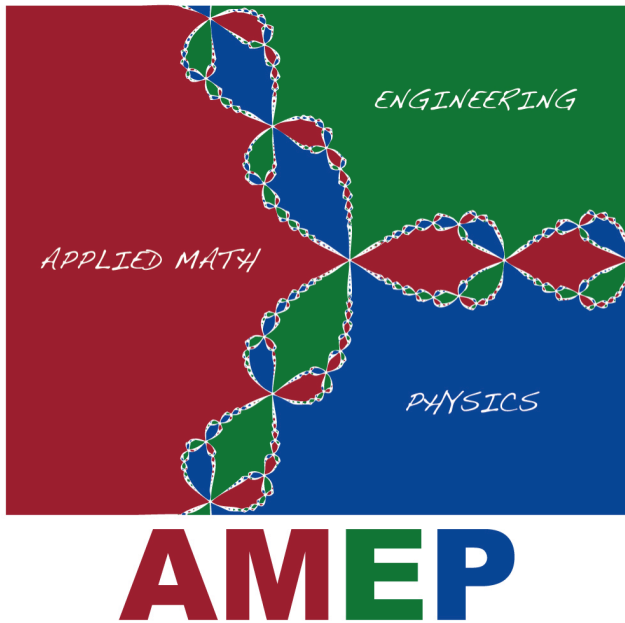




# AMEP Undergraduate Degree Program



**Applied  
Mathematics  
Engineering  
Physics**

AMEP is an *interdisciplinary* Bachelor of Science degree in the College of Letters & Science that requires 21 credits in the College of Engineering.

## AMEP at a glance

**MATHEMATICS**  
18 credits beyond Calculus

**PHYSICS**  
28 credits

**ENGINEERING**  
21 credits  
Intermediate/advanced

**HUMANITIES/SOCIAL SCIENCES**  
12 credits

- *Three faculty advisors:* one each in Applied Mathematics, Physics, and Engineering
- Strong Physical Sciences Foundations for continually evolving Science and Technology
- Integrated Math, Physics and Engineering education
- Broad and flexible array of courses to allow you to discover and pursue your interests
- AMEP Leadership Prize
- AMEP Lab available for undergraduate research projects
- Perfect for students with broad interests in Math, Physics and Engineering
- AMEP strives for an optimum balance of breadth and depth in the physical sciences within the confines of a 4 year degree
- Recommended Core Courses:
  - Calculus (Math 221, 222, 234)
  - Physics 247, 248, 249
  - Math 320, 321, 322
  - Physics 311, 322, 415
  - Chem 109 (or 103 and 104)
- Students should begin with Calculus (Math 222 or beyond) and Physics 247 (or 207) in their first semester

## Who?

- AMEP is an honors-level program for students with a strong interest and background in the mathematical and physical sciences. An AMEP freshman will have scored a 4 or 5 on the AP Calculus AB exam and thus placed into Math 222. Two semesters of Calculus with a 4 or 5 on the AP Calculus BC exam and placement in Math 234 or beyond is preferable.

## How?

- Register for Math 222 (Calc II) or Math 234 (Multivariable Calc) or [Math 320](#) as appropriate depending on your calculus background. The honors level version of Math320 designated with a (!) is recommended. That is usually lecture 3 and has been taught by AMEP advisor, [Prof. Spagnolie](#)  
[http://www.math.wisc.edu/~spagnolie/Courses/MATH320!/?](http://www.math.wisc.edu/~spagnolie/Courses/MATH320!/)
- Register for [Physics 247](#) as recommended for AMEP and Physics and Astronomy Majors  
<http://www.physics.wisc.edu/undergrads/fall>
- Declare AMEP degree *in early Fall* by visiting with an AMEP Math advisor (listed on AMEP webpage). The AMEP program is directed and administered by several of the physical mathematicians in the UW Mathematics department in coordination with faculty in the Physics and Engineering departments.

## Why?

- AMEP students love math, physics, engineering, science and technology. They do not want to be boxed in. They are driven to challenge themselves. They are entrepreneurial. They want to learn not only about *black holes*, and the *polar vortex*, and *plasma physics*, but also how to *build cool apps*, design the *hyperloop*, the next generation of *space rockets* or use math and physics for *computational design and testing of new drugs or materials*.
- AMEP students see how math, physics and engineering are distinct *and* interconnected.
- Alumni credit AMEP with their career success, stressing that the *integrated program is greater than the sum of its parts*'. AMEP graduates benefit enormously from the interdisciplinary and flexible program not only because of the strong academics but also because of their ability to collaborate with various groups with distinct cultures.
- AMEP graduates go on to careers in a variety of tech industries including the *aerospace, bioscience, and computer industries*, many also pursue graduate degrees in *applied math, math, physics, medical physics or engineering*. Some have gone to law school specializing in patent and intellectual property law. Others have founded their own company.
- A 2015 UW program review characterized AMEP as *'an outstanding exemplar of a true interdisciplinary STEM program'*.