

Applied B.S. Mathematics Majors

Description of the Cognate Requirement

In addition to the mathematics courses required for the B.S. in Applied Mathematics, students choosing this major are required to develop some expertise in an area in which mathematics is applied, or at least has the potential for application. Therefore, three cognate courses, selected by the student with the approval of a departmental advisor, are required. Usually these courses would be in a single area, but the program of study may be interdisciplinary. The following areas of application have been approved by the Mathematics Department: biology, chemistry, computer science, earth science, economics, and physics. Another area of application or an interdisciplinary program may be chosen in consultation with the student's academic advisor and the department chair, as long as the overall goals of the cognate requirement are satisfied. Additional elective courses in mathematics and the area of application should be chosen in consultation with a departmental advisor and can be selected to further career or graduate school objectives.

Guidelines:

1. Three courses are required to satisfy the cognate requirement.
2. One of these courses may also be used to satisfy an All-University or LEP Requirement.
3. One of these courses must be at the post-introductory level (at least 200 level), preferably one that involves the application of mathematics. See sample cognate programs listed below.
4. In order to apply chosen cognate courses to their degree evaluation, students must see the department chairperson. Thus, it is important for students to consult with the chairperson if they are unsure about whether a set of courses will count towards the cognate requirement.

Sample cognate requirements: The list of courses shown below is not meant to be exhaustive, but rather an example of the types of courses that the department has approved for the cognate requirement.

| | |
|--|--|
| <p>Biology: BIO 102 and 103 (or any other choice of 6 credits in introductory biology), and BIO 320 (also requires CHE 120 as a prerequisite)</p> | <p>Economics and Finance: ECO 100 and 101, and any one of ECO 310, ECO 321, ECO 375, FIN 300, FIN 346</p> |
| <p>Chemistry: CHE 120 and 121, and CHE 370</p> | <p>Earth Science: ESC 200 and either PHY 210 or 230, and ESC 210</p> |
| <p>Computer Science: CSC 152 and 153, and any one of CSC 212, 355, 370, 375</p> | <p>Physics: PHY 230 and 231, and any one of PHY 309, 340, 355, 400, 406, 410, 430</p> |