COST ACCOUNTING	R	ACA	3	2	0	0	5	5	
1353	SMFC	SMFC-CORE	22CM31B5	ACCOUNTING & REPORTING STANDARDS	R	ARS	3	2	0	0	5	5	
1354	SMFC	SMFC-	23ACCATX	TAXATION	R	TXT	3	2	0	0	5	5	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1355	SMFC	SMFC-	22CM21B2	INCOME TAX LAW & PRACTICE	R	ITLP	3	2	0	0	5	5	
1356	SMFC	SMFC-CORE	22FT12C1	PRINCIPLES OF FOOD PRESERVATION	R	PFP	1	0	0	4	2	5	
1357	SMFC	SMFC-	22FT32C2R	FOOD PACKAGING TECHNOLOGY	R	FPT	1	0	0	4	2	5	
1358	SMFC	SMFC-	22FT1207R	FOOD MICROBIOLOGY	R	FMB	3	0	2	0	4	5	
1359	SMFC	SMFC-CORE	22FT2213R	BAKERY, CONFECTIONERY AND SNACKS TECHNOLOGY	R	BCST	2	0	4	0	4	6	
1360	SMFC	SMFC-CORE	22FT1104	INTRODUCTION TO FOOD SCIENCE AND TECHNOLOGY	R	IFST	3	0	2	0	4	5	
1361	SMFC	SMFC-	22FT1102	FOOD CHEMISTRY	R	FC	3	0	2	0	4	5	
1362	SMFC	SMFC-	22FT1105	FOOD BIOCHEMISTRY	R	FBC	3	0	2	0	4	5	
1363	SMFC	SMFC-CORE	22FT2109R	PROCESSING OF HORTICULTURAL PRODUCE	R	PHP	3	0	2	0	4	5	
1364	SMFC	SMFC-	22CE1201	ENGINEERING GEOLOGY	R	EGY	3	0	2	0	4	5	
1365	SMFC	SMFC-	23CE2102R	FLUID MECHANICS & HYDRAULICS	R	FMH	3	0	2	0	4	5	
1366	SMFC	SMFC-	23ME3113R	MANUFACTURING TECHNOLOGY	R	MT	2	0	2	0	3	4	
1367	SMFC	SMFC-CORE	23EC1203	BASIC ELECTRICAL AND ELECTRONIC CIRCUITS	R	BEEC	2	0	0	0	2	2	
1368	SMFC	SMFC-CORE	23EC2104R	ANALOG ELECTRONIC CIRCUIT DESIGN	R	AECD	3	0	2	2	4.5	7	
1369	SMFC	SMFC-	23EC2211R	VLSI DESIGN	R	VLSID	3	0	2	2	4.5	7	
1370	SMFC	SMFC-	23CE2103R	SURVEYING	R	SVY	3	0	2	4	5	9	
1371	SMFC	SMFC-	23CE2206	STRUCTURAL ANALYSIS	R	STA	3	1	0	0	4	4	
1372	SMFC	SMFC-	23CE2207	CONCRETE TECHNOLOGY	R	CT	3	0	2	4	5	9	
1373	SMFC	SMFC-CORE	23ME1004	WORKSHOP PRACTICES FOR ENGINEERS	R	WPE	0	0	4	0	2	4	
1374	SMFC	SMFC-CORE	23EC2209R	ELECTROMAGNETIC WAVES & TRANSMISSION LINES	R	EMWTL	3	0	0	0	3	3	
1375	SMFC	SMFC-	23EE2101	ELECTRICAL CIRCUITS	R	ELC	2	0	2	0	3	4	
1376	SMFC	SMFC-	23BT2105R	IMMUNOLOGY	R	IMM	3	0	2	0	4	5	
1377	SMFC	SMFC-	23BT2206	MOLECULAR BIOLOGY	R	MBY	3	0	0	0	3	3	
1378	SMFC	SMFC-	23BT1101	CELL BIOLOGY	R	CB	3	0	0	0	3	3	
1379	SMFC	SMFC-	23EE2102R	ELECTRICAL MACHINES	R	ELM	3	0	2	0	4	5	
1380	SMFC	SMFC-CORE	23EE2204R	ELECTRICAL POWER GENERATION, TRANSMISSION & DISTRIBUTION	R	EPGTD	2	1	0	0	3	3	
1381	SMFC	SMFC-CORE	23EE3106R	POWER SYSTEM ANALYSIS & STABILITY	R	PSAS	2	1	0	0	3	3	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1382	SMFC	SMFC-CORE	23EE3208R	POWER SYSTEM PROTECTION & CONTROL	R	PSPC	2	0	2	2	3.5	6	
1383	SMFC	SMFC-	23BT2215	PROCESS ENGINEERING PRINCIPLES	R	PEP	2	0	2	0	3	4	
1384	SMFC	SMFC-	23BT2104	MICROBIOLOGY	R	MBG	3	0	2	0	4	5	
1385	SMFC	SMFC-	23BT3214	BIOINFORMATICS	R	BI	2	0	2	0	3	4	
1386	SMFC	SMFC-CORE	23EC2210R	NETWORK PROTOCOLS AND SECURITY	R	NPS	3	0	2	0	4	5	
1387	SMFC	SMFC-	23IN3104R	REAL TIME OPERATING SYSTEMS	R	RTOS	3	0	2	0	4	5	
1388	SMFC	SMFC-	23IN3105R	EMBEDDED SYSTEMS DESIGN	R	ESD	2	0	2	0	3	4	
1389	SMFC	SMFC-	23ME3110R	HEAT TRANSFER	R	HT	3	0	2	0	4	5	
1390	SMFC	SMFC-	23ME1002	ENGINEERING GRAPHICS	R	EG	0	0	4	0	2	4	
1391	SMFC	SMFC-CORE	23ME2209R	KINEMATICS & DYNAMICS OF MACHINES	R	KDOM	3	1	2	0	5	6	
1392	SMFC	SMFC-	23ME3111R	MECHANICAL ENGINEERING DESIGN	R	MED	3	0	0	0	3	3	
1393	SMFC	SMFC-	23ME2107R	THERMODYNAMICS	R	TD	3	0	0	0	3	3	
1394	SMFC	SMFC-	23EC2106R	PROCESSORS AND CONTROLLERS	R	PRC	3	0	2	0	4	5	
1395	SMFC	SMFC-	23IN01HF	5G TECHNOLOGIES FOR IOT	R	5TAI	3	0	2	0	4	5	
1396	SMFC	SMFC-CORE	23IN02HF	DEEP LEARNING FOR COMPUTER VISION	R	DPNV	3	0	2	0	4	5	
1397	SMFC	SMFC-CORE	23IN03HF	AR & VR APPLICATION DEVELOPMENT	R	ARVRAD	3	0	2	0	4	5	
1398	SMFC	SMFC-	23IN04HF	DEVOPS FOR IOT	R	DFIOT	3	0	2	0	4	5	
1399	SMFC	SMFC-	22CM1203	DATA ANALYSIS WITH EXCEL	R	DAWE	0	0	0	4	1	4	

Category & Grouping

S#	Category	Group Name
1	MINOR	AI AND COMPETITIVE ADVANTAGE
2	MINOR	ANIMATION AND GAMING
3	MINOR	ANTHROPOLOGY
4	MINOR	ARTS
5	MINOR	BUSINESS ADMINISTRATION
6	MINOR	COMPUTATIONAL MATHEMATICS
7	MINOR	CORPORATE LAW
8	MINOR	CREATIVE ARTS
9	MINOR	DIGITAL MARKETING AND AUTOMATION
10	MINOR	FILM MAKING
11	MINOR	FINTECH AND ALGORITHMIC TRADING
12	MINOR	FOOD TECHNOLOGY
13	MINOR	GRAPHIC DESIGN
14	MINOR	INNOVATION MANAGEMENT AND ENTREPRENEURSHIP
15	MINOR	INTELLECTUAL PROPERTY LAW
16	MINOR	INTERIOR DESIGN
17	MINOR	INTERNATIONAL BUSINESS
18	MINOR	ORGANIZATIONAL BEHAVIOUR
19	MINOR	PHARMACOLOGY
20	MINOR	PRECISION AGRICULTURE
21	MINOR	TECHNOPRENEURSHIP
22	MINOR	WATER SCIENCE AND MANAGEMENT
23	DOUBLE MAJOR	SECOND MAJOR EEE FOR FIRST MAJOR AIDS / CIVIL / BT
24	DOUBLE MAJOR	SECOND MAJOR ECE FOR FIRST MAJOR AIDS
25	DOUBLE MAJOR	SECOND MAJOR ECE FOR FIRST MAJOR CIVIL / BBA / B.COM / BSC / BCA / BA
26	DOUBLE MAJOR	SECOND MAJOR IOT FOR FIRST MAJOR CSE / CSIT / EEE / ECE / AIDS
27	DOUBLE MAJOR	SECOND MAJOR ME FOR FIRST MAJOR ECE / EEE / CSE / CSIT / AIDS / BT / IOT
28	DOUBLE MAJOR	SECOND MAJOR CIVIL FOR FIRST MAJOR ECE / EEE / CSE / CSIT / AIDS / BT / IOT
29	DOUBLE MAJOR	SECOND MAJOR BT FOR FIRST MAJOR B.TECH / BBA / B.COM / BSC / BCA / BA

S#	Category	Group Name
30	DOUBLE MAJOR	SECOND MAJOR ANIMATION AND GAMING FOR FIRST MAJOR B.TECH / BBA / B.COM /
31	DOUBLE MAJOR	SECOND MAJOR BUSINESS ADMINISTRATION FOR FIRST MAJOR B.TECH / B.COM / BSC
32	DOUBLE MAJOR	SECOND MAJOR COMPUTER APPLICATIONS FOR FIRST MAJOR B.COM / BBA / BSC / BA
33	DOUBLE MAJOR	SECOND MAJOR ECONOMICS AND PUBLIC POLICY FOR FIRST MAJOR B.TECH / B.COM /
34	DOUBLE MAJOR	SECOND MAJOR FOOD TECHNOLOGY FOR FIRST MAJOR B.TECH / B.COM / BBA / BSC
35	DOUBLE MAJOR	SECOND MAJOR COMMERCE FOR FIRST MAJOR B.TECH / BBA / BSC / BCA / BA
36	SPECIALIZATION	AGRI-BIOTECHNOLOGY
37	SPECIALIZATION	AI AND AUTONOMOUS SYSTEMS
38	SPECIALIZATION	AI FOR COMPUTATIONAL INTELLIGENCE
39	SPECIALIZATION	AI SYSTEMS FOR VISUAL INTELLIGENCE
40	SPECIALIZATION	AI-DRIVEN EDGE ARCHITECTURES AND APPLICATIONS
41	SPECIALIZATION	AI-DRIVEN LANGUAGE TECHNOLOGIES
42	SPECIALIZATION	AUTOMOTIVE ELECTRONICS AND AUTOSAR
43	SPECIALIZATION	AUTOMOTIVE ENERGY ENGINEERING
44	SPECIALIZATION	BIOINFORMATICS
45	SPECIALIZATION	BLOCKCHAIN ENGINEERING FOR WEB3
46	SPECIALIZATION	CLOUD AND EDGE COMPUTING
47	SPECIALIZATION	CLOUD INFRASTRUCTURE DESIGN AND ENGINEERING?
48	SPECIALIZATION	CLOUD NATIVE SECURITY
49	SPECIALIZATION	CLOUD NATIVE SOFTWARE ENGINEERING
50	SPECIALIZATION	CLOUD-BASED SCIENTIFIC COMPUTING
51	SPECIALIZATION	COMPUTER COMMUNICATION AND 5G TECHNOLOGY
52	SPECIALIZATION	CONSTRUCTION TECHNOLOGY AND MANAGEMENT
53	SPECIALIZATION	CROSS PLATFORM DEVELOPMENT FRAMEWORKS
54	SPECIALIZATION	CYBER PHYSICAL SYSTEMS AND IOT
55	SPECIALIZATION	CYBER SECURITY AND BLOCKCHAIN TECHNOLOGY
56	SPECIALIZATION	DATA COMMUNICATIONS
57	SPECIALIZATION	DATA ENGINEERING FOR AI
58	SPECIALIZATION	DATA SCIENCE AND BIG DATA ANALYTICS
59	SPECIALIZATION	DISTRIBUTED LEDGER ANALYTICS

S#	Category	Group Name
60	SPECIALIZATION	EMBEDDED SYSTEMS
61	SPECIALIZATION	E-MOBILITY ENGINEERING
62	SPECIALIZATION	ENGINEERING DESIGN
63	SPECIALIZATION	GAME DEVELOPMENT AND UX DESIGN
64	SPECIALIZATION	GEOTECHNICAL AND TRANSPORTATION ENGINEERING
65	SPECIALIZATION	GREEN ENERGY TECHNOLOGIES
66	SPECIALIZATION	HARDWARE-SOFTWARE CO-DESIGN FOR SECURITY
67	SPECIALIZATION	HEALTHCARE DATA ANALYTICS
68	SPECIALIZATION	INDUSTRIAL AUTOMATION
69	SPECIALIZATION	INDUSTRIAL BIOTECHNOLOGY
70	SPECIALIZATION	INTELLIGENT MULTIMEDIA PROCESSING
71	SPECIALIZATION	IOT ANALYTICS
72	SPECIALIZATION	MEDICAL BIOTECHNOLOGY
73	SPECIALIZATION	ROBOTICS AND AUTOMATION
74	SPECIALIZATION	SMART GRID TECHNOLOGIES
75	SPECIALIZATION	SMART MANUFACTURING
76	SPECIALIZATION	SOCIAL AND DIGITAL MEDIA ANALYTICS
77	SPECIALIZATION	SOFTWARE MODELLING AND DEVOPS
78	SPECIALIZATION	SPATIAL COMPUTING AND IMMERSIVE TECHNOLOGIES
79	SPECIALIZATION	STRUCTURAL ENGINEERING
80	SPECIALIZATION	VERY LARGE-SCALE INTEGRATION
81	SPECIALIZATION	WATER RESOURCE AND ENVIRONMENTAL ENGINEERING
82	PROJECT	RESEARCH PROJECT
83	PROJECT	INNOVATION PROJECT
84	PROJECT	CAPSTONE PROJECT

Category & Grouping Courses

1. MINOR: AI AND COMPETITIVE ADVANTAGE

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRAC01M	AI FOR BUSINESS STRATEGY	M	ABS	4	0	0	0	4	4	
2	MIN	MIN-CORE	23MRAC02M	AI STRATEGY AND GOVERNANCE	M	ASG	4	0	0	0	4	4	
3	MIN	MIN-CORE	23MRAC03M	SUCCESSFUL AI STRATEGIES : A CEO'S PERSPECTIVES	M	SAI	4	0	0	0	4	4	
4	MIN	MIN-CORE	23MRAC04M	CRAFTING A COMPETITIVE ADVANTAGE	M	CCA	4	0	0	0	4	4	
5	MSDC	MIN-SDP	23MRAC05	AI APPLICATIONS FOR BUSINESS SUCCESS	M	AIA	0	0	6	4	4	10	

2. MINOR: ANIMATION AND GAMING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRAG01	INTRODUCTION TO GAME MATH	R	IGM	0	0	6	4	4	10	
2	MIN	MIN-CORE	23MRAG02	DRAWING BASICS	R	DBS	0	0	6	4	4	10	
3	MIN	MIN-CORE	23MRAG03	GRAPHIC DESIGN	R	GDS	0	0	6	4	4	10	
4	MIN	MIN-CORE	23MRAG04	CONCEPTS OF 3D	R	C3D	0	0	6	4	4	10	
5	MSDC	MIN-SDP	23MRAG05	DIGITAL ART	R	DTA	0	0	6	4	4	10	

3. MINOR: ANTHROPOLOGY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRAP01M	INTRODUCTION TO ANTHROPOLOGY	M	ITA	4	0	0	0	4	4	
2	MIN	MIN-CORE	23MRAP02M	CULTURAL EVOLUTION	M	CET	4	0	0	0	4	4	
3	MIN	MIN-CORE	23MRAP03M	HUMAN ECOLOGY AND ECOLOGICAL ANTHROPOLOGY	M	HEEA	4	0	0	0	4	4	
4	MIN	MIN-CORE	23MRAP04M	FUNDAMENTALS IN ARCHEOLOGICAL ANTHROPOLOGY CHRONOLOGY	M	FAAC	4	0	0	0	4	4	
5	MSDC	MIN-SDP	23MRAP05	SOCIAL CULTURE ANTHROPOLOGY	M	SCA	0	0	6	4	4	10	

4. MINOR: ARTS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRAR01	FUNDAMENTALS OF MACRO-ECONOMICS	R	FME	4	0	0	0	4	4	
2	MIN	MIN-CORE	23MRAR02	BASICS OF ECONOMETRICS	R	BOE	4	0	0	0	4	4	
3	MIN	MIN-CORE	23MRAR03	INTERNATIONAL RELATIONS: THEORIES AND CONCEPTS	R	IRTC	4	0	0	0	4	4	
4	MIN	MIN-CORE	23MRAR04	BEHAVIOURAL ECONOMICS AND POLICY	R	BEP	4	0	0	0	4	4	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
5	MSDC	MIN-SDP	23MRAR05	SOCIAL GEOGRAPHY AND CARTOGRAPHY	R	SGC	0	0	6	4	4	10	

5. MINOR: BUSINESS ADMINISTRATION

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRBA01M	ORGANIZATIONAL BEHAVIOUR	M	OBR	4	0	0	0	4	4	
2	MIN	MIN-CORE	23MRBA02M	MARKETING MANAGEMENT	M	MMG	4	0	0	0	4	4	
3	MIN	MIN-CORE	23MRBA03M	FINANCIAL MANAGEMENT	M	FMG	4	0	0	0	4	4	
4	MIN	MIN-CORE	23MRBA04M	HUMAN RESOURCE MANAGEMENT	M	HRM	4	0	0	0	4	4	
5	MSDC	MIN-SDP	23MRBA05M	LOGISTICS AND SUPPLY CHAIN MANAGEMENT	M	LSCM	0	0	6	4	4	10	

6. MINOR: COMPUTATIONAL MATHEMATICS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRCM01	LINEAR ALGEBRA	R	LAG	2	2	0	0	4	4	
2	MIN	MIN-CORE	23MRCM02	ADVANCED NUMERICAL ANALYSIS	R	ANA	2	2	0	0	4	4	
3	MIN	MIN-CORE	23MRCM03	MATHEMATICAL MODELLING	R	MML	3	0	2	0	4	5	
4	MIN	MIN-CORE	23MRCM04	STOCHASTIC PROCESSES & OPTIMIZATION	R	SPO	2	2	0	0	4	4	
5	MIN	MIN-CORE	23MRCM05	FUZZY MATHEMATICS AND ITS APPLICATIONS	R	FMAA	2	2	0	0	4	4	
6	MSDC	MIN-SDP	23MRCM06	TRANSFORM TECHNIQUES FOR ENGINEERING	R	TTE	2	0	2	4	4	8	
7	MSDC	MIN-SDP	23MRCM07	STATISTICS WITH R PROGRAMMING	R	SWRP	2	0	2	4	4	8	
8	MSDC	MIN-SDP	23MRCM08	MATRIX COMPUTATION	R	MCT	2	0	2	4	4	8	

7. MINOR: CORPORATE LAW

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRCL01	PRINCIPLES OF COMPANIES ACT AND CORPORATE GOVERNANCE	R	PCACG	3	0	2	0	4	5	
2	MIN	MIN-CORE	23MRCL02	MERGERS, ACQUISITIONS AND PRIVATE EQUITY	R	MAPE	3	0	2	0	4	5	
3	MIN	MIN-CORE	23MRCL03	INSOLVENCY AND BANKRUPTCY LAW	R	IBL	3	0	2	0	4	5	
4	MIN	MIN-CORE	23MRCL04	COMPETITION LAW AND PRACTICE	R	CLP	3	0	2	0	4	5	
5	MSDC	MIN-SDP	23MRCL05	COMMERCIAL CONTRACT DRAFTING	R	CCD	0	0	6	4	4	10	

8. MINOR: CREATIVE ARTS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRCA01	INTRODUCTION TO CREATIVE ARTS	R	ICA	0	0	6	4	4	10	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
2	MIN	MIN-CORE	23MRCA02	DRAWING AND SKETCHING	R	DAS	0	0	6	4	4	10	
3	MIN	MIN-CORE	23MRCA03	PAINTING	R	PNT	0	0	6	4	4	10	
4	MIN	MIN-CORE	23MRCA04	CREATIVE WRITING	R	CWT	0	0	6	4	4	10	
5	MSDC	MIN-SDP	23MRCA05	SCULPTURE	R	SCP	0	0	6	4	4	10	

9. MINOR: DIGITAL MARKETING AND AUTOMATION

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRDM01M	FUNDAMENTALS OF DIGITAL MARKETING	M	FDM	4	0	0	0	4	4	
2	MIN	MIN-CORE	23MRDM02M	SOCIAL MEDIA MARKETING	M	SMM	4	0	0	0	4	4	
3	MIN	MIN-CORE	23MRDM03M	SEARCH ENGINE OPTIMIZATION	M	SEO	4	0	0	0	4	4	
4	MIN	MIN-CORE	23MRDM04M	ARTIFICIAL INTELLIGENCE IN MARKETING	M	AIM	4	0	0	0	4	4	
5	MSDC	MIN-SDP	23MRDM05	CONTENT MARKETING	M	CM	0	0	6	4	4	10	

10. MINOR: FILM MAKING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRFM01	FILM AESTHETICS	R	FAS	0	0	6	4	4	10	
2	MIN	MIN-CORE	23MRFM02	SCREEN WRITING	R	SWT	0	0	6	4	4	10	
3	MIN	MIN-CORE	23MRFM04	SOUND DESIGN	R	SDS	0	0	6	4	4	10	
4	MSDC	MIN-SDP	23MRFM05	DIGITAL PHOTOGRAPHY	R	DPG	0	0	6	4	4	10	

11. MINOR: FINTECH AND ALGORITHMIC TRADING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRFA01M	FOUNDATIONS AND APPLICATIONS OF FINANCIAL TECHNOLOGY	M	AFT	4	0	0	0	4	4	
2	MIN	MIN-CORE	23MRFA02M	DECENTRALISED FINANCE: THE FUTURE OF FINANCE	M	DFFF	4	0	0	0	4	4	
3	MIN	MIN-CORE	23MRFA03M	FINTECH INNOVATIONS	M	FIV	4	0	0	0	4	4	
4	MIN	MIN-CORE	23MRFA04M	USING MACHINE LEARNING IN TRADING AND FINANCE	M	ML	4	0	0	0	4	4	
5	MSDC	MIN-SDP	23MRFA05	TRADING ALGORITHMS	M	TA	0	0	6	4	4	10	

12. MINOR: FOOD TECHNOLOGY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRFT01	INTRODUCTION TO FOOD SCIENCE AND TECHNOLOGY	R	IFST	3	0	2	0	4	5	
2	MIN	MIN-CORE	23MRFT02	FOOD ANALYSIS AND QUALITY ASSURANCE	R	FAQA	3	0	2	0	4	5	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
3	MIN	MIN-CORE	23MRFT03	FOOD SAFETY AND REGULATIONS	R	FSR	3	1	0	0	4	4	
4	MIN	MIN-CORE	23MRFT04	FOOD ENGINEERING	R	FEG	3	0	2	0	4	5	
5	MSDC	MIN-SDP	23MRFT05	FOOD PACKAGING TECHNOLOGY	R	FPT	2	0	2	4	4	8	

13. MINOR: GRAPHIC DESIGN

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRGD01	INTRODUCTION TO GRAPHIC DESIGN	R	IGD	0	0	6	4	4	10	
2	MIN	MIN-CORE	23MRGD02	TYPOGRAPHY	R	TPY	0	0	6	4	4	10	
3	MIN	MIN-CORE	23MRGD03	VISUAL IDENTITY AND BRANDING	R	VIB	0	0	6	4	4	10	
4	MIN	MIN-CORE	23MRGD04	PRINT DESIGN	R	PRDG	0	0	6	4	4	10	
5	MSDC	MIN-SDP	23MRGD05	PUBLICATION DESIGN	R	PUDG	0	0	6	4	4	10	

14. MINOR: INNOVATION MANAGEMENT AND ENTREPRENEURSHIP

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRIM01	APPLIED DESIGN THINKING	R	ADT	3	0	2	0	4	5	
2	MIN	MIN-CORE	23MRIM02	BUSINESS MODEL INNOVATION	R	BMI	3	0	2	0	4	5	
3	MIN	MIN-CORE	23MRIM03	VENTURE MANAGEMENT	R	VMT	3	0	2	0	4	5	
4	MIN	MIN-CORE	23MRIM04	BUSINESS AND LEADERSHIP	R	BL	3	0	2	0	4	5	
5	MSDC	MIN-SDP	23MRIM05	PROJECT INNOVATE: STRATEGIES FOR ENTREPRENEURIAL GROWTH	R	PISEG	0	0	6	4	4	10	

15. MINOR: INTELLECTUAL PROPERTY LAW

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRIP01	EMERGENCE AND DEVELOPMENT OF IPR	R	EDIPR	3	0	2	0	4	5	
2	MIN	MIN-CORE	23MRIP02	LAW OF COPYRIGHT	R	LOCR	3	0	2	0	4	5	
3	MIN	MIN-CORE	23MRIP03	LAW OF PATENTS	R	LOPS	3	0	2	0	4	5	
4	MIN	MIN-CORE	23MRIP04	LAW OF TRADEMARK	R	LOTM	3	0	2	0	4	5	
5	MSDC	MIN-SDP	23MRIP05	LAW OF DESIGNS, GEOGRAPHICAL INDICATIONS AND PLANT VARIETIES	R	LODGP	0	0	6	4	4	10	

16. MINOR: INTERIOR DESIGN

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRID01	INTRODUCTION TO INTERIOR DESIGN	R	IID	3	0	2	0	4	5	
2	MIN	MIN-CORE	23MRID02	SPACE PLANNING AND LAYOUT	R	SPL	3	0	2	0	4	5	
3	MIN	MIN-CORE	23MRID03	INTERIOR MATERIAL AND FINISHES	R	IMF	3	0	2	0	4	5	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
4	MIN	MIN-CORE	23MRID04	FURNITURE AND ACCESSORIES DESIGN	R	FAD	3	0	2	0	4	5	
5	MSDC	MIN-SDP	23MRID05	DESIGN PRESENTATION AND COMMUNICATION	R	DPC	0	0	6	4	4	10	

17. MINOR: INTERNATIONAL BUSINESS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRIB01M	INTERNATIONAL BUSINESS ESSENTIALS	M	IBET	4	0	0	0	4	4	
2	MIN	MIN-CORE	23MRIB02M	INTERNATIONAL BUSINESS ENVIRONMENT	M	IBEV	4	0	0	0	4	4	
3	MIN	MIN-CORE	23MRIB03M	INTERNATIONAL BUSINESS OPERATIONS	M	IBO	4	0	0	0	4	4	
4	MIN	MIN-CORE	23MRIB04M	INTERNATIONAL BUSINESS MODELS	M	IBM	4	0	0	0	4	4	
5	MSDC	MIN-SDP	23MRIB05	PROFESSIONAL SKILLS FOR INTERNATIONAL BUSINESS	M	PIB	0	0	6	4	4	10	

18. MINOR: ORGANIZATIONAL BEHAVIOUR

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MROB01M	ORGANIZATIONAL BEHAVIOUR	M	POM	4	0	0	0	4	4	
2	MIN	MIN-CORE	23MROB02M	ORGANIZATIONAL BEHAVIOUR MODELS	M	OBM	4	0	0	0	4	4	
3	MIN	MIN-CORE	23MROB03M	ORGANIZATIONAL CHANGE AND DEVELOPMENT	M	OCD	4	0	0	0	4	4	
4	MIN	MIN-CORE	23MROB04M	LEADERSHIP IN ORGANIZATION	M	LIO	4	0	0	0	4	4	
5	MSDC	MIN-SDP	23MROB05	TEAM BUILDING AND COLLABORATION SKILLS FOR MANAGERS	M	TBCM	0	0	6	4	4	10	

19. MINOR: PHARMACOLOGY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRPY01	BASICS OF PHARMACOLOGY	R	BOP	3	0	2	0	4	5	
2	MIN	MIN-CORE	23MRPY02	ADVANCED PHARMACOLOGY - I	R	AP-I	3	0	2	0	4	5	
3	MIN	MIN-CORE	23MRPY03	EXPERIMENTAL PHARMACOLOGY	R	EPC	3	0	2	0	4	5	
4	MIN	MIN-CORE	23MRPY04	ADVANCED PHARMACOLOGY - II	R	AP-II	3	0	2	0	4	5	
5	MSDC	MIN-SDP	23MRPY05	PRACTICAL PHARMACOLOGY	R	PRI	0	0	6	4	4	10	

20. MINOR: PRECISION AGRICULTURE

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRPA01	FUNDAMENTALS OF AGRONOMY	R	FOA	3	0	2	0	4	5	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
2	MIN	MIN-CORE	23MRPA02	INTRODUCTORY AGROMETEOROLOGY AND CLIMATE CHANGE	R	IACC	3	0	2	0	4	5	
3	MIN	MIN-CORE	23MRPA03	GEOINFORMATICS AND NANOTECHNOLOGY FOR PRECISION FARMING	R	GNPF	3	0	2	0	4	5	
4	MIN	MIN-CORE	23MRPA04	PROTECTED CULTIVATION AND POST-HARVEST TECHNOLOGIES	R	PCPHT	3	0	2	0	4	5	
5	MSDC	MIN-SDP	23MRPA05	MODERN FARMING TECHNIQUES AND INNOVATIONS	R	AELP	0	0	6	4	4	10	

21. MINOR: TECHNOPRENEURSHIP

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRTP01	INTRODUCTION TO TECHNOLOGICAL ENTREPRENEURSHIP	R	ITEP	3	0	2	0	4	5	
2	MIN	MIN-CORE	23MRTP02	LEAN STARTUP LAUNCHPAD	R	LSLP	3	0	2	0	4	5	
3	MIN	MIN-CORE	23MRTP03	ENTREPRENEURSHIP AND VENTURE CAPITAL	R	EVC	3	0	2	0	4	5	
4	MIN	MIN-CORE	23MRTP04	BUILDING AND SUSTAINING A SUCCESSFUL ENTERPRISE	R	BSSE	3	0	2	0	4	5	
5	MSDC	MIN-SDP	23MRTP05	TECH INNOVATION PROJECT FOR ENTREPRENEURS	R	TIPFE	0	0	6	4	4	10	

22. MINOR: WATER SCIENCE AND MANAGEMENT

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	MIN	MIN-CORE	23MRPA01	FUNDAMENTALS OF AGRONOMY	R	FOA	3	0	2	0	4	5	
2	MIN	MIN-CORE	23MRPA02	INTRODUCTORY AGROMETEOROLOGY AND CLIMATE CHANGE	R	IACC	3	0	2	0	4	5	
3	MIN	MIN-CORE	23MRPA03	GEOINFORMATICS AND NANOTECHNOLOGY FOR PRECISION FARMING	R	GNPF	3	0	2	0	4	5	
4	MIN	MIN-CORE	23MRPA04	PROTECTED CULTIVATION AND POST-HARVEST TECHNOLOGIES	R	PCPHT	3	0	2	0	4	5	
5	MSDC	MIN-SDP	23MRPA05	MODERN FARMING TECHNIQUES AND INNOVATIONS	R	AELP	0	0	6	4	4	10	

23. DOUBLE MAJOR: SECOND MAJOR EEE FOR FIRST MAJOR AIDS / CIVIL / BT

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	FCC	FC-1	23EE2102F	ELECTRICAL MACHINES	F	ELM	2	0	2	0	3	4	
2	FCC	FC-1	23EE2225F	POWER QUALITY	F	PQ	3	0	0	0	3	3	
3	HFC	HFC-CORE	23EC2106A	PROCESSORS AND CONTROLLERS	A	PRC	4	0	4	0	6	8	
4	HFC	HFC-CORE	23EC2106E	PROCESSORS AND CONTROLLERS	E	PRC	4	0	4	0	6	8	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
5	HFC	HFC-CORE	23EC2106R	PROCESSORS AND CONTROLLERS	R	PRC	3	0	2	0	4	5	
6	OEC	OE-1	23OEEE03	ELECTRICAL POWER ENGINEERING	R	EPE	4	0	0	0	4	4	
7	OEC	OE-2	23EE2207R	CONTROL SYSTEMS	R	CS	3	0	2	0	4	5	
8	OEC	OE-3	23EE2205R	POWER ELECTRONICS	R	PES	3	0	2	0	4	5	
9	SMFC	SMFC-	23EC2106R	PROCESSORS AND CONTROLLERS	R	PRC	3	0	2	0	4	5	
10	SMFC	SMFC-	23EE2102R	ELECTRICAL MACHINES	R	ELM	3	0	2	0	4	5	
11	SMFC	SMFC-CORE	23EE2204R	ELECTRICAL POWER GENERATION, TRANSMISSION & DISTRIBUTION	R	EPGTD	2	1	0	0	3	3	
12	SMFC	SMFC-CORE	23EE3106R	POWER SYSTEM ANALYSIS & STABILITY	R	PSAS	2	1	0	0	3	3	
13	SMFC	SMFC-CORE	23EE3208R	POWER SYSTEM PROTECTION & CONTROL	R	PSPC	2	0	2	2	3.5	6	
14	SMFC	SMFC-	23EE2101	ELECTRICAL CIRCUITS	R	ELC	2	0	2	0	3	4	

24. DOUBLE MAJOR: SECOND MAJOR ECE FOR FIRST MAJOR AIDS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	ESC	ESC-CORE	23EC1203	BASIC ELECTRICAL AND ELECTRONIC CIRCUITS	R	BEEC	2	0	0	0	2	2	
2	FCC	FC-1	23EC2221F	EMBEDDED SYSTEM DESIGN	F	ESD	2	0	2	0	3	4	
3	FCC	FC-1	23EC2224F	DEEP NETWORK ARCHITECTURES	F	DNA	2	0	2	0	3	4	
4	HFC	HFC-CORE	23EC2106A	PROCESSORS AND CONTROLLERS	A	PRC	4	0	4	0	6	8	
5	HFC	HFC-CORE	23EC2106E	PROCESSORS AND CONTROLLERS	E	PRC	4	0	4	0	6	8	
6	HFC	HFC-CORE	23EC2106R	PROCESSORS AND CONTROLLERS	R	PRC	3	0	2	0	4	5	
7	OEC	OE-1	23EC2105R	SIGNALS & COMMUNICATION SYSTEMS	R	SCS	3	0	2	0	4	5	
8	OEC	OE-2	23EC2208R	DIGITAL COMMUNICATION	R	DC	3	0	2	0	4	5	
9	OEC	OE-3	23EC3112R	DISCRETE TIME SIGNAL PROCESSING	R	DTSP	3	0	2	0	4	5	
10	SMFC	SMFC-CORE	23EC2210R	NETWORK PROTOCOLS AND SECURITY	R	NPS	3	0	2	0	4	5	
11	SMFC	SMFC-	23EC2106R	PROCESSORS AND CONTROLLERS	R	PRC	3	0	2	0	4	5	
12	SMFC	SMFC-CORE	23EC2209R	ELECTROMAGNETIC WAVES & TRANSMISSION LINES	R	EMWTL	3	0	0	0	3	3	
13	SMFC	SMFC-CORE	23EC1203	BASIC ELECTRICAL AND ELECTRONIC CIRCUITS	R	BEEC	2	0	0	0	2	2	
14	SMFC	SMFC-CORE	23EC2104R	ANALOG ELECTRONIC CIRCUIT DESIGN	R	AECD	3	0	2	2	4.5	7	
15	SMFC	SMFC-	23EC2211R	VLSI DESIGN	R	VLSID	3	0	2	2	4.5	7	

25. DOUBLE MAJOR: SECOND MAJOR ECE FOR FIRST MAJOR CIVIL / BBA / B.COM / BSC / BCA / BA

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	ESC	ESC-CORE	23EC1101	FUNDAMENTALS OF IOT AND SENSORS	R	FITS	3	0	4	0	5	7	
2	ESC	ESC-CORE	23EC1202	DIGITAL DESIGN & COMPUTER ARCHITECTURE	R	DDCA	3	0	2	0	4	5	
3	ESC	ESC-CORE	23EC1203	BASIC ELECTRICAL AND ELECTRONIC CIRCUITS	R	BEEC	2	0	0	0	2	2	
4	FCC	FC-1	23EC2223F	FUNDAMENTALS OF ROBOTICS	F	FOR	2	0	2	0	3	4	
5	HFC	HFC-CORE	23EC2106A	PROCESSORS AND CONTROLLERS	A	PRC	4	0	4	0	6	8	
6	HFC	HFC-CORE	23EC2106E	PROCESSORS AND CONTROLLERS	E	PRC	4	0	4	0	6	8	
7	HFC	HFC-CORE	23EC2106R	PROCESSORS AND CONTROLLERS	R	PRC	3	0	2	0	4	5	
8	OEC	OE-1	23EC2105R	SIGNALS & COMMUNICATION SYSTEMS	R	SCS	3	0	2	0	4	5	
9	OEC	OE-2	23EC2208R	DIGITAL COMMUNICATION	R	DC	3	0	2	0	4	5	
10	OEC	OE-3	23EC3112R	DISCRETE TIME SIGNAL PROCESSING	R	DTSP	3	0	2	0	4	5	
11	SMFC	SMFC-CORE	23EC2210R	NETWORK PROTOCOLS AND SECURITY	R	NPS	3	0	2	0	4	5	
12	SMFC	SMFC-	23EC2106R	PROCESSORS AND CONTROLLERS	R	PRC	3	0	2	0	4	5	
13	SMFC	SMFC-CORE	23EC2209R	ELECTROMAGNETIC WAVES & TRANSMISSION LINES	R	EMWTL	3	0	0	0	3	3	
14	SMFC	SMFC-CORE	23EC1203	BASIC ELECTRICAL AND ELECTRONIC CIRCUITS	R	BEEC	2	0	0	0	2	2	
15	SMFC	SMFC-CORE	23EC2104R	ANALOG ELECTRONIC CIRCUIT DESIGN	R	AECD	3	0	2	2	4.5	7	
16	SMFC	SMFC-	23EC2211R	VLSI DESIGN	R	VLSID	3	0	2	2	4.5	7	

26. DOUBLE MAJOR: SECOND MAJOR IOT FOR FIRST MAJOR CSE / CSIT / EEE / ECE / AIDS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	FCC	FC-1	23IN2222F	CLOUD COMPUTING FOR IOT	F	CCIOT	2	0	2	0	3	4	
2	OEC	OE-1	23IN2101R	IOT SYSTEM DESIGN	R	IOTPA	3	0	2	0	4	5	
3	OEC	OE-2	23IN2102	ELECTRONIC DEVICES AND INTEGRATED CIRCUITS	R	EDAIC	3	0	2	0	4	5	
4	OEC	OE-3	23IN2203	WIRELESS TECHNOLOGIES FOR IOT	R	WTIOT	3	0	2	0	4	5	
5	SMFC	SMFC-	23IN01HF	5G TECHNOLOGIES FOR IOT	R	5TAI	3	0	2	0	4	5	
6	SMFC	SMFC-CORE	23IN02HF	DEEP LEARNING FOR COMPUTER VISION	R	DPNV	3	0	2	0	4	5	
7	SMFC	SMFC-CORE	23IN03HF	AR & VR APPLICATION DEVELOPMENT	R	ARVRAD	3	0	2	0	4	5	
8	SMFC	SMFC-	23IN04HF	DEVOPS FOR IOT	R	DFIOT	3	0	2	0	4	5	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
9	SMFC	SMFC-	23IN3104R	REAL TIME OPERATING SYSTEMS	R	RTOS	3	0	2	0	4	5	
10	SMFC	SMFC-	23IN3105R	EMBEDDED SYSTEMS DESIGN	R	ESD	2	0	2	0	3	4	

27. DOUBLE MAJOR: SECOND MAJOR ME FOR FIRST MAJOR ECE / EEE / CSE / CSIT / AIDS / BT / IOT

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	FCC	FC-1	23ME1001F	ENGINEERING MECHANICS	F	EM	2	1	0	0	3	3	
2	OEC	OE-1	23ME2106R	MECHANICS OF SOLIDS	R	MOS	3	0	2	0	4	5	
3	OEC	OE-2	23ME2116	FLUID MECHANICS & HYDRAULIC MACHINES	R	FMHM	3	0	2	0	4	5	
4	OEC	OE-3	23ME2208	MANUFACTURING PROCESSES	R	MP	3	0	2	0	4	5	
5	SMFC	SMFC-	23ME2107R	THERMODYNAMICS	R	TD	3	0	0	0	3	3	
6	SMFC	SMFC-	23ME3110R	HEAT TRANSFER	R	HT	3	0	2	0	4	5	
7	SMFC	SMFC-	23ME1002	ENGINEERING GRAPHICS	R	EG	0	0	4	0	2	4	
8	SMFC	SMFC-CORE	23ME2209R	KINEMATICS & DYNAMICS OF MACHINES	R	KDOM	3	1	2	0	5	6	
9	SMFC	SMFC-	23ME3111R	MECHANICAL ENGINEERING DESIGN	R	MED	3	0	0	0	3	3	
10	SMFC	SMFC-CORE	23ME1004	WORKSHOP PRACTICES FOR ENGINEERS	R	WPE	0	0	4	0	2	4	
11	SMFC	SMFC-	23ME3113R	MANUFACTURING TECHNOLOGY	R	MT	2	0	2	0	3	4	

28. DOUBLE MAJOR: SECOND MAJOR CIVIL FOR FIRST MAJOR ECE / EEE / CSE / CSIT / AIDS / BT / IOT

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	FCC	FC-1	23ME1001F	ENGINEERING MECHANICS	F	EM	2	1	0	0	3	3	
2	OEC	OE-1	23CE2208R	GEOTECHNICAL ENGINEERING	R	GTE	3	0	2	0	4	5	
3	OEC	OE-2	23CE2209R	TRANSPORTATION ENGINEERING	R	TPE	3	0	2	0	4	5	
4	OEC	OE-3	23CE3109	ENVIRONMENTAL ENGINEERING	R	EVE	3	0	2	0	4	5	
5	SMFC	SMFC-	23CE2103R	SURVEYING	R	SVY	3	0	2	4	5	9	
6	SMFC	SMFC-	23CE2206	STRUCTURAL ANALYSIS	R	STA	3	1	0	0	4	4	
7	SMFC	SMFC-	23CE2207	CONCRETE TECHNOLOGY	R	CT	3	0	2	4	5	9	
8	SMFC	SMFC-	22CE1201	ENGINEERING GEOLOGY	R	EGY	3	0	2	0	4	5	
9	SMFC	SMFC-	23CE2102R	FLUID MECHANICS & HYDRAULICS	R	FMH	3	0	2	0	4	5	

29. DOUBLE MAJOR: SECOND MAJOR BT FOR FIRST MAJOR B.TECH / BBA / B.COM / BSC / BCA / BA

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	BSC	BSC-SE-3	23BT2103	BIOCHEMISTRY	R	BCM	3	0	2	0	4	5	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
2	FCC	FC-1	23BT2224F	BIOREACTOR OPERATIONS	F	BO	2	0	2	0	3	4	
3	SDC	SDP-1	23SDBT01A	MEDICAL LAB TECHNOLOGY	A	MLT	0	0	6	4	4	10	
4	SDC	SDP-1	23SDBT01E	MEDICAL LAB TECHNOLOGY	E	MLT	0	0	6	4	4	10	
5	SDC	SDP-1	23SDBT01R	MEDICAL LAB TECHNOLOGY	R	MLT	0	0	2	4	2	6	
6	OEC	OE-1	23BT2209R	BIOCHEMICAL REACTION ENGINEERING	R	BCRE	3	0	2	0	4	5	
7	OEC	OE-2	23BT3212	PLANT AND ANIMAL BIOTECHNOLOGY	R	PABT	3	0	2	0	4	5	
8	OEC	OE-3	23BT3213R	DOWNSTREAM PROCESSING	R	DSP	2	0	4	0	4	6	
9	SMFC	SMFC-	23BT2104	MICROBIOLOGY	R	MBG	3	0	2	0	4	5	
10	SMFC	SMFC-	23BT2215	PROCESS ENGINEERING PRINCIPLES	R	PEP	2	0	2	0	3	4	
11	SMFC	SMFC-	23BT3214	BIOINFORMATICS	R	BI	2	0	2	0	3	4	
12	SMFC	SMFC-	23BT1101	CELL BIOLOGY	R	CB	3	0	0	0	3	3	
13	SMFC	SMFC-	23BT2105R	IMMUNOLOGY	R	IMM	3	0	2	0	4	5	
14	SMFC	SMFC-	23BT2206	MOLECULAR BIOLOGY	R	MBY	3	0	0	0	3	3	

34. DOUBLE MAJOR: SECOND MAJOR FOOD TECHNOLOGY FOR FIRST MAJOR B.TECH / B.COM / BBA / BSC / BCA / BA

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	OEC	OE-1	22FT2212R	PROCESSING OF AQUATIC FOODS	R	PAF	3	0	2	0	4	5	
2	OEC	OE-2	22FT22C1R	FOOD ANALYSIS AND QUALITY ASSURANCE	R	FAQA	3	0	2	0	4	5	
3	OEC	OE-3	22FT3215R	TECHNOLOGY OF MEAT AND POULTRY	R	TMP	3	0	2	0	4	5	
4	SMFC	SMFC-	22FT1102	FOOD CHEMISTRY	R	FC	3	0	2	0	4	5	
5	SMFC	SMFC-	22FT1105	FOOD BIOCHEMISTRY	R	FBC	3	0	2	0	4	5	
6	SMFC	SMFC-CORE	22FT2109R	PROCESSING OF HORTICULTURAL PRODUCE	R	PHP	3	0	2	0	4	5	
7	SMFC	SMFC-CORE	22FT12C1	PRINCIPLES OF FOOD PRESERVATION	R	PFP	1	0	0	4	2	5	
8	SMFC	SMFC-	22FT32C2R	FOOD PACKAGING TECHNOLOGY	R	FPT	1	0	0	4	2	5	
9	SMFC	SMFC-	22FT1207R	FOOD MICROBIOLOGY	R	FMB	3	0	2	0	4	5	
10	SMFC	SMFC-CORE	22FT2213R	BAKERY, CONFECTIONERY AND SNACKS TECHNOLOGY	R	BCST	2	0	4	0	4	6	
11	SMFC	SMFC-CORE	22FT1104	INTRODUCTION TO FOOD SCIENCE AND TECHNOLOGY	R	IFST	3	0	2	0	4	5	

35. DOUBLE MAJOR: SECOND MAJOR COMMERCE FOR FIRST MAJOR B.TECH / BBA / BSC / BCA / BA

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	OEC	OE-1	23ACCBT	BUSINESS TECHNOLOGY	R	BT	4	0	0	0	4	4	
2	OEC	OE-2	23ACCAFA	FINANCIAL ACCOUNTING	R	FA	3	2	0	0	5	5	
3	OEC	OE-3	23ACCAMA	MANAGEMENT ACCOUNTING	R	MA	3	2	0	0	5	5	
4	SMFC	SMFC-	23ACCAPM	PERFORMANCE MANAGEMENT	R	PM	3	2	0	0	5	5	
5	SMFC	SMFC-	22CM1206	ADVANCED COST ACCOUNTING	R	ACA	3	2	0	0	5	5	
6	SMFC	SMFC-CORE	22CM31B5	ACCOUNTING & REPORTING STANDARDS	R	ARS	3	2	0	0	5	5	
7	SMFC	SMFC-	23ACCATX	TAXATION	R	TXT	3	2	0	0	5	5	
8	SMFC	SMFC-	22CM21B2	INCOME TAX LAW & PRACTICE	R	ITLP	3	2	0	0	5	5	
9	SMFC	SMFC-	22CM1203	DATA ANALYSIS WITH EXCEL	R	DAWE	0	0	0	4	1	4	

36. SPECIALIZATION: AGRI-BIOTECHNOLOGY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDBT10A	MASS SPECTROMETRY BASED PROTEOMICS	A	MSBP	0	0	6	4	4	10	
2	SDC	SDP-4	23SDBT10E	MASS SPECTROMETRY BASED PROTEOMICS	E	MSBP	0	0	6	4	4	10	
3	SDC	SDP-4	23SDBT10R	MASS SPECTROMETRY BASED PROTEOMICS	R	MSBP	0	0	2	4	2	6	
4	PEC	PE-1	23ABT3101A	BIOSENSORS AND BIOELECTRONICS	A	BSBE	4	0	4	4	7	12	GN(1) Rule:1
5	PEC	PE-1	23ABT3101E	BIOSENSORS AND BIOELECTRONICS	E	BSBE	4	0	4	4	7	12	GN(1) Rule:1
6	PEC	PE-1	23ABT3101R	BIOSENSORS AND BIOELECTRONICS	R	BSBE	3	0	2	4	5	9	GN(1) Rule:1
7	PEC	PE-2	23ABT3202A	IOT APPLICATIONS IN PRECISION AGRICULTURE	A	IOTAPA	5	0	0	0	5	5	GN(1) Rule:1
8	PEC	PE-2	23ABT3202E	IOT APPLICATIONS IN PRECISION AGRICULTURE	E	IOTAPA	5	0	0	0	5	5	GN(1) Rule:1
9	PEC	PE-2	23ABT3202R	IOT APPLICATIONS IN PRECISION AGRICULTURE	R	IOTAPA	3	0	0	0	3	3	GN(1) Rule:1
10	PEC	PE-3	23ABT3203A	MACHINE LEARNING FOR PRECISION AGRICULTURE	A	MLPA	5	0	0	0	5	5	GN(1) Rule:1
11	PEC	PE-3	23ABT3203E	MACHINE LEARNING FOR PRECISION AGRICULTURE	E	MLPA	5	0	0	0	5	5	GN(1) Rule:1
12	PEC	PE-3	23ABT3203R	MACHINE LEARNING FOR PRECISION AGRICULTURE	R	MLPA	3	0	0	0	3	3	GN(1) Rule:1
13	PEC	PE-3	23ABT3304A	IMAGE PROCESSING FOR AGRICULTURAL APPLICATIONS	A	IPAA	4	0	4	4	7	12	GN(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
14	PEC	PE-4	23ABT3304E	IMAGE PROCESSING FOR AGRICULTURAL APPLICATIONS	E	IPAA	4	0	4	4	7	12	GN(1) Rule:1
15	PEC	PE-4	23ABT3304R	IMAGE PROCESSING FOR AGRICULTURAL APPLICATIONS	R	IPAA	3	0	2	4	5	9	GN(1) Rule:1
16	PEC	PE-4	23ABT3406M	DATA ACQUISITION AND COMMUNICATION SYSTEMS FOR AGRICULTURE	M	DACSA	3	0	0	0	3	3	GN(1) Rule:1
17	PEC	PE-5	23ABT3405M	BIOINSTRUMENTATION	M	BIM	4	0	0	0	4	4	GN(1) Rule:1
18	PEC	PE-5	23ABT3507	MICROFLUIDICS FOR AGRICULTURAL APPLICATIONS	R	MAP	3	0	0	0	3	3	GN(1) Rule:1
19	PEC	PE-5	23ABT3508	BIOINFORMATICS FOR AGRICULTURE	R	BIA	3	0	0	0	3	3	GN(1) Rule:1

37. SPECIALIZATION: AI AND AUTONOMOUS SYSTEMS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDAD09A	AUTONOMOUS VEHICLE SYSTEMS	A	AVS	0	0	6	4	4	10	
2	SDC	SDP-4	23SDAD09E	AUTONOMOUS VEHICLE SYSTEMS	E	AVS	0	0	6	4	4	10	
3	SDC	SDP-4	23SDAD09R	AUTONOMOUS VEHICLE SYSTEMS	R	AVS	0	0	2	4	2	6	
4	PEC	PE-1	23ASS3101A	AUTONOMOUS DRIVER ASSISTIVE SYSTEMS	A	ADAS	4	0	4	4	7	12	
5	PEC	PE-1	23ASS3101E	AUTONOMOUS DRIVER ASSISTIVE SYSTEMS	E	ADAS	4	0	4	4	7	12	
6	PEC	PE-1	23ASS3101R	AUTONOMOUS DRIVER ASSISTIVE SYSTEMS	R	ADAS	3	0	2	4	5	9	
7	PEC	PE-1	23ASS3102A	AI AND CONTROLS FOR AUTONOMUS FUTURE VEHICLE	A	AICAFT	4	0	4	4	7	12	
8	PEC	PE-1	23ASS3102E	AI AND CONTROLS FOR AUTONOMUS FUTURE VEHICLE	E	AICAFT	4	0	4	4	7	12	
9	PEC	PE-1	23ASS3102R	AI AND CONTROLS FOR AUTONOMUS FUTURE VEHICLE	R	AICAFT	3	0	2	4	5	9	
10	PEC	PE-2	23ASS3202A	INTRODUCTION TO INTELLIGENT DRONES	A	IID	5	0	0	0	5	5	
11	PEC	PE-2	23ASS3202E	INTRODUCTION TO INTELLIGENT DRONES	E	IID	5	0	0	0	5	5	
12	PEC	PE-2	23ASS3202R	INTRODUCTION TO INTELLIGENT DRONES	R	IID	3	0	0	0	3	3	
13	PEC	PE-2	23ASS3203A	AI AND IOT FOR AUTONOMOUS VEHICLE	A	AIAV	5	0	0	0	5	5	
14	PEC	PE-2	23ASS3203E	AI AND IOT FOR AUTONOMOUS VEHICLE	E	AIAV	5	0	0	0	5	5	
15	PEC	PE-2	23ASS3203R	AI AND IOT FOR AUTONOMOUS VEHICLE	R	AIAV	3	0	0	0	3	3	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
16	PEC	PE-2	23ASS3205A	AUTONOMOUS VEHICLE ECU DESIGN WITH AUTOSAR	A	AVECUDA	3	0	4	0	5	7	
17	PEC	PE-2	23ASS3205E	AUTONOMOUS VEHICLE ECU DESIGN WITH AUTOSAR	E	AVECUDA	3	0	4	0	5	7	
18	PEC	PE-2	23ASS3205R	AUTONOMOUS VEHICLE ECU DESIGN WITH AUTOSAR	R	AVECUDA	2	0	2	0	3	4	
19	PEC	PE-3	23ASS3304A	APPLIED DEEP LEARNING FOR AUTONOMOUS SYSTEMS	A	ADLAS	4	0	4	4	7	12	
20	PEC	PE-3	23ASS3304E	APPLIED DEEP LEARNING FOR AUTONOMOUS SYSTEMS	E	ADLAS	4	0	4	4	7	12	
21	PEC	PE-3	23ASS3304R	APPLIED DEEP LEARNING FOR AUTONOMOUS SYSTEMS	R	ADLAS	3	0	2	4	5	9	
22	PEC	PE-3	23ASS3309A	AUTONOMOUS ELECTRIC MOBILITY - SYSTEMS AND APPLICATIONS	A	AAAV	4	0	4	4	7	12	
23	PEC	PE-3	23ASS3309E	AUTONOMOUS ELECTRIC MOBILITY - SYSTEMS AND APPLICATIONS	E	AAAV	4	0	4	4	7	12	
24	PEC	PE-3	23ASS3309R	AUTONOMOUS ELECTRIC MOBILITY - SYSTEMS AND APPLICATIONS	R	AAAV	3	0	2	4	5	9	
25	PEC	PE-4	23ASS3405M	EXPERT SYSTEMS	M	ES	3	0	0	0	3	3	
26	PEC	PE-4	23ASS3406M	SELF-DRIVING CARS	M	SDC	3	0	0	0	3	3	
27	PEC	PE-4	23ASS3410M	CYBERSECURITY IN AUTONOMUS VEHICLE	M	CAV	3	0	0	0	3	3	
28	PEC	PE-5	23ASS3507	LOCALIZATION & PROGRAMMING REAL-TIME AUTONOMOUS SYSTEMS	R	LPRAS	3	0	0	0	3	3	
29	PEC	PE-5	23ASS3508	REINFORCEMENT LEARNING FOR AUTONOMOUS SYSTEM	R	RLA	3	0	0	0	3	3	
30	PEC	PE-5	23ASS3511	AI DRIVEN ECU DESIGN FOR AUTONOMOUS VEHICLES	R	AEDATT	2	0	2	0	3	4	

38. SPECIALIZATION: AI FOR COMPUTATIONAL INTELLIGENCE

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS17A	GENERATIVE ADVERSARIAL NETWORKS FOR IMAGES	A	GANI	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS17E	GENERATIVE ADVERSARIAL NETWORKS FOR IMAGES	E	GANI	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS17R	GENERATIVE ADVERSARIAL NETWORKS FOR IMAGES	R	GANI	0	0	2	4	2	6	
4	PEC	PE-1	23ACI3101A	GENERATIVE ADVERSARIAL NETWORKS	A	GANS	4	0	4	4	7	12	
5	PEC	PE-1	23ACI3101E	GENERATIVE ADVERSARIAL NETWORKS	E	GANS	4	0	4	4	7	12	
6	PEC	PE-1	23ACI3101R	GENERATIVE ADVERSARIAL NETWORKS	R	GANS	3	0	2	4	5	9	
7	PEC	PE-2	23ACI3202A	EXPLAINABLE AI AND COMMUNICATIONS	A	EAIC	5	0	0	0	5	5	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
8	PEC	PE-2	23ACI3202E	EXPLAINABLE AI AND COMMUNICATIONS	E	EAIC	5	0	0	0	5	5	
9	PEC	PE-2	23ACI3202R	EXPLAINABLE AI AND COMMUNICATIONS	R	EAIC	3	0	0	0	3	3	
10	PEC	PE-3	23ACI3303A	FUZZY LOGIC WITH SET THEORY	A	FLST	4	0	4	4	7	12	
11	PEC	PE-3	23ACI3303E	FUZZY LOGIC WITH SET THEORY	E	FLST	4	0	4	4	7	12	
12	PEC	PE-3	23ACI3303R	FUZZY LOGIC WITH SET THEORY	R	FLST	3	0	2	4	5	9	
13	PEC	PE-4	23ACI3404M	HEURISTIC ALGORITHMS	M	HAG	3	0	0	0	3	3	
14	PEC	PE-5	23ACI3405M	SWARM INTELLIGENCE APPROCAHES	M	SIA	3	0	0	0	3	3	
15	PEC	PE-5	23ACI3506	DATA MANIPULATION	R	DMP	3	0	0	0	3	3	
16	PEC	PE-5	23ACI3507	REINFORCEMENT LEARNING	R	RLG	3	0	0	0	3	3	
17	PEC	PE-5	23ACI3508	EVOLUTIONARY COMPUTATION	R	ECP	3	0	0	0	3	3	

39. SPECIALIZATION: AI SYSTEMS FOR VISUAL INTELLIGENCE

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS19A	VISUAL RECOGNITION AND SCENE UNDERSTANDING	A	VRSU	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS19E	VISUAL RECOGNITION AND SCENE UNDERSTANDING	E	VRSU	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS19R	VISUAL RECOGNITION AND SCENE UNDERSTANDING	R	VRSU	0	0	2	4	2	6	
4	PEC	PE-1	23AVI3101A	DEEP LEARNING	A	DL	4	0	4	4	7	12	
5	PEC	PE-1	23AVI3101E	DEEP LEARNING	E	DL	4	0	4	4	7	12	
6	PEC	PE-1	23AVI3101R	DEEP LEARNING	R	DL	3	0	2	4	5	9	
7	PEC	PE-2	23AVI3202A	COMPUTER VISION	A	CV	5	0	0	0	5	5	
8	PEC	PE-2	23AVI3202E	COMPUTER VISION	E	CV	5	0	0	0	5	5	
9	PEC	PE-2	23AVI3202R	COMPUTER VISION	R	CV	3	0	0	0	3	3	
10	PEC	PE-3	23AVI3303A	OBJECT DETECTION	A	OD	4	0	4	4	7	12	
11	PEC	PE-3	23AVI3303E	OBJECT DETECTION	E	OD	4	0	4	4	7	12	
12	PEC	PE-3	23AVI3303R	OBJECT DETECTION	R	OD	3	0	2	4	5	9	
13	PEC	PE-4	23AVI3404M	VISUAL RECOGNITION AND SCENE UNDERSTANDING	M	VRASU	3	0	0	0	3	3	
14	PEC	PE-4	23AVI3405M	DEEP REINFORCEMENT LEARNING FOR VISION	M	DRLV	3	0	0	0	3	3	
15	PEC	PE-5	23AVI3506	HUMAN COMPUTER INTERACTION	R	HCI	3	0	0	0	3	3	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
16	PEC	PE-5	23AVI3507	OBJECT LOCALIZATION	R	OL	3	0	0	0	3	3	
17	PEC	PE-5	23AVI3508	ADVANCED IMAGE PROCESSING AND ANALYSIS	R	AIPA	3	0	0	0	3	3	

40. SPECIALIZATION: AI-DRIVEN EDGE ARCHITECTURES AND APPLICATIONS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS20A	SMART IOT AND SENSOR NETWORKS	A	SISN	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS20E	SMART IOT AND SENSOR NETWORKS	E	SISN	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS20R	SMART IOT AND SENSOR NETWORKS	R	SISN	0	0	2	4	2	6	
4	PEC	PE-1	23ADE3101A	EDGE COMPUTING FUNDAMENTALS	A	ECF	4	0	4	4	7	12	OS(1) Rule:1
5	PEC	PE-1	23ADE3101E	EDGE COMPUTING FUNDAMENTALS	E	ECF	4	0	4	4	7	12	OS(1) Rule:1
6	PEC	PE-1	23ADE3101R	EDGE COMPUTING FUNDAMENTALS	R	ECF	3	0	2	4	5	9	OS(1) Rule:1
7	PEC	PE-2	23ADE3202A	AI AT THE EDGE	A	AIAE	5	0	0	0	5	5	OS(1) Rule:1
8	PEC	PE-2	23ADE3202E	AI AT THE EDGE	E	AIAE	5	0	0	0	5	5	OS(1) Rule:1
9	PEC	PE-2	23ADE3202R	AI AT THE EDGE	R	AIAE	3	0	0	0	3	3	OS(1) Rule:1
10	PEC	PE-3	23ADE3303A	EDGE AI ARCHITECTURES AND APPLICATIONS	A	EAI AA	4	0	4	4	7	12	OS(1) Rule:1
11	PEC	PE-3	23ADE3303E	EDGE AI ARCHITECTURES AND APPLICATIONS	E	EAI AA	4	0	4	4	7	12	OS(1) Rule:1
12	PEC	PE-3	23ADE3303R	EDGE AI ARCHITECTURES AND APPLICATIONS	R	EAI AA	3	0	2	4	5	9	OS(1) Rule:1
13	PEC	PE-4	23ADE3404M	EDGE AI AND 5G	M	EAI5G	3	0	0	0	3	3	OS(1) Rule:1
14	PEC	PE-4	23ADE3405M	EDGE AI SECURITY AND PROTECTION	M	EAI SP	3	0	0	0	3	3	OS(1) Rule:1
15	PEC	PE-5	23ADE3506	EDGE AI DEVELOPMENT FRAMEWORKS AND TOOLS	R	EAI DFT	3	0	0	0	3	3	OS(1) Rule:1
16	PEC	PE-5	23ADE3507	EDGE AI ANALYTICS AND DATA MANAGEMENT	R	EAI ADM	3	0	0	0	3	3	OS(1) Rule:1
17	PEC	PE-5	23ADE3508	EDGE AI AND SUSTAINABILITY	R	EAI AS	3	0	0	0	3	3	OS(1) Rule:1

41. SPECIALIZATION: AI-DRIVEN LANGUAGE TECHNOLOGIES

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS18A	TEXT ANALYTICS	A	TAT	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS18E	TEXT ANALYTICS	E	TAT	0	0	6	4	4	10	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
3	SDC	SDP-4	23SDCS18R	TEXT ANALYTICS	R	TAT	0	0	2	4	2	6	
4	PEC	PE-1	23ALT3101A	APPLIED MACHINE LEARNING FOR TEXT ANALYSIS	A	AMLFTA	4	0	4	4	7	12	
5	PEC	PE-1	23ALT3101E	APPLIED MACHINE LEARNING FOR TEXT ANALYSIS	E	AMLFTA	4	0	4	4	7	12	
6	PEC	PE-1	23ALT3101R	APPLIED MACHINE LEARNING FOR TEXT ANALYSIS	R	AMLFTA	3	0	2	4	5	9	
7	PEC	PE-2	23ALT3202A	DEEP LEARNING FOR NATURAL LANGUAGE PROCESSING	A	DLFNLP	5	0	0	0	5	5	
8	PEC	PE-2	23ALT3202E	DEEP LEARNING FOR NATURAL LANGUAGE PROCESSING	E	DLFNLP	5	0	0	0	5	5	
9	PEC	PE-2	23ALT3202R	DEEP LEARNING FOR NATURAL LANGUAGE PROCESSING	R	DLFNLP	3	0	0	0	3	3	
10	PEC	PE-3	23ALT3303A	CONVERSATIONAL AI AND CHATBOT DEVELOPMENT	A	CAICBD	4	0	4	4	7	12	
11	PEC	PE-3	23ALT3303E	CONVERSATIONAL AI AND CHATBOT DEVELOPMENT	E	CAICBD	4	0	4	4	7	12	
12	PEC	PE-3	23ALT3303R	CONVERSATIONAL AI AND CHATBOT DEVELOPMENT	R	CAICBD	3	0	2	4	5	9	
13	PEC	PE-4	23ALT3404M	TEXT UNDERSTANDING	M	TUS	3	0	0	0	3	3	
14	PEC	PE-4	23ALT3405M	NATURAL LANGUAGE PROCESSING	M	NLP	3	0	0	0	3	3	
15	PEC	PE-5	23ALT3506	LANGUAGE UNDERSTANDING WITH PRE-TRAINED MODELS	R	LUWPTM	3	0	0	0	3	3	
16	PEC	PE-5	23ALT3507	LARGE LANGUAGE MODEL FOR SPEECH PROCESSING	R	LLMFSP	3	0	0	0	3	3	

42. SPECIALIZATION: AUTOMOTIVE ELECTRONICS AND AUTOSAR

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	PEC	PE-1	23AEA3101A	AUTOMOTIVE SENSOR AND APPLICATIONS	A	ASA	4	0	4	4	7	12	ELM(1) Rule:1
2	PEC	PE-1	23AEA3101E	AUTOMOTIVE SENSOR AND APPLICATIONS	E	ASA	4	0	4	4	7	12	ELM(1) Rule:1
3	PEC	PE-1	23AEA3101R	AUTOMOTIVE SENSOR AND APPLICATIONS	R	ASA	3	0	2	4	5	9	ELM(1) Rule:1
4	PEC	PE-2	23AEA3202A	AUTOTRONICS	A	AT	5	0	0	0	5	5	ELM(1) Rule:1
5	PEC	PE-2	23AEA3202E	AUTOTRONICS	E	AT	5	0	0	0	5	5	ELM(1) Rule:1
6	PEC	PE-2	23AEA3202R	AUTOTRONICS	R	AT	3	0	0	0	3	3	ELM(1) Rule:1
7	PEC	PE-2	23AEA3203A	AUTOMOTIVE POLLUTION AND ITS CONTROL	A	APC	5	0	0	0	5	5	ELM(1) Rule:1
8	PEC	PE-2	23AEA3203E	AUTOMOTIVE POLLUTION AND ITS CONTROL	E	APC	5	0	0	0	5	5	ELM(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
9	PEC	PE-2	23AEA3203R	AUTOMOTIVE POLLUTION AND ITS CONTROL	R	APC	3	0	0	0	3	3	ELM(1) Rule:1
10	PEC	PE-3	23AEA3304A	ALTERNATE DRIVES, TRACTION AND CONTROLS	A	ADTC	4	0	4	4	7	12	ELM(1) Rule:1
11	PEC	PE-3	23AEA3304E	ALTERNATE DRIVES, TRACTION AND CONTROLS	E	ADTC	4	0	4	4	7	12	ELM(1) Rule:1
12	PEC	PE-3	23AEA3304R	ALTERNATE DRIVES, TRACTION AND CONTROLS	R	ADTC	3	0	2	4	5	9	ELM(1) Rule:1
13	PEC	PE-4	23AEA3405M	VEHICLE CONTROL SYSTEMS	M	VCS	3	0	0	0	3	3	ELM(1) Rule:1
14	PEC	PE-4	23AEA3406M	AUTOMOTIVE ELECTRICAL AND ELECTRONIC SYSTEMS	M	AEES	3	0	0	0	3	3	ELM(1) Rule:1
15	PEC	PE-5	23AEA3507	SOFT COMPUTING TECHNIQUES FOR AUTOMOTIVE APPLICATIONS	R	SCTAA	3	0	0	0	3	3	ELM(1) Rule:1
16	PEC	PE-5	23AEA3508	AUTOMOTIVE NETWORKING AND PROTOCOLS	R	ANP	3	0	0	0	3	3	ELM(1) Rule:1

43. SPECIALIZATION: AUTOMOTIVE ENERGY ENGINEERING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDME04A	ANALYSIS OF ENERGY SYSTEMS	A	AES	0	0	6	4	4	10	
2	SDC	SDP-4	23SDME04E	ANALYSIS OF ENERGY SYSTEMS	E	AES	0	0	6	4	4	10	
3	SDC	SDP-4	23SDME04R	ANALYSIS OF ENERGY SYSTEMS	R	AES	0	0	2	4	2	6	
4	PEC	PE-1	23ECF3101A	AUTOMOBILE ENGINEERING	A	AE	4	0	4	4	7	12	TD(1) Rule:1
5	PEC	PE-1	23ECF3101E	AUTOMOBILE ENGINEERING	E	AE	4	0	4	4	7	12	TD(1) Rule:1
6	PEC	PE-1	23ECF3101R	AUTOMOBILE ENGINEERING	R	AE	3	0	2	4	5	9	TD(1) Rule:1
7	PEC	PE-2	23ECF3202A	AUTOTRONICS & SAFETY	A	ATS	5	0	0	0	5	5	TD(1) Rule:1
8	PEC	PE-2	23ECF3202E	AUTOTRONICS & SAFETY	E	ATS	5	0	0	0	5	5	TD(1) Rule:1
9	PEC	PE-2	23ECF3202R	AUTOTRONICS & SAFETY	R	ATS	3	0	0	0	3	3	TD(1) Rule:1
10	PEC	PE-2	23ECF3203A	AUTONOMOUS VEHICLES	A	AV	5	0	0	0	5	5	TD(1) Rule:1
11	PEC	PE-2	23ECF3203E	AUTONOMOUS VEHICLES	E	AV	5	0	0	0	5	5	TD(1) Rule:1
12	PEC	PE-2	23ECF3203R	AUTONOMOUS VEHICLES	R	AV	3	0	0	0	3	3	TD(1) Rule:1
13	PEC	PE-3	23ECF3304A	HYBRID AND ELECTRIC VEHICLE DESIGN	A	HEVD	4	0	4	4	7	12	TD(1) Rule:1
14	PEC	PE-3	23ECF3304E	HYBRID AND ELECTRIC VEHICLE DESIGN	E	HEVD	4	0	4	4	7	12	TD(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
15	PEC	PE-3	23ECF3304R	HYBRID AND ELECTRIC VEHICLE DESIGN	R	HEVD	3	0	2	4	5	9	TD(1) Rule:1
16	PEC	PE-4	23ECF3405M	SPECIAL PURPOSE VEHICLES	M	SPV	3	0	0	0	3	3	TD(1) Rule:1
17	PEC	PE-4	23ECF3406M	VEHICLE DYNAMICS	M	VD	3	0	0	0	3	3	TD(1) Rule:1
18	PEC	PE-5	23ECF3507	THERMAL MANAGEMENT OF ELECTRIC AND ELECTRONIC SYSTEMS	R	TMEES	3	0	0	0	3	3	TD(1) Rule:1
19	PEC	PE-5	23ECF3508	ALTERNATE ENERGY SOURCES FOR AUTOMOBILES	R	AESFA	3	0	0	0	3	3	TD(1) Rule:1

44. SPECIALIZATION: BIOINFORMATICS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDBT08A	DRUG DESIGN: PRINCIPLES AND ENGINEERING	A	DDPE	0	0	6	4	4	10	
2	SDC	SDP-4	23SDBT08E	DRUG DESIGN: PRINCIPLES AND ENGINEERING	E	DDPE	0	0	6	4	4	10	
3	SDC	SDP-4	23SDBT08R	DRUG DESIGN: PRINCIPLES AND ENGINEERING	R	DDPE	0	0	2	4	2	6	
4	PEC	PE-1	23BIS3101A	MOLECULAR MODELLING AND DRUG DESIGN	A	MMDD	4	0	4	4	7	12	
5	PEC	PE-1	23BIS3101E	MOLECULAR MODELLING AND DRUG DESIGN	E	MMDD	4	0	4	4	7	12	
6	PEC	PE-1	23BIS3101R	MOLECULAR MODELLING AND DRUG DESIGN	R	MMDD	3	0	2	4	5	9	
7	PEC	PE-2	23BIS3202A	BIOMEDICAL INFORMATICS	A	BMI	5	0	0	0	5	5	
8	PEC	PE-2	23BIS3202E	BIOMEDICAL INFORMATICS	E	BMI	5	0	0	0	5	5	
9	PEC	PE-2	23BIS3202R	BIOMEDICAL INFORMATICS	R	BMI	3	0	0	0	3	3	
10	PEC	PE-2	23BIS3203A	PYTHON AND R PROGRAMMING	A	P&RP	5	0	0	0	5	5	
11	PEC	PE-2	23BIS3203E	PYTHON AND R PROGRAMMING	E	P&RP	5	0	0	0	5	5	
12	PEC	PE-2	23BIS3203R	PYTHON AND R PROGRAMMING	R	P&RP	3	0	0	0	3	3	
13	PEC	PE-3	23BIS3304A	STRUCTURAL BIOLOGY	A	SB	4	0	4	4	7	12	
14	PEC	PE-3	23BIS3304E	STRUCTURAL BIOLOGY	E	SB	4	0	4	4	7	12	
15	PEC	PE-3	23BIS3304R	STRUCTURAL BIOLOGY	R	SB	3	0	2	4	5	9	
16	PEC	PE-4	23BIS3405M	APPLIED BIOINFORMATICS	M	ABI	3	0	0	0	3	3	
17	PEC	PE-4	23BIS3406M	NGS SEQUENCING AND DATA ANALYSIS	M	NGSDA	3	0	0	0	3	3	
18	PEC	PE-5	23BIS3507	SYSTEMS BIOLOGY	R	SSB	3	0	0	0	3	3	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
19	PEC	PE-5	23BIS3508	DATABASE MANAGEMENT SYSTEM FOR BIOLOGIST	R	DBMS	3	0	0	0	3	3	

45. SPECIALIZATION: BLOCKCHAIN ENGINEERING FOR WEB3

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDAD08A	EMERGING BLOCKCHAIN MODELS FOR DIGITAL CURRENCIES	A	EBCMDC	0	0	6	4	4	10	
2	SDC	SDP-4	23SDAD08E	EMERGING BLOCKCHAIN MODELS FOR DIGITAL CURRENCIES	E	EBCMDC	0	0	6	4	4	10	
3	SDC	SDP-4	23SDAD08R	EMERGING BLOCKCHAIN MODELS FOR DIGITAL CURRENCIES	R	EBCMDC	0	0	2	4	2	6	
4	PEC	PE-1	23BEW3101A	INTRODUCTION TO BLOCKCHAIN TECHNOLOGY, CRYPTOCURRENCIES AND TOKENS	A	ITBTCT	4	0	4	4	7	12	
5	PEC	PE-1	23BEW3101E	INTRODUCTION TO BLOCKCHAIN TECHNOLOGY, CRYPTOCURRENCIES AND TOKENS	E	ITBTCT	4	0	4	4	7	12	
6	PEC	PE-1	23BEW3101R	INTRODUCTION TO BLOCKCHAIN TECHNOLOGY, CRYPTOCURRENCIES AND TOKENS	R	ITBTCT	3	0	2	4	5	9	
7	PEC	PE-2	23BEW3202A	SMART CONTRACTS	A	SCR	5	0	0	0	5	5	
8	PEC	PE-2	23BEW3202E	SMART CONTRACTS	E	SCR	5	0	0	0	5	5	
9	PEC	PE-2	23BEW3202R	SMART CONTRACTS	R	SCR	3	0	0	0	3	3	
10	PEC	PE-3	23BEW3303A	DECENTRALIZED APPLICATIONS AND DECENTRALIZED WEB	A	DADW	4	0	4	4	7	12	
11	PEC	PE-3	23BEW3303E	DECENTRALIZED APPLICATIONS AND DECENTRALIZED WEB	E	DADW	4	0	4	4	7	12	
12	PEC	PE-3	23BEW3303R	DECENTRALIZED APPLICATIONS AND DECENTRALIZED WEB	R	DADW	3	0	2	4	5	9	
13	PEC	PE-4	23BEW3404M	BLOCKCHAIN PLATFORMS AND PROTOCOLS	M	BCPAP	3	0	0	0	3	3	
14	PEC	PE-4	23BEW3405M	BLOCKCHAIN SECURITY	M	BCS	3	0	0	0	3	3	
15	PEC	PE-4	23BEW3406M	ORACLES AND DATA FEEDS	M	ODF	3	0	0	0	3	3	
16	PEC	PE-5	23BEW3507	BLOCKCHAIN SCALABILITY AND LAYER 2 SOLUTIONS	R	BCSALS	3	0	0	0	3	3	
17	PEC	PE-5	23BEW3508	REGULATORY LANDSCAPE AND COMPLIANCE	R	RLAC	3	0	0	0	3	3	
18	PEC	PE-5	23BEW3509	FUTURE TRENDS IN BLOCKCHAIN AND WEB3	R	FTBCAW	3	0	0	0	3	3	

46. SPECIALIZATION: CLOUD AND EDGE COMPUTING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS04A	CLOUD BASED SOLUTIONS ARCHITECT	A	CBSA	0	0	6	4	4	10	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
2	SDC	SDP-4	23SDCS04E	CLOUD BASED SOLUTIONS ARCHITECT	E	CBSA	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS04R	CLOUD BASED SOLUTIONS ARCHITECT	R	CBSA	0	0	2	4	2	6	
4	PEC	PE-1	23CEC3101A	CLOUD INFRASTRUCTURE AND SERVICES	A	CIS	4	0	4	4	7	12	OS(1) Rule:1
5	PEC	PE-1	23CEC3101E	CLOUD INFRASTRUCTURE AND SERVICES	E	CIS	4	0	4	4	7	12	OS(1) Rule:1
6	PEC	PE-1	23CEC3101R	CLOUD INFRASTRUCTURE AND SERVICES	R	CIS	3	0	2	4	5	9	OS(1) Rule:1
7	PEC	PE-2	23CEC3202A	ADVANCED OPERATING SYSTEMS	A	AOS	5	0	0	0	5	5	OS(1) Rule:1
8	PEC	PE-2	23CEC3202E	ADVANCED OPERATING SYSTEMS	E	AOS	5	0	0	0	5	5	OS(1) Rule:1
9	PEC	PE-2	23CEC3202R	ADVANCED OPERATING SYSTEMS	R	AOS	3	0	0	0	3	3	OS(1) Rule:1
10	PEC	PE-2	23CEC3203A	FUNCTIONAL & CONCURRENT PROGRAMMING	A	FCP	5	0	0	0	5	5	OS(1) Rule:1
11	PEC	PE-2	23CEC3203E	FUNCTIONAL & CONCURRENT PROGRAMMING	E	FCP	5	0	0	0	5	5	OS(1) Rule:1
12	PEC	PE-2	23CEC3203R	FUNCTIONAL & CONCURRENT PROGRAMMING	R	FCP	3	0	0	0	3	3	OS(1) Rule:1
13	PEC	PE-2	23CEC3204A	CLOUD DEVOPS	A	CD	5	0	0	0	5	5	OS(1) Rule:1
14	PEC	PE-2	23CEC3204E	CLOUD DEVOPS	E	CD	5	0	0	0	5	5	OS(1) Rule:1
15	PEC	PE-2	23CEC3204R	CLOUD DEVOPS	R	CD	3	0	0	0	3	3	OS(1) Rule:1
16	PEC	PE-3	23CEC3305A	CLOUD & SERVERLESS COMPUTING	A	CSC	4	0	4	4	7	12	OS(1) Rule:1
17	PEC	PE-3	23CEC3305E	CLOUD & SERVERLESS COMPUTING	E	CSC	4	0	4	4	7	12	OS(1) Rule:1
18	PEC	PE-3	23CEC3305R	CLOUD & SERVERLESS COMPUTING	R	CSC	3	0	2	4	5	9	OS(1) Rule:1
19	PEC	PE-4	23CEC3406M	ADVANCED COMPUTER ARCHITECTURE	M	ACA	3	0	0	0	3	3	OS(1) Rule:1
20	PEC	PE-4	23CEC3407M	PARALLEL ALGORITHMS	M	PA	3	0	0	0	3	3	OS(1) Rule:1
21	PEC	PE-4	23CEC3408M	CLOUD SECURITY	M	CS	3	0	0	0	3	3	OS(1) Rule:1
22	PEC	PE-4	23CEC3409M	ARCHITECTING CLOUD SOLUTIONS*	M	ACS	3	0	0	0	3	3	
23	PEC	PE-5	23CEC3510	EDGE COMPUTING	R	EC	3	0	0	0	3	3	
24	PEC	PE-5	23CEC3511	HIGH PERFORMANCE COMPUTING	R	HPC	3	0	0	0	3	3	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
25	PEC	PE-5	23CEC3512	DESIGN OF DISTRIBUTED APPLICATIONS ON CLOUD (DDA)	R	DDAC	3	0	0	0	3	3	
26	PEC	PE-5	23CEC3513	CLOUD NETWORKING	R	CN	3	0	0	0	3	3	

47. SPECIALIZATION: CLOUD INFRASTRUCTURE DESIGN AND ENGINEERING?

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS16A	CLOUD INFRASTRUCTURE DESIGN	A	CISD	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS16E	CLOUD INFRASTRUCTURE DESIGN	E	CISD	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS16R	CLOUD INFRASTRUCTURE DESIGN	R	CISD	0	0	2	4	2	6	
4	PEC	PE-1	23CID3101A	CLOUD INFRASTRUCTURE ENGINEERING	A	CIE	4	0	4	4	7	12	OS(1) Rule:1
5	PEC	PE-1	23CID3101E	CLOUD INFRASTRUCTURE ENGINEERING	E	CIE	4	0	4	4	7	12	OS(1) Rule:1
6	PEC	PE-1	23CID3101R	CLOUD INFRASTRUCTURE ENGINEERING	R	CIE	3	0	2	4	5	9	OS(1) Rule:1
7	PEC	PE-2	23CID3202A	ENTERPRISE CLOUD COMPUTING: TECHNOLOGY, ARCHITECTURE, APPLICATIONS	A	ECT	5	0	0	0	5	5	OS(1) Rule:1
8	PEC	PE-2	23CID3202E	ENTERPRISE CLOUD COMPUTING: TECHNOLOGY, ARCHITECTURE, APPLICATIONS	E	ECT	5	0	0	0	5	5	OS(1) Rule:1
9	PEC	PE-2	23CID3202R	ENTERPRISE CLOUD COMPUTING: TECHNOLOGY, ARCHITECTURE, APPLICATIONS	R	ECT	3	0	0	0	3	3	OS(1) Rule:1
10	PEC	PE-2	23CID3203A	ARCHITECTING HIGHLY AVAILABLE AND SCALABLE CLOUD ENVIRONMENTS	A	AHASCE	5	0	0	0	5	5	OS(1) Rule:1
11	PEC	PE-2	23CID3203E	ARCHITECTING HIGHLY AVAILABLE AND SCALABLE CLOUD ENVIRONMENTS	E	AHASCE	5	0	0	0	5	5	OS(1) Rule:1
12	PEC	PE-2	23CID3203R	ARCHITECTING HIGHLY AVAILABLE AND SCALABLE CLOUD ENVIRONMENTS	R	AHASCE	3	0	0	0	3	3	OS(1) Rule:1
13	PEC	PE-3	23CID3304A	CLOUD INFRASTRUCTURE ARCHITECTURE AND ENGINEERING	A	CIA	4	0	4	4	7	12	OS(1) Rule:1
14	PEC	PE-3	23CID3304E	CLOUD INFRASTRUCTURE ARCHITECTURE AND ENGINEERING	E	CIA	4	0	4	4	7	12	OS(1) Rule:1
15	PEC	PE-3	23CID3304R	CLOUD INFRASTRUCTURE ARCHITECTURE AND ENGINEERING	R	CIA	3	0	2	4	5	9	OS(1) Rule:1
16	PEC	PE-4	23CID3405M	RELIABLE CLOUD INFRASTRUCTURE: DESIGN & PROCESS	M	RID	3	0	0	0	3	3	OS(1) Rule:1
17	PEC	PE-4	23CID3406M	HYBRID CLOUD INTEGRATION AND MANAGEMENT	M	HCIM	3	0	0	0	3	3	OS(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
18	PEC	PE-5	23CID3507	CLOUD ENGINEERING	R	CE	3	0	0	0	3	3	OS(1) Rule:1
19	PEC	PE-5	23CID3508	CLOUD DATA MANAGEMENT AND STORAGE SOLUTIONS	R	CDMSS	3	0	0	0	3	3	OS(1) Rule:1

48. SPECIALIZATION: CLOUD NATIVE SECURITY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS05A	CLOUD BASED SECURITY SPECIALITY	A	CBSS	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS05E	CLOUD BASED SECURITY SPECIALITY	E	CBSS	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS05R	CLOUD BASED SECURITY SPECIALITY	R	CBSS	0	0	2	4	2	6	
4	PEC	PE-1	23CNS3101A	INTRODUCTION TO CLOUD NATIVE COMPUTING	A	ITCNC	4	0	4	4	7	12	OS(1) Rule:1
5	PEC	PE-1	23CNS3101E	INTRODUCTION TO CLOUD NATIVE COMPUTING	E	ITCNC	4	0	4	4	7	12	OS(1) Rule:1
6	PEC	PE-1	23CNS3101R	INTRODUCTION TO CLOUD NATIVE COMPUTING	R	ITCNC	3	0	2	4	5	9	OS(1) Rule:1
7	PEC	PE-2	23CNS3202A	FUNDAMENTALS OF CLOUD SECURITY	A	FOCS	5	0	0	0	5	5	OS(1) Rule:1
8	PEC	PE-2	23CNS3202E	FUNDAMENTALS OF CLOUD SECURITY	E	FOCS	5	0	0	0	5	5	OS(1) Rule:1
9	PEC	PE-2	23CNS3202R	FUNDAMENTALS OF CLOUD SECURITY	R	FOCS	3	0	0	0	3	3	OS(1) Rule:1
10	PEC	PE-3	23CNS3303A	CONTAINER SECURITY	A	CTSY	4	0	4	4	7	12	OS(1) Rule:1
11	PEC	PE-3	23CNS3303E	CONTAINER SECURITY	E	CTSY	4	0	4	4	7	12	OS(1) Rule:1
12	PEC	PE-3	23CNS3303R	CONTAINER SECURITY	R	CTSY	3	0	2	4	5	9	OS(1) Rule:1
13	PEC	PE-4	23CNS3404M	MICROSERVICES SECURITY	M	MSS	3	0	0	0	3	3	OS(1) Rule:1
14	PEC	PE-4	23CNS3405M	INFRASTRUCTURE AS CODE SECURITY	M	ISACS	3	0	0	0	3	3	OS(1) Rule:1
15	PEC	PE-4	23CNS3406M	IDENTITY AND ACCESS MANAGEMENT IN CLOUD NATIVE ENVIRONMENTS	M	IAMCNE	3	0	0	0	3	3	OS(1) Rule:1
16	PEC	PE-4	23CNS3407M	NETWORK SECURITY IN CLOUD NATIVE ARCHITECTURES	M	NSCNA	3	0	0	0	3	3	OS(1) Rule:1
17	PEC	PE-5	23CNS3508	MONITORING AND LOGGING FOR CLOUD NATIVE SECURITY	R	MLCNS	3	0	0	0	3	3	OS(1) Rule:1
18	PEC	PE-5	23CNS3509	COMPLIANCE AND GOVERNANCE IN CLOUD NATIVE ENVIRONMENTS	R	CGCNE	3	0	0	0	3	3	OS(1) Rule:1
19	PEC	PE-5	23CNS3510	SERVERLESS SECURITY	R	SLSY	3	0	0	0	3	3	OS(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
20	PEC	PE-5	23CNS3511	CLOUD NATIVE SECURITY TOOLS AND SOLUTIONS	R	CNSTAS	3	0	0	0	3	3	OS(1) Rule:1
21	PEC	PE-5	23CNS3512	FUTURE TRENDS IN CLOUD NATIVE SECURITY	R	FTCNS	3	0	0	0	3	3	OS(1) Rule:1

49. SPECIALIZATION: CLOUD NATIVE SOFTWARE ENGINEERING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS15A	SOFTWARE DESIGN WITH CLOUD NATIVE COMPUTING	A	SDCNC	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS15E	SOFTWARE DESIGN WITH CLOUD NATIVE COMPUTING	E	SDCNC	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS15R	SOFTWARE DESIGN WITH CLOUD NATIVE COMPUTING	R	SDCNC	0	0	2	4	2	6	
4	PEC	PE-1	23CNE3101A	FOUNDATIONS OF CLOUD NATIVE COMPUTING	A	FCNC	4	0	4	4	7	12	OS(1) Rule:1
5	PEC	PE-1	23CNE3101E	FOUNDATIONS OF CLOUD NATIVE COMPUTING	E	FCNC	4	0	4	4	7	12	OS(1) Rule:1
6	PEC	PE-1	23CNE3101R	FOUNDATIONS OF CLOUD NATIVE COMPUTING	R	FCNC	3	0	2	4	5	9	OS(1) Rule:1
7	PEC	PE-2	23CNE3202A	CLOUD NATIVE APPLICATION DEVELOPMENT	A	CNAD	5	0	0	0	5	5	OS(1) Rule:1
8	PEC	PE-2	23CNE3202E	CLOUD NATIVE APPLICATION DEVELOPMENT	E	CNAD	5	0	0	0	5	5	OS(1) Rule:1
9	PEC	PE-2	23CNE3202R	CLOUD NATIVE APPLICATION DEVELOPMENT	R	CNAD	3	0	0	0	3	3	OS(1) Rule:1
10	PEC	PE-2	23CNE3203A	CLOUD NATIVE DESIGN PROCESS	A	CNDP	5	0	0	0	5	5	OS(1) Rule:1
11	PEC	PE-2	23CNE3203E	CLOUD NATIVE DESIGN PROCESS	E	CNDP	5	0	0	0	5	5	OS(1) Rule:1
12	PEC	PE-2	23CNE3203R	CLOUD NATIVE DESIGN PROCESS	R	CNDP	3	0	0	0	3	3	OS(1) Rule:1
13	PEC	PE-3	23CNE3304A	SOFTWARE ENGINEERING FOR CLOUD COMPUTING	A	SEC	4	0	4	4	7	12	OS(1) Rule:1
14	PEC	PE-3	23CNE3304E	SOFTWARE ENGINEERING FOR CLOUD COMPUTING	E	SEC	4	0	4	4	7	12	OS(1) Rule:1
15	PEC	PE-3	23CNE3304R	SOFTWARE ENGINEERING FOR CLOUD COMPUTING	R	SEC	3	0	2	4	5	9	OS(1) Rule:1
16	PEC	PE-4	23CNE3405M	SERVERLESS COMPUTING AND EVENT-DRIVEN ARCHITECTURES	M	SCEDA	3	0	0	0	3	3	OS(1) Rule:1
17	PEC	PE-4	23CNE3406M	CLOUD NATIVE SOFTWARE ARCHITECTURES	M	CNSA	3	0	0	0	3	3	OS(1) Rule:1
18	PEC	PE-5	23CNE3507	CLOUD NATIVE NETWORKING AND STORAGE SYSTEMS	R	CNNS	3	0	0	0	3	3	OS(1) Rule:1
19	PEC	PE-5	23CNE3508	CLOUD INFRASTRUCTURE AND VIRTUALIZATION	R	CIAV	3	0	0	0	3	3	OS(1) Rule:1

50. SPECIALIZATION: CLOUD-BASED SCIENTIFIC COMPUTING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS14A	CLOUD ARCHITECTURES FOR SCIENTIFIC WORKLOADS	A	CASW	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS14E	CLOUD ARCHITECTURES FOR SCIENTIFIC WORKLOADS	E	CASW	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS14R	CLOUD ARCHITECTURES FOR SCIENTIFIC WORKLOADS	R	CASW	0	0	2	4	2	6	
4	PEC	PE-1	23CSC3101A	FUNDAMENTALS OF CLOUD-BASED SCIENTIFIC COMPUTING	A	FCS	4	0	4	4	7	12	OS(1) Rule:1
5	PEC	PE-1	23CSC3101E	FUNDAMENTALS OF CLOUD-BASED SCIENTIFIC COMPUTING	E	FCS	4	0	4	4	7	12	OS(1) Rule:1
6	PEC	PE-1	23CSC3101R	FUNDAMENTALS OF CLOUD-BASED SCIENTIFIC COMPUTING	R	FCS	3	0	2	4	5	9	OS(1) Rule:1
7	PEC	PE-2	23CSC3202A	DEVELOPMENT OF SCIENTIFIC APPLICATIONS USING CLOUD-BASED TECHNOLOGY	A	DSA	5	0	0	0	5	5	OS(1) Rule:1
8	PEC	PE-2	23CSC3202E	DEVELOPMENT OF SCIENTIFIC APPLICATIONS USING CLOUD-BASED TECHNOLOGY	E	DSA	5	0	0	0	5	5	OS(1) Rule:1
9	PEC	PE-2	23CSC3202R	DEVELOPMENT OF SCIENTIFIC APPLICATIONS USING CLOUD-BASED TECHNOLOGY	R	DSA	3	0	0	0	3	3	OS(1) Rule:1
10	PEC	PE-2	23CSC3203A	DISTRIBUTED SCIENTIFIC COMPUTING IN THE CLOUD	A	DSCC	5	0	0	0	5	5	OS(1) Rule:1
11	PEC	PE-2	23CSC3203E	DISTRIBUTED SCIENTIFIC COMPUTING IN THE CLOUD	E	DSCC	5	0	0	0	5	5	OS(1) Rule:1
12	PEC	PE-2	23CSC3203R	DISTRIBUTED SCIENTIFIC COMPUTING IN THE CLOUD	R	DSCC	3	0	0	0	3	3	OS(1) Rule:1
13	PEC	PE-3	23CSC3304A	CLOUD BASED HIGH PERFORMANCE COMPUTING	A	CHC	4	0	4	4	7	12	OS(1) Rule:1
14	PEC	PE-3	23CSC3304E	CLOUD BASED HIGH PERFORMANCE COMPUTING	E	CHC	4	0	4	4	7	12	OS(1) Rule:1
15	PEC	PE-3	23CSC3304R	CLOUD BASED HIGH PERFORMANCE COMPUTING	R	CHC	3	0	2	4	5	9	OS(1) Rule:1
16	PEC	PE-4	23CSC3405M	CLOUD-BASED GRID COMPUTING	M	CGC	3	0	0	0	3	3	OS(1) Rule:1
17	PEC	PE-4	23CSC3406M	CLOUD COMPUTING FOR SCIENTIFIC DISCOVERY	M	CCFSD	3	0	0	0	3	3	OS(1) Rule:1
18	PEC	PE-5	23CSC3508	PARALLEL COMPUTING FOR SCIENTISTS USING CLOUD PLATFORMS	R	PCSCP	3	0	0	0	3	3	OS(1) Rule:1
19	PEC	PE-5	23CSC3507	CLOUD-BASED SCALABLE COMPUTING AND BIG DATA ANALYTICS	R	CSCBD	3	0	0	0	3	3	OS(1) Rule:1

51. SPECIALIZATION: COMPUTER COMMUNICATION AND 5G TECHNOLOGY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEC12A	NETWORK PROGRAMMABILITY AND AUTOMATION	A	NPA	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEC12E	NETWORK PROGRAMMABILITY AND AUTOMATION	E	NPA	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEC12R	NETWORK PROGRAMMABILITY AND AUTOMATION	R	NPA	0	0	2	4	2	6	
4	PEC	PE-1	23CCF3101A	TCP/IP & OTHER PROTOCOL SUITE	A	TCP	4	0	4	4	7	12	RNW(1) Rule:1
5	PEC	PE-1	23CCF3101E	TCP/IP & OTHER PROTOCOL SUITE	E	TCP	4	0	4	4	7	12	RNW(1) Rule:1
6	PEC	PE-1	23CCF3101R	TCP/IP & OTHER PROTOCOL SUITE	R	TCP	3	0	2	4	5	9	RNW(1) Rule:1
7	PEC	PE-2	23CCF3202A	CLOUD COMPUTING AND NETWORKS SECURITY	A	CCNS	5	0	0	0	5	5	RNW(1) Rule:1
8	PEC	PE-2	23CCF3202E	CLOUD COMPUTING AND NETWORKS SECURITY	E	CCNS	5	0	0	0	5	5	RNW(1) Rule:1
9	PEC	PE-2	23CCF3202R	CLOUD COMPUTING AND NETWORKS SECURITY	R	CCNS	3	0	0	0	3	3	RNW(1) Rule:1
10	PEC	PE-3	23CCF3303A	VOIP AND BROADBAND NETWORKS	A	VBN	4	0	4	4	7	12	RNW(1) Rule:1
11	PEC	PE-3	23CCF3303E	VOIP AND BROADBAND NETWORKS	E	VBN	4	0	4	4	7	12	RNW(1) Rule:1
12	PEC	PE-3	23CCF3303R	VOIP AND BROADBAND NETWORKS	R	VBN	3	0	2	4	5	9	RNW(1) Rule:1
13	PEC	PE-4	23CCF3404M	5G MOBILE AND IEEE STANDARDS	M	5GMI	3	0	0	0	3	3	RNW(1) Rule:1
14	PEC	PE-5	23CCF3505	IP MULTIMEDIA SUB-SYSTEM & EMERGING TECHNOLOGIES	R	IMSET	3	0	0	0	3	3	RNW(1) Rule:1
15	PEC	PE-5	23CCF3506	IT SECURITY: DEFENCE AGAINST THE DIGITAL DARK ARTS	R	IMSET	3	0	0	0	3	3	RNW(1) Rule:1

52. SPECIALIZATION: CONSTRUCTION TECHNOLOGY AND MANAGEMENT

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCE04A	PLANNING AND SCHEDULING OF RESIDENTIAL BUILDING USING PRIMAVERA SOFTWARE	A	PSRBPS	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCE04E	PLANNING AND SCHEDULING OF RESIDENTIAL BUILDING USING PRIMAVERA SOFTWARE	E	PSRBPS	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCE04R	PLANNING AND SCHEDULING OF RESIDENTIAL BUILDING USING PRIMAVERA SOFTWARE	R	PSRBPS	0	0	2	4	2	6	
4	PEC	PE-1	23CTM3101A	BUILDING INFORMATION MODELLING	A	BIM	4	0	4	4	7	12	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
5	PEC	PE-1	23CTM3101E	BUILDING INFORMATION MODELLING	E	BIM	4	0	4	4	7	12	
6	PEC	PE-1	23CTM3101R	BUILDING INFORMATION MODELLING	R	BIM	3	0	2	4	5	9	
7	PEC	PE-2	23CTM3202A	ADVANCED CONSTRUCTION TECHNOLOGY	A	ACT	5	0	0	0	5	5	
8	PEC	PE-2	23CTM3202E	ADVANCED CONSTRUCTION TECHNOLOGY	E	ACT	5	0	0	0	5	5	
9	PEC	PE-2	23CTM3202R	ADVANCED CONSTRUCTION TECHNOLOGY	R	ACT	3	0	0	0	3	3	
10	PEC	PE-2	23CTM3203A	SUSTAINABLE CONSTRUCTION TECHNOLOGY	A	SCT	5	0	0	0	5	5	
11	PEC	PE-2	23CTM3203E	SUSTAINABLE CONSTRUCTION TECHNOLOGY	E	SCT	5	0	0	0	5	5	
12	PEC	PE-2	23CTM3203R	SUSTAINABLE CONSTRUCTION TECHNOLOGY	R	SCT	3	0	0	0	3	3	
13	PEC	PE-3	23CTM3304A	CONSTRUCTION PLANNING & SCHEDULING	A	CPS	4	0	4	4	7	12	
14	PEC	PE-3	23CTM3304E	CONSTRUCTION PLANNING & SCHEDULING	E	CPS	4	0	4	4	7	12	
15	PEC	PE-3	23CTM3304R	CONSTRUCTION PLANNING & SCHEDULING	R	CPS	3	0	2	4	5	9	
16	PEC	PE-4	23CTM3405M	CONSTRUCTION CONTRACTS	M	CC	3	0	0	0	3	3	
17	PEC	PE-4	23CTM3406M	CONSTRUCTION FORMULATION APPRAISAL	M	CFA	3	0	0	0	3	3	
18	PEC	PE-5	23CTM3507	QUALITY AND SAFETY IN CONSTRUCTION	R	QSC	3	0	0	0	3	3	
19	PEC	PE-5	23CTM3508	GREEN BUILDING	R	GB	3	0	0	0	3	3	

53. SPECIALIZATION: CROSS PLATFORM DEVELOPMENT FRAMEWORKS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCI04A	ADVANCED ANDROID MOBILE APPLICATION WITH CLOUD-BASED WEB SERVICES	A	AAMA	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCI04E	ADVANCED ANDROID MOBILE APPLICATION WITH CLOUD-BASED WEB SERVICES	E	AAMA	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCI04R	ADVANCED ANDROID MOBILE APPLICATION WITH CLOUD-BASED WEB SERVICES	R	AAMA	0	0	2	4	2	6	
4	PEC	PE-1	23CPD3101A	FUNDAMENTALS OF MOBILE APPLICATION DEVELOPMENT	A	FMAD	4	0	4	4	7	12	
5	PEC	PE-1	23CPD3101E	FUNDAMENTALS OF MOBILE APPLICATION DEVELOPMENT	E	FMAD	4	0	4	4	7	12	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
6	PEC	PE-1	23CPD3101R	FUNDAMENTALS OF MOBILE APPLICATION DEVELOPMENT	R	FMAD	3	0	2	4	5	9	
7	PEC	PE-2	23CPD3202A	REACT NATIVE FOR ANDROID AND IOS DEVELOPMENT	A	RNA	5	0	0	0	5	5	
8	PEC	PE-2	23CPD3202E	REACT NATIVE FOR ANDROID AND IOS DEVELOPMENT	E	RNA	5	0	0	0	5	5	
9	PEC	PE-2	23CPD3202R	REACT NATIVE FOR ANDROID AND IOS DEVELOPMENT	R	RNA	3	0	0	0	3	3	
10	PEC	PE-2	23CPD3203A	FRAMEWORK BASED CROSS PLATFORM APP DEVELOPMENT	A	FBCPD	5	0	0	0	5	5	
11	PEC	PE-2	23CPD3203E	FRAMEWORK BASED CROSS PLATFORM APP DEVELOPMENT	E	FBCPD	5	0	0	0	5	5	
12	PEC	PE-2	23CPD3203R	FRAMEWORK BASED CROSS PLATFORM APP DEVELOPMENT	R	FBCPD	3	0	0	0	3	3	
13	PEC	PE-3	23CPD3304A	SECURE MOBILE APPLICATION DEVELOPMENT	A	SMAD	4	0	4	4	7	12	
14	PEC	PE-3	23CPD3304E	SECURE MOBILE APPLICATION DEVELOPMENT	E	SMAD	4	0	4	4	7	12	
15	PEC	PE-3	23CPD3304R	SECURE MOBILE APPLICATION DEVELOPMENT	R	SMAD	3	0	2	4	5	9	
16	PEC	PE-4	23CPD3406M	META REACT NATIVE SPECIALIZATION	M	MRNS	3	0	0	0	3	3	
17	PEC	PE-4	23CPD3405M	UX DESIGN	M	UXD	3	0	0	0	3	3	
18	PEC	PE-5	23CPD3507	ADVANCED MOBILE APPLICATION DEVELOPMENT	R	AMAD	3	0	0	0	3	3	
19	PEC	PE-5	23CPD3508	CROSS PLATFORM USER INTERFACE DESIGN	R	CPED	3	0	0	0	3	3	

54. SPECIALIZATION: CYBER PHYSICAL SYSTEMS AND IOT

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDIN06A	EMBEDDED AND IOT ROGRAMMING	A	IOTHP	0	0	6	4	4	10	
2	SDC	SDP-4	23SDIN06E	EMBEDDED AND IOT ROGRAMMING	E	IOTHP	0	0	6	4	4	10	
3	SDC	SDP-4	23SDIN06R	EMBEDDED AND IOT ROGRAMMING	R	IOTHP	0	0	2	4	2	6	
4	PEC	PE-1	23CPS3101A	IOT SENSING AND ACTUATING DEVICES	A	ISAD	4	0	4	4	7	12	NPS(1) Rule:1
5	PEC	PE-1	23CPS3101E	IOT SENSING AND ACTUATING DEVICES	E	ISAD	4	0	4	4	7	12	NPS(1) Rule:1
6	PEC	PE-1	23CPS3101R	IOT SENSING AND ACTUATING DEVICES	R	ISAD	3	0	2	4	5	9	NPS(1) Rule:1
7	PEC	PE-2	23CPS3202A	INTERNET OF THINGS ARCHITECTURES AND PROTOCOLS	A	IOTAP	5	0	0	0	5	5	NPS(1) Rule:1
8	PEC	PE-2	23CPS3202E	INTERNET OF THINGS ARCHITECTURES AND PROTOCOLS	E	IOTAP	5	0	0	0	5	5	NPS(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
9	PEC	PE-2	23CPS3202R	INTERNET OF THINGS ARCHITECTURES AND PROTOCOLS	R	IOTAP	3	0	0	0	3	3	NPS(1) Rule:1
10	PEC	PE-3	23CPS3303A	CYBER PHYSICAL SYSTEMS	A	CPS	4	0	4	4	7	12	NPS(1) Rule:1
11	PEC	PE-3	23CPS3303E	CYBER PHYSICAL SYSTEMS	E	CPS	4	0	4	4	7	12	NPS(1) Rule:1
12	PEC	PE-3	23CPS3303R	CYBER PHYSICAL SYSTEMS	R	CPS	3	0	2	4	5	9	NPS(1) Rule:1
13	PEC	PE-4	23CPS3404M	FOUNDATIONS OF HYBRID AND EMBEDDED SYSTEMS	M	DVP	3	0	0	0	3	3	NPS(1) Rule:1
14	PEC	PE-5	23CPS3505	CLOUD COMPUTING FOR IOT ENGINEERS	R	CCIOTE	3	0	0	0	3	3	NPS(1) Rule:1
15	PEC	PE-5	23CPS3506	WIRELESS SENSOR NETWORKS	R	WSN	3	0	0	0	3	3	NPS(1) Rule:1
16	PEC	PE-5	23CPS3507	EDGE COMPUTING	R	EC	3	0	0	0	3	3	NPS(1) Rule:1

55. SPECIALIZATION: CYBER SECURITY AND BLOCKCHAIN TECHNOLOGY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS05A	CLOUD BASED SECURITY SPECIALITY	A	CBSS	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS05E	CLOUD BASED SECURITY SPECIALITY	E	CBSS	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS05R	CLOUD BASED SECURITY SPECIALITY	R	CBSS	0	0	2	4	2	6	
4	PEC	PE-1	23CSB3101A	CRYPT ANALYSIS & CYBER DEFENSE	A	CACD	4	0	4	4	7	12	NPS(1) Rule:1
5	PEC	PE-1	23CSB3101E	CRYPT ANALYSIS & CYBER DEFENSE	E	CACD	4	0	4	4	7	12	NPS(1) Rule:1
6	PEC	PE-1	23CSB3101R	CRYPT ANALYSIS & CYBER DEFENSE	R	CACD	3	0	2	4	5	9	NPS(1) Rule:1
7	PEC	PE-2	23CSB3202A	NETWORK AND INFRASTRUCTURE SECURITY	A	NIS	5	0	0	0	5	5	NPS(1) Rule:1
8	PEC	PE-2	23CSB3202E	NETWORK AND INFRASTRUCTURE SECURITY	E	NIS	5	0	0	0	5	5	NPS(1) Rule:1
9	PEC	PE-2	23CSB3202R	NETWORK AND INFRASTRUCTURE SECURITY	R	NIS	3	0	0	0	3	3	NPS(1) Rule:1
10	PEC	PE-2	23CSB3203A	INTRODUCTION TO BLOCKCHAIN AND CRYPTO CURRENCIES	A	IBCC	3	0	4	0	5	7	NPS(1) Rule:1
11	PEC	PE-2	23CSB3203E	INTRODUCTION TO BLOCKCHAIN AND CRYPTO CURRENCIES	E	IBCC	3	0	4	0	5	7	NPS(1) Rule:1
12	PEC	PE-2	23CSB3203R	INTRODUCTION TO BLOCKCHAIN AND CRYPTO CURRENCIES	R	IBCC	2	0	2	0	3	4	NPS(1) Rule:1
13	PEC	PE-3	23CSB3304A	DIGITAL FORENSICS	A	DF	4	0	4	4	7	12	NPS(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
14	PEC	PE-3	23CSB3304E	DIGITAL FORENSICS	E	DF	4	0	4	4	7	12	NPS(1) Rule:1
15	PEC	PE-3	23CSB3304R	DIGITAL FORENSICS	R	DF	3	0	2	4	5	9	NPS(1) Rule:1
16	PEC	PE-4	23CSB3405M	DATABASE SYSTEM AND SECURITY	M	DSS	3	0	0	0	3	3	NPS(1) Rule:1
17	PEC	PE-4	23CSB3406M	PROGRAMMING FOR SMART CONTRACTS	M	PSC	3	0	0	0	3	3	NPS(1) Rule:1
18	PEC	PE-4	23CSB3407M	CLOUD SECURITY	M	CS	3	0	0	0	3	3	NPS(1) Rule:1
19	PEC	PE-5	23CSB3508	SECURE SOFTWARE ENGINEERING	R	SSE	3	0	0	0	3	3	NPS(1) Rule:1
20	PEC	PE-5	23CSB3509	WEB SECURITY	R	WS	3	0	0	0	3	3	NPS(1) Rule:1
21	PEC	PE-5	23CSB3510	SECURITY GOVERNANCE & MANAGEMENT	R	SGM	3	0	0	0	3	3	NPS(1) Rule:1

56. SPECIALIZATION: DATA COMMUNICATIONS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEC13A	5G PRIVATE AND INDUSTRIAL AUTOMATION NETWORKS	A	5PIA	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEC13E	5G PRIVATE AND INDUSTRIAL AUTOMATION NETWORKS	E	5PIA	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEC13R	5G PRIVATE AND INDUSTRIAL AUTOMATION NETWORKS	R	5PIA	0	0	2	4	2	6	
4	PEC	PE-1	23DCS3101A	4G WIRELESS TECHNOLOGIES AND CELLULAR COMMUNICATION	A	4GW	4	0	4	4	7	12	WC(1) Rule:1
5	PEC	PE-1	23DCS3101E	4G WIRELESS TECHNOLOGIES AND CELLULAR COMMUNICATION	E	4GW	4	0	4	4	7	12	WC(1) Rule:1
6	PEC	PE-1	23DCS3101R	4G WIRELESS TECHNOLOGIES AND CELLULAR COMMUNICATION	R	4GW	3	0	2	4	5	9	WC(1) Rule:1
7	PEC	PE-2	23DCS3202A	MODERN SATELLITE COMMUNICATION SYSTEMS	A	MSCS	5	0	0	0	5	5	WC(1) Rule:1
8	PEC	PE-2	23DCS3202E	MODERN SATELLITE COMMUNICATION SYSTEMS	E	MSCS	5	0	0	0	5	5	WC(1) Rule:1
9	PEC	PE-2	23DCS3202R	MODERN SATELLITE COMMUNICATION SYSTEMS	R	MSCS	3	0	0	0	3	3	WC(1) Rule:1
10	PEC	PE-3	23DCS3303A	5G WIRELESS TECHNOLOGIES	A	5GWT	4	0	4	4	7	12	WC(1) Rule:1
11	PEC	PE-3	23DCS3303E	5G WIRELESS TECHNOLOGIES	E	5GWT	4	0	4	4	7	12	WC(1) Rule:1
12	PEC	PE-3	23DCS3303R	5G WIRELESS TECHNOLOGIES	R	5GWT	3	0	2	4	5	9	WC(1) Rule:1
13	PEC	PE-4	23DCS3404M	OPTICAL WIRELESS COMMUNICATIONS	M	PWC	3	0	0	0	3	3	WC(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
14	PEC	PE-5	23DCS3505	MACHINE LEARNING FOR WIRELESS COMMUNICATION	R	MLWC	3	0	0	0	3	3	WC(1) Rule:1

57. SPECIALIZATION: DATA ENGINEERING FOR AI

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDAD11A	AI-DRIVEN DATA ENGINEERING	A	ADDE	0	0	6	4	4	10	
2	SDC	SDP-4	23SDAD11E	AI-DRIVEN DATA ENGINEERING	E	ADDE	0	0	6	4	4	10	
3	SDC	SDP-4	23SDAD11R	AI-DRIVEN DATA ENGINEERING	R	ADDE	0	0	2	4	2	6	
4	PEC	PE-1	23DEA3101A	FUNDAMENTALS OF DATA ENGINEERING	A	FDE	4	0	4	4	7	12	
5	PEC	PE-1	23DEA3101E	FUNDAMENTALS OF DATA ENGINEERING	E	FDE	4	0	4	4	7	12	
6	PEC	PE-1	23DEA3101R	FUNDAMENTALS OF DATA ENGINEERING	R	FDE	3	0	2	4	5	9	
7	PEC	PE-2	23DEA3202A	DATA EXPLORATION AND PREPARATION	A	DEP	5	0	0	0	5	5	
8	PEC	PE-2	23DEA3202E	DATA EXPLORATION AND PREPARATION	E	DEP	5	0	0	0	5	5	
9	PEC	PE-2	23DEA3202R	DATA EXPLORATION AND PREPARATION	R	DEP	3	0	0	0	3	3	
10	PEC	PE-3	23DEA3303A	BIG DATA TECHNOLOGIES	A	BDT	4	0	4	4	7	12	
11	PEC	PE-3	23DEA3303E	BIG DATA TECHNOLOGIES	E	BDT	4	0	4	4	7	12	
12	PEC	PE-3	23DEA3303R	BIG DATA TECHNOLOGIES	R	BDT	3	0	2	4	5	9	
13	PEC	PE-4	23DEA3404M	DATA WAREHOUSING AND BUSINESS INTELLIGENCE	M	DWBI	3	0	0	0	3	3	
14	PEC	PE-5	23DEA3505R	MACHINE LEARNING ENGINEERING FOR BIG DATA	R	MLEBD	3	0	0	0	3	3	

58. SPECIALIZATION: DATA SCIENCE AND BIG DATA ANALYTICS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS08A	CLOUD BASED DATA ANALYTICS SPECIALITY	A	CBDAS	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS08E	CLOUD BASED DATA ANALYTICS SPECIALITY	E	CBDAS	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS08R	CLOUD BASED DATA ANALYTICS SPECIALITY	R	CBDAS	0	0	2	4	2	6	
4	PEC	PE-1	23DSB3101A	DATA ANALYTICS AND VISUALIZATION	A	DAV	4	0	4	4	7	12	
5	PEC	PE-1	23DSB3101E	DATA ANALYTICS AND VISUALIZATION	E	DAV	4	0	4	4	7	12	
6	PEC	PE-1	23DSB3101R	DATA ANALYTICS AND VISUALIZATION	R	DAV	3	0	2	4	5	9	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
7	PEC	PE-2	23DSB3202A	DATA WAREHOUSING AND MINING	A	DWHM	5	0	0	0	5	5	
8	PEC	PE-2	23DSB3202E	DATA WAREHOUSING AND MINING	E	DWHM	5	0	0	0	5	5	
9	PEC	PE-2	23DSB3202R	DATA WAREHOUSING AND MINING	R	DWHM	3	0	0	0	3	3	
10	PEC	PE-3	23DSB3303A	BIG DATA ANALYTICS	A	BDA	4	0	4	4	7	12	
11	PEC	PE-3	23DSB3303E	BIG DATA ANALYTICS	E	BDA	4	0	4	4	7	12	
12	PEC	PE-3	23DSB3303R	BIG DATA ANALYTICS	R	BDA	3	0	2	4	5	9	
13	PEC	PE-4	23DSB3404M	BIG DATA OPTIMIZATION	M	BDO	3	0	0	0	3	3	
14	PEC	PE-4	23DSB3407M	DATA ANALYTICS ON CLOUD	M	DAC	3	0	0	0	3	3	
15	PEC	PE-4	23DSB3408M	DIGITAL MEDIA ANALYTICS	M	DMA	3	0	0	0	3	3	
16	PEC	PE-4	23DSB3406M	DIGITAL VIDEO PROCESSING	M	DVP	3	0	0	0	3	3	
17	PEC	PE-5	23DSB3509	ADVANCED DATABASES	R	AD	3	0	0	0	3	3	
18	PEC	PE-5	23DSB3510	BUSINESS ANALYTICS	R	BA	3	0	0	0	3	3	
19	PEC	PE-5	23DSB3511	GRAPH & WEB ANALYTICS	R	GWA	3	0	0	0	3	3	
20	PEC	PE-5	23DSB3512	DATA GOVERNANCE ON CLOUD	R	DGC	3	0	0	0	3	3	

59. SPECIALIZATION: DISTRIBUTED LEDGER ANALYTICS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDAD08A	EMERGING BLOCKCHAIN MODELS FOR DIGITAL CURRENCIES	A	EBCMDC	0	0	6	4	4	10	
2	SDC	SDP-4	23SDAD08E	EMERGING BLOCKCHAIN MODELS FOR DIGITAL CURRENCIES	E	EBCMDC	0	0	6	4	4	10	
3	SDC	SDP-4	23SDAD08R	EMERGING BLOCKCHAIN MODELS FOR DIGITAL CURRENCIES	R	EBCMDC	0	0	2	4	2	6	
4	PEC	PE-1	23DLA3101A	SYSTEM & NETWORK TRAFFIC SECURITY ANALYTICS	A	SNTSA	4	0	4	4	7	12	
5	PEC	PE-1	23DLA3101E	SYSTEM & NETWORK TRAFFIC SECURITY ANALYTICS	E	SNTSA	4	0	4	4	7	12	
6	PEC	PE-1	23DLA3101R	SYSTEM & NETWORK TRAFFIC SECURITY ANALYTICS	R	SNTSA	3	0	2	4	5	9	
7	PEC	PE-2	23DLA3202A	AUTOMATED NETWORK ANALYSIS	A	ANA	5	0	0	0	5	5	
8	PEC	PE-2	23DLA3202E	AUTOMATED NETWORK ANALYSIS	E	ANA	5	0	0	0	5	5	
9	PEC	PE-2	23DLA3202R	AUTOMATED NETWORK ANALYSIS	R	ANA	3	0	0	0	3	3	
10	PEC	PE-2	23DLA3203A	BLOCKCHAIN TECHNOLOGY FOR DIGITAL TRANSFORMATION	A	BTDT	5	0	0	0	5	5	
11	PEC	PE-2	23DLA3203E	BLOCKCHAIN TECHNOLOGY FOR DIGITAL TRANSFORMATION	E	BTDT	5	0	0	0	5	5	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
12	PEC	PE-2	23DLA3203R	BLOCKCHAIN TECHNOLOGY FOR DIGITAL TRANSFORMATION	R	BTDI	3	0	0	0	3	3	
13	PEC	PE-3	23DLA3304A	MULTI AGENT SYSTEMS	A	MAS	4	0	4	4	7	12	
14	PEC	PE-3	23DLA3304E	MULTI AGENT SYSTEMS	E	MAS	4	0	4	4	7	12	
15	PEC	PE-3	23DLA3304R	MULTI AGENT SYSTEMS	R	MAS	3	0	2	4	5	9	
16	PEC	PE-4	23DLA3405M	BLOCKCHAIN ANALYTICS	M	BCA	3	0	0	0	3	3	
17	PEC	PE-4	23DLA3406M	CRYPTOCURRENCY AND BLOCKCHAIN TECHNOLOGY	M	CBT	3	0	0	0	3	3	
18	PEC	PE-5	23DLA3507	DISTRIBUTED LEDGER ARCHITECTURE FOR AUTOMATION	R	DLAA	3	0	0	0	3	3	
19	PEC	PE-5	23DLA3508	PERMISSIONED DISTRIBUTED LEDGER	R	PDL	3	0	0	0	3	3	

60. SPECIALIZATION: EMBEDDED SYSTEMS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEC14A	EMBEDDED PROTOTYPE	A	EPT	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEC14E	EMBEDDED PROTOTYPE	E	EPT	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEC14R	EMBEDDED PROTOTYPE	R	EPT	0	0	2	4	2	6	
4	PEC	PE-1	23EDS3101A	ADVANCED EMBEDDED SYSTEMS	A	AES	4	0	4	4	7	12	ESD(1) Rule:1
5	PEC	PE-1	23EDS3101E	ADVANCED EMBEDDED SYSTEMS	E	AES	4	0	4	4	7	12	ESD(1) Rule:1
6	PEC	PE-1	23EDS3101R	ADVANCED EMBEDDED SYSTEMS	R	AES	3	0	2	4	5	9	ESD(1) Rule:1
7	PEC	PE-2	23EDS3202A	EMBEDDED SYSTEMS FOR IOT	A	ESIOT	5	0	0	0	5	5	ESD(1) Rule:1
8	PEC	PE-2	23EDS3202E	EMBEDDED SYSTEMS FOR IOT	E	ESIOT	5	0	0	0	5	5	ESD(1) Rule:1
9	PEC	PE-2	23EDS3202R	EMBEDDED SYSTEMS FOR IOT	R	ESIOT	3	0	0	0	3	3	ESD(1) Rule:1
10	PEC	PE-3	23EDS3303A	EMBEDDED AND REAL-TIME SYSTEMS	A	ERTS	4	0	4	4	7	12	ESD(1) Rule:1
11	PEC	PE-3	23EDS3303E	EMBEDDED AND REAL-TIME SYSTEMS	E	ERTS	4	0	4	4	7	12	ESD(1) Rule:1
12	PEC	PE-3	23EDS3303R	EMBEDDED AND REAL-TIME SYSTEMS	R	ERTS	3	0	2	4	5	9	ESD(1) Rule:1
13	PEC	PE-4	23EDS3404M	CLOUD ARCHITECTURE IN IOT	M	CAIOT	3	0	0	0	3	3	ESD(1) Rule:1
14	PEC	PE-5	23EDS3505	EDGE COMPUTING & DATA ANALYTICS IN IOT	R	ECDAI	3	0	0	0	3	3	ESD(1) Rule:1

61. SPECIALIZATION: E-MOBILITY ENGINEERING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEE06A	EVT HARDWARE PROTOTYPING	A	EVTHP	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEE06E	EVT HARDWARE PROTOTYPING	E	EVTHP	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEE06R	EVT HARDWARE PROTOTYPING	R	EVTHP	0	0	2	4	2	6	
4	PEC	PE-1	23EME3101A	POWER TRAIN DESIGN FOR ELECTRIC VEHICLE	A	PTDEV	4	0	4	4	7	12	ELM(1) Rule:1
5	PEC	PE-1	23EME3101E	POWER TRAIN DESIGN FOR ELECTRIC VEHICLE	E	PTDEV	4	0	4	4	7	12	ELM(1) Rule:1
6	PEC	PE-1	23EME3101R	POWER TRAIN DESIGN FOR ELECTRIC VEHICLE	R	PTDEV	3	0	2	4	5	9	ELM(1) Rule:1
7	PEC	PE-2	23EME3202A	COMMUNICATION PROTOCOLS & TESTING OF ELECTRIC VEHICLE	A	CPTEV	5	0	0	0	5	5	ELM(1) Rule:1
8	PEC	PE-2	23EME3202E	COMMUNICATION PROTOCOLS & TESTING OF ELECTRIC VEHICLE	E	CPTEV	5	0	0	0	5	5	ELM(1) Rule:1
9	PEC	PE-2	23EME3202R	COMMUNICATION PROTOCOLS & TESTING OF ELECTRIC VEHICLE	R	CPTEV	3	0	0	0	3	3	ELM(1) Rule:1
10	PEC	PE-2	23EME3203A	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	A	AVAE	5	0	0	0	5	5	ELM(1) Rule:1
11	PEC	PE-2	23EME3203E	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	E	AVAE	5	0	0	0	5	5	ELM(1) Rule:1
12	PEC	PE-2	23EME3203R	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	R	AVAE	3	0	0	0	3	3	ELM(1) Rule:1
13	PEC	PE-3	23EME3304A	CHARGING STATIONS FOR ELECTRIC VEHICLES	A	CSEV	4	0	4	4	7	12	ELM(1) Rule:1
14	PEC	PE-3	23EME3304E	CHARGING STATIONS FOR ELECTRIC VEHICLES	E	CSEV	4	0	4	4	7	12	ELM(1) Rule:1
15	PEC	PE-3	23EME3304R	CHARGING STATIONS FOR ELECTRIC VEHICLES	R	CSEV	3	0	2	4	5	9	ELM(1) Rule:1
16	PEC	PE-4	23EME3405M	INTRODUCTION TO BATTERY-MANAGEMENT SYSTEMS	M	IBMS	3	0	0	0	3	3	ELM(1) Rule:1
17	PEC	PE-4	23EME3406M	BATTERY STATE ESTIMATION ALGORITHMS FOR ELECTRIC VEHICLE	M	BSAEV	3	0	0	0	3	3	ELM(1) Rule:1
18	PEC	PE-5	23EME3507	AI AND IOT FOR ELECTRIC VEHICLE	R	AIEV	3	0	0	0	3	3	ELM(1) Rule:1
19	PEC	PE-5	23EME3508	EV SYSTEM AND WIRING DESIGN	R	ESWS	3	0	0	0	3	3	ELM(1) Rule:1

62. SPECIALIZATION: ENGINEERING DESIGN

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDME05A	3D MODELLING AND DIGITAL PROTOTYPING	A	3DMDP	0	0	6	4	4	10	
2	SDC	SDP-4	23SDME05E	3D MODELLING AND DIGITAL PROTOTYPING	E	3DMDP	0	0	6	4	4	10	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
3	SDC	SDP-4	23SDME05R	3D MODELLING AND DIGITAL PROTOTYPING	R	3DMDP	0	0	2	4	2	6	
4	PEC	PE-1	23EGD3101A	MODELING ANALYSIS & DESIGN OF ROBOTIC SYSTEMS	A	MADRS	4	0	4	4	7	12	EM(1) Rule:1
5	PEC	PE-1	23EGD3101E	MODELING ANALYSIS & DESIGN OF ROBOTIC SYSTEMS	E	MADRS	4	0	4	4	7	12	EM(1) Rule:1
6	PEC	PE-1	23EGD3101R	MODELING ANALYSIS & DESIGN OF ROBOTIC SYSTEMS	R	MADRS	3	0	2	4	5	9	EM(1) Rule:1
7	PEC	PE-2	23EGD3202A	CREEP, FATIGUE AND FRACTURE MECHANICS	A	CFFM	5	0	0	0	5	5	EM(1) Rule:1
8	PEC	PE-2	23EGD3202E	CREEP, FATIGUE AND FRACTURE MECHANICS	E	CFFM	5	0	0	0	5	5	EM(1) Rule:1
9	PEC	PE-2	23EGD3202R	CREEP, FATIGUE AND FRACTURE MECHANICS	R	CFFM	3	0	0	0	3	3	EM(1) Rule:1
10	PEC	PE-2	23EGD3203A	THEORY OF ELASTICITY AND PLASTICITY	A	TEP	5	0	0	0	5	5	EM(1) Rule:1
11	PEC	PE-2	23EGD3203E	THEORY OF ELASTICITY AND PLASTICITY	E	TEP	5	0	0	0	5	5	EM(1) Rule:1
12	PEC	PE-2	23EGD3203R	THEORY OF ELASTICITY AND PLASTICITY	R	TEP	3	0	0	0	3	3	EM(1) Rule:1
13	PEC	PE-3	23EGD3304A	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN ENGINEERING DESIGN	A	SDSIED	4	0	4	4	7	12	EM(1) Rule:1
14	PEC	PE-3	23EGD3304E	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN ENGINEERING DESIGN	E	SDSIED	4	0	4	4	7	12	EM(1) Rule:1
15	PEC	PE-3	23EGD3304R	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN ENGINEERING DESIGN	R	SDSIED	3	0	2	4	5	9	EM(1) Rule:1
16	PEC	PE-4	23EGD3405M	ADVANCED VIBRATIONS	M	AV	3	0	0	0	3	3	EM(1) Rule:1
17	PEC	PE-4	23EGD3406M	MECHANICS OF COMPOSITE MATERIALS	M	MOCM	3	0	0	0	3	3	EM(1) Rule:1
18	PEC	PE-5	23EGD3507	ADVANCED STRENGTH OF MATERIALS	R	ASM	3	0	0	0	3	3	EM(1) Rule:1
19	PEC	PE-5	23EGD3508	HYBRID AND ELECTRIC VEHICLE DESIGN	R	HEVD	3	0	0	0	3	3	EM(1) Rule:1

63. SPECIALIZATION: GAME DEVELOPMENT AND UX DESIGN

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS06A	CERTIFIED GAME DEVELOPER	A	CGD	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS06E	CERTIFIED GAME DEVELOPER	E	CGD	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS06R	CERTIFIED GAME DEVELOPER	R	CGD	0	0	2	4	2	6	
4	PEC	PE-1	23GDU3101A	PROGRAMMING FOR GAME DEVELOPMENT	A	PGD	4	0	4	4	7	12	GN(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
5	PEC	PE-1	23GDU3101E	PROGRAMMING FOR GAME DEVELOPMENT	E	PGD	4	0	4	4	7	12	GN(1) Rule:1
6	PEC	PE-1	23GDU3101R	PROGRAMMING FOR GAME DEVELOPMENT	R	PGD	3	0	2	4	5	9	GN(1) Rule:1
7	PEC	PE-2	23GDU3202A	UX DESIGN	A	UD	5	0	0	0	5	5	GN(1) Rule:1
8	PEC	PE-2	23GDU3202E	UX DESIGN	E	UD	5	0	0	0	5	5	GN(1) Rule:1
9	PEC	PE-2	23GDU3202R	UX DESIGN	R	UD	3	0	0	0	3	3	GN(1) Rule:1
10	PEC	PE-3	23GDU3303A	AR & VR APPLICATION DEVELOPMENT	A	AR&VR	4	0	4	4	7	12	GN(1) Rule:1
11	PEC	PE-3	23GDU3303E	AR & VR APPLICATION DEVELOPMENT	E	AR&VR	4	0	4	4	7	12	GN(1) Rule:1
12	PEC	PE-3	23GDU3303R	AR & VR APPLICATION DEVELOPMENT	R	AR&VR	3	0	2	4	5	9	GN(1) Rule:1
13	PEC	PE-4	23GDU3404M	COMPUTER GRAPHICS	M	CG	3	0	0	0	3	3	GN(1) Rule:1
14	PEC	PE-4	23GDU3405M	3D MODELLING & ANIMATION	M	3DMA	3	0	0	0	3	3	GN(1) Rule:1
15	PEC	PE-5	23GDU3506	PRINCIPLES OF GAME DESIGN	R	PRGD	3	0	0	0	3	3	GN(1) Rule:1
16	PEC	PE-5	23GDU3507	BUSINESS OF GAMES & ENTREPRENEURSHIP	R	BGE	3	0	0	0	3	3	GN(1) Rule:1

64. SPECIALIZATION: GEOTECHNICAL AND TRANSPORTATION ENGINEERING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCE05A	DESIGN OF THE PAVEMENT BY USING MX ROADS	A	DPMX	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCE05E	DESIGN OF THE PAVEMENT BY USING MX ROADS	E	DPMX	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCE05R	DESIGN OF THE PAVEMENT BY USING MX ROADS	R	DPMX	0	0	2	4	2	6	
4	PEC	PE-1	23GTE3101A	ADVANCED FOUNDATION ENGINEERING	A	AFE	4	0	4	4	7	12	SM(1) Rule:1
5	PEC	PE-1	23GTE3101E	ADVANCED FOUNDATION ENGINEERING	E	AFE	4	0	4	4	7	12	SM(1) Rule:1
6	PEC	PE-1	23GTE3101R	ADVANCED FOUNDATION ENGINEERING	R	AFE	3	0	2	4	5	9	SM(1) Rule:1
7	PEC	PE-2	23GTE3202A	INTELLIGENT TRANSPORTATION SYSTEMS	A	ITS	5	0	0	0	5	5	SM(1) Rule:1
8	PEC	PE-2	23GTE3202E	INTELLIGENT TRANSPORTATION SYSTEMS	E	ITS	5	0	0	0	5	5	SM(1) Rule:1
9	PEC	PE-2	23GTE3202R	INTELLIGENT TRANSPORTATION SYSTEMS	R	ITS	3	0	0	0	3	3	SM(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
10	PEC	PE-2	23GTE3203A	GROUND IMPROVEMENT TECHNIQUES	A	GIT	5	0	0	0	5	5	SM(1) Rule:1
11	PEC	PE-2	23GTE3203E	GROUND IMPROVEMENT TECHNIQUES	E	GIT	5	0	0	0	5	5	SM(1) Rule:1
12	PEC	PE-2	23GTE3203R	GROUND IMPROVEMENT TECHNIQUES	R	GIT	3	0	0	0	3	3	SM(1) Rule:1
13	PEC	PE-3	23GTE3304A	PAVEMENT MATERIALS &DESIGN	A	PMD	4	0	4	4	7	12	SM(1) Rule:1
14	PEC	PE-3	23GTE3304E	PAVEMENT MATERIALS &DESIGN	E	PMD	4	0	4	4	7	12	SM(1) Rule:1
15	PEC	PE-3	23GTE3304R	PAVEMENT MATERIALS &DESIGN	R	PMD	3	0	2	4	5	9	SM(1) Rule:1
16	PEC	PE-4	23GTE3405M	URBAN TRANSPORTATION SYSTEMS PLANNING	M	UTSP	3	0	0	0	3	3	SM(1) Rule:1
17	PEC	PE-4	23GTE3406M	GEOTECHNICAL EARTHQUAKE ENGINEERING	M	BIE	3	0	0	0	3	3	SM(1) Rule:1
18	PEC	PE-5	23GTE3507	TRAFFIC ENGINEERING AND MANAGEMENT	R	TEM	3	0	0	0	3	3	SM(1) Rule:1
19	PEC	PE-5	23GTE3508	DESIGN OF EARTH RETAINING STRUCTURES	R	DERS	3	0	0	0	3	3	SM(1) Rule:1

65. SPECIALIZATION: GREEN ENERGY TECHNOLOGIES

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEE05A	MODELING AND SIMULATION OF GREEN ENERGY SYSTEMS	A	GML	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEE05E	MODELING AND SIMULATION OF GREEN ENERGY SYSTEMS	E	GML	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEE05R	MODELING AND SIMULATION OF GREEN ENERGY SYSTEMS	R	GML	0	0	2	4	2	6	
4	PEC	PE-1	23GET3101A	SOLAR PV AND MICRO ENERGY TECHNOLOGIES	A	SPMET	4	0	4	4	7	12	EPE(1) Rule:1
5	PEC	PE-1	23GET3101E	SOLAR PV AND MICRO ENERGY TECHNOLOGIES	E	SPMET	4	0	4	4	7	12	EPE(1) Rule:1
6	PEC	PE-1	23GET3101R	SOLAR PV AND MICRO ENERGY TECHNOLOGIES	R	SPMET	3	0	2	4	5	9	EPE(1) Rule:1
7	PEC	PE-2	23GET3202A	WIND AND ENERGY STORAGE TECHNOLOGIES	A	WEST	5	0	0	0	5	5	EPE(1) Rule:1
8	PEC	PE-2	23GET3202E	WIND AND ENERGY STORAGE TECHNOLOGIES	E	WEST	5	0	0	0	5	5	EPE(1) Rule:1
9	PEC	PE-2	23GET3202R	WIND AND ENERGY STORAGE TECHNOLOGIES	R	WEST	3	0	0	0	3	3	EPE(1) Rule:1
10	PEC	PE-2	23GET3203A	ENERGY ECONOMICS AND POLICY	A	EEP	5	0	0	0	5	5	EPE(1) Rule:1
11	PEC	PE-2	23GET3203E	ENERGY ECONOMICS AND POLICY	E	EEP	5	0	0	0	5	5	EPE(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
12	PEC	PE-2	23GET3203R	ENERGY ECONOMICS AND POLICY	R	EEP	3	0	0	0	3	3	EPE(1) Rule:1
13	PEC	PE-3	23GET3304A	GRID INTEGRATION OF RENEWABLE ENERGY SOURCES	A	GIRES	4	0	4	4	7	12	EPE(1) Rule:1
14	PEC	PE-3	23GET3304E	GRID INTEGRATION OF RENEWABLE ENERGY SOURCES	E	GIRES	4	0	4	4	7	12	EPE(1) Rule:1
15	PEC	PE-3	23GET3304R	GRID INTEGRATION OF RENEWABLE ENERGY SOURCES	R	GIRES	3	0	2	4	5	9	EPE(1) Rule:1
16	PEC	PE-4	23GET3405M	ENERGY MANAGEMENT AND GREEN BUILDING	M	EMGB	3	0	0	0	3	3	EPE(1) Rule:1
17	PEC	PE-4	23GET3406M	HYDROGEN FUEL CELL TECHNOLOGY	M	HFCT	3	0	0	0	3	3	EPE(1) Rule:1
18	PEC	PE-5	23GET3507	AI AND IOT FOR GREEN ENERGY INTEGRATION	R	AIGEI	3	0	0	0	3	3	EPE(1) Rule:1
19	PEC	PE-5	23GET3508	POWER ELECTRONICS FOR RENEWABLE ENERGY SYSTEMS	R	PERES	3	0	0	0	3	3	EPE(1) Rule:1

66. SPECIALIZATION: HARDWARE-SOFTWARE CO-DESIGN FOR SECURITY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS21A	HARDWARE SOFTWARE CODESIGN IMPLEMENTATION FOR SECURITY SPECILAITY	A	HSCISS	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS21E	HARDWARE SOFTWARE CODESIGN IMPLEMENTATION FOR SECURITY SPECILAITY	E	HSCISS	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS21R	HARDWARE SOFTWARE CODESIGN IMPLEMENTATION FOR SECURITY SPECILAITY	R	HSCISS	0	0	2	4	2	6	
4	PEC	PE-1	23HSS3101A	INTRODUCTION TO HARDWARE-SOFTWARE CO-DESIGN	A	ITHSCD	4	0	4	4	7	12	NPS(1) Rule:1
5	PEC	PE-1	23HSS3101E	INTRODUCTION TO HARDWARE-SOFTWARE CO-DESIGN	E	ITHSCD	4	0	4	4	7	12	NPS(1) Rule:1
6	PEC	PE-1	23HSS3101R	INTRODUCTION TO HARDWARE-SOFTWARE CO-DESIGN	R	ITHSCD	3	0	2	4	5	9	NPS(1) Rule:1
7	PEC	PE-2	23HSS3202A	FUNDAMENTALS OF COMPUTER SECURITY	A	FOCS	5	0	0	0	5	5	NPS(1) Rule:1
8	PEC	PE-2	23HSS3202E	FUNDAMENTALS OF COMPUTER SECURITY	E	FOCS	5	0	0	0	5	5	NPS(1) Rule:1
9	PEC	PE-2	23HSS3202R	FUNDAMENTALS OF COMPUTER SECURITY	R	FOCS	3	0	0	0	3	3	NPS(1) Rule:1
10	PEC	PE-3	23HSS3303A	HARDWARE SECURITY MECHANISMS	A	HSM	4	0	4	4	7	12	NPS(1) Rule:1
11	PEC	PE-3	23HSS3303E	HARDWARE SECURITY MECHANISMS	E	HSM	4	0	4	4	7	12	NPS(1) Rule:1
12	PEC	PE-3	23HSS3303R	HARDWARE SECURITY MECHANISMS	R	HSM	3	0	2	4	5	9	NPS(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
13	PEC	PE-4	23HSS3404M	SOFTWARE SECURITY PRINCIPLES	M	SSP	3	0	0	0	3	3	NPS(1) Rule:1
14	PEC	PE-4	23HSS3405M	SECURE CO-DESIGN METHODOLOGIES	M	SCDM	3	0	0	0	3	3	NPS(1) Rule:1
15	PEC	PE-4	23HSS3406M	HARDWARE TROJAN DETECTION AND PREVENTION	M	HTDAP	3	0	0	0	3	3	NPS(1) Rule:1
16	PEC	PE-5	23HSS3507	SIDE-CHANNEL ATTACKS AND COUNTERMEASURES	R	SCACM	3	0	0	0	3	3	NPS(1) Rule:1
17	PEC	PE-5	23HSS3508	FORMAL METHODS FOR HARDWARE- SOFTWARE SECURITY	R	FMHSS	3	0	0	0	3	3	NPS(1) Rule:1
18	PEC	PE-5	23HSS3509	TRUSTED PLATFORM MODULES AND SECURE ELEMENTS	R	TPMASE	3	0	0	0	3	3	NPS(1) Rule:1
19	PEC	PE-5	23HSS3510	SECURE COMMUNICATION PROTOCOLS AND APIS	R	SCPA	3	0	0	0	3	3	NPS(1) Rule:1
20	PEC	PE-5	23HSS3511	HARDWARE-SOFTWARE CO-DESIGN	R	HSCCS	3	0	0	0	3	3	NPS(1) Rule:1
21	PEC	PE-5	23HSS3512	FUTURE TRENDS IN HARDWARE- SOFTWARE CO-DESIGN FOR SECURITY	R	FTHSCS	3	0	0	0	3	3	NPS(1) Rule:1

67. SPECIALIZATION: HEALTHCARE DATA ANALYTICS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDBT08A	DRUG DESIGN: PRINCIPLES AND ENGINEERING	A	DDPE	0	0	6	4	4	10	
2	SDC	SDP-4	23SDBT08E	DRUG DESIGN: PRINCIPLES AND ENGINEERING	E	DDPE	0	0	6	4	4	10	
3	SDC	SDP-4	23SDBT08R	DRUG DESIGN: PRINCIPLES AND ENGINEERING	R	DDPE	0	0	2	4	2	6	
4	PEC	PE-1	23HDA3101A	INTELLIGENT SYSTEMS FOR DISEASE PREDICTION & DRUG DISCOVERY	A	ISDPDD	4	0	4	4	7	12	
5	PEC	PE-1	23HDA3101E	INTELLIGENT SYSTEMS FOR DISEASE PREDICTION & DRUG DISCOVERY	E	ISDPDD	4	0	4	4	7	12	
6	PEC	PE-1	23HDA3101R	INTELLIGENT SYSTEMS FOR DISEASE PREDICTION & DRUG DISCOVERY	R	ISDPDD	3	0	2	4	5	9	
7	PEC	PE-2	23HDA3202A	BIO MEDICAL INFORMATICS	A	BMI	5	0	0	0	5	5	
8	PEC	PE-2	23HDA3202E	BIO MEDICAL INFORMATICS	E	BMI	5	0	0	0	5	5	
9	PEC	PE-2	23HDA3202R	BIO MEDICAL INFORMATICS	R	BMI	3	0	0	0	3	3	
10	PEC	PE-2	23HDA3203A	GENETIC PROGRAMMING	A	GP	5	0	0	0	5	5	
11	PEC	PE-2	23HDA3203E	GENETIC PROGRAMMING	E	GP	5	0	0	0	5	5	
12	PEC	PE-2	23HDA3203R	GENETIC PROGRAMMING	R	GP	3	0	0	0	3	3	
13	PEC	PE-2	23HDA3204A	PYTHON FOR GENOMIC DATA SCIENCE	A	PFGDS	5	0	0	0	5	5	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
14	PEC	PE-2	23HDA3204E	PYTHON FOR GENOMIC DATA SCIENCE	E	PFGDS	5	0	0	0	5	5	
15	PEC	PE-2	23HDA3204R	PYTHON FOR GENOMIC DATA SCIENCE	R	PFGDS	3	0	0	0	3	3	
16	PEC	PE-3	23HDA3305A	COMPUTATIONAL NEUROSCIENCE	A	CNSE	4	0	4	4	7	12	
17	PEC	PE-3	23HDA3305E	COMPUTATIONAL NEUROSCIENCE	E	CNSE	4	0	4	4	7	12	
18	PEC	PE-3	23HDA3305R	COMPUTATIONAL NEUROSCIENCE	R	CNSE	3	0	2	4	5	9	
19	PEC	PE-4	23HDA3407M	INTRODUCTION TO GENOMIC TECHNOLOGIES	M	IGT	3	0	0	0	3	3	
20	PEC	PE-4	23HDA3406M	NGS SEQUENCING AND DATA ANALYSIS	M	NGSDA	3	0	0	0	3	3	
21	PEC	PE-5	23HDA3511	EPI GENETIC CONTROL OF GENE EXPRESSION	R	ECBI	3	0	0	0	3	3	
22	PEC	PE-5	23HDA3509	MOLECULAR MODELING AND DRUG DESIGN	R	MMDD	3	0	0	0	3	3	
23	PEC	PE-5	23HDA3510	GENOMIC DATA SCIENCE & CLUSTERING	R	GDSC	3	0	0	0	3	3	

68. SPECIALIZATION: INDUSTRIAL AUTOMATION

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEE07A	IA HARDWARE PROTOTYPING	A	IAHP	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEE07E	IA HARDWARE PROTOTYPING	E	IAHP	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEE07R	IA HARDWARE PROTOTYPING	R	IAHP	0	0	2	4	2	6	
4	PEC	PE-1	23ILA3101A	INTRODUCTION TO INDUSTRIAL INTERNET OF THINGS	A	IIIoT	4	0	4	4	7	12	
5	PEC	PE-1	23ILA3101E	INTRODUCTION TO INDUSTRIAL INTERNET OF THINGS	E	IIIoT	4	0	4	4	7	12	
6	PEC	PE-1	23ILA3101R	INTRODUCTION TO INDUSTRIAL INTERNET OF THINGS	R	IIIoT	3	0	2	4	5	9	
7	PEC	PE-2	23ILA3202A	INDUSTRIAL AUTOMATION AND ROBOTICS	A	IAR	5	0	0	0	5	5	
8	PEC	PE-2	23ILA3202E	INDUSTRIAL AUTOMATION AND ROBOTICS	E	IAR	5	0	0	0	5	5	
9	PEC	PE-2	23ILA3202R	INDUSTRIAL AUTOMATION AND ROBOTICS	R	IAR	3	0	0	0	3	3	
10	PEC	PE-2	23ILA3203A	EDGE COMPUTING FOR INDUSTRY 4.0	A	ECI	5	0	0	0	5	5	
11	PEC	PE-2	23ILA3203E	EDGE COMPUTING FOR INDUSTRY 4.0	E	ECI	5	0	0	0	5	5	
12	PEC	PE-2	23ILA3203R	EDGE COMPUTING FOR INDUSTRY 4.0	R	ECI	3	0	0	0	3	3	
13	PEC	PE-3	23ILA3304A	INDUSTRIAL DRIVES AND CONTROL	A	ID&C	4	0	4	4	7	12	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
14	PEC	PE-3	23ILA3304E	INDUSTRIAL DRIVES AND CONTROL	E	ID&C	4	0	4	4	7	12	
15	PEC	PE-3	23ILA3304R	INDUSTRIAL DRIVES AND CONTROL	R	ID&C	3	0	2	4	5	9	
16	PEC	PE-4	23ILA3405M	INDUSTRIAL COMMUNICATION PROTOCOLS AND CYBER SECURITY	M	ICPCS	3	0	0	0	3	3	
17	PEC	PE-4	23ILA3406M	DIGITAL MANUFACTURING AND DESIGN	M	DMD	3	0	0	0	3	3	
18	PEC	PE-5	23ILA3508	PLC PROGRAMMING & CONTROL	R	PLCPC	3	0	0	0	3	3	
19	PEC	PE-5	23ILA3507	SMART SENSORS AND SENSOR NETWORKING	R	SSSN	3	0	0	0	3	3	

69. SPECIALIZATION: INDUSTRIAL BIOTECHNOLOGY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDBT07A	ASPECTS OF BIOCHEMICAL ENGINEERING	A	ABCE	0	0	6	4	4	10	
2	SDC	SDP-4	23SDBT07E	ASPECTS OF BIOCHEMICAL ENGINEERING	E	ABCE	0	0	6	4	4	10	
3	SDC	SDP-4	23SDBT07R	ASPECTS OF BIOCHEMICAL ENGINEERING	R	ABCE	0	0	2	4	2	6	
4	PEC	PE-1	23IBT3101A	PHARMACEUTICAL BIOTECHNOLOGY	A	PBT	4	0	4	4	7	12	BO(1) Rule:1
5	PEC	PE-1	23IBT3101E	PHARMACEUTICAL BIOTECHNOLOGY	E	PBT	4	0	4	4	7	12	BO(1) Rule:1
6	PEC	PE-1	23IBT3101R	PHARMACEUTICAL BIOTECHNOLOGY	R	PBT	3	0	2	4	5	9	BO(1) Rule:1
7	PEC	PE-2	23IBT3202A	PHARMACOVIGILANCE AND SAFETY	A	PCS	5	0	0	0	5	5	BO(1) Rule:1
8	PEC	PE-2	23IBT3202E	PHARMACOVIGILANCE AND SAFETY	E	PCS	5	0	0	0	5	5	BO(1) Rule:1
9	PEC	PE-2	23IBT3202R	PHARMACOVIGILANCE AND SAFETY	R	PCS	3	0	0	0	3	3	BO(1) Rule:1
10	PEC	PE-3	23IBT3203A	BIOPROCESS ECONOMICS AND PLANT DESIGN	A	BEPD	5	0	0	0	5	5	BO(1) Rule:1
11	PEC	PE-3	23IBT3203E	BIOPROCESS ECONOMICS AND PLANT DESIGN	E	BEPD	5	0	0	0	5	5	BO(1) Rule:1
12	PEC	PE-3	23IBT3203R	BIOPROCESS ECONOMICS AND PLANT DESIGN	R	BEPD	3	0	0	0	3	3	BO(1) Rule:1
13	PEC	PE-4	23IBT3304A	ENZYMES ENGINEERING	A	EE	4	0	4	4	7	12	BO(1) Rule:1
14	PEC	PE-4	23IBT3304E	ENZYMES ENGINEERING	E	EE	4	0	4	4	7	12	BO(1) Rule:1
15	PEC	PE-4	23IBT3304R	ENZYMES ENGINEERING	R	EE	3	0	2	4	5	9	BO(1) Rule:1
16	PEC	PE-4	23IBT3406M	FOOD TECHNOLOGY	M	FT	3	0	0	0	3	3	BO(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
17	PEC	PE-5	23IBT3405M	BIOPROCESS VALIDATION AND CGMP	M	BVcGMP	3	0	0	0	3	3	BO(1) Rule:1
18	PEC	PE-5	23IBT3507	MICROBIAL TECHNOLOGY	R	MBT	3	0	0	0	3	3	BO(1) Rule:1
19	PEC	PE-5	23IBT3508	METABOLIC ENGINEERING	R	MBE	3	0	0	0	3	3	BO(1) Rule:1

70. SPECIALIZATION: INTELLIGENT MULTIMEDIA PROCESSING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEC15A	NATURAL LANGUAGE PROCESSING USING TENSOR FLOW	A	NLPTF	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEC15E	NATURAL LANGUAGE PROCESSING USING TENSOR FLOW	E	NLPTF	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEC15R	NATURAL LANGUAGE PROCESSING USING TENSOR FLOW	R	NLPTF	0	0	2	4	2	6	
4	PEC	PE-1	23IMP3101A	NATURAL LANGUAGE PROCESSING & APPLICATIONS	A	NLPA	4	0	4	4	7	12	
5	PEC	PE-1	23IMP3101E	NATURAL LANGUAGE PROCESSING & APPLICATIONS	E	NLPA	4	0	4	4	7	12	
6	PEC	PE-1	23IMP3101R	NATURAL LANGUAGE PROCESSING & APPLICATIONS	R	NLPA	3	0	2	4	5	9	
7	PEC	PE-2	23IMP3202A	DATA ENGINEERING	A	DE	5	0	0	0	5	5	
8	PEC	PE-2	23IMP3202E	DATA ENGINEERING	E	DE	5	0	0	0	5	5	
9	PEC	PE-2	23IMP3202R	DATA ENGINEERING	R	DE	3	0	0	0	3	3	
10	PEC	PE-3	23IMP3303A	BIO MEDICAL SIGNAL AND IMAGE ANALYSIS	A	AMSIA	4	0	4	4	7	12	
11	PEC	PE-3	23IMP3303E	BIO MEDICAL SIGNAL AND IMAGE ANALYSIS	E	AMSIA	4	0	4	4	7	12	
12	PEC	PE-3	23IMP3303R	BIO MEDICAL SIGNAL AND IMAGE ANALYSIS	R	AMSIA	3	0	2	4	5	9	
13	PEC	PE-4	23IMP3404M	DATA VISUALIZATION	M	DV	3	0	0	0	3	3	
14	PEC	PE-5	23IMP3505	MULTI MEDIA PROCESSING	R	MMP	3	0	0	0	3	3	
15	PEC	PE-5	23IMP3506	INTRODUCTION TO QUANTUM COMPUTING	R	MMP	3	0	0	0	3	3	

71. SPECIALIZATION: IOT ANALYTICS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDIN05A	IOT ANALYTICS FOR THE CLOUD	A	IOTAC	0	0	6	4	4	10	
2	SDC	SDP-4	23SDIN05E	IOT ANALYTICS FOR THE CLOUD	E	IOTAC	0	0	6	4	4	10	
3	SDC	SDP-4	23SDIN05R	IOT ANALYTICS FOR THE CLOUD	R	IOTAC	0	0	2	4	2	6	
4	PEC	PE-1	23IOT3101A	INDUSTRIAL INTERNET OF THINGS	A	IOT	4	0	4	4	7	12	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
5	PEC	PE-1	23IOT3101E	INDUSTRIAL INTERNET OF THINGS	E	I IOT	4	0	4	4	7	12	
6	PEC	PE-1	23IOT3101R	INDUSTRIAL INTERNET OF THINGS	R	I IOT	3	0	2	4	5	9	
7	PEC	PE-2	23IOT3202A	EDGE COMPUTING	A	EC	5	0	0	0	5	5	
8	PEC	PE-2	23IOT3202E	EDGE COMPUTING	E	EC	5	0	0	0	5	5	
9	PEC	PE-2	23IOT3202R	EDGE COMPUTING	R	EC	3	0	0	0	3	3	
10	PEC	PE-2	23IOT3203A	PRECISION AGRICULTURE	A	PA	5	0	0	0	5	5	
11	PEC	PE-2	23IOT3203E	PRECISION AGRICULTURE	E	PA	5	0	0	0	5	5	
12	PEC	PE-2	23IOT3203R	PRECISION AGRICULTURE	R	PA	3	0	0	0	3	3	
13	PEC	PE-2	23IOT3204A	SMART FARMING	A	SF	5	0	0	0	5	5	
14	PEC	PE-2	23IOT3204E	SMART FARMING	E	SF	5	0	0	0	5	5	
15	PEC	PE-2	23IOT3204R	SMART FARMING	R	SF	3	0	0	0	3	3	
16	PEC	PE-3	23IOT3305A	DEEP LEARNING	A	DL	4	0	4	4	7	12	
17	PEC	PE-3	23IOT3305E	DEEP LEARNING	E	DL	4	0	4	4	7	12	
18	PEC	PE-3	23IOT3305R	DEEP LEARNING	R	DL	3	0	2	4	5	9	
19	PEC	PE-4	23IOT3406M	DATA VISUALIZATION TECHNIQUES	M	DVT	3	0	0	0	3	3	
20	PEC	PE-4	23IOT3407M	APPLIED MACHINE LEARNING FOR AGRICULTURE	M	AMLA	3	0	0	0	3	3	
21	PEC	PE-5	23IOT3508	BIG DATA ANALYTICS	R	BDA	3	0	0	0	3	3	

72. SPECIALIZATION: MEDICAL BIOTECHNOLOGY

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDBT09A	CELL CULTURE TECHNOLOGIES	A	CCT	0	0	6	4	4	10	
2	SDC	SDP-4	23SDBT09E	CELL CULTURE TECHNOLOGIES	E	CCT	0	0	6	4	4	10	
3	SDC	SDP-4	23SDBT09R	CELL CULTURE TECHNOLOGIES	R	CCT	0	0	2	4	2	6	
4	PEC	PE-1	23MBT3101A	STEM CELL TECHNOLOGY	A	SCT	4	0	4	4	7	12	RACT(1) Rule:1
5	PEC	PE-1	23MBT3101E	STEM CELL TECHNOLOGY	E	SCT	4	0	4	4	7	12	RACT(1) Rule:1
6	PEC	PE-1	23MBT3101R	STEM CELL TECHNOLOGY	R	SCT	3	0	2	4	5	9	RACT(1) Rule:1
7	PEC	PE-2	23MBT3202A	VIROLOGY	A	VR	5	0	0	0	5	5	RACT(1) Rule:1
8	PEC	PE-2	23MBT3202E	VIROLOGY	E	VR	5	0	0	0	5	5	RACT(1) Rule:1
9	PEC	PE-2	23MBT3202R	VIROLOGY	R	VR	3	0	0	0	3	3	RACT(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
10	PEC	PE-2	23MBT3203A	NANOBIOTECHNOLOGY	A	NBT	5	0	0	0	5	5	RACT(1) Rule:1
11	PEC	PE-2	23MBT3203E	NANOBIOTECHNOLOGY	E	NBT	5	0	0	0	5	5	RACT(1) Rule:1
12	PEC	PE-2	23MBT3203R	NANOBIOTECHNOLOGY	R	NBT	3	0	0	0	3	3	RACT(1) Rule:1
13	PEC	PE-3	23MBT3304A	HEALTHCARE BIOTECHNOLOGY	A	HBT	4	0	4	4	7	12	RACT(1) Rule:1
14	PEC	PE-3	23MBT3304E	HEALTHCARE BIOTECHNOLOGY	E	HBT	4	0	4	4	7	12	RACT(1) Rule:1
15	PEC	PE-3	23MBT3304R	HEALTHCARE BIOTECHNOLOGY	R	HBT	3	0	2	4	5	9	RACT(1) Rule:1
16	PEC	PE-4	23MBT3405M	CANCER BIOLOGY	M	CB	3	0	0	0	3	3	RACT(1) Rule:1
17	PEC	PE-4	23MBT3406M	NEUROBIOLOGY	M	NB	3	0	0	0	3	3	RACT(1) Rule:1
18	PEC	PE-5	23MBT3507	BIOELECTRONICS & BIOSENSORS	R	BB	3	0	0	0	3	3	RACT(1) Rule:1
19	PEC	PE-5	23MBT3508	TISSUE ENGINEERING	R	NBT	3	0	0	0	3	3	RACT(1) Rule:1

73. SPECIALIZATION: ROBOTICS AND AUTOMATION

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEC17A	ROBOT DESIGN AND ANALYSIS	A	RDA	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEC17E	ROBOT DESIGN AND ANALYSIS	E	RDA	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEC17R	ROBOT DESIGN AND ANALYSIS	R	RDA	0	0	2	4	2	6	
4	PEC	PE-1	23RAN3101A	ROBOT MOTION PLANNING, DYNAMICS AND CONTROL	A	RMPDC	4	0	4	4	7	12	
5	PEC	PE-1	23RAN3101E	ROBOT MOTION PLANNING, DYNAMICS AND CONTROL	E	RMPDC	4	0	4	4	7	12	
6	PEC	PE-1	23RAN3101R	ROBOT MOTION PLANNING, DYNAMICS AND CONTROL	R	RMPDC	3	0	2	4	5	9	
7	PEC	PE-1	23RAN3102A	AUTONOMOUS MOBILE ROBOT SYSTEMS	A	AMRS	4	0	4	4	7	12	
8	PEC	PE-1	23RAN3102E	AUTONOMOUS MOBILE ROBOT SYSTEMS	E	AMRS	4	0	4	4	7	12	
9	PEC	PE-1	23RAN3102R	AUTONOMOUS MOBILE ROBOT SYSTEMS	R	AMRS	3	0	2	4	5	9	
10	PEC	PE-2	23RAN3202A	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	A	AVAE	5	0	0	0	5	5	
11	PEC	PE-2	23RAN3202E	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	E	AVAE	5	0	0	0	5	5	
12	PEC	PE-2	23RAN3202R	AUTONOMOUS VEHICLES & AUTOMOTIVE ELECTRONICS	R	AVAE	3	0	0	0	3	3	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
13	PEC	PE-2	23RAN3203A	ROBOT MANIPULATION AND WHEELED MOBILE ROBOTS	A	RMWR	5	0	0	0	5	5	
14	PEC	PE-2	23RAN3203E	ROBOT MANIPULATION AND WHEELED MOBILE ROBOTS	E	RMWR	5	0	0	0	5	5	
15	PEC	PE-2	23RAN3203R	ROBOT MANIPULATION AND WHEELED MOBILE ROBOTS	R	RMWR	3	0	0	0	3	3	
16	PEC	PE-3	23RAN3304A	ADVANCED ROBOTICS	A	AR	4	0	4	4	7	12	
17	PEC	PE-3	23RAN3304E	ADVANCED ROBOTICS	E	AR	4	0	4	4	7	12	
18	PEC	PE-3	23RAN3304R	ADVANCED ROBOTICS	R	AR	3	0	2	4	5	9	
19	PEC	PE-4	23RAN3405M	ARTIFICIAL INTELLIGENCE FOR ROBOTICS	M	AIR	3	0	0	0	3	3	
20	PEC	PE-4	23RAN3406M	HUMAN MACHINE INTERFACE & BRAIN MACHINE INTERFACE	M	HMIBMI	3	0	0	0	3	3	
21	PEC	PE-5	23RAN3507	COMPUTER VISION & APPLICATIONS	R	CVA	3	0	0	0	3	3	

74. SPECIALIZATION: SMART GRID TECHNOLOGIES

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEE04A	AI & ML FOR SMART GRIDS	A	AIMLSG	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEE04E	AI & ML FOR SMART GRIDS	E	AIMLSG	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEE04R	AI & ML FOR SMART GRIDS	R	AIMLSG	0	0	2	4	2	6	
4	PEC	PE-1	23SGT3101A	DISTRIBUTED ENERGY RESOURCES AND SMART GRIDS	A	DERSG	4	0	4	4	7	12	
5	PEC	PE-1	23SGT3101E	DISTRIBUTED ENERGY RESOURCES AND SMART GRIDS	E	DERSG	4	0	4	4	7	12	
6	PEC	PE-1	23SGT3101R	DISTRIBUTED ENERGY RESOURCES AND SMART GRIDS	R	DERSG	3	0	2	4	5	9	
7	PEC	PE-2	23SGT3202A	DISTRIBUTION SYSTEM PRACTICES	A	DSP	5	0	0	0	5	5	
8	PEC	PE-2	23SGT3202E	DISTRIBUTION SYSTEM PRACTICES	E	DSP	5	0	0	0	5	5	
9	PEC	PE-2	23SGT3202R	DISTRIBUTION SYSTEM PRACTICES	R	DSP	3	0	0	0	3	3	
10	PEC	PE-2	23SGT3203A	MICROGRID DYNAMICS AND CONTROL	A	MDC	5	0	0	0	5	5	
11	PEC	PE-2	23SGT3203E	MICROGRID DYNAMICS AND CONTROL	E	MDC	5	0	0	0	5	5	
12	PEC	PE-2	23SGT3203R	MICROGRID DYNAMICS AND CONTROL	R	MDC	3	0	0	0	3	3	
13	PEC	PE-3	23SGT3304A	ENERGY MANAGEMENT SYSTEMS AND SCADA	A	EMS&SCADA	4	0	4	4	7	12	
14	PEC	PE-3	23SGT3304E	ENERGY MANAGEMENT SYSTEMS AND SCADA	E	EMS&SCADA	4	0	4	4	7	12	
15	PEC	PE-3	23SGT3304R	ENERGY MANAGEMENT SYSTEMS AND SCADA	R	EMS&SCADA	3	0	2	4	5	9	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
16	PEC	PE-4	23SGT3405M	SMART GRID COMMUNICATION AND CYBERSECURITY	M	SGCCS	3	0	0	0	3	3	
17	PEC	PE-4	23SGT3406M	SMART METERS AND SMART CITIES	M	SMSC	3	0	0	0	3	3	
18	PEC	PE-5	23SGT3507	INTERNET OF THINGS AND SMART GRID ANALYTICS	R	IOT&SGA	3	0	0	0	3	3	
19	PEC	PE-5	23SGT3508	SMART GRID PROTECTION	R	SGP	3	0	0	0	3	3	

75. SPECIALIZATION: SMART MANUFACTURING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDME06A	GEOMETRIC DIMENSIONING AND TOLERANCING	A	GDAT	0	0	6	4	4	10	
2	SDC	SDP-4	23SDME06E	GEOMETRIC DIMENSIONING AND TOLERANCING	E	GDAT	0	0	6	4	4	10	
3	SDC	SDP-4	23SDME06R	GEOMETRIC DIMENSIONING AND TOLERANCING	R	GDAT	0	0	2	4	2	6	
4	PEC	PE-1	23SMF3101A	REVERSE ENGINEERING & RAPID PROTOTYPING	A	MMC	4	0	4	4	7	12	
5	PEC	PE-1	23SMF3101E	REVERSE ENGINEERING & RAPID PROTOTYPING	E	MMC	4	0	4	4	7	12	
6	PEC	PE-1	23SMF3101R	REVERSE ENGINEERING & RAPID PROTOTYPING	R	MMC	3	0	2	4	5	9	
7	PEC	PE-2	23SMF3202A	ADVANCED MATERIALS MANUFACTURING & TESTING	A	AMMT	5	0	0	0	5	5	
8	PEC	PE-2	23SMF3202E	ADVANCED MATERIALS MANUFACTURING & TESTING	E	AMMT	5	0	0	0	5	5	
9	PEC	PE-2	23SMF3202R	ADVANCED MATERIALS MANUFACTURING & TESTING	R	AMMT	3	0	0	0	3	3	
10	PEC	PE-2	23SMF3203A	MODERN MANUFACTURING PROCESSES	A	MMP	5	0	0	0	5	5	
11	PEC	PE-2	23SMF3203E	MODERN MANUFACTURING PROCESSES	E	MMP	5	0	0	0	5	5	
12	PEC	PE-2	23SMF3203R	MODERN MANUFACTURING PROCESSES	R	MMP	3	0	0	0	3	3	
13	PEC	PE-3	23SMF3304A	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN SMART MANUFACTURING	A	SDSISM	4	0	4	4	7	12	
14	PEC	PE-3	23SMF3304E	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN SMART MANUFACTURING	E	SDSISM	4	0	4	4	7	12	
15	PEC	PE-3	23SMF3304R	SUSTAINABLE DESIGN & SOCIAL INNOVATION IN SMART MANUFACTURING	R	SDSISM	3	0	2	4	5	9	
16	PEC	PE-4	23SMF3405M	ROBOTICS & INDUSTRIAL AUTOMATION	M	RIA	3	0	0	0	3	3	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
17	PEC	PE-4	23SMF3406M	MECHANICAL MEASUREMENTS AND METROLOGY	M	MMM	3	0	0	0	3	3	
18	PEC	PE-5	23SMF3507	MACHINE TO MACHINE COMMUNICATION	R	MMC	3	0	0	0	3	3	
19	PEC	PE-5	23SMF3508	FLEXIBLE MANUFACTURING SYSTEMS	R	FMS	3	0	0	0	3	3	

76. SPECIALIZATION: SOCIAL AND DIGITAL MEDIA ANALYTICS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDAD06A	ANALYSIS OF DIGITAL MARKETING	A	ADM	0	0	6	4	4	10	
2	SDC	SDP-4	23SDAD06E	ANALYSIS OF DIGITAL MARKETING	E	ADM	0	0	6	4	4	10	
3	SDC	SDP-4	23SDAD06R	ANALYSIS OF DIGITAL MARKETING	R	ADM	0	0	2	4	2	6	
4	PEC	PE-1	23SDM3101A	SENTIMENT ANALYSIS	A	SA	4	0	4	4	7	12	
5	PEC	PE-1	23SDM3101E	SENTIMENT ANALYSIS	E	SA	4	0	4	4	7	12	
6	PEC	PE-1	23SDM3101R	SENTIMENT ANALYSIS	R	SA	3	0	2	4	5	9	
7	PEC	PE-2	23SDM3202A	OPINION MINING & RECOMMENDER SYSTEMS	A	OMRS	5	0	0	0	5	5	
8	PEC	PE-2	23SDM3202E	OPINION MINING & RECOMMENDER SYSTEMS	E	OMRS	5	0	0	0	5	5	
9	PEC	PE-2	23SDM3202R	OPINION MINING & RECOMMENDER SYSTEMS	R	OMRS	3	0	0	0	3	3	
10	PEC	PE-2	23SDM3203A	META SOCIAL MEDIA ANALYTICS	A	MSMA	5	0	0	0	5	5	
11	PEC	PE-2	23SDM3203E	META SOCIAL MEDIA ANALYTICS	E	MSMA	5	0	0	0	5	5	
12	PEC	PE-2	23SDM3203R	META SOCIAL MEDIA ANALYTICS	R	MSMA	3	0	0	0	3	3	
13	PEC	PE-3	23SDM3304A	SOCIAL MEDIA MARKETING ANALYTICS	A	SMMA	4	0	4	4	7	12	
14	PEC	PE-3	23SDM3304E	SOCIAL MEDIA MARKETING ANALYTICS	E	SMMA	4	0	4	4	7	12	
15	PEC	PE-3	23SDM3304R	SOCIAL MEDIA MARKETING ANALYTICS	R	SMMA	3	0	2	4	5	9	
16	PEC	PE-4	23SDM3405M	DIGITAL MEDIA ANALYTICS	M	DMA	3	0	0	0	3	3	
17	PEC	PE-4	23SDM3406M	ETHICAL SOCIAL MEDIA	M	ESM	3	0	0	0	3	3	
18	PEC	PE-5	23SDM3508	SEARCH ENGINE OPTIMIZATION	R	SEO	3	0	0	0	3	3	
19	PEC	PE-5	23SDM3507	INTELLIGENT SOCIAL MEDIA MONITORING SYSTEMS	R	ISMMS	3	0	0	0	3	3	

77. SPECIALIZATION: SOFTWARE MODELLING AND DEVOPS

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCI05A	CLOUD DEVOPS	A	CDP	0	0	6	4	4	10	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
2	SDC	SDP-4	23SDCI05E	CLOUD DEVOPS	E	CDP	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCI05R	CLOUD DEVOPS	R	CDP	0	0	2	4	2	6	
4	PEC	PE-1	23SMD3101A	SOFTWARE VERIFICATION & VALIDATION	A	SVV	4	0	4	4	7	12	
5	PEC	PE-1	23SMD3101E	SOFTWARE VERIFICATION & VALIDATION	E	SVV	4	0	4	4	7	12	
6	PEC	PE-1	23SMD3101R	SOFTWARE VERIFICATION & VALIDATION	R	SVV	3	0	2	4	5	9	
7	PEC	PE-2	23SMD3202A	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	A	DPCT	5	0	0	0	5	5	
8	PEC	PE-2	23SMD3202E	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	E	DPCT	5	0	0	0	5	5	
9	PEC	PE-2	23SMD3202R	DESIGN PATTERNS & CLEAN CODING TECHNIQUES	R	DPCT	3	0	0	0	3	3	
10	PEC	PE-3	23SMD3303A	CONTINUOUS DELIVERY & DEVOPS	A	CDD	4	0	4	4	7	12	
11	PEC	PE-3	23SMD3303E	CONTINUOUS DELIVERY & DEVOPS	E	CDD	4	0	4	4	7	12	
12	PEC	PE-3	23SMD3303R	CONTINUOUS DELIVERY & DEVOPS	R	CDD	3	0	2	4	5	9	
13	PEC	PE-4	23SMD3404M	SOFTWARE PROJECT MANAGEMENT	M	SPM	3	0	0	0	3	3	
14	PEC	PE-4	23SMD3405M	SOFTWARE ARCHITECTURE & DESIGN	M	SAD	3	0	0	0	3	3	
15	PEC	PE-5	23SMD3506	SOFTWARE RELIABILITY	R	SR	3	0	0	0	3	3	
16	PEC	PE-5	23SMD3507	CROSS-PLATFORM USER INTERFACE DESIGN	R	CPUIF	3	0	0	0	3	3	

78. SPECIALIZATION: SPATIAL COMPUTING AND IMMERSIVE TECHNOLOGIES

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCS06A	CERTIFIED GAME DEVELOPER	A	CGD	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCS06E	CERTIFIED GAME DEVELOPER	E	CGD	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCS06R	CERTIFIED GAME DEVELOPER	R	CGD	0	0	2	4	2	6	
4	PEC	PE-1	23SCI3101A	SPATIAL DATA VISUALIZATION	A	SDV	4	0	4	4	7	12	
5	PEC	PE-1	23SCI3101E	SPATIAL DATA VISUALIZATION	E	SDV	4	0	4	4	7	12	
6	PEC	PE-1	23SCI3101R	SPATIAL DATA VISUALIZATION	R	SDV	3	0	2	4	5	9	
7	PEC	PE-2	23SCI3202A	SPATIAL COMPUTING FOR MULTIPLAYER GAMES	A	SCMG	5	0	0	0	5	5	
8	PEC	PE-2	23SCI3202E	SPATIAL COMPUTING FOR MULTIPLAYER GAMES	E	SCMG	5	0	0	0	5	5	
9	PEC	PE-2	23SCI3202R	SPATIAL COMPUTING FOR MULTIPLAYER GAMES	R	SCMG	3	0	0	0	3	3	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
10	PEC	PE-3	23SCI3303A	SPATIAL COMPUTING PLATFORMS AND DEVELOPMENT	A	SCPD	4	0	4	4	7	12	
11	PEC	PE-3	23SCI3303E	SPATIAL COMPUTING PLATFORMS AND DEVELOPMENT	E	SCPD	4	0	4	4	7	12	
12	PEC	PE-3	23SCI3303R	SPATIAL COMPUTING PLATFORMS AND DEVELOPMENT	R	SCPD	3	0	2	4	5	9	
13	PEC	PE-4	23SCI3404M	SPATIAL AND SOCIAL IMPLICATIONS OF IMMERSIVE TECHNOLOGIES	M	SSIIT	3	0	0	0	3	3	
14	PEC	PE-4	23SCI3405M	SPATIAL AUDIO DESIGN FOR GAMES	M	SADG	3	0	0	0	3	3	
15	PEC	PE-5	23SCI3506	SPATIAL USER INTERFACE DESIGN	R	SUID	3	0	0	0	3	3	
16	PEC	PE-5	23SCI3507	INTRODUCTION TO SPATIAL COMPUTING	R	ITSC	3	0	0	0	3	3	

79. SPECIALIZATION: STRUCTURAL ENGINEERING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCE06A	DESIGN & ANALYSIS OF DIFFERENT STRUCTURAL COMPONENTS USING SAFE	A	SAFE	0	0	6	4	4	10	
2	SDC	SDP-4	23SDCE06E	DESIGN & ANALYSIS OF DIFFERENT STRUCTURAL COMPONENTS USING SAFE	E	SAFE	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCE06R	DESIGN & ANALYSIS OF DIFFERENT STRUCTURAL COMPONENTS USING SAFE	R	SAFE	0	0	2	4	2	6	
4	PEC	PE-1	23STE3101A	ADVANCED CONCRETE TECHNOLOGY	A	ACT	4	0	4	4	7	12	EM(1) Rule:1
5	PEC	PE-1	23STE3101E	ADVANCED CONCRETE TECHNOLOGY	E	ACT	4	0	4	4	7	12	EM(1) Rule:1
6	PEC	PE-1	23STE3101R	ADVANCED CONCRETE TECHNOLOGY	R	ACT	3	0	2	4	5	9	EM(1) Rule:1
7	PEC	PE-2	23STE3202A	ADVANCED STRUCTURAL ANALYSIS	A	ASA	5	0	0	0	5	5	EM(1) Rule:1
8	PEC	PE-2	23STE3202E	ADVANCED STRUCTURAL ANALYSIS	E	ASA	5	0	0	0	5	5	EM(1) Rule:1
9	PEC	PE-2	23STE3202R	ADVANCED STRUCTURAL ANALYSIS	R	ASA	3	0	0	0	3	3	EM(1) Rule:1
10	PEC	PE-2	23STE3203A	ADVANCED DESIGN OF STEEL STRUCTURE	A	ADSS	5	0	0	0	5	5	EM(1) Rule:1
11	PEC	PE-2	23STE3203E	ADVANCED DESIGN OF STEEL STRUCTURE	E	ADSS	5	0	0	0	5	5	EM(1) Rule:1
12	PEC	PE-2	23STE3203R	ADVANCED DESIGN OF STEEL STRUCTURE	R	ADSS	3	0	0	0	3	3	EM(1) Rule:1
13	PEC	PE-3	23STE3304A	BRIDGE ENGINEERING	A	BE	4	0	4	4	7	12	EM(1) Rule:1

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
14	PEC	PE-3	23STE3304E	BRIDGE ENGINEERING	E	BE	4	0	4	4	7	12	EM(1) Rule:1
15	PEC	PE-3	23STE3304R	BRIDGE ENGINEERING	R	BE	3	0	2	4	5	9	EM(1) Rule:1
16	PEC	PE-4	23STE3405M	PRESTRESSED CONCRETE	M	PC	3	0	0	0	3	3	EM(1) Rule:1
17	PEC	PE-4	23STE3406M	PRECAST AND PREFABRICATED STRUCTURES	M	PPS	3	0	0	0	3	3	EM(1) Rule:1
18	PEC	PE-5	23STE3507	PRE ENGINEERING STRUCTURES	R	PES	3	0	0	0	3	3	EM(1) Rule:1
19	PEC	PE-5	23STE3508	ADVANCED DESIGN OF REINFORCED CONCRETE STRUCTURES	R	ADRCS	3	0	0	0	3	3	EM(1) Rule:1

80. SPECIALIZATION: VERY LARGE-SCALE INTEGRATION

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDEC18A	VLSI SUBMICRON DESIGN AND VERIFICATION	A	VSDV	0	0	6	4	4	10	
2	SDC	SDP-4	23SDEC18E	VLSI SUBMICRON DESIGN AND VERIFICATION	E	VSDV	0	0	6	4	4	10	
3	SDC	SDP-4	23SDEC18R	VLSI SUBMICRON DESIGN AND VERIFICATION	R	VSDV	0	0	2	4	2	6	
4	PEC	PE-1	23VLS3101A	ANALOG VLSI DESIGN	A	AVD	4	0	4	4	7	12	
5	PEC	PE-1	23VLS3101E	ANALOG VLSI DESIGN	E	AVD	4	0	4	4	7	12	
6	PEC	PE-1	23VLS3101R	ANALOG VLSI DESIGN	R	AVD	3	0	2	4	5	9	
7	PEC	PE-2	23VLS3202A	TESTING AND VERIFICATION OF VLSI CIRCUITS	A	TVVC	5	0	0	0	5	5	
8	PEC	PE-2	23VLS3202E	TESTING AND VERIFICATION OF VLSI CIRCUITS	E	TVVC	5	0	0	0	5	5	
9	PEC	PE-2	23VLS3202R	TESTING AND VERIFICATION OF VLSI CIRCUITS	R	TVVC	3	0	0	0	3	3	
10	PEC	PE-3	23VLS3303A	VLSI PHYSICAL DESIGN AUTOMATION	A	VPDA	4	0	4	4	7	12	
11	PEC	PE-3	23VLS3303E	VLSI PHYSICAL DESIGN AUTOMATION	E	VPDA	4	0	4	4	7	12	
12	PEC	PE-3	23VLS3303R	VLSI PHYSICAL DESIGN AUTOMATION	R	VPDA	3	0	2	4	5	9	
13	PEC	PE-4	23VLS3404M	SYSTEM-ON-CHIP	M	SOC	3	0	0	0	3	3	
14	PEC	PE-5	23VLS3505	MIXED SIGNAL IC DESIGN	R	MSID	3	0	0	0	3	3	

81. SPECIALIZATION: WATER RESOURCE AND ENVIRONMENTAL ENGINEERING

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	SDC	SDP-4	23SDCE07A	ARC-GIS (PRO)	A	ARC	0	0	6	4	4	10	

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
2	SDC	SDP-4	23SDCE07E	ARC-GIS (PRO)	E	ARC	0	0	6	4	4	10	
3	SDC	SDP-4	23SDCE07R	ARC-GIS (PRO)	R	ARC	0	0	2	4	2	6	
4	PEC	PE-1	23WRE3101A	RIVER ENGINEERING	A	RE	4	0	4	4	7	12	FMH(1) Rule:1
5	PEC	PE-1	23WRE3101E	RIVER ENGINEERING	E	RE	4	0	4	4	7	12	FMH(1) Rule:1
6	PEC	PE-1	23WRE3101R	RIVER ENGINEERING	R	RE	3	0	2	4	5	9	FMH(1) Rule:1
7	PEC	PE-2	23WRE3202A	SOLID WASTE MANAGEMENT AND LANDFILLS	A	SWML	5	0	0	0	5	5	FMH(1) Rule:1
8	PEC	PE-2	23WRE3202E	SOLID WASTE MANAGEMENT AND LANDFILLS	E	SWML	5	0	0	0	5	5	FMH(1) Rule:1
9	PEC	PE-2	23WRE3202R	SOLID WASTE MANAGEMENT AND LANDFILLS	R	SWML	3	0	0	0	3	3	FMH(1) Rule:1
10	PEC	PE-2	23WRE3203A	DESIGN OF HYDRAULIC STRUCTURES	A	DHS	5	0	0	0	5	5	FMH(1) Rule:1
11	PEC	PE-2	23WRE3203E	DESIGN OF HYDRAULIC STRUCTURES	E	DHS	5	0	0	0	5	5	FMH(1) Rule:1
12	PEC	PE-2	23WRE3203R	DESIGN OF HYDRAULIC STRUCTURES	R	DHS	3	0	0	0	3	3	FMH(1) Rule:1
13	PEC	PE-3	23WRE3304A	WATER RESOURCES FIELD METHODS	A	WRFM	4	0	4	4	7	12	FMH(1) Rule:1
14	PEC	PE-3	23WRE3304E	WATER RESOURCES FIELD METHODS	E	WRFM	4	0	4	4	7	12	FMH(1) Rule:1
15	PEC	PE-3	23WRE3304R	WATER RESOURCES FIELD METHODS	R	WRFM	3	0	2	4	5	9	FMH(1) Rule:1
16	PEC	PE-4	23WRE3405M	URBAN WATER HYDROLOGY AND HYDRAULICS	M	UWHH	3	0	0	0	3	3	FMH(1) Rule:1
17	PEC	PE-4	23WRE3406M	ENVIRONMENTAL IMPACT ASSESSMENT AND LIFE CYCLE ANALYSES	M	EIALCA	3	0	0	0	3	3	FMH(1) Rule:1
18	PEC	PE-5	23WRE3507	PHYSICO-CHEMICAL PROCESSES FOR WATER AND WASTEWATER TREATMENT	R	PCPWWT	3	0	0	0	3	3	FMH(1) Rule:1
19	PEC	PE-5	23WRE3508	SUSTAINABLE ENGINEERING AND TECHNOLOGY	R	SET	3	0	0	0	3	3	FMH(1) Rule:1

84. PROJECT: CAPSTONE PROJECT

S#	Cat	Sub-Cat	CourseCode	Course Title	Mode	Acrym	L	T	P	S	CR	CH	Pre-req
1	PRI		23IE4053A	CAPSTONE PROJECT - 1	A	CP-1	0	0	10	20	10	30	
2	PRI		23IE4053R	CAPSTONE PROJECT - 1	R	CP-1	0	0	8	16	8	24	
3	PRI		23IE4054A	CAPSTONE PROJECT - 2	A	CP-2	0	0	10	20	10	30	
4	PRI		23IE4054R	CAPSTONE PROJECT - 2	R	CP-2	0	0	8	16	8	24	

Program Articulation Matrix

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	HAS	23FL3054 - FLG	CO1	Acquire a working knowledge of the basic elements of the French language viz. letters, vowels, accents, articles, useful expressions, etc.					2			2							
2	HAS	23FL3054 - FLG	CO2	Classify questions and respond in the affirmative or negative with ?tre and avoir and form plurals						2				3					
3	HAS	23FL3054 - FLG	CO3	Utilize and apply the adjectives and essential verbs.								2		2					
4	HAS	23FL3054 - FLG	CO4	Construct and use in speech, vocabulary, reading, questions and answers								2				3			
5	HAS	23FL3055 - GLG	CO1	classify their understanding of greeting wishes, alphabets and numbers learning. to understand the greetings in formal and informal way					2			2							
6	HAS	23FL3055 - GLG	CO2	Apply their knowledge of essential daily expressions, present, past and future tense. Conjugating the verbs in the Singular and Plural groups, Past participle tense and the futertense and relations with the verbs										3					
7	HAS	23FL3055 - GLG	CO3	Utilize their understanding with suitable prepositions, questions, and possessive pronouns, and the importance of four German cases. Prepositions in Akkusativ and Dativ										2					
8	HAS	23FL3055 - GLG	CO4	Develop their knowledge about how to move in public places, such as shopping centres, restaurants, tourist places, etc, and preparation of them for German A1 level examination.								2				3			

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9	HAS	23FL3058 - JLG	CO1	Classify Hiragana, Katakana, and basic Kanji characters used in greetings and simple scripts					2			2							
10	HAS	23FL3058 - JLG	CO2	Apply their knowledge of essential daily expressions, numbers, months, dates, time, body parts, colors, and common vocabulary to effectively communicate in basic everyday situations										3					
11	HAS	23FL3058 - JLG	CO3	Utilize their understanding of present, past, and future tenses, along with the ability to construct interrogative sentences, to express themselves in various timeframes and ask questions effectively in different conversational contexts. pen_spark								2		2					
12	HAS	23FL3058 - JLG	CO4	Develop their knowledge of verbs, including negative conjugations, and prepositions to discuss hobbies, deliver self-introductions, and navigate basic interview scenarios in Japanese								2				3			
13	HAS	23MB0001 - BME	CO1	Understand the basic concepts of marketing management		2													
14	HAS	23MB0001 - BME	CO2	Understand the concepts of Marketing environment, consumer behaviour and Segmentation, Targeting and Positioning (STP)		2													
15	HAS	23MB0001 - BME	CO3	Apply the marketing mix strategies with special focus on technology products			2												
16	HAS	23MB0001 - BME	CO4	Apply promotion and distribution strategies for marketing of high tech products and services						2									
17	HAS	23MB0002 - PIMT	CO1	Understand the basic management concepts along with an insight into levels of management									2						
18	HAS	23MB0002 - PIMT	CO2	Understand the key contributions of classical approach to Management											2				

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19	HAS	23MB0002 - PIMT	CO3	Understand and apply Quantitative methods to improve Management performance.									2						
20	HAS	23MB0002 - PIMT	CO4	Understand the key contributions of Behavioural and contemporary approaches to Management.									2						
21	HAS	23MB0003 - FMFE	CO1	Understanding the comprehension of finance functions and diverse business models to facilitate informed decision-making processes within financial management.		2													
22	HAS	23MB0003 - FMFE	CO2	Analyzing the investment decisions through an understanding of capital budgeting techniques, both traditional and modern, emphasizing long-term implications.				2											
23	HAS	23MB0003 - FMFE	CO3	Analyze and make informed decisions regarding working capital management, considering the short-term financial health of organizations through practical case studies.				2											
24	HAS	23MB0003 - FMFE	CO4	Developing proficiency in comprehending and utilizing various sources of finance while discerning the implications of different dividend policies in practical financial scenarios.				2											
25	HAS	23MB0004 - OMG	CO1	Remember and understand the various management theories and management approaches.									2						
26	HAS	23MB0004 - OMG	CO2	Remember and understand organization theories, structures and organization principles												2			

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27	HAS	23MB0004 - OMG	CO3	Have basic knowledge and understanding of motivation, motivational theories, leadership theories, moral and behavioral sciences and also understand the management concept, administration and management objectives.									2						
28	HAS	23MB0004 - OMG	CO4	Remember and understand the various issues in industrial relations, trade unions and college bargaining and industrial safety									2						
29	HAS	23MB0005 - MPF	CO1	Understanding Personal Finance	2														
30	HAS	23MB0005 - MPF	CO2	Applying and Building a Budget and Tracking Your Money		3													
31	HAS	23MB0005 - MPF	CO3	Applying and Managing Debt and Credit in present context			3												
32	HAS	23MB0005 - MPF	CO4	Applying Saving and Investment to present scenario			3												
33	HAS	23MB4062 - CPM	CO1	Understand construction principles and techniques to effectively plan and execute construction projects.	1										2		1		
34	HAS	23MB4062 - CPM	CO2	Understand about construction project scheduling, cost estimation, and resource allocation for a particular project	1										2		1		
35	HAS	23MB4062 - CPM	CO3	Understand about the Construction Methods and Techniques	1										2		1		
36	HAS	23MB4062 - CPM	CO4	Understand about the Construction Project Cost Estimation and Control.	1										2		1		
37	HAS	23MB4062 - CPM	CO5	Understand about project cost control and monitoring, earned value management in construction.	1										2		1		

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38	HAS	23MB4063 - RSQM	CO1	Demonstrate an understanding of resource management principles and the importance of resource optimization in construction projects by applying best practices to enhance efficiency.	2			3			2								3
39	HAS	23MB4063 - RSQM	CO2	Interpret and ensure compliance with construction safety regulations and standards set by regulatory bodies, ensuring legal and regulatory adherence in project execution.	2			3			2								3
40	HAS	23MB4063 - RSQM	CO3	Apply hazard identification techniques and conduct comprehensive risk assessments to prioritize and mitigate risks in construction environments, enhancing safety management.	2			3			2								3
41	HAS	23MB4063 - RSQM	CO4	Develop and implement safety management systems and quality assurance strategies, including safety policies, training, and communication, to ensure high safety standards and quality control in construction projects.	2			3			2								3
42	HAS	23MB4064 - SDM	CO1	Understand the concepts of digital marketing and search engine optimization											2				
43	HAS	23MB4064 - SDM	CO2	Apply the search engine optimization technique to website											2				
44	HAS	23MB4064 - SDM	CO3	Apply the key PPC concepts to draw visitors to a business websites											2				
45	HAS	23MB4064 - SDM	CO4	Analyse the search engine optimization technique for marketing strategy											2				
46	HAS	23MB4065 - DET	CO1	Introduction to Digital Economics	2														
47	HAS	23MB4065 - DET	CO2	Digital Business Models		2													
48	HAS	23MB4065 - DET	CO3	Tokenomics Fundamentals			3												

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49	HAS	23MB4065 - DET	CO4	Economic Implications of Cryptocurrencies			3														
50	HAS	23MB4066 - DFDFS	CO1	Define and explain the key concepts of DeFi, including decentralization, blockchain technology, smart contracts, and decentralized applications (DApps). Differentiate between traditional financial systems and DeFi ecosystems, identifying the advantages and challenges of each.	2													2			
51	HAS	23MB4066 - DFDFS	CO2	Describe the fundamentals of blockchain technology, including consensus mechanisms, cryptographic principles, and transaction processing. Evaluate different blockchain platforms and their suitability for supporting DeFi applications.			2											2			
52	HAS	23MB4066 - DFDFS	CO3	Analyze and evaluate various decentralized financial protocols, such as decentralized exchanges (DEXs), lending platforms, liquidity provision mechanisms, and asset management protocols. Demonstrate the ability to interact with DeFi protocols through hands-on exercises and practical applications.							3										3
53	HAS	23MB4066 - DFDFS	CO4	Explain the concept of stablecoins and synthetic assets, including their design principles, use cases, and implications for the broader financial ecosystem. Assess the role of stablecoins and synthetic assets in mitigating volatility and enabling new financial services in DeFi.							3										3
54	HAS	23MB4067 - IMPP	CO1	Understand the basic management concepts along with an insight into production and control											2						2

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55	HAS	23MB4067 - IMPP	CO2	Select best forecasting models to predict future demand	2														2
56	HAS	23MB4067 - IMPP	CO3	Solve various production scheduling problems to optimize productivity				2											2
57	HAS	23MB4067 - IMPP	CO4	Understand concept of Inventory control, Method study and time study											2				2
58	HAS	23MB4068 - IMG	CO1	Identify and analyze market needs and gaps, using tools such as SWOT and PESTLE analysis, to pinpoint real-world problems suitable for entrepreneurial solutions.		2									2			1	
59	HAS	23MB4068 - IMG	CO2	Develop innovative solutions through creative thinking and apply lean startup principles to build and iterate a minimum viable product (MVP).		1									2			2	
60	HAS	23MB4068 - IMG	CO3	Create a comprehensive lean business model canvas that outlines customer segments, value propositions, channels, revenue streams, and key metrics.		1									2			2	
61	HAS	23MB4068 - IMG	CO4	Create a compelling business plan and investor pitch, including financial projections and funding strategies, demonstrating effective communication and persuasion skills.		1									2			1	
62	HAS	23UC0026 - HGP	CO1	Understanding the basic concepts of value education								2	1						
63	HAS	23UC0026 - HGP	CO2	Gain basic understanding of the principles in harmony among the human beings								2	1						
64	HAS	23UC0026 - HGP	CO3	Gain knowledge in the concept of Harmony in the family and society								3	3						
65	HAS	23UC0026 - HGP	CO4	Acquire knowledge in the concepts of harmony in the nature								3	3						

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66	HAS	23UC0027 - LAMS	CO1	Understand basic leadership, skills and perspectives and leadership styles									2						
67	HAS	23UC0027 - LAMS	CO2	Understand different managerial skills and apply them to develop high performance teams											3				
68	HAS	23UC0027 - LAMS	CO3	Analyse effective communicative strategies and apply them in team tasks										3					
69	HAS	23UC0027 - LAMS	CO4	Apply strategic planning fundamentals and decision-making techniques, through exercises and case studies											3				
70	HAS	23UC1101 - IPE	CO1	Language Mechanics and Basic Grammar										2					
71	HAS	23UC1101 - IPE	CO2	Integrated Reading and Techniques of Writing										2					
72	HAS	23UC1202 - EP	CO1	Express the ability in interactive skills of listening, speaking, reading, and writing that are better suited for the corporate environment.									3	3					
73	HAS	23UC1202 - EP	CO2	Apply various strategies for LSRW skills and apply them in interpreting the text									3	3					
74	HAS	23UC1203 - DTI	CO1	Understand the importance of Design thinking mindset for identifying contextualized problems		1													
75	HAS	23UC1203 - DTI	CO2	Analyze the problem statement by empathizing with user							2								
76	HAS	23UC1203 - DTI	CO3	Develop ideation and test the prototypes made			2												
77	HAS	23UC1203 - DTI	CO4	Explore the fundamentals of entrepreneurship skills for transforming the challenge into an opportunity											1				
78	BSC	22PH4101 - QPFE	CO1	Understand the structure of crystalline solids, semiconductors physics and properties of light in Engineering application of Lasers.	2														

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79	BSC	22PH4101 - QPFE	CO2	Understands the behavior of electrons on the microscopic level by using different quantum models	2															
80	BSC	22PH4101 - QPFE	CO3	Apply to solve the understand of time-independent Schrodinger wave equation as an intermediate step to solve the time-dependent Schrodinger wave equation		3														
81	BSC	22PH4101 - QPFE	CO4	Understand the meaning and significance of the postulates of the special theory of relativity		3														
82	BSC	22PH4101 - QPFE	CO5	Apply the knowledge on structural and optical properties of materials to perform experiments.																
83	BSC	22PH4102 - APY	CO1	Applying the concepts of basics of crystal structure to find out and to analyse the various structure of materials and structural property relation through crystal imperfections.	3															
84	BSC	22PH4102 - APY	CO2	Apply the concepts and properties of light to know the laser mechanism in various materials and to know their specific applications in engineering and medicine.	3															
85	BSC	22PH4102 - APY	CO3	Apply the spin and orbital motion of electrons in determining magnetic properties of materials and identifies their role in classification soft and hard magnetic materials having specific engineering applications.		3														
86	BSC	22PH4102 - APY	CO4	Apply the concepts of various concepts of quantum mechanics to solve the problems related to the motion of electrons in microscopic level.		3														

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87	BSC	22PH4102 - APY	CO5	Apply the knowledge of physics to execute the related experiments by analysing the data and develop some inter disciplinary projects.																3	
88	BSC	23BT2103 - BCM	CO1	Relate the importance of biological buffers and its preparation, explain cellular thermodynamics, structure, function and metabolism of carbohydrates; the association between structure and function of carbohydrate at a chemical level with a biological perspective with a hands-on approach on laboratory techniques	3	3		3									3				
89	BSC	23BT2103 - BCM	CO2	Make use of the information about the folding, conformation, dynamics and intrinsic properties of proteins and apply the knowledge to learn about abnormalities related with protein dysfunction and their clinical importance	3	3		3									3				
90	BSC	23BT2103 - BCM	CO3	Apply the structural and biological roles that nucleic acids and lipids play in cellular physiology, and application of that knowledge in biotechniques to identify these biomolecules and discuss about disorders related with nucleotide metabolism	3	3		3										3			
91	BSC	23BT2103 - BCM	CO4	Categorize enzymes, catalysis, kinetics, applications; immobilized enzymes and their catalytic mechanisms	3	3		3										3			
92	BSC	23BT2103 - BCM	CO5	Analyze the biomolecules from various sources by employing experimental techniques and laboratory studies	3	3		3										3			

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93	BSC	23CS3202 - NSC	CO1	Understand a diverse array of optimization algorithms, each distinguished by its specific approach and techniques aimed at achieving optimal solutions to complex problems.	3	2	2										2			
94	BSC	23CS3202 - NSC	CO2	Apply a diverse set of metaheuristic optimization algorithms, showcasing their efficacy in tackling complex problems through comprehensive simulations and practical case studies.	3	2	2											2		
95	BSC	23CS3202 - NSC	CO3	Analyze a range of advanced neural network architectures and computational intelligence techniques to solve complex problems in machine learning and pattern recognition, demonstrating practical proficiency through implementation and evaluation.	2	3	2										2			
96	BSC	23CS3202 - NSC	CO4	contrast in between Apply a variety of advanced computational intelligence techniques and hybrid algorithms to address complex optimization and problem-solving challenges, showcasing practical proficiency through implementation and evaluation.	2	3		2											3	
97	BSC	23CS3202 - NSC	CO5	Design and Build bio inspired algorithms for Function Optimization to solve numerical problems.	2		3	3												3
98	BSC	23CS3203 - QCP	CO1	Demonstrate the basics of quantum computing, including quantum states, qubits, single and multiple qubit gates, entanglement, quantum circuits, and various applications.	3				3											3

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99	BSC	23CS3203 - QCP	CO2	Apply quantum computing algorithms like Deutsch-Jozsa, Bernstein-Vazirani, Simon's, Shor's, and Grover's algorithms, as well as the Quantum Fourier Transform and superdense coding.				3											3
100	BSC	23CS3203 - QCP	CO3	Implement quantum circuits and the intricacies of quantum measurement, providing hands-on experience in these areas.		3													3
101	BSC	23CS3203 - QCP	CO4	Demonstrate Quantum machine learning techniques like unsupervised and supervised learning, pattern recognition, neural networks, support vector machines, regression analysis, and boosting.	3														3
102	BSC	23CY1001 - ECY	CO1	Apply the operation of electrochemical systems to produce electric energy and storage devices.	3	2													
103	BSC	23CY1001 - ECY	CO2	Use the fundamental aspects of electrochemistry and materials science relevant to corrosion phenomena.	3	2													
104	BSC	23CY1001 - ECY	CO3	Examine water quality and apply appropriate purification technique for intended problem.	3	2													
105	BSC	23CY1001 - ECY	CO4	Employ the fundamental principles and general properties of materials in various engineering applications.	3	2													
106	BSC	23CY1001 - ECY	CO5	Analyze the data, develop skills in chemical analysis and their application in engineering.	3						3								
107	BSC	23CY1002 - PCT	CO1	Understand the basic concepts of physical chemistry and thermodynamics	2														
108	BSC	23CY1002 - PCT	CO2	Apply the laws of thermodynamics to various systems to evaluate their efficiency		2													

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109	BSC	23CY1002 - PCT	CO3	Apply the principles of chemical reactions to understand the phase transitions and rate of reaction		2													
110	BSC	23CY1002 - PCT	CO4	Apply the concepts of kinetic theory of gases to understand the behaviour of mixture of gases		2													
111	BSC	23CY1002 - PCT	CO5	Verify the gas laws, reaction rates and performance of different thermal systems using simulation softwares			2												
112	BSC	23CY1003 - CPC	CO1	Interpret the importance and applications of computational techniques in solving chemical problems.	3		2												
113	BSC	23CY1003 - CPC	CO2	Interpret simulation results to predict molecular behavior, reaction mechanisms, and material properties.	3		2												
114	BSC	23CY1003 - CPC	CO3	Apply frequency calculations, and molecular dynamics, and leveraging cheminformatics tools for data mining in chemistry.	3		2		2										
115	BSC	23CY1003 - CPC	CO4	Utilize computational resources to address and solve contemporary chemical challenges.	3		2												
116	BSC	23CY1003 - CPC	CO5	Analyze results to gain insights into molecular behaviors, reaction mechanisms, and properties.	3				2										
117	BSC	23MT1001 - LACE	CO1	Apply matrix algebra to the real-world applications in engineering, physical and biological sciences, computer science, finance, economics and solving the system of equations.	3														
118	BSC	23MT1001 - LACE	CO2	Apply multivariate differential calculus to find maxima & minima of functions and understand the concepts of second order differential equations and its applications.	3														

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119	BSC	23MT1001 - LACE	CO3	Apply beta and gamma functions to evaluate improper integrals. Evaluate double and triple integrals techniques over a region in two dimensional and three-dimensional geometry.	3														
120	BSC	23MT1001 - LACE	CO4	interpret the physical meaning of different operators such as gradient, curl and compute the line integrals of vector functions and learn their applications.	3														
121	BSC	23MT1002 - DIS	CO1	Apply the knowledge of sets and function to the real world problems and computer problems to analyze and draw ven diagrams	3														
122	BSC	23MT1002 - DIS	CO2	Apply basic and computational techniques on discrete structures like relations, orders, functions & FSM, Lattices, and propositional & predicate logic	3														
123	BSC	23MT1002 - DIS	CO3	Apply the knowledge of counting techniques, Recurrence Relations, Generating functions to solve the real world problems	3														
124	BSC	23MT1002 - DIS	CO4	Apply graph theory to solving real world structures and their related applications	3														
125	BSC	23MT2004 - MPG	CO1	Apply various methods for finding the optimal solution of Linear Programming Problem.	2	2											2		
126	BSC	23MT2004 - MPG	CO2	Apply Integer and Fractional programming approaches for solving optimization problems.	2	3											2		
127	BSC	23MT2004 - MPG	CO3	Apply quadratic programming and geometric programming techniques for solving non linear programming problems	2		2										3		
128	BSC	23MT2004 - MPG	CO4	Apply evolutionary algorithms, nature-inspired metaheuristics, to solve complex optimization problems in infinite-dimensional spaces.		3	2										3		

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129	BSC	23MT2013 - RAI	CO1	Understand the E R model and relational model	2	2	2										2		
130	BSC	23MT2013 - RAI	CO2	Apply various Normalization techniques to design a Database	2	2	2										2		
131	BSC	23MT2013 - RAI	CO3	Apply source coding techniques, such as prefix coding, to efficiently represent information		2	3		2								2		
132	BSC	23MT2013 - RAI	CO4	Design and implement symmetric key cryptographic systems using stream ciphers, block ciphers, and algorithms		2	3		2									2	
133	BSC	23PH1009 - CMP	CO1	Describe computational principles, historical context, and practical applications in computer science and scientific computation	2													2	
134	BSC	23PH1009 - CMP	CO2	Understanding of integration using stochastic methods, including quadrature techniques such as direct fit polynomials		2												2	
135	BSC	23PH1009 - CMP	CO3	Explain solid grasp of sampling and integration techniques, including the Metropolis algorithm, its applications in statistical physics		2												2	
136	BSC	23PH1009 - CMP	CO4	Summarize general behavior of classical systems, basic methods for many-body systems, including the Verlet algorithm		2												2	
137	BSC	23PH1009 - CMP	CO5	Analysing the data by apply the knowledge of physics to executethe related experiments and develop some inter disciplinaryprojects		2													2
138	BSC	23PH1010 - EMT	CO1	Understand the concept of Electromagnetic theory: similarities and differences, free-space propagation, and the classification of photons and electrons.		2													
139	BSC	23PH1010 - EMT	CO2	Understand the concept of nonlinear optics and it applications.	3														

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140	BSC	23PH1010 - EMT	CO3	Understand the concept of Photonic Crystals.				3											
141	BSC	23PH1010 - EMT	CO4	Understand the concepts of Applications of Nanophotonics					3										
142	BSC	23PH1010 - EMT	CO5	Understand the experimental techniques															
143	BSC	23PH1011 - CMR	CO1	Understand fundamental concepts in computational mechanics and their relevance to robotics	2	2											2		
144	BSC	23PH1011 - CMR	CO2	Apply the proficiency in modeling for robotic systems development	2	2											2		
145	BSC	23PH1011 - CMR	CO3	Apply the various methods of trajectory planning for motion control in robotics.		2	2										2		
146	BSC	23PH1011 - CMR	CO4	Apply computational techniques to solve practical problems in robotics		2	2										2		
147	BSC	23PH1011 - CMR	CO5	Analyze the Robot navigation and path following using simulation software					2								2		
148	BSC	23SC3201 - DSS	CO1	Understand the fundamental principles of data science and statistics	2	2												2	
149	BSC	23SC3201 - DSS	CO2	Gain basic understanding the role of data science in various scenarios in the real-world problems.		2		3										2	
150	BSC	23SC3201 - DSS	CO3	Apply probabilistic predictions and decisions based on data analysis.		2		3										2	
151	BSC	23SC3201 - DSS	CO4	Implement and apply proficiency in statistical inference techniques			2											2	
152	ESC	23CS1207 - OOP	CO1	Apply the concepts of Basic Data types, Operators, Decision and Looping Control Statements, Strings			3		3										

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153	ESC	23CS1207 - OOP	CO2	Apply the concepts of Lists, Tuples, Dictionaries. Functions, Modules, Class, Object, OOPS principles.			3		3										
154	ESC	23CS1207 - OOP	CO3	Apply Concepts of OOP principles, classes and objects, Call byvalue vs. Call by reference, recursion, and Nested classes			3		3										
155	ESC	23CS1207 - OOP	CO4	Apply Concepts of Files, Interfaces, Packages, Threads			3		3										
156	ESC	23CS1207 - OOP	CO5	Design, implement, and evaluate Python programs using basic data types, variables, expressions, conditional statements, loops, functions, built-in data structures, object-oriented programming concepts, Python libraries and modules, debugging techniques, and file I/O to solve programming problems.							3		3			3	3		
157	ESC	23CS1207 - OOP	CO6	Apply object-oriented programming concepts to write programs and Analyses requirements and design to implement lab-based project with SDLC in a group of students							3		3			3	3		
158	ESC	23EC1101 - FITS	CO1	Apply the basic concepts of IoT and its implementation using the Development Hardware	2	1												3	
159	ESC	23EC1101 - FITS	CO2	Apply the different sensors interfacing with Development Hardware		1	3											3	
160	ESC	23EC1101 - FITS	CO3	Apply the different actuators interfacing with Development Hardware		1	3											3	
161	ESC	23EC1101 - FITS	CO4	Analyze the IoT concept to solve real time insights		1	3	2										3	

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162	ESC	23EC1101 - FITS	CO5	Analyze the concept of IoT by interfacing with sensors and Development Hardware		1	3											3	
163	ESC	23EC1202 - DDCA	CO1	Build the combinational and programmable digital logic circuits using logic gates and optimization methods	2	2											3		
164	ESC	23EC1202 - DDCA	CO2	Construct the sequential and memory circuits using flip-flops	2	2											3		
165	ESC	23EC1202 - DDCA	CO3	Organize computer architecture and instructions sequence	2	2											3		
166	ESC	23EC1202 - DDCA	CO4	Model the Memory Architecture and I/O Organization modules	2	2											3		
167	ESC	23EC1202 - DDCA	CO5	Develop and analyze computer architecture modules using basic combinational, sequential and memory logics	2		2		2								3		
168	ESC	23EC1203 - BEEC	CO1	Understand the basic concepts of circuits and its fundamentals	2												3		
169	ESC	23EC1203 - BEEC	CO2	Grasp the principles of AC circuits, including sinusoidal waveforms, impedance, and power factor.	2												3		
170	ESC	23EC1203 - BEEC	CO3	Comprehend the behavior of basic electronic components, such as diodes, and transistors.	2												3		
171	ESC	23EC1203 - BEEC	CO4	Understand the basic functional Principles of analog and digital ICs.	2												3		
172	ESC	23ME1103 - DTW	CO1	Demonstrate proficiency in typing sentence , paragraph , report , presentations along spread sheets using office tools, LaTeX tools and PowerBI					2									2	

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
173	ESC	23ME1103 - DTW	CO2	Build a static website and blog with using html along with Special features of HTML5, CSS and Javascript					3					3					
174	ESC	23ME1103 - DTW	CO3	Develop a virtual environment with cospace and construct a marker based Augmented Reality			3										3		
175	ESC	23ME1103 - DTW	CO4	Utilising the softwares of Autodesk Fusion 360 and the same can be printed in 3D printer as physical prototype			3										3		
176	ESC	23SC1101 - CTSD	CO1	Develop and apply logical building blocks to solve real world problems	3	3	3												
177	ESC	23SC1101 - CTSD	CO2	Apply computational thinking for designing solutions	3	3	3												
178	ESC	23SC1101 - CTSD	CO3	Develop and apply the CRUD operations on arrays	3														
179	ESC	23SC1101 - CTSD	CO4	Apply CRUD operations on Linear Data Structures	3	3	3												
180	ESC	23SC1101 - CTSD	CO5	Apply the structured programming paradigm with logic building skills onBasic and Linear Data Structures for solving real world problems	3				3										
181	ESC	23SC1101 - CTSD	CO6	Skill the students in such a way that students will be able to develop logicthat help them to create programs as well as applications in C					3										
182	ESC	23SC1202 - DS	CO1	Understand various sorting algorithms and analyse the efficiency of the algorithms.	3	3													
183	ESC	23SC1202 - DS	CO2	Implement and evaluate Linear Data Structures and Demonstrate their applications.	3	3	3												
184	ESC	23SC1202 - DS	CO3	Implement and evaluate tree data structures and understand hashing techniques	3	3	3							3					

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
185	ESC	23SC1202 - DS	CO4	Understand graph data structures and apply graphs to solve problems	3	3								3					
186	ESC	23SC1202 - DS	CO5	"Design, Develop and evaluate common practical applications for linear and nonlinear data structures."			3							3					
187	ESC	23SC1202 - DS	CO6	"Skill the students in such a way that students will be able to develop logic that help them to create programs on both linear and non-linear datastructuresand its applications."			3							3					
188	ESC	23SC12030 - CTOD	CO1	Apply Object oriented paradigm for code reusability			3		3									3	
189	ESC	23SC12030 - CTOD	CO2	Design object-oriented solutions to the real-world problems through OOPS concepts			3		3									3	
190	ESC	23SC12030 - CTOD	CO3	Demonstrate Exception handling and String manipulation techniques			3		3									3	
191	ESC	23SC12030 - CTOD	CO4	Apply Event driven programming with event listeners			3		3									3	
192	ESC	23SC12030 - CTOD	CO5	Apply Object Oriented Paradigm with logical building blocks to develop solutions for real world problem	3	3		3											
193	PCC	23AD2001R - AIML	CO1	Apply a variety of artificial intelligence algorithms and techniques to effectively solve complex problems in diverse real-world environments		3	3	3									3		
194	PCC	23AD2001R - AIML	CO2	Demonstrate proficiency in formulating and solving constraint satisfaction problems, employing knowledge engineering principles to perform inferencing, reasoning and probability theory.		3	3	3									3		

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
195	PCC	23AD2001R - AIML	CO3	Proficient in understanding and applying various machine learning techniques to analyze and solve real-world problems		3	3	3									3		
196	PCC	23AD2001R - AIML	CO4	Demonstrate proficiency in advanced supervised learning techniques and unsupervised learning techniques to solve complex real-world problems.		3	3	3									3		
197	PCC	23AD2001R - AIML	CO5	Build solutions for various AI & ML related problems			3	3	3										3
198	PCC	23AD2001R - AIML	CO6	Develop projects that addresses AI and ML related real-world problems			3	3	3										3
199	PCC	23AD2103R - SDC	CO1	Understanding the functionalities and types of operating systems, their support for computer architecture, and concepts such as process virtualization, CPU scheduling, segmentation, paging, TLB, swapping, demand paging, thrashing, and page replacement algorithms	2	2	3												2
200	PCC	23AD2103R - SDC	CO2	Applying deadlock management strategies such as prevention, detection, and avoidance, alongside concurrency concepts including threads and common problems, while comparing network types, topologies, and reference models	2	2		2											2
201	PCC	23AD2103R - SDC	CO3	Understanding the network layer design issues, including store and forward packet switching, the services provided to the transport layer, and the implementation of connectionless and connection-oriented services	2		2	2											2

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
202	PCC	23AD2103R - SDC	CO4	Analyzing the fundamentals of cloud computing, including its history, characteristics, advantages and disadvantages, deployment models, cloud services (IAAS, PAAS, SAAS), virtualization, containers and pricing models	2	2	2												3
203	PCC	23AD2103R - SDC	CO5	Applying Operating System Concepts, HTTP Clients, HTTP Servers and Computer Networking concepts. Analyzing Cloud Service Providers - AWS EC2	2	2	2												2
204	PCC	23AD2204R - DMW	CO1	Design a Data warehouse system and perform business analysis with OLAP tools	2		2	3										2	
205	PCC	23AD2204R - DMW	CO2	Apply suitable pre-processing and visualization techniques for data analysis	3	3	3											2	
206	PCC	23AD2204R - DMW	CO3	Discover frequent pattern and association rule mining techniques for data analysis		3	3	3										3	
207	PCC	23AD2204R - DMW	CO4	Apply appropriate classification techniques for data analysis	2	3	3											2	
208	PCC	23AD2204R - DMW	CO5	Discover appropriate clustering techniques for data analysis	2	3	3											2	
209	PCC	23AD2205R - DL	CO1	Understand and apply optimization algorithms to solve neural networks, enhancing model performance through weight adjustment. Develop the ability to select and implement appropriate optimization techniques for various neural network architectures and problems	3	3											3		

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
210	PCC	23AD2205R - DL	CO2	Apply CNN models and their variants to real-time data, including LeNet, AlexNet, ZF-Net, and VGGNet. Gain proficiency in implementing and optimizing these models for various real-time data scenarios.	3	3											3		
211	PCC	23AD2205R - DL	CO3	Apply RNN, Long Short Term Memory (LSTM), and autoencoders to relevant data tasks. Acquire the ability to design, train, and optimize these models for various sequential and feature extraction problems.	3	3											3		
212	PCC	23AD2205R - DL	CO4	Apply variational autoencoders and generative neural models for data generation tasks. Develop skills in constructing, training, and optimizing these models to create high-quality synthetic data.		3	3											3	
213	PCC	23AD2205R - DL	CO5	Apply and implement basic neural networks, various types of autoencoders, batch normalization, and convolutional neural networks. Gain proficiency in constructing, training, and optimizing these models for diverse applications. Develop the ability to enhance model performance using advanced techniques.		3	3											3	
214	PCC	23AD2205R - DL	CO6	Construct , Design and develop various types of neural network models, autoencoders, batch normalization, and convolutional neural networks. Gain expertise in building, training, and optimizing these models for different tasks. Enhance your ability to implement advanced techniques to improve model performance.		3	3											3	

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
215	PCC	23AD3106R - BDE	CO1	Apply big data use cases from selected business domains.	2	2	2			2	2						2	3	
216	PCC	23AD3106R - BDE	CO2	Construct NoSQL big data management			3		3									3	
217	PCC	23AD3106R - BDE	CO3	Install, configure, and run Hadoop and HDFS		2		3		2	2								
218	PCC	23AD3106R - BDE	CO4	Perform map-reduce analytics using Hadoop			3												
219	PCC	23AD3106R - BDE	CO5	Implement the lab experiments for big data application															
220	PCC	23AD3207R - NLP	CO1	Apply various approaches to syntax and semantics in NLP	2	2												2	
221	PCC	23AD3207R - NLP	CO2	Apply the statistical estimation and statistical alignment models for language modelling and parsing.		2	2											2	
222	PCC	23AD3207R - NLP	CO3	Apply Vector models for documents to gain insights of the document.		2	2										3		
223	PCC	23AD3207R - NLP	CO4	Apply various statistical models for classification, information extraction, translation, and generation.		3	3										3		
224	PCC	23AD3207R - NLP	CO5	Inspect and Evaluate Language Processing Methods using python			3										3		
225	PCC	23AD4108 - EAI	CO1	Understand Ethical Principles underlying AI development and deployment, including transparency, fairness, accountability, and privacy.			3		2			3						3	
226	PCC	23AD4108 - EAI	CO2	Analyze Ethical Dilemmas arising in AI design, development, and deployment, considering multiple perspectives and potential consequences.			3		3			3						3	

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
227	PCC	23AD4108 - EAI	CO3	Apply Ethical Frameworks and guidelines to evaluate the ethical implications of AI technologies across various domains such as healthcare, employment, and social justice.			3		3			3							3	
228	PCC	23AD4108 - EAI	CO4	Critically Evaluate AI Systems for biases, fairness, and ethical considerations, employing analytical tools and methods to assess the ethical soundness of these systems.			3		3			3							3	
229	PCC	23CS22050 - DAA	CO1	Apply concepts of mathematics to find space complexity, time complexities of various algorithms	2															1
230	PCC	23CS22050 - DAA	CO2	Analyze the problems that can be solved by using Divide and Conquer and Greedy Method		2	2		3											2
231	PCC	23CS22050 - DAA	CO3	Analyze the problems that can be solved by using Dynamic Programming and Backtracking		2	2		3											2
232	PCC	23CS22050 - DAA	CO4	Analyze the problems that can be solved by using Branch and Bound, NP-Hard Graph problems and Approximation Algorithms		2	2		3											2
233	PCC	23CS22050 - DAA	CO5	Solve and Analyze the complex and realtime problems by various design strategies	1	2	2		3											2
234	PRI	23IE2040 - SIP	CO1	Remember the fundamentals of the science of water cycle along with powerful tools that students can use to diagnose the health of the local water cycle as well as develop targeted action plans to restore the local natural water cycle and bring water prosperity			3												3	
235	PRI	23IE2040 - SIP	CO2	Remember the water sustainability and water resilience of village, city, residential facilities and households using multi-level water scorecards				3											3	

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
236	PRI	23IE2040 - SIP	CO3	Apply the design thinking positive action plan for a village, campus, residential facility and community neighbourhood.					3								3		
237	PRI	23IE2040 - SIP	CO4	Apply the water positive solutions within an urban watershed, a rural watershed, residential institutional and corporate community						3							3		
238	PRI	23IE3041 - TIP	CO1	Ability to demonstrate the impact of academic skills and logical thinking			3										3		
239	PRI	23IE3041 - TIP	CO2	Ability to integrate existing and new technical knowledge for industrial application				3									3		
240	PRI	23IE3041 - TIP	CO3	Ability to demonstrate the impact of the internship on their learning and professional development					3								3		
241	PRI	23IE3041 - TIP	CO4	Demonstrate the ability to harness resources by analyzing challenges						3							3		
242	PRI	23IE4042 - IIP	CO1	Apply fundamental engineering/technology knowledge to solve real-world industrial problems.	2					2							2		
243	PRI	23IE4042 - IIP	CO2	Demonstrate effective communication and Technical skills in a professional setting.		2			3									3	
244	PRI	23IE4042 - IIP	CO3	Collaborate effectively in a team environment.		3		2											2
245	PRI	23IE4053R - CP-1	CO1	Exercise to acquire knowledge within the chosen area of technology for project development.	2														
246	PRI	23IE4053R - CP-1	CO2	Identify, discuss and justify the technical aspects of the chosen area for problem analysis		2													
247	PRI	23IE4053R - CP-1	CO3	Reproduce, improve and refine technical aspects for chosen problem						3							2		

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
248	PRI	23IE4053R - CP-1	CO4	Communicate and report effectively project related activities and findings.									2						3	
249	PRI	23IE4054R - CP-2	CO1	Literature search equips students with the ability to efficiently locate, evaluate, and synthesize academic and scholarly sources relevant to their field of study. Students will develop skills to conduct comprehensive searches, critically assess the credibility of sources, and apply research findings to support their academic or professional work.	2															
250	PRI	23IE4054R - CP-2	CO2	Problem identification enables students to accurately recognize and define complex issues or challenges within a given context. Students will learn to analyze situations critically, identify underlying causes, and articulate clear problem statements that guide effective problem-solving strategies.		2														
251	PRI	23IE4054R - CP-2	CO3	Analysis of research work prepares students to critically evaluate and interpret research studies, assessing the methodology, data, and conclusions. Students will develop the ability to dissect research findings, identify strengths and weaknesses, and draw informed conclusions that contribute to their own academic or professional endeavors.						3										

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
252	PRI	23IE4054R - CP-2	CO4	Analysis of research work prepares students to critically evaluate and interpret research studies, assessing the methodology, data, and conclusions. Students will develop the ability to dissect research findings, identify strengths and weaknesses, and draw informed conclusions that contribute to their own academic or professional endeavors.									2						
253	SIL	22UC0021 - SIL-1	CO1	Apply effective communication and collaboration skills to work with diverse populations in addressing social issues within the community.									3			3			
254	SIL	22UC0021 - SIL-1	CO2	Build technological solutions to real-world problems or challenges with peers to achieve common goals.			3			3									
255	SIL	22UC0021 - SIL-1	CO3	Plan effectively to communicate ideas and collaborate with others to achieve artistic or recreational goals.									3			3			
256	SIL	22UC0021 - SIL-1	CO4	Develop innovative solutions by thinking critically and creatively within a collaborative social immersive learning environment.						3			3						
257	SIL	22UC0021 - SIL-1	CO5	Identify the strategies to promote personal well-being for healthy living through social interaction and shared experiences.			3			3									
258	SIL	22UC0022 - SIL-2	CO1	Apply effective communication and collaboration skills to work with diverse populations in addressing social issues within the community.								3	3						
259	SIL	22UC0022 - SIL-2	CO2	Build technological solutions to real-world problems or challenges with peers to achieve common goals.								3	3						

S#	Cat	Course	CO	CO Description	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
260	SIL	22UC0022 - SIL-2	CO3	Plan effectively to communicate ideas and collaborate with others to achieve artistic or recreational goals.			3					3	3						
261	SIL	22UC0022 - SIL-2	CO4	Develop innovative solutions by thinking critically and creatively within a collaborative social immersive learning environment.			3					3	3				3		
262	SIL	22UC0022 - SIL-2	CO5	Identify the strategies to promote personal well-being for healthy living through social interaction and shared experiences.						3		3	3						
263	SIL	22UC0023 - SIL-3	CO1	Apply effective communication and collaboration skills to work with diverse populations in addressing social issues within the community.								3	3						
264	SIL	22UC0023 - SIL-3	CO2	Build technological solutions to real-world problems or challenges with peers to achieve common goals.								3	3						
265	SIL	22UC0023 - SIL-3	CO3	Plan effectively to communicate ideas and collaborate with others to achieve artistic or recreational goals.			3						3						3
266	SIL	22UC0023 - SIL-3	CO4	Develop innovative solutions by thinking critically and creatively within a collaborative social immersive learning environment.			3						3						3
267	SIL	22UC0023 - SIL-3	CO5	Identify the strategies to promote personal well-being for healthy living through social interaction and shared experiences.			3			3			3						
					2.4	2.3	2.7	2.7	2.7	2.7	2.3	2.6	2.6	2.7	2.1	2.9	2.6	2.4	2.5

Stakeholder's Feedback

Q#	Question	No. of Stakeholder's						Rating (%)				
		STU	ALU	IE	AP	FAC	TOT	[5]	[4]	[3]	[2]	[1]
Q1	How would you rate the relevance of the current syllabus content in addressing industry needs and trends?	599	254	192	182	677	1904	56.2	34	8.9	0.9	0
Q2	How well do the course outcomes align with the skills required in the industry?	599	254	192	182	677	1904	52.5	37.4	9.3	0.8	0
Q3	How would you rate the inclusion of emerging technologies or methodologies in the syllabus?	599	254	192	182	677	1904	54	34.7	10.3	1	0
Q4	How effectively are the latest tools integrated into the curriculum?	599	254	192	0	0	1045	66.3	23.8	8.3	1.6	0
Q5	How beneficial are the global certifications included in the curriculum for industry readiness?	599	254	192	0	677	1722	58.3	30.9	9.7	1	0.1
Q6	How effectively does the curriculum incorporate practical lab experiments relevant to industry practices?	0	254	192	0	0	446	55.8	32.4	10.9	0.7	0.2
Q7	How does this curriculum compare with similar curricula at other institutions in terms of content and quality?	0	0	0	182	0	182	34.1	48.9	16.5	0.5	0
Q8	How effective is the integration of research opportunities into the curriculum?	0	0	0	182	677	859	39	45.5	13.8	1.7	0
Q9	How beneficial were the MOOCs recommended as part of the curriculum?	599	254	0	182	677	1712	53.2	35.2	10.6	0.9	0
Q10	How well does the course content map to skill council recommendations?	0	0	192	182	677	1051	41.6	45.8	12	0.7	0

Stakeholder's Feedback

Legend

- Rating 5
- Rating 4
- Rating 3
- Rating 2
- Rating 1

