GATE 2021 Syllabus for CSE (Computer Science Engineering)

Updated on: Mar 20, 2020

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36.1K Views

Devise an effective preparation strategy for GATE 2021 with Computer Science Engineering (CSE) Syllabus

GATE Syllabus for Computer Science and Information Technology

GATE CSE syllabus will help the apsirants in knowing

about the topics to study for GATE 2021. Candidates planning to appear in the exam next year should analyze GATE computer science syllabus. The link to download GATE CSE syllabus PDF is available on this page below. GATE 2021 CSE syllabus is not available as of now. But candidates can refer to the previous year syallbus to start the preparation.

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GATE syllabus for CSE is based out on the undergraduate engineering course. GATE 2021 CS and IT paper will consist of questions from aptitude and the subject (CS and IT) further divided into sections: Digital Logic, Computer Organization and Architecture, Programming and Data Structures, Algorithms, Theory of Computation, Compiler Design, Operating System, Databases, and Computer Networks. Apart from the syllabus, candidates should also check GATE exam pattern as it will help them in making GATE preparation strategy. The detailed information about topics and

chapters included in GATE CSE syllabus is given below.

GATE 2021 Syllabus for CSE (Computer Science Engineering)

Section 1: Engineering Mathematics

Discrete Mathematics: Propositional and first order logic. Sets, relations, functions, partial orders and lattices. Groups. Graphs: connectivity, matching, coloring. Combinatorics: counting, recurrence relations, generating functions.

Linear Algebra: Matrices, determinants, system of linear equations, eigenvalues and eigenvectors, LU decomposition.

Calculus: Limits, continuity and differentiability. Maxima and minima. Mean value theorem. Integration.

Probability: Random variables. Uniform, normal, exponential, poisson and binomial distributions. Mean, median, mode and standard deviation. Conditional

probability and Bayes theorem.

Section 2: Digital Logic

Boolean algebra. Combinational and sequential circuits. Minimization. Number representations and computer arithmetic (fixed and floating point).

Section 3: Computer Organization and Architecture

Machine instructions and addressing modes. ALU, data? path and control unit. Instruction pipelining. Memory hierarchy: cache, main memory and secondary storage; I/O interface (interrupt and DMA mode).

Section 4: Programming and Data Structures

Programming in C. Recursion. Arrays, stacks, queues, linked lists, trees, binary search trees, binary heaps, graphs.

Section 5: Algorithms

Searching, sorting, hashing. Asymptotic worst case time and space complexity. Algorithm design techniques: greedy, dynamic programming and divide?and?conquer. Graph search, minimum spanning trees, and shortest paths.

Section 6: Theory of Computation

Regular expressions and finite automata. Context-free grammars and push-down automata. Regular and contex-free languages, pumping lemma. Turing machines and undecidability.

Section 7: Compiler Design

Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation.

Section 8: Operating System

Processes, threads, inter?process communication, concurrency and synchronization. Deadlock. CPU scheduling. Memory management and virtual memory. File systems.

Section 9: Databases

ER?model. Relational model: relational algebra, tuple calculus, SQL. Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control.

Section 10: Computer Networks

Concept of layering. LAN technologies (Ethernet). Flow

and error control techniques, switching. IPv4/IPv6, routers and routing algorithms (distance vector, link state). TCP/UDP and sockets, congestion control. Application layer protocols (DNS, SMTP, POP, FTP, HTTP). Basics of Wi-Fi. Network security: authentication, basics of public key and private key cryptography, digital signatures and certificates, firewalls.

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GATE Exam Highlights

Particulars	Details
Exam Duration	Three hours
Mode of examination	Computer-based test
Question type	Objective type and Numerical Answer Type (NAT)
Number of questions	65
Total marks	100
Sections	Aptitude Engineering Mathematics Subject specific questions
Marking Scheme	1 mark MCQs – 1/3 mark

	will be deducted for every wrong answer. 2 mark MCQs – 2/3 mark will be deducted for every wrong response. Zero marks will be awarded for unattempted questions No negative marking will be done for Numerical Answer Type (NAT) questions
Sectional Time-Limit	No

GATE 2020 Cutoff for CS and IT

The qualifying marks is available after declaration of GATE result. Check **GATE 2020 qualifying marks** in the table below.

Paper Name	Gen/EWS	OBC(NCL)	SC/ST/PwD
Aerospace Engineering (AE)	27.2	24.4	18.1
Agricultural			

Engineering (AG)	26.3	23.6	17.5
Architecture and Planning (AR)	34.8	31.3	23.2
Biomedical Engineering (BM)	25.0	22.5	16.6
Biotechnology (BT)	30.7	27.6	20.4
Civil Engineering (CE)	32.9	29.6	21.9
Chemical Engineering (CH)	35.7	32.1	23.8
Computer Science and Information Technology (CS)	28.5	25.6	19.0

Chemistry (CY)	26.7	24.0	17.8
Electronics and Communication Engineering (EC)	28.8	25.9	19.2
Electrical Engineering (EE)	33.4	30.0	22.2
EY Ecology and Evolution	42.2	37.9	28.1
Geology (GG)	38.4	34.5	25.6
Geophysics	51.9	46.7	34.6
Instrumentation Engineering (IN)	34.6	31.1	23.0
Mathematics (MA)	25.0	22.5	16.6
Mechanical Engineering (ME)	34.0	30.6	22.6

Mining Engineering (MN)	32.7	29.4	21.8
Metallurgical Engineering (MT)	49.2	44.2	32.8
Petroleum Engineering (PE)	39.8	35.8	26.5
Physics (PH)	37.2	33.4	24.8
Production and Industrial Engineering (PI)	36.6	32.9	24.4
Statistics (ST)	25.0	22.5	16.6
Textile Engineering and Fibre Science (TF)	37.1	33.3	24.7
Engineering Sciences (XE)	26.0	23.4	17.3

Life Sciences (XL)	31.7	28.5	21.1

Candidate can check previous years' GATE cutoff for CS and IT in the table given below.

Year	General	OBC	SC/ST/PH
2019	29.5	26.6	19.7
2018	25	22.5	16.6
2017	25	22.5	16.6
2016	25	22.5	16.6
2015	25	22.5	16.67
2014	25	22.25	16.67

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