FACULTY OF MATHEMATICAL SCIENCES

Q. 1-How many departments come under the Faculty of Mathematical Sciences in University of Delhi?

Ans- There are four departments under the Faculty of Mathematical Sciences in University of Delhi:

- Department of Computer Science
- Department of Mathematics
- Department of Operational Research
- Department of Statistics

Department of Computer Science

Q. 2-What are the courses conducted by the Department of Computer Science in University of Delhi?

Ans-The courses conducted by the Department of Computer Science in University of Delhi is as follows:

- Master of Computer Applications (MCA)
- Master of Science (Computer Science)
- Ph. D (Computer Science)

Q. 3-What are the chances of placement under the Department of Computer Science in University of Delhi?

Ans. The department has a Placement Cell which invites leading companies from the IT Industry for Campus placement. The department has had an excellent track record of 100 % placement for several years.

Master of Computer Applications (M.C.A.)

Three-year Master of Computer Applications (M.C.A.) Programme at the Department of Computer Science, University of Delhi was started in 1982 and was among the first such programmes in India. Since then, it has been immensely popular and one of the most sought after M.C.A. courses in India. The department is proud of more than 700 alumni at important positions in Information Technology industry in India and abroad.

Q. 4-What is the eligibility criterion for M.C.A. in University of Delhi?

Ans- The eligibility criterion for M.C.A in University of Delhi is as follows:

- Any bachelor's degree from University of Delhi with at least one paper in Mathematical Sciences (Mathematics/Statistics/Operations Research/Computer Science) under annual mode/ at least two papers in Mathematical Sciences in semester mode of examination or an equivalent degree.
- The candidates who are appearing in the final year examination of the degree on the basis of which admission is sought are also eligible to apply.

Q. 5-What is the application fee for M.C.A. / M.Sc. (Computer Science) course in University of Delhi?

Ans- The application fee for M.C.A. /M.Sc. (Computer Science) course in University of Delhi is as follows:

- Rs.800 for General/OBC Category
- Rs.400 for SC/ST/PH Category

***Fee is subject to change.**

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Q. 6-What is the mode of payment for M.C.A. course in University of Delhi?

Ans-Students can pay the application amount through Demand Draft. Payment should be made by crossed Bank Draft in favor of "Registrar, University of Delhi" payable at New Delhi.

Q. 7-What is the admission procedure for M.C.A. in University of Delhi?

Ans- The admission to MCA course in University of Delhi is based on Admission Test and Interview. The final merit list shall be prepared according to following weightage:

- **Admission Test**: 80% weightage
- **Interview**: 20% weightage

Q. 8- Where shall a student contact if he/she is unable to collect the admission slip?

Ans- In case of non-receipt of the Admission Ticket for any reason, a request may be made to the Department of Computer Science with two copies of photograph along with application letter not earlier than three days prior to the date of the Entrance Test for issue of a duplicate admission ticket. The candidate shall be required to show the admission ticket at the time of the test. No candidate shall be admitted to the Examination Hall without the admission ticket.

Q. 9-What is the basis of interview call for M.C.A. in University of Delhi?

Ans- The number of students called for the Interview for M.C.A. in University of Delhi shall be maximum three times of the number of seats.

Q. 10-What is the weightage of entrance exam and interview for merit list?

Ans- The weightage of entrance exam and interview for merit list is as follows:

- **Admission Test**: 80% weightage
- **Interview**: 20% weightage

Q. 11-What is the program fee for M.C.A. in University of Delhi?

Ans- A program fee (course fee) of Rs.7000/- per semester shall be charged over and above the normal University fee.

***Fee is subject to change.**

Q. 12- What is the number of seats for M.C.A. course in University of Delhi?

Ans- The number of sanctioned seats for M.C.A. in University of Delhi is 46.

Note: Seats are subject to change by the University of Delhi.

Q. 13-What is the distribution of seats for M.C.A. course in University of Delhi?

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Ans- The distribution of seats for M.C.A. course in University of Delhi is as follows:

SC	15%
ST	7.5%
OBC	50.5%
GENERAL	27%

Note: Seats are subject to change by the University of Delhi.

Q. 14-Is there any provision of lateral entry in M.C.A. course in University of Delhi?

Ans- There is no direct admission to the second or third year of the M.CA. course in University of Delhi.

Q. 15-What is the syllabus of Entrance examination for M.C.A. course in University of Delhi?
Ans- Entrance Test shall have the following components: Mathematical Ability, Computer Science, Logical Reasoning, and English Comprehension.
The syllabus for entrance test for M.C.A. course in University of Delhi is given below:

- **Mathematics**: Mathematics at the level of B. Sc. Program of the University of Delhi.

- **Computer Science**: Introduction to Computer organization including data representation, Boolean circuits and their simplification, basics of combinational circuits; C - Programming: Data types including user defined data types, constants and variables, Operators and expressions, control structures, modularity: use of functions, scope, arrays.

- **Logical ability & English Comprehension**: Problem-solving using basic concepts of Arithmetic, Algebra, Geometry and Data Analysis. Correct usage of English Language.

Q. 16- When can one obtain the application form for M.C.A. course in University of Delhi?

Ans-The application forms for M.C.A. course can be obtained tentatively in the month of May and June, as per the notification of University of Delhi.

M. Sc (Computer Sciences)

Q. 18-What is the eligibility criterion for M. Sc. in Computer Science in University of Delhi?

Ans-The eligibility criteria for M. Sc. in Computer Science is as follows:

(i) **Examination Passed**: B.Sc. (Honours) Computer Science (10+2+3 scheme) from University of Delhi or any other University whose examination is recognized as equivalent to University of Delhi.
Minimum Percentage Required: 60% marks in aggregate.

(ii) **Examination Passed**: B.Sc. Applied Physical Sciences with Mathematics and Computer Science/B.Sc. (General) Mathematical Sciences (10+2+3 scheme) with Mathematics and Computer Science from University of Delhi or any other University whose examination is

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recognized as equivalent to University of Delhi. **Minimum Percentage Required**: 60% marks in the aggregate along with 60% marks in Computer Science and Mathematics separately.

(iii) **Examination Passed:** Any Bachelor's Degree (10+2+3 scheme) of University of Delhi with at least six papers in Computer Science and two papers in Mathematics under Semester system/at least three papers in Computer Science and one paper in Mathematics under Annual Examination System; or any other University whose examination is recognized as equivalent to University of Delhi.
Minimum Percentage Required: 60% marks in the aggregate with 60% marks in Computer Science and Mathematics separately.

Note: The candidates who are appearing in the final year examination of the degree on the basis of which admission is sought are also eligible to apply.

Q. 19-What is the application fee for M. Sc. in Computer Science course in University of Delhi?

Ans- The application fee for M. Sc. in Computer Science in University of Delhi is as follows:

M.Sc. (Computer Science)	Rs.800 for General/OBC Category
	Rs.400 for SC/ST/PH Category

***Fee is subject to change.**

Q. 20-What is the mode of payment for M. Sc. in Computer Science in University of Delhi?

Ans-Students can pay the application amount through Demand Draft. Payment should be made by crossed Bank Draft in favor of "Registrar, University of Delhi" payable at New Delhi.

Q. 21-What is the admission procedure for M. Sc. in Computer Science in University of Delhi?

Ans: (i) 50% of the seats are filled on the basis of merit in the current year B.Sc. (H) Computer Science Examinations of University of Delhi. Students with gap year shall not be considered. Only those students who have filled the Application form shall be considered under this category.
(ii)The admission for the remaining 50% seats in the M.Sc. Computer Science course is based on Admission Test which shall consist of two parts:

Part I: Objective type questions.
Part II: Comprehensive questions.

- Students with 40% marks in Part I shall qualify for Part II. A relaxation of 5% shall be provided to the candidates belonging to SC/ST Category.
- For preparing the final merit list 60% weightage shall be given to the score in the Admission test **(Part II)** and 40% weightage shall be given to the score of the qualifying examination (i.e. Bachelors level).
- The last date for submission of final year result for the purpose of merit list preparation shall be specified in the Bulletin of Information.
- In the event of any shortfall of admission **through Entrance Test, the remaining seats shall be filled from the merit list of the candidates seeking admission through direct quota reserved for B.Sc.(Honours) Computer Science students of the University of Delhi and vice versa.**

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- If a candidate is shortlisted in both the categories, he/she shall be admitted through the merit. The decision shall be taken at the time of admission only, and future withdrawals shall not change the category of a candidate already admitted.

Q. 22-What is the percentage of marks required for qualifying Part-II?

Ans- The percentage of marks required for qualifying Part-II is 40% marks in Part-I. A relaxation of 5% shall be provided to the candidates belonging to SC/ST Category.

Q.23-What are the criteria for merit list for M. Sc. in Computer Science in University of Delhi?

Ans- For preparing the final merit list 60% weightage shall be given to the score in the Admission test **(Part II)** and 40% weightage shall be given to the score of the qualifying examination (i.e. Bachelors level). The last date for submission of final year result for the purpose of merit list preparation shall be specified in the Bulletin of Information.

Q. 24-What is the condition for shortfall of seats in M. Sc. Computer Science in University of Delhi?

Ans- In the event of any shortfall of admission **through Entrance Test, the remaining seats shall be filled from the merit list of the candidates seeking admission through direct quota reserved for B.Sc.(Honours) Computer Science students of the University of Delhi and vice versa.** If a candidate is shortlisted in both the categories, he/she shall be admitted through the merit. The decision shall be taken at the time of admission only, and future withdrawals shall not change the category of a candidate already admitted.

Q. 25- What is the mode in which a student get admission if he/she is selected for both modes?

Ans- If a candidate is shortlisted in both the categories, he/she shall be admitted through the merit. The decision shall be taken at the time of admission only, and future withdrawals shall not change the category of a candidate already admitted.

Q 26- What is the total number of seats in M. Sc. in Computer Science in University of Delhi?
Ans- The number of sanctioned seats for M. Sc. in Computer Science in University of Delhi is 46.

Note: Seats are subject to change by the University of Delhi.

Q.27-What is the distribution of seats for M. Sc. in Computer Science in University of Delhi?

Ans- The distribution of seats for M. Sc. in Computer Science in University of Delhi is as follows:

SC	15%
ST	7.5%

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OBC	50.5%
GENERAL	27%

Note: Seats are subject to change by the University of Delhi.

Q.28 When can one obtain the application form for M. Sc. Computer Science in University of Delhi?
Ans. The application forms for M. Sc. Computer Science can be obtained tentatively in the month of May and June, as per the notification of University of Delhi.

Q.29-What is the syllabus of entrance examination for M. Sc. Computer Science in University of Delhi?
Ans- The syllabus of entrance examination for M. Sc. Computer Science is as follows:

Computer Science:
Discrete Structures: Sets, functions, relations, counting; generating functions, recurrence relations and their solutions; algorithmic complexity, growth of functions and asymptotic notations.

Programming, Data Structures and Algorithms: Data types, control structures, functions/ modules, object-oriented programming concepts: sub-typing, inheritance, classes and subclasses, etc. Basic data structures like stacks, linked list, queues, trees, binary search tree, AVL and B+ trees; sorting, searching, order statistics, graph algorithms, greedy algorithms and dynamic programming.

Computer System Architecture: Boolean algebra and computer arithmetic, flip-flops, design of combinational and sequential circuits, instruction formats, addressing modes, 18 interfacing peripheral devices, types of memory and their organization, interrupts and exceptions.

Operating Systems: Basic functionalities, multiprogramming, multiprocessing, multithreading, timesharing, real-time operating system; processor management, process synchronization, memory management, device management, file management, security and protection; case study: Linux.

Software Engineering: Software process models, requirement analysis, software specification, software testing, software project management techniques, quality assurance.

DBMS and File Structures: File organization techniques, database approach, data models, DBMS architecture, data independence, E-R model, relational data models, SQL, normalization and functional dependencies.
Computer Networks: ISO-OSI and TCP/IP models, basic concepts like transmission media, signal encoding, modulation techniques, multiplexing, error detection and correction; overview of LAN/ MAN/ WAN; data link, MAC, network, transport and application layer protocol features; network security.

Mathematics:
Algebra: Groups, subgroups, normal subgroups, cosets, Lagrange's theorem, rings and their properties, commutative rings, integral domains and fields, sub rings, ideals and their elementary properties. Vector space, subspace and its properties, linear independence and dependence of vectors, matrices, rank of a matrix, reduction to normal forms, linear homogeneous and non- homogeneous equations, Cayley- Hamilton theorem,

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characteristic roots and vectors. De Moivre's theorem, relation between roots and coefficient of nth degree equation, solution to cubic and biquadratic equation, transformation and equations.

Calculus:
Limit and continuity, differentiability of functions, successive differentiation, Leibnitz's theorem, partial differentiation, Eider's theorem on homogeneous functions, tangents and normal, asymptotes, singular points, curve tracing, reduction formulae, integration and properties of definite integrals, quadrature, rectification of curves, volumes and surfaces of solids of revolution.

Geometry: System of circles, parabola, ellipse and hyperbola, classification and tracing of curves of second degree, sphere, cones, cylinders and their properties.

Vector Calculus: Differentiation and partial differentiation of a vector function, derivative of sum, dot product and cross product, gradient, divergence and curl.

Differential Equations: Linear, homogeneous and bi-homogeneous equations, separable equations, first order higher degree equations, algebraic property of solutions, Wronskian- its properties and applications, linear homogeneous equations with constant coefficients, solution of second order differential equations. Linear non-homogeneous differential equations, the method of undetermined coefficients, Euler's equations, simultaneous differential equations and total differential equations.
Real Analysis: Neighborhoods, open and closed sets, limit points and Bolzano Weiestrass theorem, continuous functions, sequences and their properties, limit superior and limit inferior of a sequence, infinite series and their convergence. Rolle's 19 theorem, mean value theorem, Taylor's theorem, Taylor's series, Maclaurin's series, maxima and minima, indeterminate forms.

Probability and Statistics: Measures of dispersion and their properties, skewness and kurtosis, introduction to probability, theorems of total and compound probability, Bayes theorem random variables, and probability distributions and density functions, mathematical expectation, moment generating functions, cumulants and their relation with moments, binomial Poisson and normal distributions and their properties, correlation and regression, method of least squares, introduction to sampling and sampling distributions like Chi-Square, t and F distributions, test of significance based on t, Chi-square and F distributions.

English Comprehension:
Correct usage of English language and reading comprehension

Q.30-Is there any hostel facility for M.C.A. /M. Sc. in Computer Science students in University of Delhi?
Ans- Limited hostel accommodation is available for M.C.A. /M.Sc. students in the campus.

Q.31-Where can one contact for further clarification?

Ans- Candidates can contact at the following address:

- Department of Computer Science
  Faculty of Mathematical Sciences
  New Academic Block, University of Delhi
  Phone: - 27667591, 27667059, 27667725 Extn: 1336
  Fax:-27662553
  Email ID:- office.cs.du@gmail.com head@cs.du.ac.in
  Website: cs.du.ac.in

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