

# JEE Main Syllabus for Paper 2A (B.Arch)

## Syllabus Structure

JEE Main Paper 2A consists of three parts:

- **Part I: Mathematics** - Objective-type questions covering topics from Class 11 and 12.
- **Part II: Aptitude Test** - Objective-type questions testing general awareness and reasoning.
- **Part III: Drawing Test** - Questions to evaluate drawing and sketching abilities.

## Part I: Mathematics Syllabus

The Mathematics section is similar to Paper 1 (B.E./B.Tech) and focuses on topics from Class 11 and 12. Key topics include:

- **Sets, Relations, and Functions:** Types of functions, equivalence relations.
- **Complex Numbers and Quadratic Equations:** Argand plane, quadratic roots.
- **Matrices and Determinants:** Operations, inverse, applications.
- **Permutations and Combinations:** Fundamental principle, binomial theorem.
- **Binomial Theorem and Its Simple Applications:** General term, expansions.
- **Sequences and Series:** Arithmetic Progression (AP), Geometric Progression (GP), Harmonic Progression (HP), sums.
- **Limit, Continuity, and Differentiability:** Limits, derivatives, Rolles theorem.
- **Integral Calculus:** Indefinite and definite integrals, area under curves.
- **Differential Equations:** Order, degree, solutions.
- **Coordinate Geometry:** Straight lines, circles, conic sections (parabola, ellipse, hyperbola).
- **Three Dimensional Geometry:** Direction cosines, planes, lines.
- **Vector Algebra:** Scalar and vector products, applications.
- **Statistics and Probability:** Mean, variance, Bayes theorem.

- **Trigonometry:** Identities, equations, heights and distances.
- **Mathematical Reasoning:** Statements, logical operations.

## Part II: Aptitude Test Syllabus

The Aptitude section evaluates general awareness, analytical skills, and architectural awareness. Key topics include:

- **Awareness of Persons, Places, Buildings, and Materials:** Famous buildings, architectural landmarks, materials used in construction.
- **Three-Dimensional Perception:** Visualization of 3D objects from 2D drawings, understanding scale and proportion.
- **Visualizing Different Sides of 3D Objects:** Rotational views, perspective drawings.
- **Analytical Reasoning:** Logical reasoning, pattern recognition, puzzles.
- **Mental Ability:** Verbal and non-verbal reasoning.
- **Texture and Objects Related to Architecture:** Building materials, textures, and their applications.
- **Architectural Awareness:** Basic knowledge of architecture, historical and modern structures.

## Part III: Drawing Test Syllabus

The Drawing section assesses candidates sketching and creative skills. Key areas include:

- **Sketching of Scenes and Activities:** Drawing scenes from urban or rural life, such as markets, streets, or festivals.
- **2D and 3D Composition:** Creating compositions using given shapes (e.g., circles, triangles, cubes).
- **Perspective Drawing:** One-point and two-point perspectives of objects or scenes.
- **Drawing from Memory:** Recreating everyday objects or scenarios from memory.
- **Design and Creativity:** Designing posters, logos, or architectural elements.
- **Use of Colors:** Application of color theory in compositions (color pencils allowed in pen-and-paper mode).

## Preparation Tips

- **Mathematics:** Focus on NCERT Class 11 and 12 textbooks, practice coordinate geometry and calculus.
- **Aptitude:** Study architectural landmarks, practice 3D visualization, and solve reasoning puzzles.
- **Drawing:** Practice freehand sketching, perspective drawing, and compositions; use quality pencils and colors.
- Solve previous years papers and take mock tests for the computer-based sections.
- Check the official JEE Main website (<https://jeemain.nta.ac.in>) for updates to the syllabus or pattern.