CURRICULUM STRUCTURE

FIRST YEAR UG: B.TECH

COMPUTER SCIENCE AND ENGINEERING

REVISION: FRCRCE-3-26

Effective from Academic Year 2026-27
Board of Studies Approval: 04/03/2026
Academic Council Approval: 27/03/2026

Dr. DEEPAK BHOIR	**Dr. JAGRUTI SAVE**	**DR. SAPNA PRABHU**
Dean Academics	**HOD (CSE)**	**Principal**

Preamble:

Fr Conceicao Rodrigues College of Engineering (Fr. CRCE) is an Autonomous Institute from the year 2024-25. The University Grant Commission vide letter No. F. 2-10/2023(AC-Policy) dated 23rd Nov 2023 conferred the autonomous status to Fr. Conceicao Rodrigues College of Engineering, Fr. Agnel Ashram, Bandstand, Bandra (West), Mumbai 400050 affiliated to the University of Mumbai for a period of 10 years from the Academic year 2024-2025 to 2033-2034 as per clause 7.5 of the UGC (Conferment of Autonomous Status Upon Colleges and Measures for Maintenance of Standards in Autonomous Colleges) Regulations, 2023. We look towards Autonomy as a great opportunity to design and implement a curriculum sensitive to the needs of Learners, Indian Society, and Industries. We are committed to the effective implementation of the UGC Regulations and NEP 2020 in its spirit. The Government of Maharashtra has directed Autonomous Colleges to revise their curriculum in line with the National Education Policy (NEP) 2020 through a Government Resolution dated 4th July 2023. Accordingly, degree options are given to the students admitted from the academic year 2024-25 based on the UGC circulars and the DTE guidelines ref no. 17/DTE/NEP-2020/2024/111 dated 4th June 2024 related to the implementation of NEP.

Based on the recent recommendations of the GR, we are pleased to offer our holistic curriculum, a "H-Tree Model" of Engineering Education. A unique "H-Tree Model" of Engineering Education Curriculum is carefully designed to systematically develop IQ (Intelligence Quotient), PQ (Physical Quotient), EQ (Emotional Quotient) and SQ (Spiritual Quotient) of a learner. This curriculum aims at the development of a well-rounded personality through a holistic approach to education in which the learner receives 25% teacher-led learning, 25% peer learning, 25% self-learning and 25% experiential learning. The curriculum model is outcome-based that focuses on learning by doing. The curriculum is designed to provide multiple learning opportunities for students to acquire and demonstrate competencies for rewarding careers. It offers curated, interest-driven pathways that empower learners to acquire skills through structured, strategic planning. It has 7 verticals aligned to the GR recommendations with a strong science and mathematics foundation and Program core, Sequence of electives, Multidisciplinary Minor courses, Humanities & Management courses along with sufficient experiential learning through projects and a semester-long industry / research internship along with employable skill-based courses. Learners get an opportunity to acquire skills through NSDC-aligned courses during the summer vacations. Additionally, learners can choose from multiple degree pathways, including a built-in Multidisciplinary Minor, a Double Minor in emerging fields, or Honors with Research.

The curriculum integrates emerging industry trends with skill-based learning to foster innovation and analytical problem-solving. It offers flexible, multidisciplinary course choices with a strong emphasis on experiential and project-based learning. The Program Core Courses comprehensively cover the fundamental and advanced areas of Computer Science and Engineering, including Data Structures and Algorithms, Artificial Intelligence, Machine Learning, Data Science, Cybersecurity, Software Engineering, Computer Networks, Operating Systems, and other department-specific specializations.

Various steps are taken to transform the teaching-learning process to make learning a joyful experience for students. We believe that this curriculum will raise the bar of academic standards with the active involvement and cooperation from students, academic and administrative units.

Curriculum Structure for UG Programs at Fr CRCE w.e.f. A.Y. 2026-27

Nomenclature of the courses in the curriculum	
Abbreviation	**Title**
BSESC	Basic Science & Engineering Science Courses
PCPEC	Program Core and Program Elective Courses
MDC	Multidisciplinary Courses
SC	Skill Courses
HSSM	Humanities, Social Sciences and Management
EL	Experiential Learning
LLC	Liberal Learning Courses
BSC	Basic Science Courses
ESC	Engineering Science Courses
PCC	Program Core Courses
PEC	Program Elective Courses
MDM	Multidisciplinary Minor
OE	Open Elective
VSEC	Vocational and Skill Enhancement Course
VSC	Vocational Skill Courses
SEC	Skill Enhancement Courses
AEC	Ability Enhancement Course
EEMC	Entrepreneurship, Economics and Management Course
IKS	Indian Knowledge System
VEC	Value Education
RM	Research Methodologies
CEFP	Community Engagement or Field Project
ELC	Experiential Learning Courses
PRJ	Project
INT	Internship
CC	Cocurricular Courses
HMM	Honors and Multidisciplinary Minor
DM	Double Minor
HR	Honors with Research

Credit Specification:

- Theory: 1 credit=13 to 15 hrs of teaching
- Lab: 1 Credit=26 to 30 hrs of lab work
- Studio Activities: 1 Credit= 26 to 30 hrs of creative activities
- Workshop Based Activities: 1 Credit=26 to 30 hrs of hands-on activities related to vocation/professional practice/skill based
- Seminar/Group Discussion: 1 Credit=13 to 15 hrs of participation
- Internship: 1 Credit=Per 2 weeks OR 36 to 40 hrs of engagement
- Field Based Learning/Practices: 1 Credit=26 to 30 hrs of learning activities
- Community Engagement Projects: 1 Credit=26 to 30 hrs of contact time along with 13 to 15 hrs of activities preparation, report writing, independent reading etc.
- Notional hours include Theory, practical, tutorials and self-learning for each students per week.

Degree/SEM	I	II	III	IV	V	VI	VII	VIII	Total
B.Tech (Multidisciplinary Minor)	20	20	22	22	22	22	20	20	168
B.Tech with Double Minor (Multidisciplinary & Specialization Minor)	20	20	22+4*	22+4*	22+4*	22+4*	20+2$	20	186
B.Tech with Honors with Research (Multidisciplinary Minor)	20	20	22+4*	22+4*	22+4*	22+4*	20+2$	20	186

*Optional Credits
$ optional 2 credits can be earned either in VII or VIII Semester

1. Learners who earn a minimum of total 168 credits will be awarded "B.Tech in Engg. /Tech. with Multidisciplinary Minor (MDM)" degree.
2. Learners will have the following options to earn B. Tech. in Engg. /Tech. degree in
    a. Major Engg./Tech Discipline with Double Minor (Multidisciplinary and Specialization Minor)
    b. Major Engg./Tech Discipline with Honors with Research and Multidisciplinary Minor
3. Major Engg./Tech Discipline with Double Minor (Multidisciplinary and Specialization Minor) (additional 18 credits): 168 +18 =186 Min Credits. There will be four courses (4 credits each), one in each semester starting from the III semester which will be from emerging areas of specialisation. In VII or VIII semester students will complete 2 credits seminar/project. Admission eligibility min CGPA=7.5 after First year
4. B.Tech in Engg./ Tech.- Honors with Research and Multidisciplinary Minor (additional 20 credits by research): 168 +18=186 Min Credits. (Admission eligibility: min CGPA=7.5 after First and should maintain CGPA=7.5 after Third year)
5. Learner can earn the certificate/Diploma/Degree based on his/her exit from the program as follows. College shall explore feasibility to offer NSDC aligned skill-based courses to the learners:
    a. UG Certificate: After a one-year (40 credits to be earned) and 8-credits summer workshop/vocational courses/internship
    b. UG Diploma: After two-years (80 credits to be earned) and 8-credits summer workshop/vocational courses/internship/Project
    c. B.Voc.: After three-years (120 credits to be earned) and 8-credits summer workshop/vocational courses/internship/Project

Salient Features of Curriculum:

- Framed as per Government Resolution dated 4th July 2023 in line with National Education Policy (NEP) 2020.
- Minimum 168 choice-based credit structure with options of Degrees earning additional credits
- Unique 'H-Tree' Model of Curriculum: Hybrid model for holistic development with happy learning environment having bridge connecting verticals providing unique path for each learner for 3-dimensional growth, Life Long Learning, multiple entry-exit, inclusive model indicating equal distribution of central resources
- More emphasis on laboratory based and experiential learning
- More weightage to continuous assessment to reduce examination stress
- Mandatory Semester-long internship, courses with emotional & spiritual learning and skill-based learning aligned with NSDC framework
- Well balanced curriculum to attain Program Outcomes and skills of 21st century learner

	Course Verticals																Total Credits
	BSESC		PCPEC		MDC		SC	HSSM				EL				LLC	BC	
SEM	BSC	ESC	PCC	PEC	MDM	OE	VSEC	AEC	EEMC	IKS	VEC	RM	CEFP	PRJ	INT	CC	BC	
I	6	7	4				1									2	--	20
II	6	4	1				1	4		2						2	--	20
III	3		11		3	2					2		1					22
IV	3		11		3	2	2				1						2*	22
V			12	3	3	2	2											22
VI			13	4	3	2												22
VII & VIII				15	3							4		6	12		--	40
Total Credits as per Fr CRCE	18	11	52	22	15	8	6	4		2	3	4	1	6	12	4	2*	168
Total Credits as per GR	14	12	44	20	14	8	8	4	4	2	4	4	2	4	12	4		160

- Bridge course is only for second year direct admission students.

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SEMESTERWISE CURRICULUM STRUCTURE
UG Computer Science and Engineering Programme: 2026-27 Scheme

SEM-I

Course Code	Course Vertical	Sub-Vertical	Course Name		Notional Hours	Examination Marks (1 Credit=50 Marks)					Credits	
						ISE	MSE	ESE Min	ESE Max	Total	Points	Total
26BSC11CS01	BSESC	BSC	Matrices and Differential Calculus	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3							
26BSC11CS04	BSESC	BSC	Engineering Physics	TH	2	20	30	20	50	100	2	3
				PR	2	50	-		-	50	1	
				SL	2							
26PCC11CS01	PCPEC	PCC	Programming Fundamentals (C)	TH	2	20	30	20	50	100	2	4
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	3							
26ESC11CS03	BSESC	ESC	Basic Electrical and Electronics Engineering	TH	2	20	30	20	50	100	2	4
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	3							
26ESC11CS02	BSESC	ESC	Engineering Graphics	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26VSE11CS02	SC	VSEC	Skill Laboratory – 2	PR	2	50	-	-	-	50	1	1
26LLC1X	LLC	CC	One Course from CC	PR	2	100	-	-	-	100	2	2
				SL	2							
				Total	**TH:TU:PR:SL 10:3:12:15=40**					**1000**	**-**	**20**

SEM-II

Course Code	Course Vertical	Sub-Vertical	Course Name		Notional Hours	Examination Marks (1 Credit=50 Marks)					Credits	
						ISE	MSE	ESE Min	ESE Max	Total	Points	Total
26BSC11CS03	BSESC	BSC	Integral Calculus and Probability Theory	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3							
26BSC11CS02	BSESC	BSC	Engineering Chemistry	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC11CS02	PCPEC	PCC	Innovation and Design Thinking	PR	2	50	-	-	-	50	1	1
26IKS11CS01	HSSM	IKS	Indian Knowledge System	TH	2	100	-	-	-	100	2	2
				SL	2							
26ESC11CS01	BSESC	ESC	Digital Electronics	TH	2	20	30	20	50	100	2	4
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	3							
26AEC11CS01	HSSM	AEC	Object Oriented Programming with JAVA	PR	4	100	-	-	-	100	2	2
26VSE11CS01	SC	VSEC	Skill Laboratory -1	PR	2	50	-	-	-	50	1	1
26AEC11CS02	HSSM	AEC	Art of Communication	TH	1	100	-	-	-	100	1	2
				PR	2						1	
				SL	1							
26LLC2X	LLC	CC	One Course From CC	PR	2	100	-	-	-	100	2	2
				SL	2							
				Total	**TH:TU:PR:SL 9:2:16:13=40**			-	-	**1000**	**-**	**20**

Notional hours = Contact hours + Self-learning

Skill Laboratory 1		Skill Laboratory 2	
A	Measuring and Testing Tools	A	PC and Networking
B	Soldering and PCB Assembly	B	Linux Operating System
C	Mini-project (Hardware)	C	Data analysis using spreadsheets

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Curriculum Structure for UG Programs at Fr CRCE w.e.f. A.Y. 2027-28
Second Year Computer Science and Engineering Program

SEM-III

Course Code	Course Vertical	Sub-Vertical	Course Name		Notional Hours	Examination Marks (1 Credit=50 Marks)					Credits	
						ISE	MSE	ESE Min	ESE Max	Total	Points	Total
26BSC12CS05	BSESC	BSC	Discrete Structure and Graph Theory	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3							
26PCC12CS03	PCPEC	PCC	Data Structures	TH	2	20	30	20	50	100	2	4
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	3							
26PCC12CS04	PCPEC	PCC	Database Management System	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC12CS05	PCPEC	PCC	Python Programming Lab	PR	4	100	-	-	-	100	2	2
26PCC12CS06	PCPEC	PCC	Computer Organization and Architecture	TH	2	20	30	20	50	100	2	2
				SL	2							
26OE12CS1X	MDC	OE	1. Law for Engineers 2. Financial Planning, Taxation and Investment	TH	2	100	-	-	-	100	2	2
				SL	2							
26MDM1X	MDC	MDM	MDM Course-1	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3							
26VEC12CS01	HSSM	VEC	Human Values and Professional Ethics	TH	1	100	-	-	-	100	1	2
				PR	2						1	
				SL	1							
26CEP12CS01	EL	CEFP	Community Engagement Project	PRJ	2	50	-	-	-	50	1	1
26DM1X	DM	DM	Double Minor Course	TH	2	20	30	20	50	100	2	4*
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	2							
26HR01	HR	HR	Honors with Research	PR	8						4	4*
				Total	**TH:TU:PR:SL 13:3:12:16=44**			**-**	**-**	**1100**	**-**	**22**

SEM-IV

Course Code	Course Vertical	Sub-Vertical	Course Name		Notional Hours	Examination Marks (1 Credit=50 Marks)					Credits	
						ISE	MSE	ESE Min	ESE Max	Total	Points	Total
26BSC12CS06	BSESC	BSC	Linear Algebra and Business Statistics	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3							
26PCC12CS07	PCPEC	PCC	Data Analytics and Visualization	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC12CS08	PCPEC	PCC	Analysis of Algorithm	TH	2	20	30	20	50	100	2	4
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	3							
26PCC12CS09	PCPEC	PCC	Theoretical Computer Science	TH	2	20	30	20	50	100	2	3
				TU	2	50	-	-	-	50	1	
				SL	2							
26PCC12CS10	PCPEC	PCC	Advanced Algorithmic Problem-Solving Lab	PR	2	50	-	-	-	50	1	1
26OE12CS2X	MDC	OE	1. Emerging Technology and Law 2. Principles of Management	TH	2	100	-	-	-	100	2	2
				SL	2							
26MDM2X	MDC	MDM	MDM Course-2	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3							
26VSE12CS03	SC	VSEC	Web Programming	PR	4	100	-	-	-	100	2	2
26VEC12CS02	HSSM	VEC	Technology Innovation for Sustainable Development: Mini Project	PR	2	50	-	-	-	50	1	1
26DM2X	DM	DM	Double Minor Course	TH	2	20	30	20	50	100	2	4*
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	4							
26HR02	HR	HR	Honors with Research	SL	8	-	-	-	-	-	4	4*
BC	BC	BC	MOOC	-	-	-	-	-	-	-	-	2$
				Total	**TH:TU:PR:SL 12:5:12:15=44**			**-**	**-**	**1100**	**-**	**22**

$ Discipline specific additional course to Lateral Entry (Diploma) students from Swayam Plus/Swayam platform
*** Indicates DM/HR course credits**

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Curriculum Structure for UG Programs at Fr CRCE w.e.f. A.Y. 2028-29
Third Year Computer Science and Engineering Program:

SEM-V

Course Code	Course Vertical	Sub-Vertical	Course Name		Notional Hours	Examination Marks (1 Credit=50 Marks)					Credits	
						ISE	MSE	ESE Min	ESE Max	Total	Points	Total
26PCC13CS11	PCPEC	PCC	Computer Network	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC13CS12	PCPEC	PCC	Operating System	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC13CS13	PCPEC	PCC	Software Engineering	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC13CS14	PCPEC	PCC	Machine learning and Data mining	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PEC13CS1X	PCPEC	PEC	Program Elective Course	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26VSE13CS04	SC	VSEC	Scalable Intelligent Systems Design Lab	PR	4	100	-	-	-	100	2	2
26OE13CS3X	MDC	OE	1. Health, Wellness and Psychology 2. Emotional and Spiritual Intelligence	TH	2	100	-	-	-	100	2	2
				SL	2							
26MDM3X	MDC	MDM	MDM Course-3	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3							
26DM3X	DM	DM	Double Minor Course	TH	2	20	30	20	30	100	2	4*
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	4							
26HR03	HR	HR	Honors/ with Research	SL	8						4	4*
				Total	**TH:TU:PR:SL 14:1:14:15=44**			-	-	**1100**	-	**22**

SEM-VI

Course Code	Course Vertical	Sub-Vertical	Course Name		Notional Hours	Examination Marks (1 Credit=50 Marks)					Credits	
						ISE	MSE	ESE Min	ESE Max	Total	Points	Total
26PCC13CS15	PCPEC	PCC	Advanced Database Management system	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC13CS16	PCPEC	PCC	Artificial Intelligence	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC13CS17	PCPEC	PCC	Cryptography and Computer Security	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC13CS18	PCPEC	PCC	System Programming and Compiler Construction	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PCC13CS19	PCPEC	PCC	Mini Project	PRJ	2	50	-	-	-	50	1	1
26PEC13CS2X	PCPEC	PEC	Program Elective Course	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PEL13CS1X	PCPEC	PEC	Program Elective Lab	PR	2	50	-	-	-	50	1	1
26OE13CS4	MDC	OE	Public Relations and Corporate Communication	TH	2	100	-	-	-	100	2	2
				SL	2							
26MDM4	MDC	MDM	MDM Course -4	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3							
26DM4X	DM	DM	Double Minor Course	TH	2	20	30	20	30	100	2	4*
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	4							
26HR04	HR	HR	Honors/ with Research	SL	8						4	4*
				Total	**TH:TU:PR:SL 14:1:14:15=44**			-	-	**1100**	-	**22**

*** Indicates DM/HR course credits**

Curriculum Structure for UG Programs at Fr CRCE w.e.f. A.Y. 2029-30
Final Year Computer Science and Engineering Program

SEM-VII/VIII													
Course Code	Course Vertical	Sub-Vertical	Course Name		Notional Hours	Examination Marks (1 Credit=50 Marks)					Credits	
						ISE	MSE	ESE		Total	Points	Total
								Min	Max			
26PEC14CS1X	PCPEC	PEC	Program Elective Course 1	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PEC14CS1X	PCPEC	PEC	Program Elective Course 2	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PEC14CS2X	PCPEC	PEC	Program Elective Course 3	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26PEC14CS2X	PCPEC	PEC	Program Elective Course 4	TH	2	20	30	20	30	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2							
26MDM5X	MDC	MDM	MDM Course-5	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3							
26RMC14CS01	EL	RM	Essentials of Research Methodology	TH	2	20	30	20	50	100	2	2
				SL	2							
26RMC14CS02	EL	RM	Intellectual Property Rights	TH	2	20	30	20	50	100	2	2
				SL	2							
26PRJ14CS01	EL	PRJ	Major Project	PR	12	300	-	-	-	300	6	6
26SEM14CS01	PCPEC	PEC	Course Seminar	SL	6	As per Rubrics for Seminar					3	3
26INT14CS01	EL	INT	Semester long Internship	PR	36-40 hrs	As Per Internship Manual					12	12
26DM5X	DM	DM	Double Minor Project	PR	Online	As per SWAYAM					2	2*
26HR05	HR	HR	Honors/ with Research	SL	4						2	2*
				Total	**TH:TU:PR:SL 14:1:20:21=56**			-	-	**1250**	-	**40+2***

*** Indicates DM/HR course credits**

- Students may earn academic credits of final year subjects through approved online courses offered on SWAYAM/NPTEL platforms, subject to prior approval.
- Online courses may be completed anytime from Semester V to Semester VIII. The total credits earned through online courses shall count toward the remaining credit requirements of the program.
- Credit Conversion Norms:
  - 1 Credit → Minimum 4-week SWAYAM course
  - 2 Credits → Minimum 8-week SWAYAM course (Combination of two approved 4-week courses is permitted)
  - 3 Credits → Minimum 12-week SWAYAM course
- MDM should be non-technical courses
- Project or Internship is mutually exclusive in SEM-VII or SEM-VIII
- The remaining required credits may be earned during Semester V to Semester VIII through SWAYAM/NPTEL courses or through courses offered by the Department in Sem VII/VIII.

List of Program Elective Courses (Sem V, Sem VI):

Track-1: Distributed and intelligent systems

SEM-V: **26PEC13CS11:** Distributed Systems

SEM-VI: **26PEC13CS21**: Blockchain

SEM-VI: Lab: **26PEL13CS11:** Cloud computing Lab

Track-2: Vision and Media Systems

SEM-V: **65PEC13CS12:** Image Processing

SEM-VI: **26PEC13CS22:** Computer Vision

SEM-VI: Lab: **26PEL13CS12:** AR/VR Systems Lab

Track-3: Data and Application Systems

SEM-V: **26PEC13CS13:** Big Data Analytics

SEM-VI: **26PEC13CS23:** UI/UX Design

SEM-VI: Lab: **26PEL13CS13:** Software testing lab

Track-4: Sustainable and Smart Connected Systems

SEM-V: **26PEC13CS14:** Sustainable software Engineering

SEM-VI: **26PEC13CS24:** IOT

SEM-VI: Lab: **26PEL13CS14:** IoT Edge AI & Smart Systems Lab

List of Program Elective Courses (SEM VII/ VIII) :

Students are required to select four Program Elective Courses for the semester, comprising two courses from Track-1 and two courses from Track-2 listed below.

Track-1: Advanced Artificial Intelligence & Autonomous Systems

26PEC14CS11: Deep learning

26PEC14CS12: Natural Language Processing

26PEC14CS13: Agentic AI

26PEC14CS14: Reinforcement Learning

Track-2: Advanced computing and secure systems

26PEC14CS21: Quantum Computing

26PEC14CS22: High performance computing

26PEC14CS23: Optimization Techniques

26PEC14CS24: Cyber security engineering