

School of Materials Science and Engineering

BS/MS PROGRAM

Updated 5/18/2021

Current undergraduate students may participate in the BS/MS Program offered by the School. Georgia Tech undergraduate students may be admitted into the program after completing a minimum of 30 semester credit hours (and no more than 75 hours) at Georgia Tech and have a GPA of 3.5 or higher at time of application. Both the application fee and the GRE test score are waived. Students need to maintain at least a 3.0 GPA when receiving the B.S. degree in order to be converted into graduate student status and must continue immediately into the M.S. program in order to qualify for the 6 semester-hour "Graduate Course Credit" option, <http://catalog.gatech.edu/academics/undergraduate/credit-tests-scores/undergraduate-students-taking-graduate-courses/>.

Degree Requirements:

30 course hours required, of which 21 hours must be at 6xxx (9 hours can be at the 4xxx level):

- 18 hours of MSE Approved Electives (see list below)
- 12 hours of electives

The BS-MS Program allows eligible students to use up to six credit hours of graduate-level MSE courses (or MSE approved courses) for both BS and MS degrees. A maximum of 12 hours graduate level courses can be taken as a BS level student, but only 6 hours can double count towards the MS. No course below 4xxx is permitted for counting towards the M.S. degree.

Up to three credit hours of elective course work may be taken Pass/Fail, and applied toward the degree hour requirements.

MSE Approved Elective Courses (*not limited to*):

MSE 6010	Functional Materials
MSE 6105	Diffraction Studies
MSE 6110	Transmission Electron Microscopy
MSE 6120	Quantitative Characterization of Microstructures
MSE 6130	Surface Characterization
MSE 6140	Computational Material Science
MSE 6403	Kinetics of Phase Transformations
MSE 6404	Scattering Theory
MSE 6405	Advanced Nanomaterials
MSE 6406	Corrosion of Materials
MSE 6407	Biological Properties
MSE 6411	Thermodynamics
MSE 6510	Polymers for Electronic and Photonic Applications
MSE 6600	Advanced Polymer Processing
MSE 6602	Tensor Anal and Math Tech
MSE 6603	Natural Polymers
MSE 6750	Preparation & Reactions of Polymers
MSE 6751	Physical Chemistry of Polymers in Solutions
MSE 6752	Polymer Characterization
MSE 6755	Theoretical Chemistry of Polymers or Statistical Mechanics
MSE 6768	Polymer Structure, Physical Properties
MSE 6774	(MSE/BMED): Biomaterials: Structure and Function
MSE 6776	Integrated Low-Cost Microelectronics System Packaging
MSE 6777	Advanced Biomaterials

MSE 6795	Mathematical, Statistical, and Computational Techniques in Materials Science
MSE 6796	Structure-Property Relationships in Materials
MSE 7140	Impedance and Dielectric Spectroscopy
MSE 7210	Dislocation and Deformation Mechanics
MSE 7420	Solidification Processing
MSE 7771	Mechanics of Polymer Solids and Fluids
MSE 7772	Fundamentals of Fracture Mechanics
MSE 7774	Fatigue of Materials and Structures
MSE 8803A	Nanomaterials and Nanotechnology
MSE 8803C	Advanced X-ray Diffraction
MSE 8803 E	Materials for Energy Storage and Conversion
MSE 8803HG	Statistical Mechanics of a Heterogeneous Media
MSE 8803I	Fundamentals of Nanomaterials & Energy
MSE 8803M	Biomaterials Properties
MSE 8903	Special Problems
ME 6104	Computer-aided Design
ME 6124	Finite-Element Method: Theory & Practice
ISyE 6739	Basic Statistical Methods
BMED 6710	Rational Design of Biomaterials
CHEM 6172	Physical Methods in Inorganic Chemistry
CHEM 6181	Chemical Crystallography
CHEM 6283	Electroanalytical Chemistry
CHEM 6382	Computational Methods in Organic Chemistry and Biochemistry
CHEM 6752	Polymer Characterization
CHEM 6572	Macromolecular Structure
MATH 4347	Partial Differential Equations I
MATH 4348	Partial Differential Equations II
MATH 4255	Monte Carlo Methods

* *The majority of courses must be at 6000 level or above, but up to 9 hrs credit at 4000 level can be used.*

Additional requirements include:

- 3.5 GPA for admission into the BS/MS program
- Completed at least 30 credit hours (not more than 75) at Tech, as an undergraduate student and apply for admission before completing junior year. Applications from students with more than 75 earned hours are reviewed on a case-by-case basis.
- All application materials for the BS/MS are online. Visit the Graduate Studies web page and complete a **BS/MS Degree Program Form**, <https://grad.gatech.edu/bsms-degree-program-form>. Please note that **this form does not replace the official graduate application**. After you submit the Online Application for Graduation (OAG) for Undergraduate Students during your graduating semester, you will also go ahead and submit your official application to the MSE graduate program.
- 3.0 GPA at completion of Masters.
- A permit is required to register for 6000+ level courses. Permits can be obtained by emailing Tia Williams, tia.williams@mse.gatech.edu.
- Program of Study form due to the School office by the end of the BS degree coursework. You can access a writeable PDF version of the program of study at: <http://www.mse.gatech.edu/sites/default/files/BS-MS%20Program%20%28Updated%29.pdf>.