

CHEMISTRY, BS

Banner Code: SC-BS-CHEM

Academic Advising

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This program is approved by the American Chemical Society (<https://www.acs.org/content/acs/en.html>). Upon completion, students who choose either the BS in Chemistry with no concentration or with the Analytical Chemistry concentration are certified to the society. Students that have a keen interest in sustainability should choose the Environmental Chemistry concentration. Students planning professional careers in chemistry should choose this degree.

Teacher Licensure

Students who wish to become teachers and plan to seek teacher licensure should consider the following options:

- Chemistry, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Chemistry concentration)
- Secondary Education - Chemistry (6-12) Undergraduate Certificate (<http://catalog.gmu.edu/colleges-schools/education-human-development/school-education/secondary-education-chemistry-6-12-undergraduate-certificate/>)

Interested students should attend an information session early in their undergraduate career. For more information, visit the Graduate School of Education's website (<http://gse.gmu.edu/>).

Admissions & Policies

Admissions

University-wide admissions policies can be found in the Undergraduate Admissions Policies (<http://catalog.gmu.edu/admissions/undergraduate-policies/>) section of this catalog.

To apply for this program, please complete the George Mason University Admissions Application (<https://www2.gmu.edu/admissions-aid/apply-now/>).

Policies

Students must fulfill all Requirements for Bachelor's Degrees (<http://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-3-2>), including the Mason Core (<http://catalog.gmu.edu/mason-core/>).

CHEM 336 Physical Chemistry Lab I or CHEM 465 Biochemistry Lab will fulfill the writing intensive requirement for students majoring in chemistry.

Termination from the Major

To ensure the academic integrity of the Chemistry and Biochemistry undergraduate major program, students are expected to maintain a satisfactory level of academic performance.

No chemistry, math, or science course that is required for the major may be attempted more than three times. Students who do not successfully

complete such a course with a grade of C or better by the third attempt may be terminated from the major.

Students who have been terminated from the Chemistry major may not register for a chemistry course without the permission of the Department of Chemistry and Biochemistry.

A student may not declare a major in chemistry if the student has previously met the termination criteria for the major at any time, regardless of what the student's major was at the time the courses were taken.

Requirements

Degree Requirements

Total credits: minimum 120

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Students majoring in chemistry must complete the chemistry program requirements with a minimum GPA of 2.30 and present no more than two courses with a grade of 'D' (1.00) in CHEM coursework at graduation.

BS without Concentration

Students who do not select an optional concentration complete the curriculum requirements listed below.

Chemistry Courses

Code	Title	Credits
CHEM 211	General Chemistry I (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
CHEM 212	General Chemistry II (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
CHEM 213	General Chemistry Laboratory I (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
CHEM 214	General Chemistry Laboratory II (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
CHEM 313	Organic Chemistry I	3
CHEM 314	Organic Chemistry II	3
CHEM 315	Organic Chemistry Lab I	2
CHEM 318	Organic Chemistry Lab II	2
CHEM 321	Quantitative Chemical Analysis	4
CHEM 331	Physical Chemistry I	3
CHEM 332	Physical Chemistry II	3
CHEM 336	Physical Chemistry Lab I ¹	2
CHEM 337	Physical Chemistry Lab II	2
CHEM 422	Instrumental Methods of Chemical Analysis	3
CHEM 423	Instrumental Methods of Chemical Analysis Laboratory	2
CHEM 441	Properties and Bonding of Inorganic Compounds	3

CHEM 445	Inorganic Preparations and Techniques	2
CHEM 463	General Biochemistry I	4
Select 3 credits of chemistry electives (http://catalog.gmu.edu/courses/chem/) ²		3

In Depth Electives

Select one from the following:		3
CHEM 413	Synthetic and Mechanistic Organic Chemistry	
CHEM 427	Aquatic Environmental Chemistry	
CHEM 438	Atmospheric Chemistry	
CHEM 458	Chemical Oceanography	
CHEM 464	General Biochemistry II	
CHEM 467	The Chemistry of Enzyme-Catalyzed Reactions	
CHEM 468	Bioorganic Chemistry	
Total Credits		52

¹ Fulfills the writing intensive requirement.

² Any lecture, lab or research course(s)

Mathematics Courses

Code	Title	Credits
MATH 113	Analytic Geometry and Calculus I (Mason Core) (http://catalog.gmu.edu/mason-core/)	4
MATH 114	Analytic Geometry and Calculus II	4
MATH 213	Analytic Geometry and Calculus III	3
Total Credits		11

Physics Courses

Code	Title	Credits
PHYS 160	University Physics I (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
PHYS 161	University Physics I Laboratory (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
PHYS 260	University Physics II (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
PHYS 261	University Physics II Laboratory (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
Total Credits		8

Concentration in Environmental Chemistry (EVCH)

Students who choose this concentration will have a broad knowledge of chemistry and a firm foundation in the environmental sciences covering atmospheric, aquatic, and soil. The major prepares students to work in the public or private sector as environmental chemists as well as to pursue an advanced degree.

Chemistry Courses

Code	Title	Credits
CHEM 211	General Chemistry I (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
CHEM 213	General Chemistry Laboratory I (Mason Core) (http://catalog.gmu.edu/mason-core/)	1

CHEM 212	General Chemistry II (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
CHEM 214	General Chemistry Laboratory II (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
CHEM 313	Organic Chemistry I	3
CHEM 314	Organic Chemistry II	3
CHEM 315	Organic Chemistry Lab I	2
CHEM 318	Organic Chemistry Lab II	2
CHEM 321	Quantitative Chemical Analysis	4
CHEM 331	Physical Chemistry I	3
CHEM 332	Physical Chemistry II	3
CHEM 336	Physical Chemistry Lab I ¹	2
CHEM 337	Physical Chemistry Lab II	2
CHEM 422	Instrumental Methods of Chemical Analysis	3
CHEM 423	Instrumental Methods of Chemical Analysis Laboratory	2
CHEM 427	Aquatic Environmental Chemistry	3
CHEM 438	Atmospheric Chemistry	3
CHEM 441	Properties and Bonding of Inorganic Compounds	3
or CHEM 446	Bioinorganic Chemistry	
CHEM Elective (lecture or research course) (http://catalog.gmu.edu/courses/chem/)		3
Total Credits		49

¹ Fulfills the writing intensive requirement.

Physics Courses

Code	Title	Credits
Select one option:		8
Option One:		
PHYS 160	University Physics I (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 161	University Physics I Laboratory (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 260	University Physics II (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 261	University Physics II Laboratory (Mason Core) (http://catalog.gmu.edu/mason-core/)	
Option Two:		
PHYS 243	College Physics I (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 244	College Physics I Lab (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 245	College Physics II (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 246	College Physics II Lab (Mason Core) (http://catalog.gmu.edu/mason-core/)	
Total Credits		8

Mathematics Courses

Code	Title	Credits
MATH 113	Analytic Geometry and Calculus I (Mason Core) (http://catalog.gmu.edu/mason-core/)	4
MATH 114	Analytic Geometry and Calculus II	4
MATH 213 or STAT 250	Analytic Geometry and Calculus III Introductory Statistics I (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
Total Credits		11

Science Core Courses

Code	Title	Credits
GEOL 101	Introductory Geology I (Mason Core) (http://catalog.gmu.edu/mason-core/)	4
GEOL 306	Soil Science	3
EVPP 210 or BIOL 213	Environmental Biology: Molecules and Cells Cell Structure and Function (Mason Core) (http://catalog.gmu.edu/mason-core/)	4
Total Credits		11

Supporting Science Electives

Code	Title	Credits
Select two courses from the following: ¹		6-8
CHEM 458 or BIOL 309 or EVPP 309 or GEOL 309	Chemical Oceanography Introduction to Oceanography Introduction to Oceanography Introduction to Oceanography	
EVPP 301	Environmental Science: Biological Diversity and Ecosystems	
EVPP 445	Principles of Environmental Toxicology	
GEOL 305	Environmental Geology	
GEOL 313	Hydrogeology	
BIOL 305 & BIOL 306 or EVPP 305 & EVPP 306	Biology of Microorganisms and Biology of Microorganisms Laboratory Environmental Microbiology Essentials and Environmental Microbiology Essentials Laboratory	
GGS 302	Global Environmental Hazards	
Total Credits		6-8

¹ The discipline sequences may be interchanged only with approval by the program coordinator.

The remaining credits are fulfilled by Mason Core requirements or general electives.

Concentration in Analytical Chemistry (ANAC)

The Analytical Chemistry concentration is designed to introduce and train students in modern aspects of analytical chemistry. Students who choose this program will be well prepared to run sophisticated analytical instruments in industry and research laboratories and to pursue an advanced degree specializing in analytical chemistry.

Chemistry Courses

Code	Title	Credits
CHEM 211	General Chemistry I (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
CHEM 213	General Chemistry Laboratory I (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
CHEM 212	General Chemistry II (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
CHEM 214	General Chemistry Laboratory II (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
CHEM 313	Organic Chemistry I	3
CHEM 314	Organic Chemistry II	3
CHEM 315	Organic Chemistry Lab I	2
CHEM 318	Organic Chemistry Lab II	2
CHEM 321	Quantitative Chemical Analysis	4
CHEM 331	Physical Chemistry I	3
CHEM 332	Physical Chemistry II	3
CHEM 336	Physical Chemistry Lab I ¹	2
CHEM 337	Physical Chemistry Lab II	2
CHEM 422	Instrumental Methods of Chemical Analysis	3
CHEM 423	Instrumental Methods of Chemical Analysis Laboratory	2
CHEM 427 or CHEM 355 or CHEM 451 or CHEM 452	Aquatic Environmental Chemistry Undergraduate Research Special Projects in Chemistry Special Projects in Chemistry	3
CHEM 463	General Biochemistry I	4
CHEM 441	Properties and Bonding of Inorganic Compounds	3
CHEM 465 or CHEM 445	Biochemistry Lab Inorganic Preparations and Techniques	2
CHEM 424 or CHEM 425	Principles of Chemical Separation Electroanalytical Chemistry	3
Total Credits		52

¹ Fulfills the writing intensive requirement.

Physics Courses

Code	Title	Credits
PHYS 160	University Physics I (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
PHYS 161	University Physics I Laboratory (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
PHYS 260	University Physics II (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
PHYS 261	University Physics II Laboratory (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
Total Credits		8

Mathematics Courses

Code	Title	Credits
MATH 113	Analytic Geometry and Calculus I (Mason Core) (http://catalog.gmu.edu/mason-core/)	4
MATH 114	Analytic Geometry and Calculus II	4
MATH 213	Analytic Geometry and Calculus III	3
Total Credits		11

Supporting Science Electives

Code	Title	Credits
Select 6 credits from the following:		6
BENG 101 or STAT 250	Introduction to Bioengineering Introductory Statistics I (Mason Core) (http://catalog.gmu.edu/mason-core/)	
ECE 101 or CHEM 620	Introduction to Electrical and Computer Engineering Modern Instrumentation	
Total Credits		6

The remaining hours are used to fulfill the Mason Core requirements and general elective courses.

CDS 130 Computing for Scientists is required to fulfill the Mason Core IT requirement.

Concentration in Biochemistry (BC)

Students planning professional careers in biochemistry, the pharmaceutical industry, medicine, biotechnology, or related fields with a chemistry emphasis should choose this program instead of the Chemistry, BS without a concentration. This concentration provides students with a focus on biochemistry while retaining a strong chemistry foundation. Students are allowed to tailor the concentration to their interests with 9 credits of biology or chemistry elective credits.

Chemistry Courses

Code	Title	Credits
CHEM 211	General Chemistry I (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
CHEM 213	General Chemistry Laboratory I (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
CHEM 212	General Chemistry II (Mason Core) (http://catalog.gmu.edu/mason-core/)	3
CHEM 214	General Chemistry Laboratory II (Mason Core) (http://catalog.gmu.edu/mason-core/)	1
CHEM 313	Organic Chemistry I	3
CHEM 314	Organic Chemistry II	3
CHEM 315	Organic Chemistry Lab I	2
CHEM 318	Organic Chemistry Lab II	2
CHEM 321	Quantitative Chemical Analysis	4
CHEM 331	Physical Chemistry I	3
CHEM 336	Physical Chemistry Lab I ¹	2
CHEM 446	Bioinorganic Chemistry	3
CHEM 463	General Biochemistry I	4
CHEM 464	General Biochemistry II	3

CHEM 465	Biochemistry Lab ¹	2
Total Credits		39

¹ Fulfills the writing intensive requirement.

Mathematics Courses

Code	Title	Credits
MATH 113	Analytic Geometry and Calculus I (Mason Core) (http://catalog.gmu.edu/mason-core/)	4
MATH 114	Analytic Geometry and Calculus II	4
Total Credits		8

Physics Courses

Code	Title	Credits
Select one option:		8
Option One:		
PHYS 243	College Physics I (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 244	College Physics I Lab (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 245	College Physics II (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 246	College Physics II Lab (Mason Core) (http://catalog.gmu.edu/mason-core/)	
Option Two:		
PHYS 160	University Physics I (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 161	University Physics I Laboratory (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 260	University Physics II (Mason Core) (http://catalog.gmu.edu/mason-core/)	
PHYS 261	University Physics II Laboratory (Mason Core) (http://catalog.gmu.edu/mason-core/)	
Total Credits		8

Biology Courses

Code	Title	Credits
BIOL 213	Cell Structure and Function (Mason Core) (http://catalog.gmu.edu/mason-core/)	4
BIOL 305	Biology of Microorganisms	3
BIOL 306	Biology of Microorganisms Laboratory	1
Total Credits		8

Approved Science Electives

Code	Title	Credits
Select 9 credits of approved science electives chosen from CHEM or BIOL courses numbered 302-499 ¹		9
Total Credits		9

¹ Other science or math courses may be approved as electives, subject to prior approval of the undergraduate coordinator.

Mason Core and Elective Credits

In order to meet a minimum of 120 credits, this degree requires additional credits (specific credit counts by concentration are shown below), which may be applied toward any remaining Mason Core (<http://catalog.gmu.edu/mason-core/>) requirements (outlined below), Requirements for Bachelor's Degrees (<http://catalog.gmu.edu/policies/academic/undergraduate-policies/#ap-5-3-2>), and electives. Students are strongly encouraged to consult with their advisors to ensure that they fulfill all requirements.

- Without concentration: 49 credits
- Environmental concentration: 33-35 credits
- Analytical concentration: 43 credits
- Biochemistry concentration: 48 credits

Mason Core

Some Mason Core (<http://catalog.gmu.edu/mason-core/>) requirements may already be fulfilled by the major requirements listed above. Students are strongly encouraged to consult their advisors to ensure they fulfill all remaining Mason Core (<http://catalog.gmu.edu/mason-core/>) requirements.

Code	Title	Credits
Foundation Requirements		
	Written Communication (ENGH 101) (http://catalog.gmu.edu/mason-core/#written)	3
	Oral Communication (http://catalog.gmu.edu/mason-core/#oral)	3
	Quantitative Reasoning (http://catalog.gmu.edu/mason-core/#quantitative)	3
	Information Technology and Computing (http://catalog.gmu.edu/mason-core/#information-technology)	3
Exploration Requirements		
	Arts (http://catalog.gmu.edu/mason-core/#arts)	3
	Global Understanding (http://catalog.gmu.edu/mason-core/#global)	3
	Literature (http://catalog.gmu.edu/mason-core/#literature)	3
	Natural Science (http://catalog.gmu.edu/mason-core/#natural-science)	7
	Social and Behavioral Sciences (http://catalog.gmu.edu/mason-core/#social-behavioral-science)	3
	Western Civilization/World History (http://catalog.gmu.edu/mason-core/#western-civilization-world-history)	3
Integration Requirements		
	Written Communications (ENGH 302) (http://catalog.gmu.edu/mason-core/#written)	3
	Writing-Intensive (http://catalog.gmu.edu/mason-core/#wi) ¹	3
	Synthesis/Capstone (http://catalog.gmu.edu/mason-core/#synthesis-capstone) ²	3
Total Credits		40

¹ Most programs include the writing-intensive course designated for the major as part of the major requirements; this course is therefore not counted towards the total required for Mason Core.

² Minimum 3 credits required.

Honors

Honors in the Major

Chemistry majors who have completed prerequisites for CHEM 455 Honors Research in Chemistry and CHEM 456 Honors Research in Chemistry and have maintained an overall GPA of at least 3.00 in mathematics and science courses are eligible to enter the departmental honors program. To graduate with honors in chemistry, a student is required to maintain a minimum GPA of 3.00 in mathematics and science courses and successfully complete the two semesters of CHEM 455 Honors Research in Chemistry and CHEM 456 Honors Research in Chemistry with a minimum GPA of 3.50.

In order to apply for Chemistry Honors, please complete the application (<https://cos.gmu.edu/chemistry/wp-content/uploads/sites/7/2015/08/form-honors-program-application-2016.pdf>) and submit it to the undergraduate coordinator.

Accelerated Master's

Chemistry, BA or BS/Curriculum and Instruction, Accelerated MEd (Secondary Education Chemistry concentration)

Overview

Highly-qualified undergraduates may be admitted to the bachelor's/accelerated master's option and obtain a BA (<http://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-ba/>) or BS in Chemistry (degree without concentration) and an MEd in Curriculum and Instruction (<http://catalog.gmu.edu/colleges-schools/education-human-development/school-education/curriculum-instruction-med/>) (concentration in secondary education chemistry) in an accelerated time frame after completion of 149 credits. See AP.6.7 Bachelor's/Accelerated Master's Degree (<http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7>) for policies related to this program.

This accelerated option is offered jointly by the Department of Chemistry and Biochemistry (<http://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/>) and the Graduate School of Education (<http://catalog.gmu.edu/colleges-schools/education-human-development/school-education/>).

Students in an accelerated degree program must fulfill all university requirements for the master's degree. For policies governing all graduate degrees, see AP.6 Graduate Policies (<http://catalog.gmu.edu/policies/academic/graduate-policies/#text>).

Accelerated Option Requirements

Students must complete the following courses in their senior year.

Senior			
Fall Semester	Credits	Spring Semester	Credits
SEED 540	3	EDRD 619	3
SEED 573	3	SEED 673	3
	6		6

Total Credits 12

While undergraduate students, accelerated master's students are able to apply two of the courses listed above to both the bachelor's and master's degrees. These courses are considered advanced standing for the MEd. A minimum grade of B must be earned to be eligible to count as advanced standing. The other two courses are taken as reserve graduate credit and do not apply to the undergraduate degree. Early in their final undergraduate semester, students must submit the Bachelor's/Accelerated Master's Transition Form to the CEHD Admissions Office and specify which of the four courses are to be designated as advanced standing and reserve graduate credit.

Chemistry, BS/Chemistry, Accelerated MS Overview

This bachelor's/accelerated master's degree program allows academically strong undergraduates with a commitment to research to obtain both the Chemistry, BS and the Chemistry, MS (<http://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-ms/>) degrees within an accelerated timeframe. Upon completion of this 144 credit program, students will be exceptionally well prepared for entry into a professional school or a PhD program in chemistry or a related discipline. Students are eligible to enter this program and enroll in graduate courses after successfully completing 90 undergraduate credits, inclusive of prerequisites, toward the Chemistry, BS degree. This flexibility makes it possible for students to complete graduate coursework during their final year.

For more detailed information, see AP.6.7 Bachelor's/Accelerated Master's Degrees (<http://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7>). For policies governing all graduate degrees, see AP.6 Graduate Policies (<http://catalog.gmu.edu/policies/academic/graduate-policies/>).

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in the Graduate Admission Policies (<http://catalog.gmu.edu/admissions/graduate-policies/>) section of this catalog. Application information for this accelerated master's program can be found here (<https://www2.gmu.edu/admissions-aid/how-apply/accelerated-masters/>).

Successful applicants will have an overall undergraduate GPA of at least 3.00. Additionally, they will have completed 36 credits of CHEM courses with a GPA of at least 3.00.

Accelerated Option Requirements

At the beginning of the student's final undergraduate semester, students must submit a bachelor's/accelerated master's transition form (available from the Office of the University Registrar (<http://registrar.gmu.edu/>)) to the College of Science's Office of Academic and Student Affairs (<https://cos.gmu.edu/about/contact-us/>). Students must begin their

master's program in the semester immediately following conferral of the bachelor's degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework and should consult with their faculty advisor to coordinate their academic goals within the chemistry and biochemistry concentrations.

Reserve Graduate Credit

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree.

Bachelor's Degree (selected), Bioinformatics Management, Accelerated PSM

Overview

This degree option allows highly qualified George Mason University bachelor's students to earn a Bioinformatics Management, PSM (<https://catalog.gmu.edu/colleges-schools/science/systems-biology/bioinformatics-management-professional-science-masters/>) degree in less time than if they had first graduated with a BS degree and then applied to the PSM program sequentially.

Admission and Processing Requirements

Students in the Biology, BS (<https://catalog.gmu.edu/colleges-schools/science/biology/biology-bs/>); Chemistry, BS (<https://catalog.gmu.edu/colleges-schools/science/chemistry-biochemistry/chemistry-bs/>); Computational and Data Sciences, BS (<https://catalog.gmu.edu/colleges-schools/science/computational-data-sciences/computational-data-sciences-bs/>); Neuroscience, BS (<https://catalog.gmu.edu/colleges-schools/science/neuroscience-program/neuroscience-bs/>); or Physics, BS (<https://catalog.gmu.edu/colleges-schools/science/physics-astronomy/physics-bs/>) with an overall GPA of at least 3.00 in their last 60 credits are welcome to apply to the Bioinformatics Management, PSM (<http://catalog.gmu.edu/colleges-schools/science/systems-biology/bioinformatics-management-professional-science-masters/>) accelerated master's program. Applicants to this accelerated master's should have previously taken courses in molecular biology, computer science, calculus, physical chemistry, and statistics. Students with deficiencies in one or more of these areas may be required to take additional courses from the undergraduate curriculum.

The GRE requirement is waived for students accepted into this accelerated program.

By the beginning of the undergraduate student's senior year, they should submit a Graduate Application for Accelerated Master's Program form (obtained from the College of Science's Office of Academic and Student Affairs (<https://cos.gmu.edu/about/contact-us/>)).

By at least the beginning of their senior year, students should seek out the Bioinformatics Management, PSM (<https://catalog.gmu.edu/colleges-schools/science/systems-biology/bioinformatics-management-professional-science-masters/>) Program Director who will aid the student in choosing the appropriate graduate courses to take and help to prepare the student for graduate studies.

In their senior year, accelerated master's students must complete the two graduate courses indicated on their Accelerated Master's Program Application with a minimum grade of 3.00 in each course. They must maintain a minimum GPA of 3.00 in all coursework and in coursework applied to their major. In the semester specified on the application (around the completion and conferral of the undergraduate degree), students must submit the Bachelor's/Accelerated Master's Transition form (found on the Office of the University Registrar website (<http://registrar.gmu.edu/forms/>)) and will subsequently be admitted into graduate status.

Reserve Graduate Credits

Students admitted to this program may take graduate courses after completing 90 undergraduate credits, and up to 6 credits of appropriate graduate coursework may be used in partial satisfaction of the requirements for the undergraduate degree. If students earn at least a 3.00 GPA in these classes, they are granted advanced standing in the master's program and must then complete an additional 25 credits to receive the master's degree.

To apply these credits to the master's degree, students must request that the credits be moved from the undergraduate degree to the graduate degree using the Bachelor's/Accelerated Master's Transition form found on the Office of the University Registrar website (<http://registrar.gmu.edu/forms/>) (as noted above).

Students may take up to 6 additional approved graduate credits as reserve graduate credit. These credits do not apply to the undergraduate degree but will reduce the subsequent master's degree credits accordingly (e.g., with 6 credits counted towards undergraduate degree plus the maximum 6 reserve credits, the PSM could be completed with 19 post-bachelor's credits). The ability to take courses for reserve graduate credit is available to all high achieving undergraduates with the permission of the School of Systems Biology (<https://catalog.gmu.edu/colleges-schools/science/systems-biology/>).

Policies

For more detailed information on accelerated master's in general, see AP.6.7 Bachelor's/Accelerated Master's Degrees (<https://catalog.gmu.edu/policies/academic/graduate-policies/#ap-6-7>).

For policies governing all graduate programs, see AP.6 Graduate Policies (<https://catalog.gmu.edu/policies/academic/graduate-policies/>).