Master of Science in Applied Mathematics and Computational Science (AMCS)

Department of Mathematics and Physics
School of Engineering and Physical Sciences
North South University

DESCRIPTION OF THE PROGRAM

The Master of Science in Applied Mathematics and Computational Science (MSc in AMCS) degree is intended to provide the student a working knowledge of several areas of applied mathematics, which may include a specific area of application, to prepare for a dynamic career in industry and academia. In addition to providing a solid conceptual foundation for the applications of mathematics, students will be prepared to complete a thesis in topics related to Applied Mathematics and Computational Science.

VISION OF THE PROGRAM OFFERING ENTITY

The Department of Mathematics and Physics (DMP) would like to transform into a full-fledged Department of Mathematical and Physical Sciences, which will offer eventually undergraduate majors in both Mathematics and Physics. DMP will also be a center of excellence for graduate and undergraduate research in Mathematical and Physical Sciences.

MISSION OF THE PROGRAM

- To educate the students to meet high standards of excellence in applied mathematics by offering comprehensive up-to-date education in the main areas of computational and applied mathematics
- To foster skilled applied mathematicians equipped with advanced computing knowledge and well-prepared for professional careers or PhD studies
- To create and disseminate progressive knowledge through applied research in different fields of applied and computational mathematics.

DURATION OF THE PROGRAM: The curriculum is semester based, 2 semesters a year. The degree must be completed in minimum one and a half (1.5) years to maximum three (3) years from the date of enrollment.

ADMISSION REQUIREMENTS

A 4-year bachelor in mathematics or applied mathematics, or equivalent degree in statistics, physics, applied physics, engineering, computer science & engineering, information & communication technology, and economics from an accredited public or private university in Bangladesh or abroad with a grade point average of at least 2.75 (in a scale of 4.0) or minimum of 2nd class in BSc-Hons/MSc.

- A 3-year bachelor in mathematics or applied mathematics, or equivalent degree in statistics, physics, applied physics, engineering, computer science & engineering, information & communication technology, and economics or any related areas from an accredited public or private university in Bangladesh or abroad with a grade point average of at least 2.75 (in a scale of 4.0) or minimum of 2nd class (55% marks) in BSc-Hons/MSc may be admitted on condition that at least 09 credits of remedial mathematics courses must be completed at NSU in order to be a regular student in the MS in AMCS program.
- Acceptable score in the NSU administered Admission Test or a score of 1100 in the Quantitative and Verbal part of GRE General Test.
- Two letters of recommendation (one from the host institute of bachelor degree).

TOTAL COURSE CREDIT

The MSc in AMCS degree requires successful completion of 40 credit hours to complete.
- **Coursework**: 34 credit hours of graduate-level of coursework
- **Graduate Thesis**: 6 credit hours of Graduate Thesis
- **Course Waive:** Maximum 9 credits waiver for students with substantial mathematical courses at Undergraduate levels

COURSES:

- Computational Linear Algebra with Lab,
- High Performance Parallel Computing with Lab,
- Advanced Partial Differential Equations: Modeling and Numeric,
- Advanced Numerical Methods & Computation with Lab,
- Advance Control Theory and Application,
- Computational Fluid Dynamics,
- Mathematical Modeling of Engineering Problems,
- Dynamical Systems and Chaos,
- Mathematics for Data Science and Machine Learning,
- Mathematical Control Theory
- Operations Research
- Numerical Analysis
- Financial Mathematics
- Applied Harmonic Analysis
- Essential of Advanced Mathematics -I & II
- Research Methodology in Mathematics Education
- Labs on Mathematical Research Tools

FINANCIAL BENIFITS:
- Three Post graduates merit-based NSU scholarship
- Graduate Teaching Assistantship/Research Assistantship
- Financial aid for Tuition fee waiver
- Maximum 9 credits waiver for students with substantial mathematical courses at Undergraduate levels

Short Information:

- ➢ Program Code: **58**
- ➢ Credit: **40**
- ➢ Admission Fee: **20,000**
- ➢ Caution Money: **10,000**
- ➢ Tuition Fee Per Credit: **4,500**
- ➢ Activities Fee: **4,500**
- ➢ Library Fee: **1,500**
- ➢ Computer Lab Fee: **3,000**