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VIJAY KUMAR CHIRUTHA

**GATE [Graduate Aptitude Test in Engineering]
Syllabus**

[CSE, ECE, EE, ME, CE, and DA]



GATE [GRADUATE APTITUDE TEST IN ENGINEERING]

Educating The World

GATE

[Graduate Aptitude Test in Engineering] Syllabus

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COMMON MODULES (ALL BRANCHES)

MODULE 0 – GENERAL APTITUDE (GA)

Sub-modules

1. Verbal Ability

- English grammar
- Vocabulary
- Sentence completion

2. Reading Comprehension

3. Numerical Ability

- Percentages, ratios
- Averages, time & work

4. Logical & Analytical Reasoning

5. Data Interpretation

MODULE 1 – ENGINEERING MATHEMATICS

[INCLUDED IN CSE, ECE, EE, ME, CE, DA]

Sub-modules

1. Linear Algebra

- Matrices, determinants
- Eigenvalues & eigenvectors

2. Calculus

- Limits, continuity
- Differentiation
- Integration

3. Differential Equations

4. Probability & Statistics

5. Numerical Methods

6. Vector Calculus

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UPSC - CIVILS
IAS Exams

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GATE CSE – COMPUTER SCIENCE & IT

Module C1 – Discrete Mathematics

- Logic & Proofs
- Sets, Relations, Functions
- Graph Theory
- Combinatorics

Module C2 – Digital Logic

- Boolean algebra
- Combinational circuits
- Sequential circuits

Module C3 – Programming & Data Structures

- C programming
- Arrays, stacks, queues
- Trees, graphs
- Hashing

Module C4 – Algorithms

- Complexity analysis
- Sorting & searching
- Greedy, DP
- Graph algorithms

Module C5 – Theory of Computation

- Regular languages
- Context-free grammars
- Turing machines

Module C6 – Computer Organization

- CPU architecture
- Pipelining
- Memory hierarchy

Module C9 – Computer Networks

- OSI & TCP/IP
- Routing
- Congestion control

Module C7 – Operating Systems

- Processes & threads
- CPU scheduling
- Deadlocks
- Memory management

Module C8 – Databases

- ER model
- SQL
- Normalization
- Transactions

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GATE DA – DATA SCIENCE & ARTIFICIAL INTELLIGENCE

Module D1 – Mathematics for

DA

- Linear algebra
- Probability & statistics
- Optimization basics

Module D2 – Programming

- Python
- Data handling libraries

Module D3 – Data

Structures & Algorithms

- Arrays, trees, graphs
- Complexity

Module D4 – Machine

Learning

- Supervised learning
- Unsupervised learning
- Bias–variance

Module D5 – Artificial Intelligence

- Search algorithms
- Knowledge representation
- Reasoning

Module D6 – Data Analytics

- Data preprocessing
- Visualization
- Exploratory data analysis

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GATE ECE – ELECTRONICS & COMMUNICATION

Module E1 – Engineering Mathematics

Module E2 – Network Theory

- Circuit laws
- Network theorems

Module E4 – Analog Circuits

- Amplifiers
- Oscillators

Module E7 – Control Systems

- Transfer functions
- Stability

Module E3 – Electronic Devices

- Diodes
- BJTs
- MOSFETs

Module E5 – Digital Electronics

- Logic gates
- Flip-flops
- Counters

Module E8 – Communication Systems

- Analog communication
- Digital communication

Module E3 – Electronic Devices

- Diodes
- BJTs
- MOSFETs

Module E6 – Signals & Systems

- LTI systems
- Fourier, Laplace

Module E9 – Electromagnetics

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Module EE1 – Engineering Mathematics

Module EE2 – Electrical Circuits

- AC/DC analysis

Module EE3 – Signals & Systems

Module EE6 – Control Systems

GATE EE – ELECTRICAL ENGINEERING

Module EE4 – Electrical Machines

- Transformers
- Induction machines
- Synchronous machines

Module EE7 – Power Electronics

- Converters
- Inverters

Module EE5 – Power Systems

- Generation
- Transmission
- Fault analysis

Module EE8 – Measurements

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Module M1 – Engineering Mathematics

Module M2 – Engineering Mechanics

- Statics
- Dynamics

Module M3 – Strength of Materials

Module M7 – Fluid Mechanics

- Fluid statics
- Fluid dynamics

GATE ME – MECHANICAL ENGINEERING

Module M4 – Theory of Machines

- Kinematics
- Dynamics of machines

Module M8 – Manufacturing Engineering

- Casting
- Machining
- Welding

Module M5 – Thermodynamics

Module M6 – Heat Transfer

Module M9 – Industrial Engineering

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Module CE1 – Engineering Mathematics

Module CE2 – Structural Engineering

- Strength of materials
- Structural analysis
- RCC
- Steel structures

Module CE6 – Transportation Engineering

GATE CE – CIVIL ENGINEERING

Module CE3 – Geotechnical Engineering

- Soil mechanics
- Foundation engineering

Module CE5 – Environmental Engineering

- Water supply
- Wastewater treatment

Module CE4 – Water Resources

- Fluid mechanics
- Hydrology
- Irrigation

Module CE7 – Surveying

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Note

Revision & Practice

- Topic-wise PYQs
- Subject tests

Final

- Full-length mock tests
- Weak-area correction

Note this

Please do refer your official notification for subjects, patterns, syllabus, topics. We are providing here, some common topics needs to be covered

Thanks

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- NCERTS, IB, STATE BOARD EXAMS
- NATIONAL LAW COMPETITIVE EXAMS
- STATE POLICE DEPT EXAMS
- CAT/CSAT/EMCET/GATE EXAMS
- SCHOOL, COLLEGE, UNIVERSITY EXAMS
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**THANK YOU
SO MUCH**

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