INTO MASON: SCIENCE GRADUATE PATHWAYS

Banner Code: IN-MS-P002

Requirements

Graduate International Pathways to master's degrees in the College of Science

INTO Mason provides nine Graduate International Pathways for international students to enter various graduate degrees in the College of Science (COS) (http://catalog.gmu.edu/colleges-schools/science/) at George Mason University. The pathways give students the academic foundation, essential language skills, and cultural knowledge to successfully move on to their master's degree programs. For most students, enrolling in a Graduate International Pathway will add one additional semester to their overall master's degree program.

The following are the available Graduate International Pathways at INTO Mason to degrees in the College of Science at GMU:

- Applied and Engineering Physics
- Bioinformatics and Computational Biology
- Earth Systems Science
- Environmental Science and Policy
- Forensic Science
- Geographic and Cartographic Sciences
- Mathematics

The following are the types of pathways available:

- **One Term pathways (Accelerated)**: These pathways lead students through their first semester of graduate school. Upon completion of all matriculation requirements, students will move on to their degree-seeking program often with several graduate credits completed as determined by the graduate degree program. Eight of the nine COS pathways have one-term options available.
- **Two Term pathways (Standard)**: These pathways lead students through their first semester of graduate school. Upon completion of all matriculation requirements, students will move on to their degree-seeking program often with several graduate credits completed as determined by the graduate degree program. All nine COS pathways have two-term options available.
- **Bridge pathway**: This pathway provides foundational coursework designed to substitute for an additional year of undergraduate academic coursework, to render students with three-year baccalaureate degrees eligible to move on to their graduate degree program. Students will often move on to their degree-seeking program with several graduate credits completed as determined by the graduate degree program.

INTO Mason Graduate Pathway Programs often require credit loads above the established 11-credit limit for non-degree students. These Pathways are built to provide additional language and cultural support to international and multilingual students seeking master's degrees via the Pathways. #This support is reflected in the additional courses required for Graduate Pathway students, which result in a curriculum that exceeds the university's Academic Load policies. These required additional courses include English for Academic Purposes and Cultural Transition courses along with classes in their future degree programs. This academic load has resulted in better graduation rates overall for INTO Mason students as compared to their directly admitted classmates and similar GPAs. Each program's requirement section indicates the semesters when an overload is required.

Graduate International Pathways are designed for international students who:

- Need further English language development. Students who require a moderate amount of English language support can enter all available International Pathways to strengthen their language proficiency and ensure their long-term academic success
- Fall short of meeting the minimum GPA or admission test score requirements
- Need to improve study skills for success in their chosen field of study
- Any or all of the above
- Require a fourth year of undergraduate study. Students who hold three-year baccalaureate degrees that are not formally evaluated as equivalent to a four-year U.S. bachelor's degree may enter many Graduate International Pathways. For these students, their pathway acts as a "bridge" enhancing their international educational background with academic coursework to meet the eligibility for admission to a GMU graduate degree program

Administered through INTO Mason (http://catalog.gmu.edu/international-programs-resources/into-mason/#text)in partnership with the academic units across the university, the courses in each Graduate International Pathway are taught by highly qualified Mason instructional faculty members and supported by International Pathways academic advisors.

Students enrolled in any Graduate International Pathway should review the program's student guidebook for specific details related to program requirements and expectations.

Program Requirements

Applied and Engineering Physics Graduate Pathway

The following grid is for the first semester of the standard, 2-semester pathway into the Master of Science in Applied and Engineering Physics degree:

Code	Title	Credits
Standard semester 1 of 2		
EAP 506	Graduate Communication in the Disciplines I	4
EAP 410	Language Support for International Students	2
INYO 504	Transitions for International Graduate Students	3
PHYS 502	Introduction to Quantum Mechanics and Atomic Physics	3
or PHYS 684	Quantum Mechanics I	
Total Credits		12

The following grid is for the second semester of the standard, 2-semester pathway into the Master of Science in Applied and Engineering Physics degree:

Code	Title	Credits
Standard semester 2 of 2		
EAP 507	Advanced Graduate Communication Across the Disciplines	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 508	Special Topics Content Support in the Disciplines	1
PHYS 513	Applied Electromagnetic Theory	3
or PHYS 685	Classical Electrodynamics I	
Total Credits		9

The following grid is for the single semester of the accelerated, 1-semester pathway into the Master of Science in Applied and Engineering Physics degree:

Code	Title	Credits
Accelerated semester 1 of 1		
EAP 508	Graduate Communication in the Disciplines III	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 504	Transitions for International Graduate Students	3
PHYS 502	Introduction to Quantum Mechanics and Atomic Physics	3
or PHYS 684	Quantum Mechanics I	
PHYS 705	Classical Mechanics	3
Total Credits		14

Bioinformatics and Computational Biology/Management Graduate Pathway

The following grid is for the first semester of the standard, 2-semester pathway into the Master of Science in Bioinformatics and Computational Biology / Management degree:

Code	Title	Credits
Standard semester 1 of 2		
EAP 506	Graduate Communication in the Disciplines I	4
EAP 410	Language Support for International Students	2
INYO 504	Transitions for International Graduate Students	3
BINF 631	Molecular Cell Biology for Bioinformatics	3
or BINF 630	Bioinformatics Methods	
Total Credits		12

The following grid is for the second semester of the standard, 2-semester pathway into the Master of Science in Bioinformatics and Computational Biology / Management degree:

Code	Title	Credits
Standard semester 2 of 2		
EAP 507	Advanced Graduate Communication Across the Disciplines	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 508	Special Topics Content Support in the Disciplines	1
BINF 631	Molecular Cell Biology for Bioinformatics	3
or BINF 630	Bioinformatics Methods	
Total Credits		9

The following grid is for the single semester of the accelerated, 1-semester pathway into the Master of Science in Bioinformatics and Computational Biology / Management degree:

Code	Title	Credits
Accelerated semester 1 of 1		
EAP 508	Graduate Communication in the Disciplines III	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 504	Transitions for International Graduate Students	3
BINF 631	Molecular Cell Biology for Bioinformatics	3
or BINF 634	Bioinformatics Programming	
BINF 630	Bioinformatics Methods	3
or BINF 633	Molecular Biotechnology	
Total Credits		14

Computational Science Graduate Pathway

The following grid is for the first semester of the standard, 2-semester pathway into the Master of Science in Computational Science degree:

Code	Title	Credits
Standard semester 1 of 2		
EAP 506	Graduate Communication in the Disciplines I	4
EAP 410	Language Support for International Students	2
INYO 504	Transitions for International Graduate Students	3
CSI 695	Scientific Databases	3
Total Credits		12

The following grid is for the second semester of the standard, 2-semester pathway into the Master of Science in Computational Science degree:

Code	Title	Credits
Standard semester 2 of 2		
EAP 507	Advanced Graduate Communication Across the Disciplines	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 508	Special Topics Content Support in the Disciplines	1
CSI 690	Numerical Methods	3
Total Credits		9

The following grid is for the single semester of the accelerated, 1-semester pathway into the Master of Science in Computational Science degree:

Code	Title	Credits
Accelerated semester 1 of 1		
EAP 508	Graduate Communication in the Disciplines III	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 504	Transitions for International Graduate Students	3
CSI 690	Numerical Methods	3
CSI 695	Scientific Databases	3
Total Credits		14

Earth Systems Science Graduate Pathway

The following grid is for the first semester of the standard, 2-semester pathway into the Master of Science in Earth Systems Science degree:

Code	Title	Credits
Standard semester 1 of 2		
EAP 506	Graduate Communication in the Disciplines I	4
EAP 410	Language Support for International Students	2
INYO 504	Transitions for International Graduate Students	3
GGS 553	Geographic Information Systems	3
or GGS 560	Quantitative Methods	
or GGS 579	Remote Sensing	
Total Credits		12

The following grid is for the second semester of the standard, 2-semester pathway into the Master of Science in Earth Systems Science degree:

Code	Title	Credits
Standard semester 2 of 2		
EAP 507	Advanced Graduate Communication Across the Disciplines	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 508	Special Topics Content Support in the Disciplines	1
GEOL 513	Hydrogeology	3
or GEOL 532	Paleoclimatology	
CLIM 512	Physical Oceanography	3
or GEOL 506	Soil Science	
Total Credits		12

The following grid is for the single semester of the accelerated, 1-semester pathway into the Master of Science in Earth Systems Science degree:

Code	Title	Credits
Accelerated semester 1 of 1		
EAP 508	Graduate Communication in the Disciplines III	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 504	Transitions for International Graduate Students	3
GGS 553	Geographic Information Systems	3
or GGS 560	Quantitative Methods	
or GGS 579	Remote Sensing	
GEOL 506	Soil Science	3
or GEOL 513	Hydrogeology	
or GEOL 532	Paleoclimatology	
or CLIM 512	Physical Oceanography	
Total Credits		14

Environmental Science and Policy Graduate Pathway

The following grid is for the first semester of the standard, 2-semester pathway into the Master of Science in Environmental Science and Policy degree:

Code	Title	Credits
Standard semester 1 of 2		
EAP 506	Graduate Communication in the Disciplines I	4
EAP 410	Language Support for International Students	2
INYO 504	Transitions for International Graduate Students	3
EVPP 506	Science of the Environment I	3
Total Credits		12

The following grid is for the second semester of the standard, 2-semester pathway into the Master of Science in Environmental Science and Policy degree:

Code	Title	Credits
Standard semester 2 of 2		
EAP 507	Advanced Graduate Communication Across the Disciplines	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 508	Special Topics Content Support in the Disciplines	1
EVPP 507	Science of the Environment II	3
Total Credits		9

The following grid is for the single semester of the accelerated, 1-semester pathway into the Master of Science in Environmental Science and Policy degree:

Code	Title	Credits
Accelerated semester 1 of 1		
EAP 508	Graduate Communication in the Disciplines III	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 504	Transitions for International Graduate Students	3
EVPP or PUAD course		3

EVPP or PUAD course	3
Total Credits	14

Forensic Science Graduate Pathway

The following grid is for the first semester of the standard, 2-semester pathway into the Master of Science in Forensic Science degree:

Code	Title	Credits
Standard semester 1 of 2		
EAP 506	Graduate Communication in the Disciplines I	4
EAP 410	Language Support for International Students	2
INYO 504	Transitions for International Graduate Students	3
FRSC 500	Introduction to Forensic Science	3
Total Credits		12

The following grid is for the second semester of the standard, 2-semester pathway into the Master of Science in Forensic Science degree:

Code	Title	Credits
Standard semester 2 of 2		
EAP 507	Advanced Graduate Communication Across the Disciplines	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 508	Special Topics Content Support in the Disciplines	1
FRSC 510	Basic Crime Analysis	3
FRSC 570	Trace and Physical Evidence Concepts	3
Total Credits		12

The following grid is for the single semester of the accelerated, 1-semester pathway into the Master of Science in Forensic Science degree:

Code	Title	Credits
Accelerated semester 1 of 1		
EAP 508	Graduate Communication in the Disciplines III	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 504	Transitions for International Graduate Students	3
FRSC 500	Introduction to Forensic Science	3
FRSC 510	Basic Crime Analysis	3
Total Credits		14

Geographic and Cartographic Sciences Graduate Pathway

The following grid is for the first semester of the standard, 2-semester pathway into the Master of Science in Geographic and Cartographic Sciences degree:

Code	Title	Credits
Standard semester 1 of 2		
EAP 506	Graduate Communication in the Disciplines I	4
EAP 410	Language Support for International Students	2
INYO 504	Transitions for International Graduate Students	3
GGS 551	Cartographic Design	3
or GGS 553	Geographic Information Systems	
or GGS 560	Quantitative Methods	
or GGS 579	Remote Sensing	
Total Credits		12

The following grid is for the second semester of the standard, 2-semester pathway into the Master of Science in Geographic and Cartographic Sciences degree:

Code	Title	Credits
Standard semester 2 of 2		
EAP 507	Advanced Graduate Communication Across the Disciplines	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 508	Special Topics Content Support in the Disciplines	1
Required Major Courses (student will take two of the following):		6
GGS 551	Cartographic Design	
or GGS 553	Geographic Information Systems	
or GGS 560	Quantitative Methods	
or GGS 579	Remote Sensing	
Total Credits		12

The following grid is for the single semester of the accelerated, 1-semester pathway into the Master of Science in Geographic and Cartographic Sciences degree:

Code	Title	Credits
Accelerated semester 1 of 1		
EAP 508	Graduate Communication in the Disciplines III	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 504	Transitions for International Graduate Students	3
Required Major Courses (student will take two of the following):		6
GGS 551	Cartographic Design	
or GGS 553	Geographic Information Systems	
or GGS 560	Quantitative Methods	

or GGS 579	Remote Sensing	
Total Credits		14

Mathematics Graduate Pathway

The following grid is for the first semester of the standard, 2-semester pathway into the Master of Science in Mathematics degree:

Code	Title	Credits
Standard semester 1 of 2		
EAP 506	Graduate Communication in the Disciplines I	4
EAP 410	Language Support for International Students	2
INYO 504	Transitions for International Graduate Students	3
MATH 315	Advanced Calculus I	3
or MATH 675	Linear Analysis	
Total Credits		12

The following grid is for the second semester of the standard, 2-semester pathway into the Master of Science in Mathematics degree:

Code	Title	Credits
Standard semester 2 of 2		
EAP 507	Advanced Graduate Communication Across the Disciplines	4
EAP 405	Special Topics in Advanced English for Academic Purposes	1
INYO 508	Special Topics Content Support in the Disciplines	1
MATH 321	Abstract Algebra	3
or MATH 621	Algebra I	
MATH 322	Advanced Linear Algebra	3
Total Credits		12