

# Course Change Request

A deleted record may not be edited and the course number may not be re-used until 5 years have passed since the course's inactivation.

## Course Deactivation Proposal

Date Submitted: 11/12/24 12:51 pm

Viewing: **PHYS 346 : Quarks to Strings**

Last approved: 10/26/23 6:02 am

Last edit: 11/12/24 12:51 pm

Changes proposed by: prubin

### Catalog Pages referencing this course

[Department of Physics and Astronomy](#)  
[Physics \(PHYS\)](#)

### Justification for deactivation

### In Workflow

1. **PHYS UG  
Committee**
2. **PHYS Chair**
3. **SC Curriculum  
Committee**
4. SC Assistant Dean
5. Assoc Provost-  
Undergraduate
6. Registrar-Courses
7. Banner

### Approval Path

1. 03/04/25 7:49 pm  
Philip Rubin  
(prubin): Approved  
for PHYS UG  
Committee
2. 03/05/25 3:41 pm  
Ernest Barreto  
(ebarreto):  
Approved for PHYS  
Chair

### History

1. Aug 25, 2017 by  
pchampan
2. Mar 29, 2018 by  
Philip Rubin  
(prubin)
3. Feb 22, 2019 by  
Gregory Craft  
(gcraft)

4. Oct 23, 2019 by Philip Rubin (prubin)
5. May 14, 2020 by Tory Sarro (vsarro)
6. Oct 26, 2023 by Deborah Mcgarrah (dmcgarra)

This capstone course has not been taught since 2019, its creator has retired, and it can't be modified to fit into the P & A curriculum.

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

No

Effective Term: Spring 2025

Subject Code: PHYS - Physics

Course Number: 346

Bundled Courses:

Is this course replacing another course? No

Equivalent Courses:

Catalog Title: Quarks to Strings

Banner Title: Quarks to Strings

Will section titles vary by semester? No

Credits: 3

Schedule Type: Lecture

Hours of Lecture or Seminar per week: 3

Repeatable: May be only taken once for credit, limited to 3 attempts (N3)

Max Allowable Credits:  
9

Default Grade Mode: Undergraduate Regular

Recommended Prerequisite(s):

**Recommended  
Corequisite(s):**

**Required  
Prerequisite(s) /  
Corequisite(s)  
(Updates only):**

PHYS 262 or PHYS 270 or PHYS 308

**Registrar's Office Use Only - Required Prerequisite(s)/Corequisite(s):**

And/Or	(	Course/Test Code	Min Grade/Score	Academic Level	)	Concurrency?
		PHYS 262	C	UG		
Or		PHYS 262	XS	UG		
Or		PHYS 270	C	UG		
Or		PHYS 308	C	UG		
Or		PHYS 308	XS	UG		

**Registration  
Restrictions  
(Updates only):**

**Registrar's Office Use Only - Registration Restrictions:**

- Field(s) of Study:
- Class(es):
- Level(s):
- Degree(s):
- School(s):

**Catalog  
Description:**

An non-technical introduction to the Standard Model of Elementary Particles and String Theory, in the context of the philosophy of science. Conceptual mastery will be demonstrated through writing assignments rather than calculations. Notes: This course does not satisfy elective-category requirements for the physics and astronomy majors.

**Justification:**

**Does this course cover material which  
crosses into another department?** No

**Learning Outcomes:**

**Will this course be scheduled as a cross-level cross listed section?**

**Attach Syllabus**

**Additional Attachments**

**Specialized Course****Categories:**

Mason Core

**Select the Mason Core Requirement the course is proposing to fulfill:**

**Foundation Courses:**

**Exploration Courses:**

**Integration****Courses:**

Mason Apex

Retired Category (Registrar's Office Use Only): Synthesis

## **Mason Apex**

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**Learning Objectives:**

**Upon completing a Mason Apex course, students will be able to:**

1. Integrate skills, abilities, theories, or methodologies gained across a Mason student's undergraduate education to explore complex issues in original ways.
2. Communicate effectively the results of the student's work with awareness of audience, purpose, and context using an appropriate modality (for example: written, oral, visual, material, embodied, multimodal).

**Describe the overall rationale for designating this course as Global Understanding Mason Core.**

**For each learning outcome, what assignments or activities will you give that allow students to demonstrate their competence on each outcome? Please confirm these are reflected in the attached syllabus or uploaded as additional documents as needed.**

## Synthesis

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**Course must meet learning outcomes 1 and 2:**

1. Communicate effectively in both oral and written forms, applying appropriate rhetorical standards (e.g., audience adaptation, language, argument, organization, evidence, etc.)
2. Using perspectives from two or more disciplines, connect issues in a given field to wider intellectual, community or societal concerns

**Course must meet one additional learning outcome:**

- 3a) Apply critical thinking skills to evaluate the quality, credibility and limitations of an argument or a solution using appropriate evidence or resources OR
- 3b) Apply critical thinking skills to judge the quality or value of an idea, work, or principle based on appropriate analytics and standards

**I affirm that I have attached the following using the syllabus and attachment buttons provided above: (see “?” for help with submission)**

Syllabus

Completed proposal worksheet

Assignments (if needed)

**Describe the overall rationale for designating this course as Synthesis Mason Core.**

previously approved

**For each learning outcome, what assignments or activities will you give that allow students to demonstrate their competence on each outcome? Please confirm these are reflected in the attached syllabus or uploaded as additional documents as needed.**

previously approved

## Writing Intensive:

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

**Additional  
Comments:**

~~Converting all Capstone/Synthesis courses to Mason Apex for the 2024-2025 catalog year Mason Core updates~~

**Reviewer**  
**Comments**

Key: 12535