FIRST YEAR UG: B.TECH

ELECTRONICS AND COMPUTER SCIENCE

REVISION: FRCRCE-3-26

Board of Studies Approval: 04/03/2026
Academic Council Approval: 27/03/2026

Dr. Deepak Bhoir Dean Academics	HOD (Department)	Dr. Sapna Prabhu Principal

Preamble:

Fr Conceicao Rodrigues College of Engineering an autonomous institute from the year 2024-25. 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 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 curriculum sensitive to needs of Learner, Indian Society, and Industries. We commit to ourselves to the effective implementation of UGC Regulations and NEP 2020 in its spirit. Government of Maharashtra has directed Autonomous Colleges to revise their curriculum in line with National Education Policy (NEP) 2020 through Government Resolution dated 4th July 2023. Accordingly, degree options are given to the students admitted from academic year 2024-25 based on UGC circulars and DTE guidelines ref no. 17/DTE/NEP-2020/2024/111 dated 4th June 2024 related to implementation of NEP.

Based on 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 an all-rounded personality with holistic approach to education in which 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. Curriculum is designed to provide multiple learning opportunities for students to acquire and demonstrate competencies for rewarding careers. It ensures multiple choices to leaner acquiring skills through systematic planning. It has 7 verticals aligned to GR recommendations with strong science, and mathematics foundation and program core, sequel of electives, Multidisciplinary Minor courses, humanities & management courses and sufficient experiential learning through projects and semester-long industry / research internship along with employable skill-based courses. Learner gets an opportunity to acquire skills through NSDC aligned courses during summer vacations. Learner also gets additional option to choose the kind of degree i.e. **Built in Multidisciplinary minor or Double Minor in emerging field or Honors with Research.**

The curriculum is designed to give a glimpse of trends in the industry under vocational and enhanced skill practices, the pool is offered to nurture and develop creative skills in contemporary industrial practices. Criteria met in the structure is the opportunity for learners to choose the course of their interest in all disciplines. Program Core Course Cover Electronics and Computer Engineering based core courses. (Department Specific)

Various steps are taken to transform 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

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 Course

RM -Research Methodologies

CEFP -Community Engagement or Field Project

ELC -Experiential Learning Courses

PRJ- Project

INT -Internship

CC -Cocurricular Courses

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. Honors with Research and Multidisciplinary Minor

a) 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 3rd semester which will be from emerging areas of specialisation. In 7 th or 8 th semester students will complete 2 credits seminar/project.

Admission eligibility min CGPA=7.5 after First year

b) B.Tech in Engg./ Tech.- Honors with Research and Multidisciplinary Minor (additional 18 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)

3. 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 4 th 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

SEMESTERWISE CURRICULUM STRUCTURE
UG Electronics and Computer Science 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		Total	Points	Total
								Min	Max			
26BSC11EC01	BSESC	BSC	Matrices and Differential Calculus	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3	-	-	-	-	-	-	
26BSC11EC04	BSESC	BSC	Engineering Physics	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26ESC11EC01	BSESC	ESC	Programming Fundamentals (C)	TH	2	20	30	20	50	100	2	4
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	3	-	-	-	-	-	-	
26ESC11EC03	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	-	-	-	-	-	-	
26ESC11EC02	BSESC	ESC	Engineering Graphics	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26VSE11EC02	SC	VSEC	Skill Laboratory – 2	PR	2	50	-	-	-	50	1	1
LLCXX	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		Total	Points	Total
								Min	Max			
26BSC11EC03	BSESC	BSC	Integral Calculus and Probability Theory	TH	2	20	30	20	50	100	2	3
				TU	1	50	-		-	50	1	
				SL	3	-	-	-	-	-	-	
26BSC11EC02	BSESC	BSC	Engineering Chemistry	TH	2	20	30	20	50	100	2	3
				PR	2	50	-		-	50	1	
				SL	2	-	-	-	-	-	-	
26PCC11EC02	PCPEC	PCC	Innovation and Design Thinking	PR	2	50	-	-	-	50	1	1
26IKS11EC01	HSSM	IKS	Indian Knowledge System	TH	2	100	-	-	-	100	2	2
				SL	2	-	-	-	-	-	-	
26PCC11EC01	PCPEC	PCC	Digital Electronics	TH	2	20	30	20	50	100	2	4
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	3	-	-	-	-	-	-	
26AEC11EC01	HSSM	AEC	Object Oriented Programming with JAVA	PR	4	100	-	-	-	100	2	2
26VSE11EC01	SC	VSEC	Skill Laboratory -1	PR	2	50	-	-	-	50	1	1
26AEC11EC02	HSSM	AEC	Art of Communication	TH	1	100	-	-	-	100	1	2
				PR	2		-		-		1	
				SL	1	-	-	-	-	-	-	
LLCXX	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

NOTE:

1. Colour rows are going to be swapped in SEM I and SEM II for two Groups.

Group I: 3 Computer Engineering Divisions and 1-Mechanical Engineering Class.

Group II: 3 Computer Science and Engineering Divisions and 1- Electronics and Computer Science class.

2. '**Manual for Degree Options'** for List of Courses offered under MDM and DM Degree options.

Curriculum Structure for UG Programs at Fr CRCE w.e.f. A.Y. 2027-28

SECOND YEAR:

SEM-III												
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			
26BSC12EC05	BSESC	BSC	Signals and Systems	TH	2	20	30	20	50	100	2	3
				TU	1	50	-	-	-	50	1	
				SL	3	-	-	-	-	-	-	
26PCC12EC03	PCPEC	PCC	Electronics Devices and Applications	TH	2	20	30	20	50	100	2	4
				PR	2	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	3	-	-	-	-	-	-	
26PCC12EC04	PCPEC	PCC	Database Management systems	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PCC12EC05	PCPEC	PCC	Creative Coding in Python	PR	4	100	-	-	-	100	2	2
26PCC12CE06	PCPEC	PCC	Computer Organization and Architecture	TH	2	20	30	20	50	100	2	2
				SL	2	-	-	-	-	-	-	
26OE13EC1X	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	3	3
				TU	1	50	-	-	-	-	-	
				SL	3	-	-	-	-	-	-	
26VEC12EC01	HSSM	VEC	Human Values and Professional Ethics	TH	1	100	-	-	-	100	1	2
				PR	2						1	
				SL	1	-	-	-	-	-	-	
26CEP12EC01	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*
				TU	1	50	-	-	-	50	1	
				PR	2	50	-	-	-	50	1	
				SL	3	-	-	-	-	-	-	
26HR01	HR	HR	Honors with Research	SL	-	-	-	-	-	-	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		Total	Points	Total
								Min	Max			
26BSC12EC06	BSESC	BSC	Mathematics and Numerical Methods	TH	2	20	30	20	50	100	2	3
				TU	1	50	-		-	50	1	
				SL	3	-	-	-	-	-	-	
26PCC12EC07	PCPEC	PCC	Analog Electronics Circuits	TH	2	20	30	20	50	100	2	4
				TU	1	50	-	-	-	50	1	
				PR	2	50	-	-	-	50	1	
				SL	3	-	-	-	-	-	-	
26PCC12EC08	PCPEC	PCC	Microprocessors and Microcontrollers	TH	2	20	30	20	50	100	2	4
				TU	1	50	-	-	-	50	1	
				PR	2	50	-	-	-	50	1	
				SL	3	-	-	-	-	-	-	
26PCC12CE09	PCPEC	PCC	Discrete Structure and Automata Theory	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26OE13EC2X	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	-	-	-	-	1	
				SL	3	-	-	-	-	-	-	
26VSE12EC03	SC	VSEC	Data Structures	PR	2+2*	50	-	50	-	100	2	2
26VEC12EC02	HSSM	VEC	SDG based mini Project	PR	2	50	-	-	-	50	1	1
26DMX2(2X)	DM	DM	Double Minor Course	TH	2	20	30	20	50	100	2	4*
				TU	1	50	-	-	-	50	1	
				PR	2	50	-	-	-	50	1	
				SL	3	-	-	-	-	-	-	
26HR02	HR	HR	Honors with Research	SL	8	-	-	-	-	-	4	4*
BC	BC	BC	MOOC	-	-	-	-	-	-	-	-	2$
Total					**TH:TU:PR:SL 12:4:12:16=44**					**1100**		**22**

Note: Discipline specific additional course to Lateral Entry (Diploma) students from Swayam Plus/Swayam platform

Curriculum Structure for UG Programs at Fr CRCE w.e.f. A.Y. 2028-29

THIRD YEAR:

SEM-V

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			
26PCC13EC10	PCPEC	PCC	Controls and Instrumentation	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PCC13EC11	PCPEC	PCC	Analog and Digital Communication	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PCC13EC12	PCPEC	PCC	Artificial Intelligence	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PCC13EC13	PCPEC	PCC	Software Engineering and Web Technology	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PEC13ECXX	PCPEC	PEC	Program Elective Course-I	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26VSE13EC04	SC	VSEC	Analysis of Algorithms	PR	4	100	-	-	-	100	2	2
26OE13EC3X	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	-	-	-	-	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	2	-	-	-	-	-	-	
26HR03	HR	HR	Honors/ with Research	SL	4	-	-	-	-	-	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		Total	Points	Total
								Min	Max			
26PCC13EC14	PCPEC	PCC	Computer Networks	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PCC13EC15	PCPEC	PCC	Machine Learning	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PCC13EC16	PCPEC	PCC	VLSI Design	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PCC13EC17	PCPEC	PCC	Data Ware Housing and Mining	TH	2	20	30	20	50	100	2	2
				SL	2	-	-	-	-	-	-	
26PCC13EC18	PCPEC	PCC	Embedded Systems and RTOS	PR	2	50	-	-	-	50	1	1
26PCC13EC19	PCPEC	PCC	Operating Systems	PR	2	50	-	-	-	50	1	1
26PCC13EC20	PCPEC	PCC	Mini-project	PRJ	2	50	-	-	-	50	1	1
26PEC13ECXX	PCPEC	PEC	Program Elective Course-II	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26OE13CE4X	MDC	OE	Public Relations and Corporate Communication	TH	2	100	-	-	-	100	2	2
				SL	2	-	-	-	-	-	-	
26MDM4X	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	1	50	-	-	-	50	1	
				TU	1	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26HR04	HR	HR	Honors/ with Research	SL	4	-	-	-	-	-	4	4*
Total					**TH:TU:PR:SL 14:1:14:15=44**					**1100**		**22**

List of Program Elective Courses (SEM V and SEM VI)

	Sem. V-PCE1 (Th+Pr) Credits 3 **Course code: Name of the course**	**Sem.VI-PCE2 (Th+Pr) Credits 3** **Course code: Name of the course**
Track-A	26PEC13EC11: Automation and Data Acquisition System 26PEC13EC12: Digital Signal and Image Processing	26PEC13EC13; Power Electronics 26PEC13EC14: Internet of Things
Track-B	26PEC13EC21: Natural Language Processing 26PEC13EC22 : Big Data Analytics	26PEC13EC23: Cryptography 26PEC13EC24: Deep Learning

Curriculum Structure for UG Programs at Fr CRCE w.e.f. A.Y. 2029-30
FINAL YEAR

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			
26PEC14ECXX	PCPEC	PEC	Program Elective Course	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PEC14ECXX	PCPEC	PEC	Program Elective Course	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PEC14ECXX	PCPEC	PEC	Program Elective Course	TH	2	20	30	20	50	100	2	3
				PR	2	50	-	-	-	50	1	
				SL	2	-	-	-	-	-	-	
26PEC14ECXX	PCPEC	PEC	Program Elective Course	TH	2	20	30	20	50	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	-	-	-	-	-	-	
26RMC14EC01	EL	RM	Essentials of Research Methodology	TH	2	20	30	20	50	100	2	2
				SL	2	-	-	-	-	-	-	
26RMC14EC02	EL	RM	Intellectual Property Rights	TH	2	20	30	20	50	100	2	2
				SL	2	-	-	-	-	-	-	
26PRJ14EC01	EL	PR	Major Project	PR	12	300	-	-	-	300	6	6
26SEM14EC01	PCPEC	PEC	Course Seminar	SL	6	As per Rubrics for Seminar					3	3
26INT14EC01	EL	INT	Semester long Internship	PR	36-40 hrs	As Per Internship Manual					12	12
26DM5X	HMM/ DM	DM	Double Minor Project	PR	Online	As Per SWAYAM					2	2*
26HR05	HMM/ DM	HMM	Honors with Research	SL	4	-					2	2*
Total					**TH:TU:PR 14:1:20:21=56**					**1250**		**40+* 10**

Project or Internship is mutually exclusive in SEM-VII or SEM-VIII
Remaining credits can be acquired in SEM-V to SEM-VIII
Online course 1 Credit=4 Week course from SWAYAM can be taken in SEM V or SEM VIII
Online min 8 week course from SWAYAM can be taken in SEM V to SEM VIII to complete 2 credit course (Combination of two 4-week credit courses shall be allowed with prior approval)
* Online min 12 week course from SWAYAM can be taken in SEM V to SEM VIII to complete 3 credit course

List of Program Elective Courses (SEM VII and SEM VIII)

	Sem. VII-PCE (Th+Pr) Credit3 **Course code: Name of the course**
Track-A	26PEC13EC15: ASIC Verification 26PEC13EC16: Mixed VLSI 26PEC13EC17: Mobile Computing 26PEC13EC18: MEMS (Micro Electro Mechanical System) 26PEC13EC19: Robotics and Vision
Track-B	26PEC13EC25: Blockchain Technology 26PEC13EC26: GEN-AI 26PEC13EC27: Soft Computing and Optimization Algorithm 26PEC13EC28: Quantum Computing 26PEC13EC29: Product, services and IT service management

Comparison of Credit Distribution for Four Year UG Program for Fr CRCE and GR:

UG: Electronics and Computer Science

	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	4	5				1			2						2	--	20
II	6	7					1	4								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			14	3	3	2												22
VII & VIII				15	3							4		6	12		--	40
Total Credits as per Fr CRCE	18	11	53	21	15	8	6	4		2	3	4	1	6	12	4	2	168+2* =170
Total Credits as per GR	14	12	44	20	14	8	8	4	4	2	4	4	2	4	12	4		160