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## RGPV B.Tech – First Year Syllabus

### BT-204: Basic Civil Engineering & Mechanics

#### Unit I: Building Materials & Construction

- Stones, bricks, cement, lime, timber – types, properties, tests & uses
- Concrete and mortar – workability, strength, proportions, curing
- Elements of construction – foundations, RCC footings, masonry walls
- Plastering, pointing, floors, roofs, doors, windows, lintels, staircases

#### Unit II: Surveying & Positioning

- Surveying instruments – levels, theodolites, plane tables, EDM tools
- Measurement of distances, directions, elevations
- Reciprocal leveling and modern electronic methods

#### Unit III: Mapping & Remote Sensing

- Mapping details, contouring, cross-sectioning
- Area and volume measurement, quantity computation
- Survey stations, introduction to remote sensing and applications

#### Unit IV: Forces and Equilibrium

- Graphical and analytical treatment of forces
- Free body diagrams, Bow's notation
- Plane truss analysis – method of joints and sections

- Frictional forces in equilibrium problems

## Unit V: Center of Gravity & Moment of Inertia

- Centroid, center of gravity, moment of inertia
- Radius of gyration, product of inertia, principal axes
- Support reactions, shear force and bending moment diagrams
- Cantilever and simply supported beams with various loads



### Download Official Syllabus

- [RGPV Notes – BT-204 Full Breakdown](#)
- [CompleteNotes – BT-204 PDFs](#)

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