

## **Introduction to the MSCS Program:**

The Master of Science (MS) in Computer Science at the GAUS is an advanced graduate research degree program for technically minded students who aim to conduct research in computer science fundamentals.

Our master's degree is a full-time, two-year program that provides a comprehensive knowledge of coursework as well as a research component. It aims to strengthen students' understanding of how to construct computer programs, including the key technologies and skills needed for strong theoretical foundations and the practical ability to develop systems and products.

This course is particularly designed to give you an insight into different areas of computer science, which include computer security, machine learning, internet protocols, networks, artificial intelligence, advanced algorithms, Scientific computing, software technology, data science, theoretical computer science, as well as research methodology.

While studying with us, you can pursue careers at the frontline of modern software technologies in leading software houses, commercial sectors, or work at advanced technology companies. With specialization, you will also be prepared for a research career or continued studies toward a doctoral degree.

This degree will help you to understand and grasp deep knowledge of user experience and computer interactions, information security management, data mining, cognitive neural networks, object-oriented programming, and web-based information system developments.

Our computer science modules are indicative of a wide range of courses with the possibility to specialize in different subjects. The course structure offers a flexible mixture of core/compulsory and optional modules. Students may get an option to add a year to a research exchange program, which enhances their knowledge and helps them in the future.

## **Program Mission:**

The mission of the MSCS program is to provide high-quality education in computing that prepares students for professional/research careers and lifelong learning research/development in computational processes and systems. A student can pursue higher studies toward a PhD.

## **Eligibility Criteria for MSCS:**

Degree in a relevant subject, earned from a recognized university after 16 years of education with at least 60 % marks or a CGPA of at least 2.0 on a scale of 4.0.

The following core courses are recommended to be completed before entering the MSCS program.

1. Analysis of Algorithms
2. Assembly Language / Computer Architecture
3. Computer Networks
4. Computer Programming
5. Data Structures
6. Database Systems
7. Operating Systems
8. Software Engineering
9. Theory of Automata

A student selected for admission having a deficiency in the above-stated courses may be required to study a maximum of FOUR courses, which must be passed in the first two semesters. Deficiency courses shall be determined by the Graduate Student Committee before admitting the students.

The University may recommend deficiency courses after considering the educational background and knowledge of the candidate. The deficiency courses may be 6-9 credit hours recommended by the admission committee.

A student cannot register in MS courses unless all specified deficiency courses have been passed.

**Admission Test:**

- a) Students must pass a rigorous admission test as an eligibility condition for admission to MS programs, with a passing score of 50 %.
- b) Accept the GRE/HAT General/Equivalent tests, with a passing score of 50 %.

**Duration:**

The minimum duration for completing MSCS is 1.5 years. However, the HEC allows a maximum of 4 years to complete the MSCS degree.

**Credit Hours:**

Minimum credit hours are 32.

**Registration in “MS Thesis - I” is allowed provided the student has**

- Earned at least 18 credits.
- Passed the “Research Methodology” course; AND
- CGPA is equal to or more than 2.5.

**Award of Degree:**

For the award of an MScS degree, a student must have:

1. With Thesis:
  - Passed courses of 27 credit hours, including core courses, Fahm-e-Quran courses, and research methodology course + 6 credit hours of MS Thesis.
  - Obtained a CGPA of 2.5 or above.
2. Without Thesis:
  - Passed courses totaling at least 32 credit hours, including core courses and Fahm-e-Quran Courses
  - Obtained a CGPA of 2.5 or above.