

# Course Change Request

Date Submitted: 04/18/19 11:27 am

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

Last approved: 02/22/19 4:26 am

Last edit: 04/28/19 6:50 pm

Changes proposed by: prubin

Catalog Pages referencing this course: [Department of Physics and Astronomy](#)  
[Physics \(PHYS\)](#)

### In Workflow

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

Select modification type:  
Simple  
Substantial

### Approval Path

1. 05/15/19 1:03 pm  
Philip Rubin (prubin): Approved for PHYS UG Committee
2. 05/15/19 4:40 pm  
Paul So (paso): Approved for PHYS Chair

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

No

Effective Term: Fall 2019

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) / **PHYS 262 or PHYS 270 or PHYS 308**

### History

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

Corequisite(s)  
(Updates only):

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		

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:** Physics majors complete capstones, rather than a synthesis course. The introductory modern physics required for this course is covered in PHYS 262, PHYS 170, and PHYS 308. Physics major no longer take PHYS 262.

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

**Learning Outcomes:**

**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:** Synthesis

### 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)**

**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

**Additional  
Comments:**

**Reviewer  
Comments**

Key: 12535