

HPSC AE Syllabus 2024

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The purpose of the HPSC AE Syllabus 2024 is to thoroughly evaluate applicants' knowledge of a range of topics pertinent to the role of Assistant Engineer. In addition to portions on specialized topics like mechanical, electrical, and civil engineering, it also covers general English, general awareness, reasoning ability, and quantitative aptitude. The syllabus includes a broad range of topics, including technical disciplines like fluid physics, structural analysis, and thermodynamics, as well as current events, historical knowledge, and English grammar and understanding.

General Awareness Syllabus

General Awareness Topics	Description
History of India and Haryana State	Important historical events and movements in India and Haryana.
Indian Polity and Constitution	Structure, functioning, and features of the Indian political system and the Constitution.
Geography (Indian and Haryana State)	Physical, social, and economic geography of India and Haryana.
Economics	Basic economic principles, Indian economy, and economic policies.
Current Affairs	Recent happenings in national and international events.
Science and Technology	Developments and advancements in science and technology.
Awards and Honors	Recognition given to individuals and organizations in various fields.
Prominent Personalities	Notable figures in various domains such as politics, science, literature, and arts.

Arts and Culture	Cultural heritage, traditions, and arts of India and Haryana.
Sports	Important sports events, tournaments, and achievements.

HPSC AE General English Syllabus

Topics covered in General English Syllabus for HPSC AE Exam	
General English Topics	Description
Grammar	Understanding and applying rules of English grammar.
Synonyms and Antonyms	Identifying words with similar or opposite meanings.
Error Detection	Finding and correcting grammatical errors in sentences.
Sentence Formation and Improvement	Forming sentences correctly and improving the structure of existing sentences.
Fill in the Blanks	Completing sentences by filling in the missing words.
Idioms and Phrases	Understanding and using common idioms and phrases.
One Word Substitution	Replacing phrases with a single word that conveys the same meaning.
Comprehension	Reading and understanding passages, followed by answering related questions to demonstrate comprehension.

HPSC AE Quantitative Aptitude Syllabus

Topics covered in Quantitative Aptitude syllabus for HPSC AE exam	
Quantitative Aptitude Topics	Description

Average	Calculating the mean of a set of numbers.
Ratio and Proportion	Solving problems involving ratios and proportions.
LCM & HCF	Finding the Least Common Multiple and Highest Common Factor of numbers.
Percentage	Calculating percentages and solving related problems.
Number System	Understanding and solving problems related to different number systems.
Simple and Compound Interest	Calculating interest using simple and compound methods.
Profit and Loss	Solving problems related to profit, loss, and discounts.
Time and Work	Calculating work done and time taken in various scenarios.
Pipes and Cistern	Solving problems related to the flow of liquids in pipes and cisterns.
Time and Distance	Solving problems involving speed, distance, and time.
Mixture and Allegation	Solving problems related to mixing of two or more substances.
Algebra	Solving equations and algebraic expressions.
Geometry	Understanding and solving problems related to shapes, sizes, and properties of figures.
Trigonometry	Solving problems involving trigonometric ratios and identities.
Statistics	Analyzing data and solving problems related to mean, median, mode, and standard deviation.

Reasoning Ability Syllabus

Topics Covered in Reasoning Ability Syllabus	
Reasoning Ability Topics	Description
Series	Identifying patterns and completing sequences.
Odd One Out	Finding the element that does not fit in a given set or pattern.
Coding Decoding	Deciphering codes and patterns in letters and numbers.
Seating Arrangement	Arranging people or items in a specified order based on given conditions.
Blood Relation	Solving problems related to family relationships.
Decision Making	Making logical decisions based on given scenarios.
Statement and Arguments	Analyzing arguments and determining the validity of statements.
Figure Counting	Counting geometric shapes within a larger figure.
Mirror and Water Images	Identifying mirror and water reflections of given shapes.
Direction and Distance	Solving problems related to directions and distances.
Arithmetical Reasoning	Applying arithmetic operations to solve logical problems.
Clock and Calendar	Solving problems related to time and dates.
Non Verbal Reasoning	Solving problems involving visual and spatial reasoning.

Civil Engineering subjects and Syllabus

Subjects	Syllabus

Paper - I Civil Syllabus	
Building Materials and Construction	Stones, Timber, Bricks, Cement, Mortar, Concrete, Masonry, Steel
Solid Mechanics	Stresses, Strains, Failures, Theories of Solid Material, Simple Bending and Torsion Theories, Shear Centre
Graphic Static	Force Polygon, Stress diagram
Structural Analysis	Analysis of trusses and frames, Introduction to plastic Analysis
Design of Metal Structure	Working stress and ultimate strength design of simple structures
Design of Concrete and Masonry Structures	Design of masonry walls, working stress design of plain, reinforced and prestressed concrete, ultimate strength design of reinforced and prestressed concrete
Paper - II	
Fluid Mechanics, Water Resources Engineering	Open channel and pipe flow, Hydrology Design of canals and hydraulics structures
Soil Mechanics and Foundation Engineering	Strength parameters, Earth pressures Theories, Design of Shallow and Deep foundations
Transportation Engineering	Railway Engineering and Surveying, Roads Superelevation, Ruling gradient pavements, Traffic controls, Design Consideration
Environmental Engineering	Water purifications, Sewerage treatment and disposal
Construction Planning and Management	Elements of construction practice, Bar charts, CPM, PERT
Paper - I	Mechanical Syllabus

Thermodynamics	Laws, Properties of ideal gases and vapours, Power Cycles, Gas Power Cycles, Gas Turbine Cycles, Fuels and Combustion
IC Engines	Fuel Injection and carburation, Performance and Testing, CI and SI engines, Detonation, Turbojet and Turbo-prop Engines, Rocket Engines, Elementary Knowledge of Nuclear Power Plants and Nuclear Fuels
Steam Boiler, Engines, Nozzles and Steam Turbines	Modern boilers, Steam Turbines types, Flow of Steam through nozzles, Velocity diagrams for impulse and Reaction Turbines, Efficiencies and Governing
Compressors, Gas Dynamics and Gas Turbines	Reciprocating Centrifugal and axial flow compressor, Velocity diagrams, Efficiency and Performance, Effect of Mechanical number on flow, Isentropic flow, Normal Shocks and Flow through nozzles, Gas Turbine Cycle with multistage compression, Reheating and Regeneration
Heat Transfer, Refrigeration and Air-conditioning	Conduction, Convection and Radiation, Heat exchangers and types combined, Heat Transfer, Overall Heat Transfer coefficient, Refrigeration and heat pump cycles, Refrigeration systems, Coefficient of performance, Psychometrics and psychometric chart, Comfort indices, Cooling and dehumidification methods, Industrial-Air Conditioning Process, Cooling and heating loads calculations
Properties and classification of fluid	Fluid statics, kinematics and dynamics, Principles and applications, Manometry and Buoyancy, Flow of ideal fluids, Laminar and turbulent flows, Boundary layer theory, Flow over immersed bodies, Flow through pipes and open channels, Dimensional analysis and similitude technique, Non-dimensional specific speed and classification of fluid mechanics in general, Energy transfer relation, performance and operation of pumps and of impulse and reaction water turbines, Hydrodynamic power transmission
Paper - II	
Theory of Machines	Velocity and acceleration (i) of moving bodies (ii) in machines. Klien's construction, Inertia forces in machines, Cams, Gears and Gearing, Flywheels and Governors, Balancing of Rotating and Reciprocating masses, Free and forced vibrations of systems, Critical speeds and whirling of shafts

Machine Design	Design of Joints- Threaded fasteners and Power Screws-Keys, Kotter's Coupling, Welded Joints, Transmission system- Belt and chain drives-wire ropes-shafts, Gears- Sliding and Rolling bearings
Strength of Materials	Stress and strain in two dimensions; Mohr's circles: relations between Elastic Constants, Beams-Bending moments, shearing forces and reflection, Shafts-combined bending, direct and torsional stresses, Thick Walled cylinder and spheres under Pressure, Springs Struts and columns, Theories of failure
Engineering Materials	Alloys and Alloying Materials; heat treatment, Composition, properties and uses, Plastics and other newer engineering materials
Production Engineering	Metal Machinery: Cutting Tools: Tool Materials, Wear and Machinability, measurement of cutting forces, Process: Machining Grinding, Boring, Gear, Manufacturing, Metal Forming, Metal Casting & Jointing, Basic Special Purpose, Programme and numerically controlled machine tools, Jigs and fixtures (locating elements)
Industrial Engineering	Work study and work measurement, Wage incentive, Design of Production System and Product Cost, Principles of Plant layout, Production Planning and Control Material handling, Operations Research, Linear Programming, queuing Theory, Value Engineering, Network Analysis CPM and PERT, Use of computers

HPSC AE Exam Pattern

There will be two sections to the exam: the objective and the descriptive. The objective section will include multiple-choice questions to assess the applicants' knowledge and comprehension, and the descriptive section will assess how well they can express and apply their information in writing. With a total of 1000 marks available for the exam, applicants' subject-matter expertise will be thoroughly evaluated. Refer to the table below for more details about the exam pattern.

HPSC AE Exam Pattern 2024			
Sr. No	Subjects	Marks	Duration

Part - I Objective Type Paper			
•	General Ability Test (Part A: General English) (Part B: General Studies)	200	2hrs
•	Technical Paper -I (Civil or Mechanical)	200	2 hrs
•	Technical Paper -II (Civil or Mechanical)	200	2 hrs
Part - II Conventional Papers			
•	Technical Paper -I (Civil or Mechanical)	200	3 hrs
•	Technical Paper -II (Civil or Mechanical)	200	3 hrs
Total		1000	