GER Course Documentation: MA 103

Course Justification:

Proposed Revisions with Reasons:
The proposed revision is the creation of new learning outcomes and means of assessing those outcomes to meet the new GER objectives as set forth by the CUE.

Enrollment for the Past 5 years:

Resources Statement:
N/A

Consultation with other Departments:
N/A

GER Course Documentation:
Objectives for General Education Requirements in the Mathematical Sciences:

Each course in mathematical sciences will provide instruction and guidance that help students to:

1. Improve and refine mathematical problem-solving abilities; and
2. develop logical reasoning skills.

Course Learning Outcomes: MA 103 Topics in Contemporary Math

Students should be able to

1. translate a real world problem into a mathematical concept whose solution they have studied
2. decide which mathematical concept best describes the posed problem.

Evaluation Instruments for Assessing Course Learning Outcomes: MA 103

Typical exam question:

The student will be given a street map (schematic diagram) and a scenario which involves travel through the streets. The student must translate the map into an appropriate graph and then apply the pertinent graph theory concept to solve the problem.

Syllabus MA 103 Topics in Contemporary Math

A. Instructor information:
   1. Instructor:
   2. office
   3. phone
   4. email
   5. office hours

B. Prerequisites: MA 101 or equivalent completed in high school

C. General Education Requirement information;
   1. GER category – Mathematical Sciences
   2. GER objectives:
      a) Improve and refine mathematical problem-solving abilities; and
      b) Develop logical reasoning skills.
   3. Student Learning Outcomes: students should be able to
      a) translate a real world problem into a mathematical concept whose solution they have studied
      b) decide which mathematical concept best describes the posed problem

D. Required text: Excursions in Modern Mathematics by Tannenbaum and Arnold 5^{th} edition

E. Topics covered in the course: approximately 4 class days are spent on each topic
   1. Voting Systems
   2. Weighted voting systems – power indices
   3. Fair division schemes
   4. Apportionment problems
   5. Euler circuits
   6. Hamilton circuits
   7. Minimal networks
   8. Scheduling problems
   9. Assorted topics involving numerical and geometric sequences

F. There will be 4 one hour tests – one after every 2 chapters.

G. Grading policy: The 4 tests will count for 70% of the grade; the final exam will count for 30%. The +/- grading system will be used.

H. Attendance policy: students are expected to attend class. A student with 4 or fewer absences (excused or unexcused) will have his lowest test graded dropped.

I. Academic integrity: students are expected to abide by the university policy on academic integrity which may be found at www.ncsu.edu/policies/student_services/student_discipline/POL11.35.1.php

J. Reasonable accommodation will be made for students with verifiable disabilities. Such students should register with Disability Services for Students at 1900 Student Health Center