

# Program Change Request

Date Submitted: 09/28/21 11:36 am

Viewing: : **Physics, BS/Applied and Engineering Physics, Accelerated MS**

Last approved: 03/02/21 1:45 pm

Last edit: 10/25/21 12:43 pm

Changes proposed by: jbazaz

Catalog Pages Using this Program

[Applied and Engineering Physics, MS](#)  
[Physics, BS](#)

2022-2023  
Rationale for

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

No

Requestor:

Effective Catalog: 2022-2023

Program Level: Undergraduate & Graduate (BAMs)

Program Type: Bachelor's/Accelerated Master's

Degree Type:

Title: Physics, BS/Applied and Engineering Physics, Accelerated MS

Banner

Is this a retitling of an existing

Existing Program

Registrar/OAPI Use Only – SCHEV

Registrar’s Office Use Only – Program Start Term

Registrar/OAPI Use Only – SCHEV

Registrar/OAPI Use Only – SACSCOC Status

Concentration(s):

## In Workflow

1. Registrar-Programs:Workflow Review
2. PHYS UG Committee
3. PHYS GR Committee
4. PHYS Chair
5. SC Curriculum Committee
6. SC Associate Dean
7. Assoc Provost-Graduate
8. Assoc Provost-Undergraduate
9. Registrar-Programs

## Approval Path

1. 09/30/21 10:02 am  
Tory Sarro (vsarro): Approved for Registrar-Programs:Workflow Review
2. 10/25/21 1:43 pm  
Philip Rubin (prubin): Approved for PHYS UG Committee
3. 10/25/21 1:46 pm  
Ernest Barreto (ebarreto): Approved for PHYS GR Committee
4. 10/25/21 2:00 pm  
Paul So (paso): Approved for PHYS Chair

**INTO Major(s):**  
**Registrar/IRR Use**  
**Only –**  
**Concentration CIP**

**College/School:** College of Science

**Department /**  
**Academic Unit:** Physics & Astronomy

**Jointly Owned**  
**Program?** Yes

**Participating**  
**Colleges**

**Participating**  
**Departments**

**Justification**

What: Adding clarifying language about the 12 overlapping credits.  
 Why: It was noted that the sentence could be clearer, indicating that the 12 credits count toward both the undergraduate AND graduate degrees.

What: Removing 700-level course options and replacing them with <700-level options.  
 Why: UG students aren't permitted to take 700-level courses.

## History

1. Nov 17, 2017 by  
clmig-jwehrheim
2. Mar 2, 2021 by  
Jennifer Bazaz  
Gettys (jbazaz)

## Catalog Published Information

**Total Credits**

**Registrar's Office Use Only - Program Code:**

**Registrar/IRR Use**  
**Only – Program CIP**

**Admission**  
**Requirements:**

**Program-Specific**  
**Policies:**

**Degree Requirements:**

**Retroactive  
Requirement**

**Plan of Study:**

**Honors  
Information:**

Accelerated  
Description/Dual  
Degree  
Description:

## Physics, BS/Applied and Engineering Physics, Accelerated MS

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### Overview

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This bachelor's/accelerated master's degree program allows academically strong undergraduates with a commitment to research to obtain both the [Physics, BS](#) and the [Applied and Engineering Physics, MS](#) degrees within an accelerated timeframe. Upon completion of this 138 credit accelerated program, students will be exceptionally well prepared for entry into a professional school, or a physics doctoral program, or a related discipline's doctoral program.

Students are eligible to apply for this accelerated program once they have earned at least 60 undergraduate credits and can enroll in up to 18 credits of graduate coursework after successfully completing 75 undergraduate credits. This flexibility makes it possible for students to complete a bachelor's and a master's in five years.

For more detailed information, see [AP.6.7 Bachelor's/Accelerated Master's Degrees](#). For policies governing all graduate degrees, see [AP.6 Graduate Policies](#). For more information on undergraduates enrolling in graduate courses, see [AP.1.4.4 Graduate Course Enrollment by Undergraduates](#).

### Application Requirements

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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](#) section of this catalog.

Important application information and processes for this accelerated master's program can be found [here](#).

Additionally, interested applicants should submit a letter to the undergraduate physics coordinator requesting admission along with the aforementioned recommendation letter(s). Contact the physics undergraduate or graduate coordinator for further details.

Successful applicants will have earned 60 undergraduate credits and have an overall GPA of at least 3.00. Additionally, they will have completed 45 credits in physics-major coursework. The physics major GPA must be at least 3.50.

One or more recommendation letters from one or more research supervisors are also required.

Interested applicants should submit a letter to the undergraduate physics coordinator requesting admission along with the aforementioned recommendation letter(s). Contact the physics undergraduate or graduate coordinator for further details.

### Accelerated Option Requirements

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After the completion of 75 undergraduate credits, students may complete 3 to 12 credits of graduate coursework that can apply to both the undergraduate and graduate degrees.

In addition to applying to graduate from the undergraduate program, students in the accelerated program must submit a bachelor's/accelerated master's transition form (available from the [Office of the University Registrar](#)) to the [College of Science's](#)

[Office of Academic and Student Affairs](#) by the last day to add classes of their final undergraduate semester. Students should enroll for courses in the master's program in the fall or spring semester immediately following conferral of the bachelor's degree, but should contact an advisor if they would like to defer up to one semester.

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

## Reserve Graduate Credit

Accelerated master's students may also take up to 6 graduate credits as reserve graduate credits. These credits do not apply to the undergraduate degree, but will reduce the master's degree by up to 6 credits. With 12 graduate credits counted toward the undergraduate **and graduate degrees** ~~degree~~ plus the maximum 6 reserve **graduate** ~~graduate~~ credits, the credits necessary for the **graduate degree** ~~graduate degree~~ can be reduced by up to 18.

## Graduate Course Suggestions

The following list of suggested **courses, which may be taken while in undergraduate status,** ~~courses~~ is provided for general reference. To ensure an efficient route to graduation and post-graduation readiness, students are strongly encouraged to meet with an advisor before registering for graduate-level courses.

<a href="#">ASTR 601</a>	Computer Simulation in Astronomy	3
<a href="#">PHYS 502</a>	Introduction to Quantum Mechanics and Atomic Physics	3
<a href="#">PHYS 510</a>	Computational Physics I	3
<a href="#">PHYS 513</a>	Applied Electromagnetic Theory	3
<a href="#">PHYS 534</a>	Introduction to Quantum Computation and Quantum Information	3
<a href="#">PHYS 591</a>	Systems for Quantum Scientists	3
<a href="#">PHYS 613</a>	Computational Physics II	3
<a href="#">PHYS 620</a>	Continuum Mechanics	3
<a href="#">PHYS 683</a>	Mathematical Methods in Physics	3
<a href="#">PHYS 684</a>	Quantum Mechanics I	3
<a href="#">PHYS 685</a>	Classical Electrodynamics I	3
<del>PHYS 705</del>	<del>Classical Mechanics</del>	<del>3</del>
<del>PHYS 711</del>	<del>Statistical Mechanics</del>	<del>3</del>
<a href="#">PHYS 690</a>	Engineering Thermodynamics	3

INTO-Mason  
Requirements:

**College  
Requirements &  
Policies:**

**Department /  
Academic Unit  
Requirements &  
Policies:**

## **Program Outcomes**

### **Additional Program Information**

*This information is required by the Office of Accreditation and Program Integrity.*

**Courses offered via  
distance (if**

**Indicate whether  
students are able**

**What is the  
primary delivery  
format for the  
program?**

**Does any portion of this program occur off-campus?**

**Off-campus details:**

**Are you working with a vendor / other collaborators to offer your program?**

Please explain:

Related  
Departments

Could this program prepare students for any type of professional licensure, in Virginia or elsewhere?

Please explain:

### Additional SCHEV & SACSCOC Information

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Are you changing the total number of credits required for this program?

Are you changing the delivery format in any way (e.g adding an online option)?

Are you adding/removing a licensure option which was approved by SCHEV?

Will any portion of this program be offered at an off-campus location?

What off-campus location(s)? List all

What percentage of credits toward this program are offered at the off-campus location(s)?  
Please list percentages by site (i.e. 15% at Site A, 35% at Site B etc.)

Will this program change affect any specialized accreditation?

Is the content of the new program closely related to that of an existing approved program?

Which existing approved program(s)?

Is this new program considered to be "advancing the degree level of a currently approved program" (i.e. existing content is at lower degree level, new content is at the higher degree level)?

Which existing approved program(s)?

Is this new program considered to be "lowering the degree level of a currently approved program" (i.e. existing content is at higher degree level, new content is at the lower degree level)?

Which existing approved program(s)?

Does this change represent a repackaging of content in an existing approved degree/certificate program?

Which existing approved program(s)?

Percentage of total credits containing new course content, excluding gen ed courses for undergraduate programs. ("New content" means content that is not currently included in an existing approved degree/certificate program.) Please choose a percentage (i.e. 0%-100%)

### OAPI Use Only – Determination of SACSCOC Impact

Comments or Notes

### Green Leaf Program Designation

Is this a Green Leaf program?

Green Leaf Designation

*Sustainability-focused academic programs require at least one green leaf course. Either that course is itself sustainability-focused or else the program requires a set of sustainability-related courses with aggregated substance equivalent to a sustainability focused course.*

Relationship to Existing Courses

Relationship to Existing Programs

List sustainability-focused courses currently required in the degree

Sustainability-related academic programs either require at least one sustainability-related course or else offer any green leaf course as an option or elective.\*

List sustainability-related courses currently required in the degree

Does this program cover material which crosses into another department?

Impacted Departments



## Executive Summary

### Additional Comments

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