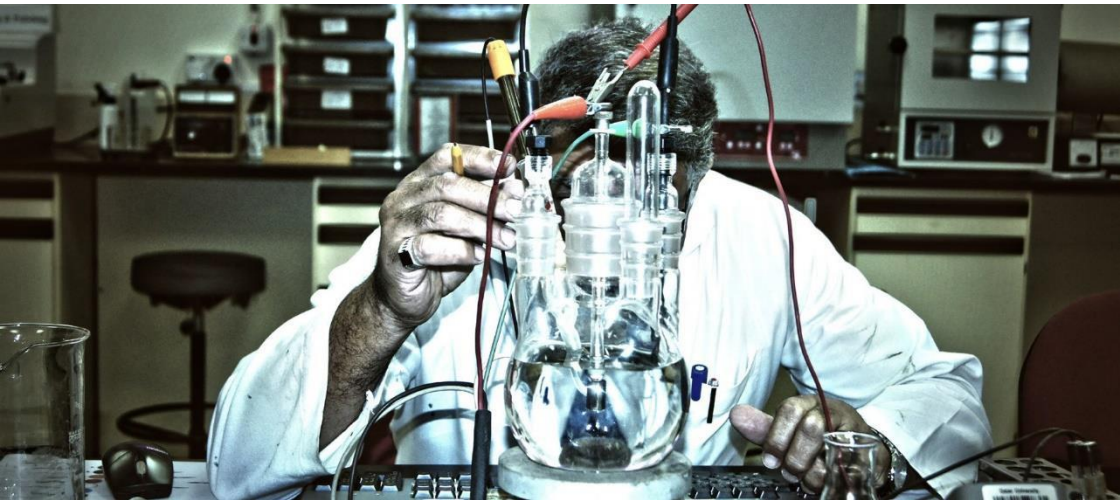




Master of Science in Materials Science and Technology



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Overview

Materials Science and Technology is a new interdisciplinary field needed in modern society. The program focuses on the understanding of scientific principles, analysis, and evaluation of the characteristics and behavior of materials according to their nano/microstructures, physical and chemical properties, thermodynamics of materials, transformation states and processes, compound materials, renewable energy materials, and research on industrial applications of specific materials.

This is the first MSc in Materials Science & Technology in Qatar, and it brings industry and some governmental institutes with academia to develop an essential postgraduate program that will serve Qatar's 2030 vision to develop a knowledge-based economy. The program delivers graduate education and research opportunities for students and professionals in 32 credit hours leading to the Master of Science in Materials Science and Technology.

The new graduate program helps in solving vital issues facing the world in energy, environment, sustainability, healthcare, and transportation.

Understanding the atomic and microscopic levels of materials through this program leads to the improvement of materials in several areas, such as new composites for more energy-efficient applications, better radiation protection, safer biomaterials, and greener materials for the environment.

Mission

The program provides students with advanced interdisciplinary knowledge, skills, and training necessary for successful careers in industry or academic roles that are focused on nanotechnology, new alloys, biomaterials, surface science, and the selection of materials to meet modern technology goals. Graduates will be well-trained to work collaboratively, conduct independent and multidisciplinary research, communicate effectively and recognize their role in solving local and global challenges while promoting sustainable practice.

Research Areas and Projects

In contrast to classical sciences and engineering programs, the Materials Science and Technology Program offers opportunities to perform research related to modern materials science and nanotechnology areas. The students can choose among a wide selection of faculty-mentored research projects and thereby reinforce experimental and theoretical knowledge in one of their fields of interest, including:

- ❖ Renewable Energy Materials
- ❖ Nano-composites
- ❖ Corrosion and Surface Sciences
- ❖ Thin Films and Semiconductors
- ❖ Nanoparticles and Nanocrystalline Materials
- ❖ Sustainable Materials
- ❖ Metallurgy

Qatar University, with its diverse departments and research centers, has a wide variety of facilities and equipment that serve the teaching, experimental laboratories, and research for the program.





Academic-Industrial partners

The Materials Science and Technology Program benefits from the support and local presence of leading international industrial groups and international academic research centers. These groups' experts participate actively in developing educational content with the goal of transmitting the most recent technical and scientific knowledge to students and of helping students develop the strategic and industrial vision, they will need for their future careers. Our partners from industries and organizations include:

- ❖ *Qatar Energy*
- ❖ *Qatar Steel*
- ❖ *QChem*
- ❖ *Qatalum*
- ❖ *QEERI*
- ❖ *QAPCO*
- ❖ *Qatar Gas*
- ❖ *Anti-Doping Laboratory Qatar*

As a part of their thesis project, students have the opportunity to be supported by internationally recognized universities and research institutes.

Total Credit Hours is 32 distributed as follows:

<i>Required Core Courses</i>			
Course Code	Course Name	Credit Hours	Pre-Requisite
MATS 511	Materials Principles and Characterization	3	None
MATS 512	Thermodynamics, Phase diagrams and Kinetics of Materials	3	None
MATS 513	Functional Properties of Materials	3	None
MATS 514	Research Methodology	3	None
MATS 580	Graduate Seminar	0	None
MATS 695	Thesis	9	Program's approval

Students following the thesis option track will take four elective courses with a total number of 11 credit hours from the following elective courses.

<i>Elective Courses</i>			
Course Code	Course Name	Credit Hours	Pre-Requisite
MATS 520	Mechanical Behavior of Materials	3	MATS 511
MATS 525	Sustainable Materials	3	None
MATS 530	Radiation Technology for Materials	3	None
MATS 535	Physical Metallurgy	3	MATS 512
MATS 540	Advanced Materials and Composites	3	MATS 511 & MATS 513
MATS 545	Polymers Science and Analysis	3	MATS 511
MATS 550	Polymer Processing	3	MATS 545
MATS 555	Metals and Minerals Processing	3	MATS 535
MATS 560	Materials Science Modelling	3	MATS 511
MATS 565	Surface Science and Corrosion	3	MATS 511
MATS 570	Nanotechnology and Advanced Characterization Methods	3	MATS 511
MATS 675	Special Topics	2	Program's approval

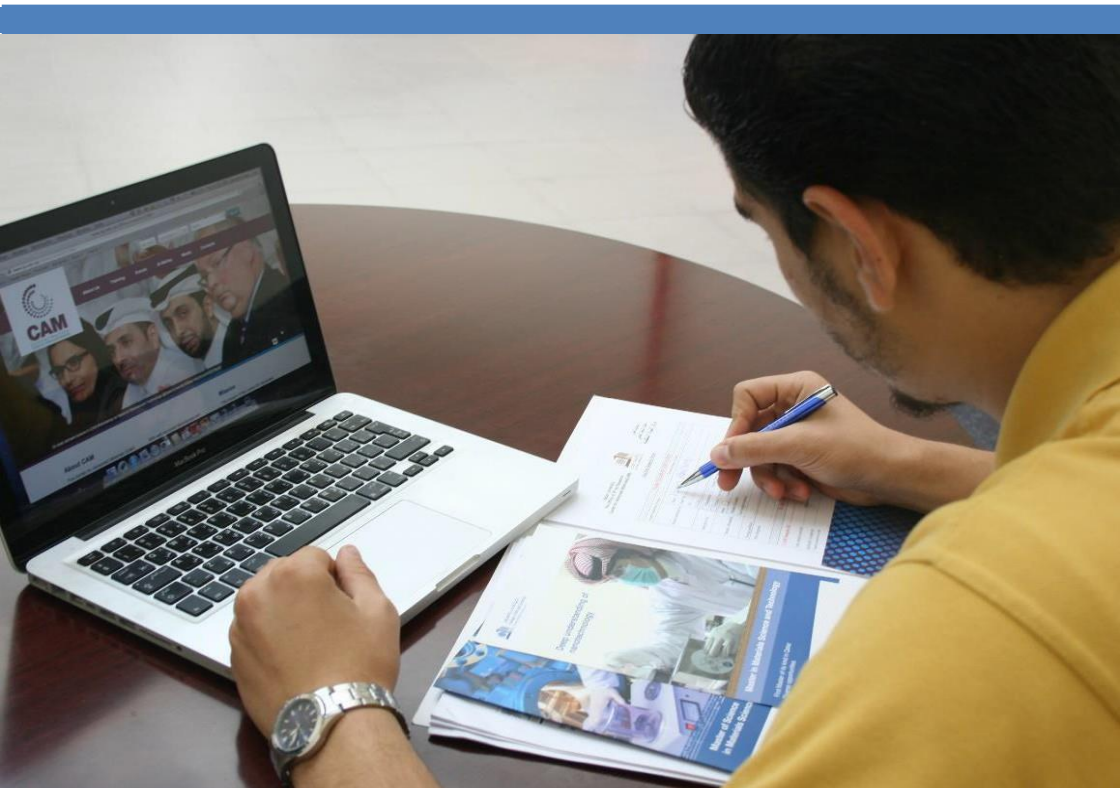


Admission and requirements

All applicants to the Master of Science in Materials Science and Technology Program who meet the following minimum criteria will be considered for admission to Qatar University:

1. Completed a Bachelor's degree in science, engineering, or related field with a minimum cumulative GPA of 2.80 out of 4.00 from a university or college accredited by an international accrediting association or by the Ministry of Higher Education or equivalent in that country, OR achieved a score of no less than 650 on the Quantitative part of the GRE exam, while there is no specified minimum for the Analytical part but the score will be part of the evaluation.
2. English proficiency is required as part of the admission process by satisfying either of the following:
(*) Earned a previous degree from an institution of higher education in a program where English was the language of instruction.
OR
(**) Achieved a minimum score of 520 on the paper-based TOEFL or equivalent test taken within 2 years of the start of the intended semester of admission.
3. A satisfactory statement of purpose of 500 words.
4. A satisfactory performance in the personal interview with the program admission committee.

A limited number of scholarships are available.





Course structure and curriculum can be found on:

<http://www.qu.edu.qa/artssciences/departments/materials-science/MSc-in-Materials-Science-and-Technology>

For any inquiries and further assistance, please contact us via:

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