UNIVERSITY OF ENGINEERING & MANAGEMENT

K O L K A T A

CURRICULUM STRUCTURE FOR UNDERGRADUATE EDUCATION

In Accordance with the National Education Policy (NEP) 2020

UEM, KOLKATA

Semester-wise Course Structure · Batch 2025-2029 onwards

Kolkata, West Bengal

Course Categories

Category	Scope
DC-MJ	Programme professional core (PCC) theory and laboratories, core engineering-science courses of the major, and professional electives (PEC).
IDC / DCMN	Open electives (OEC, theory).
MDC	Basic science (BSC) and foundation engineering-science (ESC) courses from outside the major.
AEC	Language, communication, management, economics and humanities courses (HSMC).
SEC	Essential Studies / Skill Development for Professionals (ESP, SDP, ESEP) and skill sessionals (Python, Java, data structures, cloud).
VAC	Mandatory and value-added courses (Constitution, Environmental Science / Sustainability, IVC, co-curricular, audit), plus MAR, IFC and MOOCs.
IAPC	Mini and major projects, innovative projects, internships, seminars, grand viva and comprehensive viva.

Evaluation and Examination Pattern

For core and elective courses at UEM, Kolkata. Total evaluation weightage is 100% per course, split between end-semester and internal assessment.

Component	Weightage	Assessment Breakdown / Guidelines	Passing Criteria
Theory – End-Semester Examination (ESE)	50%	Conducted for 100 marks. Covers all modules of the syllabus with a moderate balance of conceptual, application-based and analytical questions. Question banks are prepared by faculty and finalised by an external moderator approved by the Controller of Examinations (CoE).	Minimum 50/100 in the End-Semester examination
Theory – Internal Assessment (IA)	50%	Mid-Semester Tests: 30 marks (mapped to 10 marks each for two tests, equally weighted); Notional/experiential learning: 20 marks; Attendance, assignment & Class Participation: 10 marks. (Total 50 marks scaled to 100 IA marks)	–
Practical – End-Semester Examination	50%	Experiment / Project Execution: 40 marks; Lab Report: 30 marks; Viva-Voce: 30 marks.	Minimum 50/100 in the End-Semester practical examination
Practical – Internal Laboratory Assessment	50%	Two continuous assessments of 50 marks each, based on laboratory performance, lab records and viva.	–

Programmes covered: (A) Common First Year (BSH) · (B) ECE · (C) EE · (D) EEE · (E) ME · (F) Biotechnology · (G) CSE, IT & Allied Branches · (H) BBA · (I) BCA · (J) BHTA / BHM

A. Common First Year (B.Tech, All Engineering Streams, BSH)								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
I	ESCEE101 Basic Electrical Engg (4) ESCME102A Engg Mechanics - Principles (2) ESCCS101 Intro to AI & Data Science using Python (3) ESCEE191 BEE Lab (1) ESCME192 Engg Graphics & Design (3) ESCCS191 AI & DS Lab (2)	–	BSCPH101 Physics (4) BSCM103A Mathematics - Calculus (4) BSCBE104 Biology for Engineers (3) BSCPH191 Physics Lab (1.5)	–	ESP101A (0.5) SDP181A Competitive Aptitude Training-I (0.5)	IVC181A Design Thinking & Innovation (0) IVC182A Economics & Business Models (0) MCC181A Co-curricular (0)	–	**28.5**
II	ESCEC201 Basic Electronics Engineering (4) ESME202B Engineering Mechanics – Essentials (2) ESCCS202 Data Structures & Algorithms (3) ESCEC291 Basic Electronics Engineering Laboratory (1) ESCME293 Workshop/ Manufacturing Practices (3)	–	BSCCH202 Chemistry (4) BSCM203B Mathematics and Basic Statistics (4) BSCCH292 Chemistry Laboratory (1.5)	HSMC201 English (2)	ESEP201 Essential Studies for Engineering Professionals (ESEP)-II (1)	UHV272 Universal Human Values- II (3) IVC282 Economics, Finance and Entrepreneurship Skills – Intermediate (0) IVC281 Design Thinking & Innovation- Intermediate (0) MAR Mandatory Additional Requirements (0) MOOCs Massive Open Online Courses (0) IFC Industry and Foreign Certification (0) SAR Skill Additional Requirements (0)	–	**32.5**

B. B.Tech in Electronics & Communication Engineering (ECE)								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
III	PCCECE301 Basic Electronic Devices (3) 302 Analog Electronics (3) 303 Signals & Systems (3) 304 Network Theory (3) 391-394 Laboratories (1 each)	–	BSM301 Mathematics-III (3)	–	OEC381 Data Structure & Algorithm Sessional (2) OEC382 Python Lab Sessional (2) ESP301 (0.5) SDP381 (0.5)	MCC301 Constitution of India (0) MAR381 (0) IFC (0)	PRJECE381 Mini Project (1)	**25**
IV	PCCECE401 Analog & Digital Communication (3) 402 Digital Electronics (3) 403 Intro to AI & ML (3) 491, 492, 493 Laboratories (1 each)	–	BSM401 Mathematics-IV (3)	–	OEC481 OOP using Java Sessional (2) ESP402 (0.5) SDP482 (0.5)	MCC471 Sustainability & Environmental Science (2) MAR481 (0) IFC (0) MOOCs	PRJECE481 Mini Project (1)	**21***
V	PCCECE501 Electromagnetic Waves (3) 502 Microprocessor & Microcontroller (3) 503 VLSI Design (3) 504 Database Management System (3) 591-594 Laboratories (1 each) PECECE504 Program Elective-1 (3)	–	–	HSM506 Economics for Engineers (1)	OEC581 Programming in Cloud, Python on AWS (1) ESP502 (0.5) SDP582 (0.5)	MAR581 (0) IFC (0)	PRJECE581 Mini Project (1)	**23**
VI	PCCECE601 Control System (3) 602 Computer Network (3) 603 Digital Signal Processing (3) 691-693 Laboratories (1 each) 681 Advanced VLSI Design (1) 682 Software Engineering with DevOps (1) PECECE604 Program Elective-2 (3)	OECECE604 Open Elective-1 (3)	–	HSM605 Principles of Management (2)	ESP602 (0.5) SDP682 (0.5)	MAR681 (0) IFC (0)	PRJECE681 Mini Project (1)	**24**
VII	PECECE701 Program Elective-3 (3) 702 Program Elective-4 (3) 703 Program Elective-5 (3)	OECECE704 Open Elective-2 (3)	–	–	ESP702 (0.5) SDP782 (0.5)	MAR781 (0) IFC (0)	PRJECE781 Project Work-I (4) Internship I (4)	**21**
VIII	PECECE801 Program Elective-6 (3) 802 Elective (3) 892 Elective Laboratory (1)	OECECE803 Open Elective-3 (3) 804 Open Elective-4 (3)	–	–	ESP802 (0.5) SDP882 (0.5)	MAR881 (0) IFC (0)	PRJECE881 Project Work-II & Dissertation (4) ECE891 Grand Viva (3) Internship II (4)	**25**
Total III–VIII	**80**	**12**	**6**	**3**	**13**	**2**	**23**	**139**

Elective options (ECE). PE-1: Information Theory & Coding / Industrial Automation I / Cyber Law & IPR. PE-2: Nano Electronics / Industrial Automation II / Internet of Things / Power Electronics. PE-3: Embedded System / Computer Architecture. PE-4: Wireless Communication / Electronic Measurement & Instrumentation. PE-5: Digital Image & Video Processing / Satellite Communication. PE-6: Fiber Optic Communication / Renewable Energy. Sem VIII elective (802): Antenna Systems & Design / Sensors & Transducers, with 892 laboratory Sensors & Transducers Lab / Antenna & Propagation Lab. OE-1: Deep Learning with Generative AI / Operating Systems. OE-2: Natural Language Processing / Web Technology. OE-3: Industrial Management / Industrial IoT. OE-4: Data Warehousing & Business Intelligence / Optimization Technique.

C. B.Tech in Electrical Engineering (EE)								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
III	PCCEE301 Electrical Circuit Analysis (3) 302 Analog Electronics (3) 303 Electromagnetic Field Theory (4) 304 Measurement & Instrumentation (3) 391 ECA Lab (1) 392 Analog Electronics Lab (1) 393 Data Structure & Algorithm Lab (3) 394 M&I Lab (1)	–	BSM301 Mathematics-III (3)	–	ESEP301 (2)	MC301 Indian Constitution (0) MAR (0) IFC (0)	PWEE381 Mini Project I (1)	**25**
IV	PCCEE401 Electrical Machines-I (3) 402 Digital Electronics (3) 403 Power Electronics (3) 404 Signals & Systems (3) 491 EM Lab-I (1) 492 Digital Electronics Lab (1) 493 Power Electronics Lab (1)	–	BSM401 Mathematics-IV (3)	–	OECEE481 OOP & Java Lab / Programming using Python (1) ESEP401 (2)	MCC471 Sustainability, Climate Actions & Environmental Sciences (2) MAR481 (0) IFC (0)	PWEE481 Mini Project II (1)	**24**
V	PCCEE501 Electrical Machines-II (3) 502 Power System-I (3) 503 Control System (3) 591 EM Lab-II (1) 592 Power System Lab-I (1) 593 Control System Lab (1) PECEE501 Professional Elective (2**)	OECEE501 Database Management System / Analog & Digital Communication (3)	–	HSMCEE571 Engineering Economics (3)	ESEP501 (2)	MAR581 (0) IFC (0)	PWEE581 Mini Project III (1)	**23**
VI	PCCEE601 Power System-II (3) 602 Microprocessor & Microcontroller (3) 691 Power System Lab-II (1) 692 Microprocessor & Microcontroller Lab (1) PECEE601 incl. Electric & Hybrid Vehicles (3) 602 incl. Semiconductor Design & Simulation (2) PECEE691, 692 Laboratories (1 each)	OECEE601 IoT / AI & ML (2)	–	HSMCEE671 Principles of Management (2)	ESEP601 (2) SDP681 (0.5)	MAR681 (0) IFC (0)	PWEE681 Mini Project IV (1)	**22.5**
VII	PECEE701 (3) 702 (3)	OECEE701 Embedded System / other (2) 702 Computer Network / other (2)	–	–	ESEP701 (2)	MAR781 (0) IFC (0)	PWEE781 Project I (3) INP781 Internship (4)	**19**
VIII	PECEE801 (3) 802 incl. Power Quality & FACTS, Power System Protection (3)	OECEE801 incl. Power Plant Engg, Automobile Engg (3)	–	HSMC801 incl. Human Resource Development & Organisational Behaviour (2)	ESEP801 (2)	MAR881 (0) IFC (0)	PWEE881 Project II (4) INP881 Internship (4)	**21**
Total III–VIII	**75**	**12**	**6**	**7**	**13.5**	**2**	**19**	**134.5**

D. B.Tech in Electrical & Electronics Engineering (EEE)								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
III	PCEEE301 Electric Circuit Theory (3) 302 Analog Electronics (3) 303 Electromagnetic Field Theory (3) 304 Semiconductor Fabrication & Design (3) 391, 392, 393 Laboratories (1 each)	–	BSM301 Mathematics-III (3) ESEEE391 Data Structure & Algorithms Lab (1)	–	ESEP301 (2)	MCEEE371 Indian Constitution (0) MAR381 (0) IFC (0)	PWEEE01 Mini Project I (1)	**22**
IV	PCEEE401 Electric Machine-I (3) 402 Digital Electronics (3) 403 Electrical & Electronic Measurement (3) 404 Signals & Systems (3) 491, 492, 493 Laboratories (1 each)	–	BSM401 Mathematics-IV (3)	–	OEEE481 OOP & Java Lab / Programming using Python Lab (1) ESEP401 (2)	MCC471 Sustainability, Climate Action & Environmental Sciences (2) MAR481 (0) IFC (0)	PWEEE02 Mini Project II (1)	**24**
V	PCEEE501 Electric Machine-II (3) 502 Power System-I (3) 503 Control System (3) 504 Power Electronics (3) 591, 592, 593 Laboratories (1 each) PEEEE571 Electric Vehicles / Renewable & Non-Conventional Energy (3) PEEE591 Laboratory (1)	OEEE501 AI & Machine Learning / Computer Organization (3)	–	–	ESEP501 (2)	MAR581 (0) IFC (0)	PWEEE03 Mini Project III (1)	**25**
VI	PCEEE601 Power System-II (3) 602 Microprocessor & Microcontroller (3) 603 Analog & Digital Communication (3) 604 VLSI Design (3) 691, 692, 693 Laboratories (1 each) PEEE602 Digital Signal Processing / Bio-Medical Engineering / Automotive (3)	OEEE601 IoT / Image Processing (3)	–	–	ESEP601 (2)	MAR681 (0) IFC (0)	PWEEE04 Mini Project IV (1)	**25***
VII	PEEE701 Power System Dynamics & Control / Antennas & Propagation (3)	OEEE701 Embedded System / Nano Electronics (3) 702 Computer Networks / Wavelet Transforms (3)	–	HMEEE701 Economics for Engineers (3)	ESEP701 (2)	MAR781 (0) IFC (0)	PWEEE781 Project Stage-I (2) INP781 Internship I (4)	**20**
VIII	PEEE801 Fiber Optic Communications / Mobile Communication & Networks (3)	OEEE801 Database Management Systems / Cyber Security (3)	–	–	ESEP801 (2)	MAR881 (0) IFC (0)	PWEEE881 Project Stage-II (4) 882 Grand Viva (2) INP881 Internship II (4)	**18**
Total III–VIII	**73**	**15**	**7**	**3**	**13**	**2**	**20**	**133**

E. B.Tech in Mechanical Engineering (ME) – Effective from Academic Year 2025-26								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
III	ESCME302 Engineering Thermodynamics (4) PCCME301 Engineering Materials & Applications (3) 302 Mechanics of Deformable Solids (3) 303 Manufacturing Process-I (3) 391 Lab IA Materials Testing (1) 392 Lab IIA Manufacturing Process (1)	–	BSM301 Mathematics-III (3) ESCME381 Basic Electronics Engg (2)	–	ESP301 (0.5) SDP381 (0.5)	MAR (0) IFC (0) SAR (0)	PRJME381 Project I, CAD-Based (1)	**22**
IV	PCCME401 Fluid Mechanics & Fluid Machines (4) 402 Kinematics & Dynamics of Machines (3) 403 IC Engine & Gas Turbine (3) 404 Measurements & Metrology (3) 491 Lab IIIA (1) 492 Lab IIIB (1) 493 Lab IIB (1)	–	BSM401 Mathematics-IV (3) ESCME481 Data Structure & Algorithms (1)	–	ESP401 (0.5) SDP481 (0.5)	MCC471 Sustainability, Climate Action & Environmental Science (2) MAR (0) IFC (0) SAR (0)	PRJME481 Project II, Research Methodology (1)	**24**
V	PCCME501 Heat Transfer & Thermal Machines (4) 502 Machine Element & System Design (4) 503 Manufacturing Process-II (3) 504 Mechatronics, Robotics & Control (2) 591-594 Laboratories (1 each) PEME501 Professional Elective-I (3)	–	–	HSMME582 Seminar & Communication (1)	ESPME501 (0.5) SDP581 (0.5)	MAR581 (0) IFC (0) SAR (0)	PRJME581 Project-III (1)	**23**
VI	PCCME601 Computer-Aided Design & Analysis (2) 602 Manufacturing Automation (3) 603 Production & Operation Management (3) 681 Product Innovation & Entrepreneurship (1.5) 691-693 Laboratories (1 each) PECME601 Professional Elective-II (3)	–	–	HSME601 HSS / Management Elective-1 (3)	ESP(ME)601 (0.5) SDP681 (0.5)	MAR (0) IFC (0) SAR (0)	PRJME681 Project-IV, Minor (1)	**21.5***
VII	PEME701 Professional Elective-III (3)	OEME701 Open Elective-I (3) 702 Open Elective-II (3)	–	HSME701 HSS / Management Elective-2 (3)	ESPME701 (0.5) SDP781 (0.5)	MAR (0) IFC (0) SAR (0)	PRJME781 Project-V (2.5) INP781 Internship I (4)	**19.5**
VIII	–	OECME801 Open Elective-III (3)	–	HSMME801 Universal Human Values (2)	ESP802 (0.5) SDP881 (0.5)	MAR (0) IFC (0) SAR (0)	PRJME881 Project-VI, Prototype & Testing (4) INP881 Internship II (4) PRJME883 Comprehensive Viva (1)	**15**
Total III–VIII	**69.5**	**9**	**9**	**9**	**6**	**2**	**19.5**	**124**

Minor degree (optional, outside totals). Robotics: MINOR301R (4), 401R (3), 501R (4), 601R (3), 781R (2), 881R (2) · Sustainable Energy Engg: MINOR301S (3), 401S (3), 501S (3), 601S (3), 701S (3), 801S (3) · AI & ML: MINOR301A (4), 401A (4), 501A (4), 601A (3), 701A (3), 881A (2) · Honours: MOOCs (NPTEL/SWAYAM).

Electives (ME). PE-I: Mechanical Vibration / Advanced Welding Technology / Micro & Nano Manufacturing / Power Plant Engineering / Die, Mould & Tool Engineering / Computational Fluid Dynamics. PE-II: Refrigeration & Air Conditioning / Additive Manufacturing / Turbo Machinery / Finite Element Analysis / Tribology / Composite Materials / Design for Manufacturing & Assembly. PE-III: Automobile Engineering / Material Handling / Industrial Engineering / Industrial Robotics / Aerospace Engineering / Agricultural Engineering / Biomedical Engineering / Food Technology / Nuclear Engineering. HSS-1: Project Management / Finance & Accounting. HSS-2: Operations Research / Industrial Psychology. OE-I: Principles & Practices of Management / Process Planning & Cost Estimation / Renewable Energy Engineering. OE-II: Industry 4.0 / Optimization Techniques / Data Analytics. OE-III: Total Quality Management / Maintenance Engineering / Quality & Reliability Engineering / Machine Learning / Biomechanics & Biomaterials.

F. B.Tech in Biotechnology								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
I	–	–	BSC102 Chemistry (4) BSC103 Mathematics I (4) BSC109 Biology for Engineers (3) BSC192 Chemistry Lab (1.5) ESC101 Basic Electrical Engg (4) ESC103 Engg Mechanics I (2) ESC191 BEE Lab (1) ESC194 Workshop / Manufacturing Practices (3)	–	HSMC102 ESP-I (0.5) HSMC182 SDP-I (0.5)	IVC103 Programming using Python (0) IVC104 Design Thinking Basic (0) IVC105 Economics, Finance & Entrepreneurship (0)	–	**23.5**
II	–	–	BSC201 Physics (4) BSC204 Mathematics II (4) BSC291 Physics Lab (1.5) ESC202 Engg Mechanics II (2) ESC203 Programming for Problem Solving (4) ESC292 Engg Graphics & Design (3) ESC293 PPS Lab (1)	HSMC201 English (2) HSMC291 English Lab (1)	HSMC202 ESP-II (0.5) HSMC282 SDP-II (0.5)	IVC201 Basic Electronics (0) IVC202 Design Thinking Advance (0) IVC203 Economics, Finance & Entrepreneurship Advance (0)	–	**23.5**
III	BSBT301 Biochemistry (2) 302 Microbiology (2) 303 Genetics (2) 304 Cell & Molecular Biology (2) 305 Plant Biology (2) 306 Biophysics (2) 391-395 Laboratories (1 each)	–	–	HSMC301 Effective Technical Communication (3)	ESEP301 (2)	–	PSBT381 Technical Seminar (3)	**25**
IV	PCCBT401 Bioprocess Engineering (3) 402 Green Biotechnology & Pollution Abatement (2) 403 Immunology & Immunotechnology (2) 404 Structural Biology (3) 405 rDNA Technology (3) 406 Bioinformatics & Computational Biology (3) 491 Bioprocess Lab (1) 493 Immunology Lab (2) 495 rDNA Lab (2) 496 Bioinformatics Lab (2)	–	–	HSMC401 Engineering Economics (2)	ESEP401 (2)	AUBT401 Environmental Science (0)	PSBT481 Comprehensive Viva (1)	**28**

F. B.Tech in Biotechnology								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
V	PCCBT501 Analytical Techniques (2) 502 Metabolic Engineering (2) 503 Cheminformatics & Medicinal Chemistry (2) 506 Good Manufacturing & Laboratory Practice (3) 591, 592, 593 Laboratories (1 each) PECBT501 Biosimilars Technology (2) PECBT591 Lab (1)	OSCBT501 Biomaterials (2) OSCBT591 Biomaterials Lab (1)	–	HSMC501 Entrepreneurship & Startups (2)	OSCBT581 Data Structure & Algorithm (1) ESEP501 (2)	AUBT501 Indian Constitution (0)	PSBT581 Summer Internship-I (2)	**25**
VI	PCCBT601 Bioseparation Engineering (2) 602 Synthetic & Systems Biology (3) 603 Animal & Plant Biotechnology (3) 691, 692, 693 Laboratories (1 each) PECBT601 Waste Management & Upcycling (2) PECBT691 Lab (1)	OECBT601 Database Management System (2) OECBT691 DBMS Lab (1)	–	–	ESEP601 (2)	–	–	**19**
VII	PCCBT701 Food & Nutrition Technology (3) 791 Lab (1) PECBT701 State-of-the-art Imaging (2) 702 Nano Biotechnology (3) 791 Imaging Lab (1)	OSCBT701 Data Analysis & Simulations (3) 702 Bioterrorism & National Security (2) 791 Data Analysis Lab (1)	–	HSMC702 IPR & Regulatory (2)	ESEP701 (2)	–	PSCBT791 Project-I (4) PSCBT781 Summer Internship-II (2)	**26**
VIII	–	–	–	–	ESEP801 (2)	–	PSCBT891 Project-II (9) PSCBT881 Grand Viva (5)	**16**
Total I–VIII	**79**	**12**	**42**	**12**	**15**	**0**	**26**	**186**

G. B.Tech in CSE, IT & Allied Branches (Batch 2025-2029)								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
III	PCCCS301 Data Structure & Algorithms (3) 391 Lab (2) 381 IT Workshop (2)	–	ESC301 Analog Electronic Circuits (3) ESC302 Digital Electronics (3) BSM301 Mathematics-III (3) ESC391 Lab (2) ESC392 Lab (2)	HSMCS301 Principles of Management (3)	ESEP301 (2)	MAR (0) Honours MOOCs IFC (0)	PRJCS381 Innovative Project-I (1)	**26**
IV	PCCCS401 Discrete Mathematics (3) 402 Computer Organization & Architecture (3) 403 Artificial Intelligence & Machine Learning (3) 404 Design & Analysis of Algorithms (3) 405 Advanced Programming OOP (3) 492 COA Lab (2) 493 AIML Lab (1) 494 DAA Lab (2) 495 OOP Lab (1) 481 Data Analytics (1)	–	–	HSMCS471 Management-1 Finance & Accounting (3)	ESEP401 (2)	MCC471 Sustainability, Climate Actions & Environmental Sciences (2) MAR (0) IFC (0)	PRJCS481 Innovative Project-II (1)	**30**
V	PCCCS501 Database Management Systems (3) 502 Theory of Computations (3) 503 Operating Systems (3) 504 Software Engineering & Project Management (3) 591 DBMS Lab (2) 593 OS Lab (2) 594 SE & PM Lab (2) 581 Quantum Computing (2) 582 Neural Network & Deep Learning (2)	–	ESC501 Signals & Systems (3)	–	ESEP501 (2)	MCC571 Constitution of India (1) MAR (0) IFC (0)	PRJCS581 Innovative Project-III (1)	**29**
VI	PCCCS601 Computer Networks (3) 602 Cloud Computing & IoT (2) 691 CN Lab (2) 692 CC & IoT Lab (2) 681 Generative & Agentic AI (2) PECCS601 Introductory Cyber Security (3) PECS602 Elective-I (3) PECS603 Elective-II (3) PECCS691 Cyber Security Lab (2)	–	–	–	ESEP601 (2)	MAR (0) IFC (0)	PRJCS681 Project-I (3)	**27**
VII	PCCCS701 Compiler Design (3) 791 Compiler Design Lab (2) PECS701 Elective-III (3)	OECS701 Open Elective-I (3)	–	–	ESEP701 (2)	MAR (0) IFC (0)	PRJCS781 Project-II (6) INP781 Internship-I (4)	**23**
VIII	PECS801 Elective-IV (3)	OECS801 Open Elective-II (3) 802 Open Elective-III (3)	–	–	ESEP801 (2)	MAR (0) IFC (0) SAR (0)	PRJCS881 Project-III (6) PCCS881 Grand Viva Voce (2) INP881 Internship-II (4)	**23**

G. B.Tech in CSE, IT & Allied Branches (Batch 2025-2029)								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
Total III–VIII	**84**	**9**	**16**	**6**	**12**	**3**	**28**	**158**

Professional elective slots (CSE track examples). PE-1 (Sem VI): Blockchain, Cryptocurrency & NFT / Soft Computing / Graph Theory / Image Processing or Automotive. PE-2 (Sem VI): Digital Forensics / Natural Language Processing / Distributed Systems / Computer Graphics or ServiceNow System Administrator. PE-3 (Sem VII): Ad-hoc & Sensor Network / Warehousing & Business Intelligence / Parallel Processing / Computer Vision. PE-4 (Sem VIII): Data Encryption & Compression / Advanced AI / Real Time Operating Systems / Human Computer Interaction. OE-1: Enterprise System / Economic Policies in India. OE-2: Soft Skills & Interpersonal Communication / History of Science & Engineering. OE-3: Cyber Law & IPR / Introduction to Philosophical Thoughts.

H. Bachelor of Business Administration (BBA) (Batch 2025-2029)								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
I	Principles of Management (4) Business Economics-I (3) Financial Accounting (4)	–	Business Mathematics & Statistics (4)	Business Communication (3)	ESP101 Business Etiquette Lab (0.5) SDP181 Aptitude Training-I (0.5)	Design Thinking & Innovation (0) Economics & Business Models (0) Co-curricular (0)	–	**19.0**
II	Organizational Behavior (4) Marketing Management (4) Business Law (3)	–	Quantitative Techniques for Business (4)	Business Environment (3)	Essential Studies for Business Professionals-II (1)	Universal Human Values-II (3) Design Thinking-Intermediate (0) MAR / MOOCs / IFC (0)	–	**22.0**
III	Human Resource Management (3) Financial Management (3) Cost & Management Accounting (3) Marketing Research (3)	–	Business Informatics & MIS (3)	Effective Technical Communication (3)	ESEP301 Professional Skill Dev-III (2)	Constitution of India (0) MAR381 (0) IFC (0)	Mini Project-I (1)	**21.0**
IV	Production & Operations Management (3) Consumer Behavior (3) Corporate Finance (3) Business Analytics-I (3)	–	Research Methodology (3)	Managerial Economics (3)	ESEP401 Professional Skill Dev-IV (2)	Sustainability & Environmental Science (2) MAR481 (0) IFC (0)	Mini Project-II (1)	**21.0**
V	Strategic Management (3) Investment Analysis & Portfolio Mgmt (3) Digital Marketing (3) Specialization Elective-I (3)	Open Elective-I (3)	–	Entrepreneurship & Startups (2)	ESEP501 (2)	MAR581 (0) IFC (0)	Summer Internship-I (2)	**22.0**
VI	International Business (3) Supply Chain & Logistics (3) Specialization Elective-II (3) Specialization Elective-III (3)	Open Elective-II (3)	–	Business Ethics & Corporate Governance (2)	ESEP601 (2) SDP681 (0.5)	MAR681 (0) IFC (0)	Project Work-I / Minor Project (2)	**21.5**
VII	Specialization Elective-IV (3) Specialization Elective-V (3)	Open Elective-III (3)	–	–	ESEP701 (2)	MAR781 (0) IFC (0)	Industry Internship-II (4) Research Project-I (3)	**18.0**
VIII	Specialization Elective-VI (3)	Open Elective-IV (3)	–	–	ESEP801 (2)	MAR881 (0) IFC (0) SAR (0)	Major Project / Dissertation (6) Comprehensive Viva (2)	**16.0**
Total	**68**	**12**	**3**	**13**	**13.5**	**5**	**19**	**160.5**

I. Bachelor of Computer Applications (BCA) (Batch 2025-2029)								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
I	Introduction to Programming using C (3) Computer System Architecture (3) C Lab (2)	–	Mathematics-I (Discrete Math) (4) Basic Electronics (3) Physics/Digital Lab (2)	English Language & Communication (2)	ESP101 (0.5) SDP181 (0.5)	Design Thinking (0) Business Models (0) Co-curricular (0)	–	**20.0**
II	Data Structures & Algorithms (3) Object Oriented Programming using C++ (3) DS & C++ Lab (2)	–	Mathematics-II (Numerical Methods) (4) Operating Systems Concepts (3)	Technical Communication Lab (2)	ESEP201 (1)	Universal Human Values-II (3) MAR / MOOCs / IFC (0)	–	**21.5**
III	Database Management Systems (3) Software Engineering (3) Computer Networks (3) DBMS & Networking Labs (3)	–	Probability & Statistics (3)	Principles of Management (3)	ESEP301 (2)	Constitution of India (0) MAR381 (0) IFC (0)	Innovative Project-I (1)	**22.0**
IV	Design & Analysis of Algorithms (3) Python Programming (3) Web Technology (3) Advanced Programming Lab (3)	–	Formal Languages & Automata Theory (3)	Management Accounting (2)	ESEP401 (2)	Sustainability & Environmental Science (2) MAR481 (0) IFC (0)	Innovative Project-II (1)	**22.0**
V	Artificial Intelligence & Machine Learning (3) Cloud Computing & IoT (3) Mobile Application Development (3) AI & Cloud Labs (3)	Open Elective-I (3)	–	–	ESEP501 (2)	MAR581 (0) IFC (0)	Summer Internship-I (2)	**22.0**
VI	Cyber Security & Forensics (3) Data Science & Big Data Analytics (3) Professional Elective-I (3) Advanced Labs (3)	Open Elective-II (3)	–	Cyber Law & IPR (2)	ESEP601 (2) SDP681 (0.5)	MAR681 (0) IFC (0)	Minor Project (3)	**22.5**
VII	Professional Elective-II (3) Professional Elective-III (3)	Open Elective-III (3)	–	–	ESEP701 (2)	MAR781 (0) IFC (0)	Industry Internship-I (4) Project Work-I (4)	**19.0**
VIII	Professional Elective-IV (3)	Open Elective-IV (3)	–	–	ESEP801 (2)	MAR881 (0) IFC (0) SAR (0)	Project Work-II & Dissertation (6) Grand Viva (2)	**17.0**
Total	**70**	**12**	**6**	**7**	**13**	**2**	**20**	**166.0**

J. Bachelor in Hotel & Hospitality Management (BHTA / BHM) (Batch 2025-2029)								
Semester	**Major (DC-MJ)**	**IDC / DCMN**	**MDC**	**AEC**	**SEC**	**VAC**	**IAPC**	**Total Credits**
I	Food Production Foundation (3) Food & Beverage Service Foundation (3) Front Office Operations (3) Practical Labs (3)	–	Business & Hospitality Mathematics (3) Basic Accounting (3)	English & Professional Communication (3)	ESP101 (0.5) SDP181 (0.5)	Design Thinking (0) Co-curricular (0)	–	**22.0**
II	Accommodation Operations (Housekeeping) (3) Advanced Food Production (3) F&B Service Operations (3) Practical Labs (3)	–	Hospitality Marketing & Tourism Principles (3)	Foreign Language - French-I (2)	ESEP201 (1)	Universal Human Values-II (3) MAR / MOOCs (0)	–	**21.0**
III	Advanced Food Production & Patisserie (3) F&B Management (3) Front Office Management (3) Practical Labs (3)	–	Hotel Law & Safety Regulations (3)	Foreign Language - French-II (2)	ESEP301 (2)	Constitution of India (0) MAR381 (0) IFC (0)	Hospitality Mini Project-I (1)	**21.0**
IV	Housekeeping Management & Interior Decor (3) Facility Planning & Design (3) Hotel Information Systems (3) Practical Labs (3)	–	Hospitality Human Resource Management (3)	Business Economics for Hospitality (2)	ESEP401 (2)	Sustainability & Environmental Science (2) MAR481 (0) IFC (0)	Hospitality Mini Project-II (1)	**22.0**
V	Food & Beverage Cost Control (3) Hotel Financial Management (3) Event Management & MICE (3) Practical Labs (2)	Open Elective-I (3)	–	Entrepreneurship in Hospitality (2)	ESEP501 (2)	MAR581 (0) IFC (0)	Industrial Exposure Training-I / Block Training (4)	**24.0**
VI	Advanced Hospitality Operations (3) Strategic Management in Hospitality (3) Elective-I (3) Advanced Lab (2)	Open Elective-II (3)	–	Research Methodology (2)	ESEP601 (2) SDP681 (0.5)	MAR681 (0) IFC (0)	Research / Industry Project (3)	**21.5**
VII	Hospitality Quality Management (3) Elective-II (3)	Open Elective-III (3)	–	–	ESEP701 (2)	MAR781 (0) IFC (0)	Industrial Internship-II (6) Project Phase-I (3)	**21.0**
VIII	Elective-III (3)	Open Elective-IV (3)	–	–	ESEP801 (2)	MAR881 (0) IFC (0) SAR (0)	Major Dissertation & Portfolio Presentation (6) Comprehensive Viva (2)	**17.0**
Total	**64**	**12**	**3**	**6**	**13.5**	**2**	**20**	**147.5**