

Assam PAT (Lateral Entry) Syllabus for B.Tech Admission

Assam Polytechnic Admission Test (PAT) Lateral Entry is conducted for diploma holders seeking direct admission into the 2nd year of B.Tech programs in Assam engineering colleges. The exam tests candidates' technical knowledge, mathematics, and science concepts from their diploma courses.

Section-Wise Syllabus for Assam PAT (Lateral Entry)

The exam consists of two major sections:

- Mathematics & Science (50 Marks)
 - Engineering Subjects (50 Marks)
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Section 1: Mathematics & Science (50 Marks)

This section evaluates fundamental concepts in mathematics and science, which are essential for engineering studies.

Mathematics Topics

- Algebra – Matrices, Determinants, Complex Numbers, Quadratic Equations
- Trigonometry – Identities, Heights & Distances, Inverse Trigonometric Functions
- Differential Calculus – Limits, Derivatives, Applications of Derivatives
- Integral Calculus – Definite & Indefinite Integrals, Applications
- Probability & Statistics – Mean, Variance, Standard Deviation, Probability Theorems
- Coordinate Geometry – Straight Lines, Circles, Parabolas, Ellipses

Science Topics

- Physics: Laws of Motion, Work & Energy, Heat & Thermodynamics, Electricity & Magnetism, Modern Physics
 - Chemistry: Atomic Structure, Chemical Bonding, Organic & Inorganic Chemistry, Environmental Chemistry
 - Basic Engineering Sciences: Engineering Mechanics, Material Science, Engineering Graphics
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Section 2: Engineering Subjects (50 Marks)

This section is based on diploma-level engineering subjects and varies depending on the candidate's diploma specialization.

Civil Engineering

- ✓ Strength of Materials – Stress & Strain, Bending Moment & Shear Force
- ✓ Surveying – Linear & Angular Measurement, Leveling, Contouring
- ✓ Fluid Mechanics – Fluid Properties, Flow through Pipes
- ✓ Building Materials & Construction – Concrete, Masonry, Foundation Engineering

Mechanical Engineering

- ✓ Thermodynamics – Laws of Thermodynamics, Heat Transfer, IC Engines
- ✓ Strength of Materials – Stress & Strain, Bending Moment, Torsion
- ✓ Manufacturing Process – Casting, Welding, Machining, CNC Machines
- ✓ Fluid Mechanics – Bernoulli's Theorem, Flow through Pipes
- ✓ Engineering Drawing – Orthographic & Isometric Projections

Electrical & Electronics Engineering

- ✓ Circuit Theory – AC & DC Circuits, Network Theorems
- ✓ Electrical Machines – Transformers, Induction Motors, DC Machines
- ✓ Power Systems – Transmission & Distribution, Power Generation
- ✓ Digital Electronics – Logic Gates, Boolean Algebra, Flip-Flops
- ✓ Microprocessors – 8085/8086 Architecture, Assembly Language

Computer Science & IT

- ✓ Programming – C, C++, Java Basics
- ✓ Data Structures – Arrays, Linked Lists, Stacks & Queues
- ✓ Computer Networks – OSI Model, TCP/IP Basics
- ✓ Operating Systems – Basics, Process Management
- ✓ Database Management – SQL, Normalization

Assam PAT (Lateral Entry) Exam Pattern


Subject	Marks
Mathematics & Science	50 Marks
Engineering Subjects	50 Marks

Subject	Marks
Total	100 Marks

 Exam Duration: 2 Hours

 Marking Scheme: +1 for Correct Answer, No Negative Marking

 Preparation Tips for Assam PAT (Lateral Entry)

 **Revise Diploma Subjects:** Focus on core engineering subjects from your diploma syllabus.

 **Strengthen Mathematics & Science Concepts:** This section is scoring, so regular practice is essential.

 **Solve Previous Year Papers:** Helps understand the exam pattern and question types.

 **Attempt Mock Tests:** Improves time management and boosts confidence.