ACADEMIC ADVISOR :

Foundations of Academic Excellence

Education forms the foundation of personal, professional, and societal growth. Higher education institutions provide students with opportunities to develop knowledge, technical skills, and critical thinking abilities, preparing them for careers, research, and lifelong learning. At the core of this process lies a structured academic framework, which organizes learning into clearly defined programs, courses, and progression pathways. This framework ensures that students acquire fundamental competencies before advancing to more specialized topics, fostering both depth and breadth in learning. The academic framework and structure of an institution serves as a roadmap for students. From the moment they enroll, learners are guided through a combination of core courses, elective options, practical laboratories, projects, and capstone experiences. Undergraduate programs, such as engineering or technology degrees, begin with foundational knowledge in mathematics, sciences, and basic engineering concepts. These courses provide the essential tools required to understand complex topics in later semesters. Postgraduate programs, such as a Master of Business Administration (MBA) or Master of Technology (M.Tech.), focus on advanced analytical skills, research methodologies, leadership development, and real-world problem solving.

A critical component of higher education is the overview of academic programs, which clearly defines the scope, objectives, and outcomes of each program. This overview enables students to understand the breadth

of courses available, the sequence in which they are offered, and the skills and competencies they are expected to acquire at each stage. Programs are carefully designed to integrate theory with practical experience, ensuring students are not only academically proficient but also capable of applying knowledge to real-world challenges. Structured learning opportunities, including internships, laboratory work, and team-based projects, provide hands-on experience that complements classroom instruction.

The concept of structured learning pathways ensures that students progress in a logical, cumulative manner. Foundational courses establish the basic principles, intermediate courses deepen understanding, and advanced courses develop specialized expertise. Electives and specialization tracks allow students to tailor their education to personal interests or emerging industry trends, promoting flexibility and engagement. By following these pathways, learners can effectively plan their semesters, manage workloads, and ensure they meet program requirements within the expected timeframe.

The academic system and student guidance work hand in hand to support student success. Clear communication of program expectations, course sequences, assessment methods, and credit requirements is essential for informed decision-making. Students who are aware of the structure and progression of their programs can proactively manage prerequisites, avoid scheduling conflicts, and engage in meaningful learning experiences. Guidance from faculty advisors, mentors, and administrative staff further helps students navigate the academic landscape and make choices aligned with their long-term goals.

Program and curriculum overview emphasizes the integration of knowledge across disciplines. Undergraduate programs often combine theoretical learning with applied science, technology, and mathematics, while postgraduate programs emphasize research, analytical skills, and industry applications. The curriculum is periodically reviewed and updated to align with advancements in technology, industry requirements, and educational best practices. By maintaining a dynamic curriculum, institutions ensure that graduates remain competitive and well-prepared for the challenges of modern careers.

The educational framework and objectives of an institution are not limited to academic knowledge alone. They aim to develop well-rounded individuals who possess problem-solving abilities, critical thinking skills, ethical awareness, and professional competence. Students are encouraged to participate in interdisciplinary projects, research initiatives, and co-curricular activities that foster creativity, collaboration, and innovation. This holistic approach ensures that graduates are adaptable and capable of contributing meaningfully to society.

Effective academic planning and progression empower students to take ownership of their learning journey. Planning courses in advance, understanding credit requirements, and tracking academic milestones help students manage their time efficiently and achieve their degree goals without unnecessary delays. Institutions that provide transparent information on course sequences, credit accumulation, and assessment methods facilitate self-directed learning and enhance student confidence.

An institutional academic overview highlights the overarching vision, mission, and structure of the academic system. It reflects the institution's commitment to quality education, continuous improvement, and student

success. By establishing clear academic policies, standardized grading systems, and accessible learning resources, institutions create an environment where students can thrive and faculty can deliver high-quality education.

Ultimately, the guiding student learning journey emphasizes the importance of clarity, accessibility, and support throughout the academic experience. Students equipped with comprehensive academic information can plan effectively, meet graduation requirements, and pursue career or research opportunities with confidence. A well-structured academic framework transforms education from a series of courses into a meaningful journey of intellectual growth, skill development, and professional preparation.

Course Catalog

A course catalog is a structured guide that lists all courses offered in a program. It includes the course code, title, credits, prerequisites, and brief description. The catalog helps students plan their academic path, track progress, choose electives, and meet graduation requirements efficiently. Each course builds specific knowledge and skills, contributing to a student's overall learning and professional development.

B.E. Computer Science & Engineering (CSE)

Semester 1

CS101 – Introduction to Programming – 4 Credits – Prerequisite: None – Basics of programming using C/Python; loops, arrays, functions, problem-solving.
MA101 – Engineering Mathematics I – 4 Credits – Prerequisite: None – Calculus, linear algebra, matrices.
PH101 – Physics for Engineers – 3 Credits – Prerequisite: None – Mechanics, waves, thermodynamics.
HS101 – Communication Skills – 2 Credits – Prerequisite: None – Technical writing and professional communication.
CS101L – Programming Lab – 1 Credit – Prerequisite: None – Hands-on programming exercises.

Semester 2

CS102 – Data Structures – 4 Credits – Prerequisite: CS101 – Arrays, linked lists, stacks, queues, trees.
MA102 – Engineering Mathematics II – 4 Credits – Prerequisite: MA101 – Differential equations, Laplace transforms.
PH102 – Physics Lab – 1 Credit – Prerequisite: PH101 – Experiments in mechanics and optics.
CS102L – Data Structures Lab – 1 Credit – Prerequisite: CS102 – Practical implementation of data structures.

HS102 – Professional Ethics – 2 Credits – Prerequisite: None – Ethics in engineering and professional conduct.

Semester 3

CS201 – Algorithms – 4 Credits – Prerequisite: CS102 – Algorithm design, analysis, and complexity.

CS202 – Digital Logic Design – 3 Credits – Prerequisite: CS101 – Boolean algebra, logic gates, flip-flops.

MA201 – Discrete Mathematics – 4 Credits – Prerequisite: MA102 – Sets, relations, graphs, combinatorics.

CS201L – Algorithms Lab – 1 Credit – Prerequisite: CS201 – Practical implementation of algorithms.

Semester 4

CS203 – Computer Organization – 3 Credits – Prerequisite: CS202 – CPU architecture, memory hierarchy, input/output systems.

CS204 – Object-Oriented Programming – 4 Credits – Prerequisite: CS101 – OOP concepts using Java/C++; classes, inheritance, polymorphism.

EE201 – Basics of Electrical Engineering – 3 Credits – Prerequisite: None – Introduction to electrical circuits and systems.

CS204L – OOP Lab – 1 Credit – Prerequisite: CS204 – Practical OOP exercises.

Semester 5

CS301 – Operating Systems – 3 Credits – Prerequisite: CS201 – Process management, memory management, file systems.

CS302 – Database Management Systems – 3 Credits – Prerequisite: CS201 – SQL, normalization, transactions.

CS303 – Software Engineering – 3 Credits – Prerequisite: CS204 – SDLC, testing, project management.

CS301L – OS Lab – 1 Credit – Prerequisite: CS301 – Hands-on OS exercises.

Semester 6

CS304 – Computer Networks – 3 Credits – Prerequisite: CS301 – Networking principles, TCP/IP, routing, protocols.

CS305 – Web Technologies – 3 Credits – Prerequisite: CS204 – HTML, CSS, JavaScript, server-side programming.

CS306 – Compiler Design – 3 Credits – Prerequisite: CS201 – Lexical analysis, parsing, code generation.

CS306L – Compiler Lab – 1 Credit – Prerequisite: CS306 – Practical compiler implementation.

Semester 7

CS401 – Machine Learning – 4 Credits – Prerequisite: CS302 – Supervised/unsupervised learning, regression, classification, neural networks.

CS402 – Artificial Intelligence – 4 Credits – Prerequisite: CS302 – AI concepts, search algorithms, knowledge representation.

CS403 – Elective I – 3 Credits – Prerequisite: Varies – Advanced topics: Cloud Computing, Cybersecurity, IoT.

CS401L – ML Lab – 1 Credit – Prerequisite: CS401 – Practical ML exercises.

Semester 8

CS404 – Capstone Project – 4 Credits – Prerequisite: CS403 – Team-based integrated project.

CS405 – Elective II – 3 Credits – Prerequisite: Varies – Specialized elective of student choice.

CS406 – Seminar & Industrial Training – 2 Credits – Prerequisite: None – Presentation and industrial exposure.

B.E. Electronics & Communication Engineering (ECE)

Semester 1

EC101 – Circuit Theory – 4 Credits – Prerequisite: None – Fundamentals of electrical circuits.

MA101 – Engineering Mathematics I – 4 Credits – Prerequisite: None – Calculus, linear algebra.

PH101 – Physics – 3 Credits – Prerequisite: None – Mechanics, waves, thermodynamics.

HS101 – Communication Skills – 2 Credits – Prerequisite: None – Professional communication.

Semester 2

EC102 – Digital Electronics – 3 Credits – Prerequisite: EC101 – Logic gates, flip-flops, combinational circuits.

MA102 – Engineering Mathematics II – 4 Credits – Prerequisite: MA101 – Differential equations, Laplace transforms.

EC102L – Digital Lab – 1 Credit – Prerequisite: EC102 – Practical digital circuit experiments.

Semester 3

EC201 – Analog Electronics – 4 Credits – Prerequisite: EC102 – Diodes, transistors, amplifiers.

EC202 – Signals & Systems – 3 Credits – Prerequisite: MA102 – Time and frequency domain analysis.

EC201L – Analog Lab – 1 Credit – Prerequisite: EC201 – Practical analog experiments.

Semester 4

EC203 – Microprocessors & Microcontrollers – 4 Credits – Prerequisite: EC102 – Programming and interfacing microprocessors.

EC204 – Communication Systems – 3 Credits – Prerequisite: EC202 – AM, FM, digital communication principles.

EC204L – Communication Lab – 1 Credit – Prerequisite: EC204 – Experiments on communication circuits.

Semester 5

EC301 – Control Systems – 3 Credits – Prerequisite: EC202 – Feedback, stability, system analysis.

EC302 – Embedded Systems – 4 Credits – Prerequisite: EC203 – Design of embedded devices.

EC303 – Electromagnetic Theory – 3 Credits – Prerequisite: PH101 – Maxwell's equations, wave propagation.

EC301L – Control Lab – 1 Credit – Prerequisite: EC301 – Practical control experiments.

Semester 6

EC304 – VLSI Design – 3 Credits – Prerequisite: EC201 – CMOS design, chip architecture.

EC305 – Digital Signal Processing – 3 Credits – Prerequisite: EC202 – Filtering, Fourier transforms, DSP applications.

EC304L – VLSI Lab – 1 Credit – Prerequisite: EC304 – VLSI circuit experiments.

Semester 7

EC401 – Wireless Communication – 4 Credits – Prerequisite: EC204 – Cellular, satellite, Wi-Fi technologies.

EC402 – Antennas & Propagation – 3 Credits – Prerequisite: EC303 – Design and analysis of antennas.

EC403 – Elective I – 3 Credits – Prerequisite: Varies – Advanced topics like IoT, Robotics, or AI applications in ECE.

Semester 8

EC404 – Capstone Project – 4 Credits – Prerequisite: EC403 – Team-based integrated project.

EC405 – Elective II – 3 Credits – Prerequisite: Varies – Specialized elective chosen by student.

EC406 – Seminar & Industrial Training – 2 Credits – Prerequisite: None – Presentation and industry exposure.

B.E. Mechanical Engineering

Semester 1

ME101 – Engineering Mechanics – 4 Credits – Prerequisite: None – Force systems, equilibrium, statics.
MA101 – Engineering Mathematics I – 4 Credits – Prerequisite: None – Calculus, linear algebra.
PH101 – Physics – 3 Credits – Prerequisite: None – Mechanics, waves, thermodynamics.
HS101 – Communication Skills – 2 Credits – Prerequisite: None – Professional communication.

Semester 2

ME102 – Engineering Thermodynamics – 4 Credits – Prerequisite: PH101 – Laws of thermodynamics, heat transfer.
MA102 – Engineering Mathematics II – 4 Credits – Prerequisite: MA101 – Differential equations, Laplace transforms.
ME102L – Mechanics Lab – 1 Credit – Prerequisite: ME101 – Practical experiments in mechanics.

Semester 3

ME201 – Fluid Mechanics – 4 Credits – Prerequisite: ME101 – Fluid properties, flow analysis, Bernoulli's principle.
ME202 – Manufacturing Technology – 3 Credits – Prerequisite: None – Casting, forming, machining, joining processes.
ME201L – Fluid Lab – 1 Credit – Prerequisite: ME201 – Practical experiments in fluid mechanics.

Semester 4

ME203 – Strength of Materials – 4 Credits – Prerequisite: ME101 – Stress, strain, bending, torsion.

ME204 – Kinematics of Machines – 3 Credits – Prerequisite: ME101 – Mechanisms, linkages, motion analysis.

ME204L – Material Lab – 1 Credit – Prerequisite: ME203 – Stress-strain and material testing experiments.

Semester 5

ME301 – Heat Transfer – 4 Credits – Prerequisite: ME102 – Conduction, convection, radiation.

ME302 – Design of Machine Elements – 4 Credits – Prerequisite: ME203 – Shafts, gears, springs, joints design.

ME301L – Heat Transfer Lab – 1 Credit – Prerequisite: ME301 – Experiments on conduction and convection.

Semester 6

ME304 – Refrigeration & Air Conditioning – 3 Credits – Prerequisite: ME102 – Principles and applications of HVAC systems.

ME305 – Industrial Engineering – 3 Credits – Prerequisite: None – Work study, productivity, operations management.

ME306 – CAD/CAM – 4 Credits – Prerequisite: ME204 – Computer-aided design and manufacturing tools.

Semester 7

ME401 – Automotive Engineering – 4 Credits – Prerequisite: ME102 – Engine systems, transmissions, vehicle dynamics.

ME402 – Robotics & Mechatronics – 3 Credits – Prerequisite: ME304 – Robot design, control, sensors, actuators.

ME403 – Elective I – 3 Credits – Prerequisite: Varies – Advanced mechanical topics like Renewable Energy, HVAC.

Semester 8

ME404 – Capstone Project – 4 Credits – Prerequisite: ME403 – Team-based integrated project.

ME405 – Elective II – 3 Credits – Prerequisite: Varies – Specialized elective.

ME406 – Seminar & Industrial Training – 2 Credits – Prerequisite: None – Presentation and industry exposure.

B.E. Electrical & Electronics Engineering (EEE)

Semester 1

EE101 – Circuit Theory – 4 Credits – Prerequisite: None – Fundamentals of electrical circuits, Ohm's law, Kirchhoff's laws.

MA101 – Engineering Mathematics I – 4 Credits – Prerequisite: None – Calculus, linear algebra.

PH101 – Physics for Engineers – 3 Credits – Prerequisite: None – Mechanics, waves, thermodynamics.

HS101 – Communication Skills – 2 Credits – Prerequisite: None – Professional and technical communication.

Semester 2

EE102 – Electrical Machines I – 4 Credits – Prerequisite: EE101 – DC machines, transformers, basic motor principles.

MA102 – Engineering Mathematics II – 4 Credits – Prerequisite: MA101 – Differential equations, Laplace transforms.

EE102L – Electrical Lab – 1 Credit – Prerequisite: EE101 – Experiments on circuits and machines.

Semester 3

EE201 – Analog Electronics – 4 Credits – Prerequisite: EE102 – Diodes, BJTs, amplifiers, operational amplifiers.

EE202 – Signals & Systems – 3 Credits – Prerequisite: MA102 – Time and frequency domain analysis of signals.

EE201L – Electronics Lab – 1 Credit – Prerequisite: EE201 – Practical experiments on analog circuits.

Semester 4

EE203 – Electrical Machines II – 4 Credits – Prerequisite: EE102 – AC machines, induction and synchronous machines.

EE204 – Power Systems I – 3 Credits – Prerequisite: EE101 – Generation, transmission, and distribution basics.

EE204L – Machines Lab – 1 Credit – Prerequisite: EE203 – Experiments on electrical machines.

Semester 5

EE301 – Power Electronics – 4 Credits – Prerequisite: EE201 – Converters, inverters, and controlled rectifiers.

EE302 – Control Systems – 3 Credits – Prerequisite: EE202 – Feedback, stability, and system dynamics.

EE301L – Power Lab – 1 Credit – Prerequisite: EE301 – Practical exercises in power electronics.

Semester 6

EE304 – High Voltage Engineering – 3 Credits – Prerequisite: EE302 – Insulation, breakdown, and high voltage testing.

EE305 – Electrical Measurements – 3 Credits – Prerequisite: EE201 – Measurement of voltage, current, power, and energy.

EE306 – Electrical Drives – 3 Credits – Prerequisite: EE203 – DC and AC motor drives, speed control methods.

Semester 7

EE401 – Renewable Energy Systems – 4 Credits – Prerequisite: EE304 – Solar, wind, and hybrid energy systems.

EE402 – Power System Protection – 3 Credits – Prerequisite: EE304 – Relays, circuit breakers, protection schemes.

EE403 – Elective I – 3 Credits – Prerequisite: Varies – Specialized topics: Smart Grid, Electric Vehicles, Advanced Power Electronics.

Semester 8

EE404 – Capstone Project – 4 Credits – Prerequisite: EE403 – Team-based integrated project.

EE405 – Elective II – 3 Credits – Prerequisite: Varies – Specialized elective of choice.

EE406 – Seminar & Industrial Training – 2 Credits – Prerequisite: None – Presentation and industry exposure.

B.E. Civil Engineering

Semester 1

CE101 – Engineering Mechanics – 4 Credits – Prerequisite: None – Force systems, equilibrium, and statics.

MA101 – Engineering Mathematics I – 4 Credits – Prerequisite: None – Calculus, linear algebra.

PH101 – Physics for Engineers – 3 Credits – Prerequisite: None – Mechanics, waves, thermodynamics.

HS101 – Communication Skills – 2 Credits – Prerequisite: None – Professional communication skills.

Semester 2

CE102 – Engineering Materials – 3 Credits – Prerequisite: None – Properties of materials, testing, and applications.

MA102 – Engineering Mathematics II – 4 Credits – Prerequisite: MA101 – Differential equations, Laplace transforms.

CE102L – Mechanics Lab – 1 Credit – Prerequisite: CE101 – Practical experiments in mechanics.

Semester 3

CE201 – Structural Analysis I – 4 Credits – Prerequisite: CE101 – Analysis of statically determinate structures.

CE202 – Surveying – 3 Credits – Prerequisite: None – Chain surveying, leveling, compass and theodolite.

CE201L – Survey Lab – 1 Credit – Prerequisite: CE202 – Practical surveying exercises.

Semester 4

CE203 – Fluid Mechanics – 4 Credits – Prerequisite: CE101 – Fluid properties, Bernoulli's principle, flow analysis.

CE204 – Geotechnical Engineering I – 3 Credits – Prerequisite: CE101 – Soil properties, classification, and compaction.

CE204L – Fluid Lab – 1 Credit – Prerequisite: CE203 – Experiments on fluid flow.

Semester 5

CE301 – Structural Analysis II – 4 Credits – Prerequisite: CE201 – Analysis of indeterminate structures using classical methods.

CE302 – Concrete Technology – 3 Credits – Prerequisite: CE102 – Properties of concrete, mix design, durability.

CE301L – Structural Lab – 1 Credit – Prerequisite: CE301 – Experiments on beams, columns, and trusses.

Semester 6

CE304 – Transportation Engineering – 4 Credits – Prerequisite: None – Highway design, traffic engineering, pavement materials.

CE305 – Environmental Engineering – 3 Credits – Prerequisite: None – Water supply, wastewater treatment, environmental management.

CE306 – Geotechnical Engineering II – 3 Credits – Prerequisite: CE204 – Foundation design, bearing capacity, soil mechanics.

Semester 7

CE401 – Construction Management – 3 Credits – Prerequisite: None – Project planning, scheduling, cost estimation.

CE402 – Elective I – 3 Credits – Prerequisite: Varies – Advanced topics like Structural Dynamics, Earthquake Engineering.

CE403 – Capstone Project Phase I – 2 Credits – Prerequisite: None – Project work initiation, planning, and preliminary design.

Semester 8

CE404 – Capstone Project Phase II – 4 Credits – Prerequisite: CE403 – Completion and presentation of project work.

CE405 – Elective II – 3 Credits – Prerequisite: Varies – Specialized elective of choice.

CE406 – Seminar & Industrial Training – 2 Credits – Prerequisite: None – Seminar presentation and industry exposure.

Master of Business Administration (MBA)

Semester 1

MBA101 – Principles of Management – 3 Credits – Prerequisite: None – Fundamentals of management, planning, organizing, and controlling.

MBA102 – Financial Accounting – 3 Credits – Prerequisite: None – Accounting principles, financial statements, and analysis.

MBA103 – Organizational Behavior – 3 Credits – Prerequisite: None – Human behavior, motivation, and team dynamics.

MBA104 – Marketing Management – 3 Credits – Prerequisite: None – Basics of marketing, market research, and strategy.

MBA105 – Managerial Economics – 3 Credits – Prerequisite: None – Micro and macroeconomic principles for managers.

Semester 2

MBA201 – Human Resource Management – 3 Credits – Prerequisite: None – Recruitment, training, performance management, HR policies.

MBA202 – Financial Management – 3 Credits – Prerequisite: MBA102 – Capital budgeting, risk analysis, cost of capital.

MBA203 – Operations Management – 3 Credits – Prerequisite: None – Production planning, inventory, quality management.

MBA204 – Business Analytics – 3 Credits – Prerequisite: None – Data analysis, decision-making, statistical tools.

MBA205 – Strategic Management – 3 Credits – Prerequisite: MBA101 – Formulation and implementation of strategies.

Semester 3

MBA301 – International Business – 3 Credits – Prerequisite: None – Global trade, market entry strategies, cross-cultural management.

MBA302 – Entrepreneurship & Innovation – 3 Credits – Prerequisite: None – New venture creation, startup management, innovation.

MBA303 – Elective I – 3 Credits – Prerequisite: Varies – Specialized subjects like Digital Marketing, Supply Chain, or Finance.

MBA304 – Elective II – 3 Credits – Prerequisite: Varies – Specialized elective of choice.

Semester 4

MBA401 – Corporate Governance & Business Ethics – 3 Credits – Prerequisite: None – Ethical practices, corporate responsibility, compliance.

MBA402 – Elective III – 3 Credits – Prerequisite: Varies – Advanced specialization in functional areas.

MBA403 – Capstone Project / Internship – 4 Credits – Prerequisite: None – Industry-based project or research work.

MBA404 – Seminar & Presentation – 2 Credits – Prerequisite: None – Presentation of project findings and professional communication.

Grading Policies

1. Assessment Components

Most programs evaluate students through a combination of the following:

Internal Assessment (IA) / Continuous Assessment
Usually 20–40% of total course marks.

Quizzes / Tests – Short tests or online quizzes.
Assignments / Case Studies – Written or practical exercises.

Class Participation / Attendance – Marks for involvement and presence.
Lab Work / Practicals – For lab-based courses, evaluated continuously.

End-Semester / Final Examination (FE)
Usually 60–80% of total course marks.
Covers the entire syllabus of the semester.
Conducted in written format or online, sometimes includes practical exams.

Project / Internship / Seminar Evaluation (if applicable)
Capstone projects, internships, and seminars often have

separate evaluation criteria:
Report submission
Presentation / Viva
Industry mentor evaluation (for internships)
Marks may range from 50–100 per course, depending on program.

2. Credit-Based Evaluation

Most programs follow a credit-based system.
Each course has a credit value, usually 1–4 credits.

3.Grade Points and Letter Grades

Marks are converted into letter grades with corresponding grade points.

Outstanding performance is usually graded as O (10 points).

Excellent performance is graded as A+ (9 points).

Very Good performance is graded as A (8 points).

Good performance is graded as B+ (7 points).

Satisfactory performance is graded as B (6 points).

Passing marks are usually C (5 points).

Marks below the passing threshold are graded F (0 points).

Some colleges may use slightly different scales, e.g., 10-point or 4-point GPA system.

4. Semester GPA (SGPA)

Calculated for each semester using: SGPA = Sum of (Credit × Grade Point) for all courses in the semester ÷ Total Credits in that semester

5. Cumulative GPA (CGPA)

CGPA is the average of all SGPA values across semesters: CGPA = Sum of (Credit × Grade Point for all courses across semesters ÷ Total Credits for all semesters)

6. Passing Criteria

Typically, minimum 40% marks or Grade C is required to pass a course.

Failing students must reappear for exams or redo internal assessments.

7. Special Evaluations

Supplementary Exams / Revaluation – Students can retake or apply for rechecking marks.

Attendance Consideration – Some programs deduct marks for low attendance (<75%).

Practical / Lab Courses – Evaluation is 50% practical + 50% theory, depending on course design.

8. Example Grading Policy in Practice

Course: Data Structures (CSE, 4 credits)

Internal Assessment: 30 Marks

Quiz 1 – 5 Marks

Quiz 2 – 5 Marks

Assignment – 10 Marks

Attendance/Class Participation – 10 Marks

End Semester Exam: 70 Marks

Total: 100 Marks → Converted to Letter Grade → Grade Points

Academic Calendar

1. Definition

An Academic Calendar is a schedule of all important academic events and deadlines for a semester or an academic year.
It provides students, faculty, and administration a timeline for teaching, assessments, and holidays.

2. Duration

Typically divided into two semesters (Odd Semester: July–December, Even Semester: January–May) in most universities.
Each semester usually spans 15–18 weeks of instruction, excluding exams and holidays.

3. Key Components of an Academic Calendar

Semester Start and End Dates – Indicates when classes begin and end.
Registration / Enrollment Period – Time allocated for students to register for courses.
Add/Drop Period – Window for students to modify course registrations.
Internal Assessment Dates – Scheduled dates for quizzes, assignments, mid-semester exams.
End-Semester Examinations – Start and end dates for final exams.
Holidays and Festivals – University-declared holidays included in the calendar.
Project / Internship Deadlines – Submission and evaluation periods for projects or industrial training.
Grade Submission – Dates when faculty submit marks to the administration.
Results Declaration – Date when SGPA/CGPA and course results are announced.

4. Purpose

Helps students plan their studies and manage time efficiently.
Provides faculty and staff a schedule for teaching, assessments, and administrative duties.
Ensures uniformity in academic processes across all departments.

5. Example Timeline for One Semester

Week 1: Semester begins, course registration, orientation for new students.

Week 2–5: Teaching and first set of quizzes/assignments.

Week 6: Mid-semester exams / Internal Assessment I.

Week 7–10: Continuation of teaching and practical sessions.

Week 11–12: Internal Assessment II / Project work progress review.

Week 13–15: Revision, workshops, seminars, and final internal assessments.

Week 16–18: End-Semester Examinations.

Post Exams: Grade submission, result declaration, and start of next semester registration.

6. Flexibility

Some universities may include special sessions for remedial classes or make-up exams.

Dates may vary slightly depending on local holidays, festivals, or unforeseen events.

7. Significance

Provides a clear roadmap for academic planning.

Minimizes confusion regarding deadlines, exams, and course schedules.

Helps students and faculty balance workload and prepare ahead.

Degree Requirements Checklist

1. Definition

A Degree Requirements Checklist is a document that lists all the academic requirements a student must complete to earn a degree.
It ensures that students complete all courses, credits, and other program obligations before graduation.

2. Key Components

a. Core / Mandatory Courses
List of courses required for the major or program (e.g., B.E. Mechanical: Thermodynamics, Fluid Mechanics).
Usually includes foundational courses from Semester 1 onwards.
b. Elective Courses
Courses chosen by students based on interest or specialization.
Usually includes Elective I, II, III, etc., in later semesters.
c. Credit Requirements
Total number of credits required for graduation (e.g., 120–160 credits for B.E., 90–120 for B.Com, 60–80 for MBA).
Breakdown of core credits, elective credits, and mandatory lab/project credits.
d. Internal / Practical / Laboratory Requirements
Includes laboratory courses, practical sessions, and workshops.
Specifies minimum performance or completion criteria for practical components.
e. Project / Internship / Seminar
Graduation may require capstone projects, industry internships, or seminar presentations.
Checklist ensures submission deadlines and evaluation requirements are met.
f. GPA / CGPA Requirements
Minimum SGPA and CGPA needed to qualify for degree.
For example: Minimum CGPA of 5.0 or higher to pass; some programs may require higher for honors.
g. Special Requirements (if any)

Some programs include community service, extracurricular activities, or professional certifications.
Checklist may track completion of these additional requirements.

3. Purpose of Degree Requirements Checklist

Provides a clear roadmap for students to track academic progress.
Helps faculty and academic advisors monitor student progress.
Ensures that students meet all academic and program criteria before graduation.
Reduces chances of missing mandatory courses or credits.

4. Example of How a Student Uses It

Semester 1: Check off foundational courses completed (e.g., MA101, PH101).
Semester 2–4: Track completion of core and lab courses.
Semester 5–6: Track electives, project work, internships, or seminars.
Final Semester: Ensure total credits, practicals, CGPA, and project requirements are completed before applying for graduation.

Administrative criteria

Admission FAQs – Detailed

1. What are the eligibility criteria for different programs?

Eligibility criteria vary by program: for undergraduate programs (e.g., B.E., B.Com), students must have completed 10+2 or equivalent with required subjects.
For postgraduate programs (e.g., MBA, M.Com), students must have a bachelor's degree in any recognized discipline or in specific streams as prescribed.
Some programs may require minimum percentage or CGPA in qualifying exams.

2. What documents are required for admission?

Commonly required documents include:
10th and 12th grade mark sheets or equivalent certificates.
Graduation mark sheets or degree certificate (for postgraduate programs).
Passport-sized photographs.
Government-issued ID proof (Aadhar, Passport, or Driving License).
Entrance exam score card, if applicable.
Migration or Transfer Certificate, if coming from another institution.

3. How can I apply for admission?

Admissions are typically done online or offline.
Students must fill an application form with personal, academic, and contact details.
Upload scanned copies of required documents in the online portal.
Pay the application fee through the prescribed mode (online or bank challan).
Keep a confirmation copy or receipt for future reference.

4. Are there entrance exams for admission?

Some programs require entrance exams for admission, such as:
Engineering: National or state-level entrance tests.

MBA: Management aptitude tests (MAT, CAT, or university-specific exams).

Other programs may have direct admission based on merit in qualifying exams.

Students should check specific program requirements before applying.

5. Is there a quota or reservation system?

Many institutions follow government-mandated reservations for categories like SC/ST/OBC/EWS.

There may also be sports, cultural, or merit-based quotas.

Students should submit necessary certificates to claim reserved seats.

6. What is the admission timeline?

Applications are accepted before the start of the semester.

Deadlines for submission of forms, entrance exams, and document verification are usually published in the academic calendar.

Late submissions may be rejected or accepted with a late fee, depending on the rules.

7. Can I apply for multiple programs simultaneously?

Some institutions allow multiple applications, but students must meet eligibility for each program.

Selection will depend on merit, entrance score, or interview performance.

8. Is there an interview or counseling process?

Certain programs may require personal interviews or group discussions.

Counseling sessions may be conducted to verify eligibility, choice of specialization, or merit ranking.

Students must attend these sessions on scheduled dates, either in-person or online.

9. Can students apply for lateral entry or transfer?

Some programs allow lateral entry for diploma holders or transfer students.

Students must provide detailed academic transcripts and certificates.

Approval is subject to availability of seats and eligibility criteria.

10. What is the procedure for admission confirmation?

Once selected, students must submit original documents and fee payment to confirm their seat.

A provisional admission letter or confirmation receipt is provided.

Students must report on the specified date for orientation or start of classes.

11. Are there any special provisions for international students?

International students may have separate eligibility criteria, such as TOEFL/IELTS scores for English proficiency.

Visa and immigration requirements must be fulfilled.

International students may also have different fee structures or scholarship opportunities.

12. Can admission be canceled?

Admission may be canceled if documents are found to be false or if the student fails to meet eligibility requirements.

Some institutions allow withdrawal before the semester begins with a partial refund, as per the refund policy.

13. Who can I contact for admission queries?

Most institutions provide a dedicated admission office or helpdesk.

Students can email, call, or visit during working hours for guidance.

Admission FAQs and detailed instructions are usually available on the official website or admission brochure.

Fee Structure

1. Tuition Fees

The main fee for academic instruction in a semester or year.

Usually charged per semester, depending on the program and number of credits.

Example ranges (common across many institutions):

B.E.: ₹70,000 – ₹1,00,000 per semester

MBA: ₹80,000 – ₹1,20,000 per semester

B.Com: ₹20,000 – ₹40,000 per semester

Covers lectures, tutorials, and academic resources.

2. Laboratory / Practical Fees

Charged for practical-based courses (labs, workshops, computer labs).

Usually per semester or per lab course.

Includes cost for consumables, equipment maintenance, and lab usage.

Example: ₹2,000 – ₹5,000 per semester for undergraduate programs.

3. Library and Resource Fees

Covers library access, borrowing privileges, e-resources, and reference materials.

Charged annually or per semester.

Example: ₹500 – ₹2,000 per semester.

4. Exam / Assessment Fees

Charged for end-semester exams, evaluation, and grade processing.

Some institutions include it in tuition, others charge separately.

Example: ₹1,000 – ₹3,000 per semester.

5. Admission / Registration Fees

One-time or first-semester fee for new students.

Covers administrative processing, ID cards, and enrollment.

Example: ₹5,000 – ₹10,000 for undergraduate programs.

6. Miscellaneous / Campus Facilities Fees

Charged for campus amenities such as sports, gym, Wi-Fi, and health services.

May also include student union, cultural activities, and events.

Example: ₹2,000 – ₹5,000 per semester.

7. Hostel / Accommodation Fees (if applicable)

Covers room, bed, mess, and basic utilities.

Typically charged per semester.

Example ranges:

Single occupancy: ₹35,000 – ₹60,000 per semester

Shared rooms: ₹20,000 – ₹40,000 per semester

8. Transportation Fees (if applicable)

Charged for bus or shuttle services between campus and city.

Usually per semester, depending on distance.

Example: ₹5,000 – ₹15,000 per semester.

9. Scholarships / Concessions

Fee structure may include concessions for merit, category, or sports scholarships.

Discounts can range from 25% to 100%, depending on eligibility.

Students must apply and provide required documents to claim.

10. Payment Schedule

Fees are usually paid semester-wise: first installment at the beginning of the semester, second installment (if allowed) within 2–3 months.

Late payments may attract penalty charges.

Scholarship Criteria

1. Types of Scholarships

Merit-Based Scholarships: Awarded to students with outstanding academic performance (e.g., top 10% of the class or minimum CGPA requirement).
Need-Based Scholarships: Provided to students from economically weaker backgrounds, verified through income certificates.
Category-Based Scholarships: For students belonging to SC/ST/OBC/EWS or other reserved categories, as per government regulations.
Special Scholarships: For achievements in sports, arts, cultural activities, or entrepreneurship.

2. Eligibility Criteria

Merit-based: Minimum CGPA or percentage as defined by the program (e.g., ≥8.0 CGPA or ≥85%).
Need-based: Verified annual family income below the prescribed limit.
Category-based: Valid government-issued caste or category certificate.
Special scholarships: Proof of achievement in sports, competitions, or events.

3. Application Procedure

Students must submit an application with supporting documents.
Documents may include marksheets, income certificates, caste certificates, and achievement certificates.
Deadlines for scholarship applications are usually published at the beginning of the semester.

4. Renewal of Scholarships

Some scholarships are awarded for multiple semesters.
Renewal requires maintaining minimum academic performance, attendance, or participation criteria.
Students may need to reapply each academic year for certain scholarships.

5. Benefits

Scholarships may cover full or partial tuition fees.

Some may also include hostel fee concessions, book allowances, or stipend for living expenses.

Hostel Rules

1. Admission and Allocation

Hostel rooms are allocated based on merit, first-come-first-serve, or program priority.

Students must submit hostel application forms along with required documents.

Room allocation may be single or shared occupancy, depending on availability.

2. Check-in and Check-out

Students must report on the specified dates at the beginning of the semester.

Check-out before leaving for vacations is mandatory.

Damages or missing items may affect security deposit refunds.

3. Attendance and Curfew

Students must comply with hostel attendance and curfew timings.

Late arrivals without prior permission may result in warnings or disciplinary action.

4. Discipline and Conduct

No misbehavior, harassment, or use of prohibited substances is allowed.

Hostel authorities may discipline or evict students violating rules.

Quiet hours and respect for other residents are strictly enforced.

5. Facilities and Maintenanced

Hostels provide mess, common rooms, Wi-Fi, laundry, and study areas.

Students must maintain cleanliness and report damages.

Shared facilities must be used responsibly.

6. Visitors

Guest entry is usually restricted or regulated, with proper registration.
Overnight stays by outsiders may be strictly prohibited.

7. Fees and Deposits

Hostel fees are collected semester-wise, covering room, mess, and maintenance charges.
A security deposit may be collected at the time of admission and refunded at check-out, subject to deductions for damages.

Refund Policies

1. Withdrawal Before Semester Starts

Students who withdraw admission before classes begin may receive partial refund of tuition and other fees.
Certain administrative fees or processing charges may be non-refundable.

2. Withdrawal After Semester Starts

Fees are usually non-refundable once classes have started, except under exceptional circumstances approved by authorities.

3. Hostel Fee Refunds

Hostel fees may be partially refunded if students vacate early and provide proper notice.
Security deposits are refunded after deducting any damages or outstanding charges.

4. Scholarship-Linked Fee Adjustments

If a student is awarded a scholarship after paying full fees, excess fees may be adjusted in subsequent semesters or refunded.

5. Procedure

Students must submit a formal refund request to the administration.
Refunds are processed within a defined period, typically 30–45 days after approval.
Refunds are made through bank transfer or cheque to the student or guardian account.

6. Exceptions

No refunds are given for course withdrawal due to failure, disciplinary action, or academic reasons.

Refunds are subject to official rules and approval from the administrative office.

Career Services

1. **Placement Statistics**

Provides information on student employment outcomes after graduation.

Includes:

Percentage of students placed each year in various programs.

Average and highest salary packages offered.

Sector-wise distribution of placements (IT, finance, engineering, management, etc.).

Helps students and parents understand employability and career prospects.

2. **Company Visit Lists**

Lists companies and organizations visiting the campus for recruitment or workshops.

May include domestic and international companies, startups, and multinational corporations.

Provides details such as:

Name of the company

Sector/Industry

Job roles offered

Eligibility criteria for applicants

Updated every semester to reflect new recruiters and opportunities.

3. **Internship Guidelines**

Defines the process for securing internships during the program.

Key points include:

Eligibility: Usually students from 3rd semester onwards for undergraduates, or any semester for MBA.

Duration: Typically 4–12 weeks during semester breaks or as part of academic curriculum.

Learning objectives: Students must gain practical exposure to industry practices and tools.

Evaluation: Based on internship reports, mentor feedback, and presentation.

Compliance: Students must follow company and university policies, including confidentiality and attendance.

4. Alumni Success Stories

Highlights achievements of past graduates in various fields.

Includes:

Alumni working in leading national and international companies.

Entrepreneurs who started their own ventures.

Alumni pursuing higher education or research at prestigious institutions.

Awards, recognitions, and professional accomplishments.

Helps current students get motivated and build a network for mentorship and guidance.

5. Career Guidance Services

Provides workshops, seminars, and counseling sessions to prepare students for careers.

Includes:

Resume building and interview preparation

Soft skills and communication training

Industry trends and domain knowledge sessions

Career services coordinate placements, internships, and industrial visits to enhance employability.

6. Industrial Exposure and Company Interaction

Students are encouraged to participate in company visits, industry tours, and live projects.

Exposure helps understand real-world applications of academic knowledge.

Students gain practical insights, networking opportunities, and professional experience.

7. Tracking and Reporting

Placement and internship data is regularly tracked and reported for transparency.

Career statistics help improve curriculum, guidance, and industry tie-ups.

Staff Availability, Positions, and Recruitment

1. **Current Staff Availability**

The institution currently has a limited number of academic and administrative staff compared to the student population.
Staff handle teaching, administration, student guidance, career counseling, and placement coordination.
Due to high workload, students and parents often face delays in obtaining information or assistance.

2. **Required Staff Strength**

Optimal staff-to-student ratio depends on the program type and number of students.

For undergraduate programs:
1 faculty member per 15–20 students for core courses is ideal.
For laboratory/practical courses: 1 lab instructor per 20–25 students.

For postgraduate programs (MBA, M.Com):
1 faculty per 10–15 students for teaching and mentoring.

Administrative and support staff:
At least 1 administrative staff per 50–60 students for handling admissions, scholarships, hostel, and career guidance.

3. **Key Job Positions**

Academic Staff:

Professors, Associate Professors, Assistant Professors, Lecturers

Lab instructors and technical assistants

Academic coordinators for each department

Administrative Staff:

Admission officers and counselors

Fee and scholarship processing officers

Hostel wardens and mess coordinators

Career services officers / Placement coordinators

Support Staff:

Library staff

IT and helpdesk personnel

Maintenance and housekeeping staff

4. Recruitment and Hiring Process

Recruitment is conducted annually or as needed, based on vacancies and student intake.

Steps include:

Advertisement of vacancies on official websites and job portals

Screening of applications and resumes

Conducting interviews, written tests, or teaching demonstrations for academic positions

Verification of qualifications, experience, and background

Selection and appointment letters issued for faculty and staff

5. Staff Development and Training

New staff undergo orientation and training to familiarize themselves with policies, student services, and institutional systems.

Continuous professional development programs are conducted to ensure quality teaching, efficient administration, and updated career guidance.

6. Impact of Adequate Staff

Reduces administrative delays and student frustration.

Improves accuracy and accessibility of institutional documentation.

Ensures smooth academic and administrative operations, including placement and internship support.