

New Program Proposal

Changes saved but not submitted

Viewing: : Bachelor's Degree (selected), COS/Quantum Science and Engineering, Accelerated MS

Last edit: 01/15/26 2:28 pm

Are you completing this form on someone else's behalf?

No

Effective Catalog: 2026-2027

Program Level: Undergraduate & Graduate (BAMs)

Program Type: Bachelor's/Accelerated Master's

Title: Bachelor's Degree (selected), COS/Quantum Science and Engineering, Accelerated MS

Registrar's Office

Use Only –

Program Start Term

Registrar/OAPI Use

Only – SACSCOC

Status

Concentration(s):

College/School: College of Science

Department / Academic Unit: College of Science

Jointly Owned Program? Yes

Is there an embedded degree as part of a program?

Participating Colleges

	College
1	College of Science

Participating Departments

	Department
1	College of Engineering and Computing

Justification

What: Preparing a BAM pathway for any COS bachelor of science major to enter into the proposed (currently under SCHEV review) Quantum Science and Engineering, MS. If the MS should not be approved by SCHEV, this BAM pathway would become inactive.

Why: While preparing the master's SCHEV proposal, Mason student interest was observed in a survey and we are hoping to provide current students who wish to enter this program a seamless entry.

A summary of the student interest survey distributed to junior and senior CEC and COS majors in October 2025:

- Number of COS or CEC juniors and seniors with interest in the Quantum Science and Engineering, MS: 47 of 62 responses
- Number of COS or CEC juniors and seniors who provided their email address in order to stay updated on the quantum program's progress: 45

Catalog Published Information

Accelerated

Description/Dual Overview

Degree

Description: Highly-qualified undergraduates may be admitted to the combined bachelor's and accelerated master's degree pathway program (accelerated master's) and obtain a Bachelor of Science degree in any College of Science major and a Master of Science in Quantum Science and Engineering through the Bachelor's Degree (selected), COS/Quantum Science and Engineering, Accelerated MS in an accelerated time-frame after satisfactory completion of a minimum of 138 credits.

See [AP.6.7 Bachelor's/Accelerated Master's Degree](#) for policies related to this program.

This type of accelerated option is offered jointly by undergraduate Bachelor of Science programs in the College of Science and the Quantum Science and Engineering, MS program jointly offered by the College of Science and the College of Engineering and Computing.

Students in an accelerated master's degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see [AP.6 Graduate Policies](#).

BAM Pathway Admission Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in [Graduate Admissions Policies](#) and [accelerated master's degree policies](#).

Students must major in a College of Science Bachelor of Science program and will be considered for admission into the BAM Pathway after completion of a minimum of 60 credits.

Students who are accepted into the BAM Pathway will be allowed to register for graduate level courses after successful completion of a minimum of 75 undergraduate credits and any pathway-specific course prerequisites.

Accelerated Master's Admission Requirements

Undergraduate students already admitted to the BAM Pathway will be admitted to the intended master's program if they have met the following criteria that will be verified:

- Submission of BAM Transition Form by stated deadline.
- Sufficient minimum 3.0 cumulative GPA for conferred undergraduate degree (which does not include any earned reserve graduate credits).
- Completion of approved advanced standing courses and any reserve graduate courses that have met the minimum grade requirement of B-.
- Successful completion of required minimum of 120 credits needed for undergraduate degree conferral (after exclusion any satisfactory reserve graduate credits earned).
- Successfully meeting George Mason's requirements for undergraduate degree conferral (graduation) and timely submitting the application for graduation.

Accelerated Pathway Requirements

To maintain the integrity and quality of both the undergraduate and graduate degree programs, undergraduate students interested in taking graduate courses must choose from the following:

Advanced Standing Courses

Students must complete at least 3 credits from the following list of graduate-level courses while in undergraduate status, up to a maximum of 12:

Select from the following options:

3-12

One 500-600 level specialized course from the following:

<u>ASTR 601</u>	Computer Simulation in Astronomy
<u>BINF 690</u>	Numerical Methods for Bioinformatics
<u>CS 583</u>	Analysis of Algorithms
<u>CS 630</u>	Advanced Algorithms
<u>CS 635</u>	Foundations of Parallel Computation
<u>CSI 690</u>	Numerical Methods
<u>ECE 511</u>	Computer Architecture
<u>ECE 547</u>	Applied Cryptography
<u>ECE 633</u>	Error Control Coding

<u>ECE 647</u>	Post-Quantum Cryptography
<u>GGS 579</u>	Remote Sensing
<u>MATH 625</u>	Numerical Linear Algebra
<u>MATH 685</u>	Numerical Analysis
<u>MATH 686</u>	Numerical Solutions of Differential Equations
<u>OR 541</u>	Operations Research: Deterministic Optimization
<u>OR 542</u>	Operations Research: Stochastic Models
<u>OR 646</u>	Stochastic Optimization
<u>PHYS 510</u>	Computational Physics I
<u>PHYS 613</u>	Computational Physics II

Remaining credits are selected from the following:

<u>QSE 500</u>	Ideas in Quantum Science and Technology
<u>QSE 501</u>	Mathematical Foundations of QSE
<u>QSE 502</u>	Programming Foundations of QSE
<u>QSE 505</u>	Classical and Quantum Information Theory
<u>QSE 520</u>	Applications of Quantum Technology
<u>QSE 570</u>	Quantum Computing System Design
or <u>ECE 570</u>	Quantum Computing System Design

Reserve Credit Courses

Students may complete up to 6 credits while in undergraduate student status, of graduate-level coursework from the list below that will only count toward the graduate degree program.

Select up to 6 credits of not previously completed courses from the following:

6

<u>QSE 500</u>	Ideas in Quantum Science and Technology
<u>QSE 501</u>	Mathematical Foundations of QSE
<u>QSE 502</u>	Programming Foundations of QSE
<u>QSE 511</u>	Quantum Algorithms
<u>QSE 520</u>	Applications of Quantum Technology
<u>QSE 570</u>	Quantum Computing System Design
or <u>ECE 570</u>	Quantum Computing System Design

For more detailed information on coursework and timeline requirements, see [AP.6.7 Bachelor's/Accelerated Master's Degree](#) and [AP.1.4.4 Graduate Course Enrollment by Undergraduates](#).

Program Outcomes

Have you reached out to the Libraries to determine whether there are adequate resources to support your program? If not, please email Meg Meiman, Associate University Librarian for Learning, Research, and Engagement at mmeiman2@gmu.edu.

OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

Additional Attachments

Reviewer Comments

Additional Comments

Is this course required of all students in this degree program?

%wi_required.eschtml%

Key: 1138