**2009 Mathematics & CS Report**

**Step 1: Department/Program Mission (Due September 15, 2009)**

    Through excellence in teaching and advising, our dedicated faculty prepare students in mathematics and computer science for meaningful careers, advanced study, and a passion for learning. Individual attention, small classes, departmental activities, and a state-of-the-art facility foster a vibrant scholarly community. Distinguished faculties, active as peer-reviewed scholars, provide students with innovative teaching and quality research opportunities. Our modern curriculum emphasizes modeling, problem solving, logic, quantitative skills, critical thinking, abstraction, and rigor. Regular dialog with other disciplines shapes relevant courses for all students, regardless of major. Interdisciplinary connections and applications are emphasized in our courses and in the rich liberal arts tradition of Albion College.

**Step 2: List goals/outcomes (Due September 15, 2009)**

1. Continuous mathematics: Students will demonstrate proficiency in calculus of functions of one and several variables, including the application of this material.
2. Discrete mathematics: Students will demonstrate proficiency in the mathematics of the integers and related sets.
3. Abstract mathematics: Students will demonstrate proficiency in proof-writing skills and facility with abstract mathematical ideas.
4. Applied mathematics: Students will demonstrate proficiency in the applications of mathematics to at least one other area of study.
5. Mathematical communication: Students will demonstrate proficiency in written and spoken communication of mathematical ideas.
6. Computational literacy: Students will demonstrate basic familiarity with the tools of computer programming in at least one high-level programming language.

**Step 3: Identify program components (Due September 15, 2009)**

Courses identified as addressing assessment goals:

1. Mathematics 141, 143, 245, 247, 331.
2. Mathematics 236, 239, 335.
3. Mathematics 236, 239, 309, 326, 331, 333, 335, 342, 370.
4. Mathematics 247, 309, 310, 316, 326, 360, 370, 380.
5. Mathematics 299, 399.
6. Computer Science 171.

    The majority of the DMCS’s dedicated assessment activity is concentrated in the required ¼-unit courses Mathematics/CS 299 and 399: Colloquium I and II.  In these courses, students attend weekly talks given by Albion faculty, visitors from outside the Albion community, and Albion students.  For most of these talks, students prepare a written summary of the topic.  In 399, students also prepare and present a talk of their own on a mathematical topic of interest to them.  These activities represent our efforts to assess our students against assessment goal #5.
    399 students also take the Major Field Test in mathematics–this is intended as assessment of the mathematics program, not the students.

**Step 4: Select methods/data sources and instruments (Due September 15, 2009)**

    In mathematics, we have the advantage that the undergraduate curriculum is very standardized across colleges and universities, and thus we can be certain that the courses we offer already conform to the norms of our profession.  With that in mind, scores on exams or on selected exam questions, as well as course grades, are the obvious and accepted vehicle for determining mastery of knowledge in the first four and the sixth areas of attention.
    Moreover, this standard mathematics curriculum possesses a rigid and necessary prerequisite structure in which some obvious means of assessment can be created.  Toward that end, the DMCS plans to develop a web form that each professor fills out for each class at the end of the semester.  In this form, the faculty member will describe what was covered, what obstacles were present, how they think incoming students could have been better prepared, and what did not go as well as planned.   These data will be made available to the next instructor for use in planning their courses.  Over time, a given instructor will be able to see the outcomes of prerequisite courses and the utility of what they taught to students’ later courses in which their course was a prerequisite.

**Step 5: Analyze and interpret the data (Due October 1, 2009 with preliminary data; due November 2, 2009 with final data for this assessment cycle)**

1. Based on results from the December 2008 administration of the MFT, our majors are not getting the linear algebra they need early enough in their Albion career.  We are modifying our curriculum for majors and reviewing our willingness to waive the 236 prerequisite for 335 to address this concern.  (We do not yet have results from the May 2009 MFT.)

**Step 6: How will the data collected be used for decision-making, strategic planning, etc. (Due October 1, 2009 with preliminary data; due November 2, 2009 with final data for this assessment cycle)**

*NOTE:You will need to submit a summary report of your findings to the Assessment Committee for review. In that report, please include details of how the data will be used, any program changes that will be made (or not made). Questions to ask yourself/to include in the report are as follows:*

* *How, exactly, will your data be used to help with program planning and improvement?*
* *Will your program form a committee to review assessment findings, and make recommendations for change or improvement in a timely manner?*
* *Will your entire department convene to discuss assessment results and program changes?*
* *Who will make formal recommendations for curricular or other changes—the chair/head? The committee?*

(enter Step 6 here)