

ASSESSMENT REPORT ON APPLIED MATHEMATICS, ENGINEERING AND PHYSICS (AMEP) DEGREE PROGRAM

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1. Introduction. AMEP is a very small L&S Bachelor's program which provides students with an in-depth preparation in the Physical Sciences. The requirements are to complete a coherent and advanced sequence of courses in Mathematics, Physics and a focus area of Engineering. This requirement totals about 80 credits divided approximately 30,30,20 respectively in Mathematics, Physics and Engineering. In order to accomplish this, AMEP majors have different breadth requirements than other L&S students. In addition it is the only L&S major that requires a substantial number of Engineering credits. Most AMEP graduates continue to graduate school in Physics, Engineering or Applied Mathematics. In fact the major is probably the best undergraduate option available at the UW-Madison for students interested in graduate school in these disciplines. Every year some of our students are granted admission to top graduate schools.

AMEP has no courses or faculty of its own. The program is administered by the Department of Mathematics where the AMEP coordinator is a committee assignment. There is also some staff support from the Undergraduate Program Assistant in the department. Each AMEP student has 3 advisors: a main advisor in Mathematics, a Physics advisor and an advisor in their focus area of Engineering.

Table I. Degrees Conferred in AMEP

Year	Degrees Conferred	GPA
AY 03-04	5	3.4
AY 04-05	2	2.9
AY 05-06	3	3.2

2. Discussion. AMEP is a challenging major that serves a small number of extremely talented students interested in the Physical Sciences. The students appreciate that they are able to focus their energy on Science and Mathematics courses. Although most AMEP students are probably more qualified for the Engineering workforce than their peers in Engineering, they are probably at a slight disadvantage in the job market since AMEP does not have the recognition of Engineering degrees. Therefore, in its present form, AMEP remains mainly a preparation for graduate school. We have not had exit surveys in the past and we will implement them in 2006-2007.

To increase cohesion and a sense of community we organize every semester a get together and from time to time (usually upon request from the students) a faculty member associated to AMEP may offer a 1 credit undergraduate seminar course.

Information about the program probably does not reach all students who would benefit from it, although the number of students that can succeed in this type of program is limited. There have been discussions amongst AMEP advisors that the program could expand into the Biological Sciences. With the recent explosion of mathematical and computational biology comes a growing niche for undergraduates with strong Mathematics, Physics, Chemistry and Biology backgrounds. We believe the AMEP model would be ideal for this. However, any increase in the size/scope of the program would require university resources, primarily as faculty and staff support.