

**Eastern Illinois University**  
***Revised Course Proposal***  
**MAT 1160G, Mathematics: A Human Endeavor**

Please check one:      ☐ New course    ☒ Revised course

**PART I: CATALOG DESCRIPTION**

1. **Course prefix and number, such as ART 1000:** MAT 1160G
  2. **Title (may not exceed 30 characters, including spaces):** Mathematics: A Human Endeavor
  3. **Long title, if any (may not exceed 100 characters, including spaces):**
  4. **Class hours per week, lab hours per week, and credit [e.g., (3-0-3)]:** 3-0-3
  5. **Term(s) to be offered:** ☒ Fall    ☒ Spring    ☒ Summer    ☐ On demand
  6. **Initial term of offering:** ☒ Fall    ☐ Spring    ☐ Summer    **Year:** 2011
  7. **Course description (not to exceed four lines):** Development of mathematical reasoning and problem solving, through concentrated study of three or four topics. Areas may include logic, sets, probability, statistics, graph theory, number theory, and/or geometry. M1 904
  8. **Registration restrictions:**
    - a. **Identify any equivalent courses** (e.g., cross-listed course, non-honors version of an honors course).
    - b. **Prerequisite(s)**, including required test scores, courses, grades in courses, and technical skills.  
Indicate whether any prerequisite course(s) MAY be taken concurrently with the proposed/revised course.  
  
ENG 1001G: Composition and Language. This course may not be taken by students with a high school mathematics deficiency that has not been removed. This course should not be considered as preparatory for other courses in mathematics.
- Note:**  
**The state of Illinois requires high school graduates to have completed 3 years of mathematics, which includes courses in algebra and geometry. Eastern Illinois University follows this state requirement. If a student does not meet this minimal standard he/she may be provisionally admitted to the university.**

The courses in which provisionally admitted students enroll must include courses in the high school subject areas in which course-specific requirements were not met. One three-hour college course is considered to be the equivalent of one year of high school work in a subject area. To remove provisional status in Mathematics, students must complete at least three semester hours of course work with a grade of "C" or better for each year or fractional year of deficiency in a subject area. (Proficiency examination credit in accordance with University policy also is acceptable.) Courses used for this purpose must be selected from the list, which follows:

MAT 1271: College Algebra  
MAT 1400: Precalculus Mathematics

**c. Who can waive the prerequisite(s)?**

☒ No one    ☐ Chair    ☐ Instructor    ☐ Advisor    ☐ Other (Please specify)

**d. Co-requisites** (course(s) which MUST be taken concurrently with this one):

**e. Repeat status:**    ☒ Course may not be repeated.

☐ Course may be repeated to a maximum of \_\_\_\_\_ hours or \_\_\_\_\_ times.

**f. Degree, college, major(s), level, or class** to which registration in the course is restricted, if any:

**g. Degree, college, major(s), level, or class** to be excluded from the course, if any:

**9. Special course attributes** [cultural diversity, general education (indicate component), honors, remedial, writing centered or writing intensive] General Education: Mathematics

**10. Grading methods** (check all that apply): ☒ Standard letter    ☐ C/NC    ☐ Audit    ☐ ABC/NC (“Standard letter”—i.e., ABCDF—is assumed to be the default grading method unless the course description indicates otherwise.)

**11. Instructional delivery method:** ☒ lecture    ☐ lab    ☐ lecture/lab combined    ☐ independent study/research  
☐ internship    ☐ performance    ☐ practicum or clinical    ☐ study abroad  
☐ other

## **PART II: ASSURANCE OF STUDENT LEARNING**

**1. List the student learning objectives of this course:**

- a. If this is a general education course, indicate which objectives are designed to help students achieve one or more of the following goals of general education and university-wide assessment:**
- **EIU graduates will write and speak effectively.**
  - **EIU graduates will think critically.**
  - **EIU graduates will function as responsible citizens.**

Upon successful completion of this course, students will:

- apply the fundamentals of logical thought to solving problems (critical thinking).
- read, interpret, formulate mathematically, and solve word problems (writing, critical thinking, citizenship).
- accurately express and analyze mathematical reasoning in writing (writing, critical thinking, citizenship).
- appreciate and understand mathematical presentations, terminology, and data displays, whether encountered in a newspaper article or as an application in a future career.
- gain a positive attitude toward mathematics.

**b. If this is a graduate-level course, indicate which objectives are designed to help students achieve established goals for learning at the graduate level:**

- Depth of content knowledge
- Effective critical thinking and problem solving
- Effective oral and written communication
- Advanced scholarship through research or creative activity

**2. Identify the assignments/activities the instructor will use to determine how well students attained the learning objectives:**

	Quizzes & Exams	Essays & Writing Assignments	Written problem sets
Apply fundamentals of logic thought	X	X	X
Read, interpret, formulate mathematically, and solve word problems	X	X	X
Accurately express and analyze mathematical reasoning in writing		X	X
Appreciate and understand mathematical presentations, terminology, and data displays, whether encountered in a newspaper article or as an application in a future career	X	X	X
Gain a positive attitude toward mathematics		X	

**3. Explain how the instructor will determine students' grades for the course:**

The specific weight given to each evaluation category is up to the individual instructor; as is the specific grading scale to be used.

**4. For technology-delivered and other nontraditional-delivered courses/sections, address the following:**

- a. Describe how the format/technology will be used to support and assess students' achievement of the specified learning objectives:
- b. Describe how the integrity of student work will be assured:
- c. Describe provisions for and requirements of instructor-student and student-student interaction, including the kinds of technologies that will be used to support the interaction (e.g., e-mail, web-based discussions, computer conferences, etc.):

**5. For courses numbered 4750-4999, specify additional or more stringent requirements for students enrolling for graduate credit. These include:**

- a. course objectives;
- b. projects that require application and analysis of the course content; and
- c. separate methods of evaluation for undergraduate and graduate students.

**6. If applicable, indicate whether this course is writing-active, writing-intensive, or writing-centered, and describe how the course satisfies the criteria for the type of writing course identified. (See Appendix \*.)**

### **PART III: OUTLINE OF THE COURSE**

**Provide a week-by-week outline of the course's content. Specify units of time (e.g., for a 3-0-3 course, 45 fifty-minute class periods over 15 weeks) for each major topic in the outline. Provide clear and sufficient details about content and procedures so that possible questions of overlap with other courses can be addressed. For technology-delivered or other nontraditional-delivered courses/sections, explain how the course content "units" are sufficiently equivalent to the traditional on-campus semester hour units of time described above.**

<b>Week</b>	<b>Topic</b>
1	Basic Properties of Sets
1	Complements, Subsets, and Venn Diagrams
2	Set Operations
3	Applications of Sets
4	Test
4	Simple Interest
5	Compound Interest
6	Credit Cards and Consumer Loans
7	Stocks, Bonds, and Mutual Funds
8	Home Ownership
9	Test
9	Basic Concepts of Euclidean Geometry
10	Perimeter and Area of Plane Figures
11	Properties of Triangles
12	Volume and Surface Area
12	Introduction to Trigonometry
13	Introduction to Trigonometry
14	The Counting Principle
14	Permutations and Combinations
15	Probability and Odds
15	Addition and Complement Rules
16	Final Exam

### **PART IV: PURPOSE AND NEED**

- 1. Explain the department's rationale for developing and proposing the course.**
  - a. If this is a general education course, you also must indicate the segment of the general education program into which it will be placed, and describe how the course meets the requirements of that segment.**
  - b. If the course or some sections of the course may be technology delivered, explain why.**

This course is a revision of MAT 1160G and should maintain the same curriculum identification number as MAT 1160G. This course does not duplicate any other course.

The course develops critical thinking skills and the ability to apply mathematics.

It will be placed in the Mathematics segment of the general education program.

**2. Justify the level of the course and any course prerequisites, co-requisites, or registration restrictions.**

The course is offered at the 1000 level, since the only prerequisite is English 1001G: Composition and Language.

**3. If the course is similar to an existing course or courses, justify its development and offering.**

- a. If the contents substantially duplicate those of an existing course, the new proposal should be discussed with the appropriate chairpersons, deans, or curriculum committees and their responses noted in the proposal.
- b. Cite course(s) to be deleted if the new course is approved. If no deletions are planned, note the exceptional need to be met or the curricular gap to be filled.

**4. Impact on Program(s):**

- a. For undergraduate programs, specify whether this course will be required for a major or minor or used as an approved elective.
- b. For graduate programs, specify whether this course will be a core requirement for all candidates in a degree or certificate program or an approved elective.

This course is not required for any major.

**If the proposed course changes a major, minor, or certificate program in or outside of the department, you must submit a separate proposal requesting that change along with the course proposal. Provide a copy of the existing program in the current catalog with the requested changes noted.**

## **PART V: IMPLEMENTATION**

**1. Faculty member(s) to whom the course may be assigned:** Any faculty from the Department of Mathematics and Computer Science may be assigned to teach this course.

**If this is a graduate course and the department does not currently offer a graduate program, it must document that it employs faculty qualified to teach graduate courses.**

**2. Additional costs to students:**

None.

**Include those for supplemental packets, hardware/software, or any other additional instructional, technical, or technological requirements. (Course fees must be approved by the President's Council.)**

**3. Text and supplementary materials to be used (Include publication dates):**

Mathematical Excursions, 2nd edition, by Aufmann, Lockwood, Nation, and Clegg; Houghton Mifflin, 2007.

## PART VI: COMMUNITY COLLEGE TRANSFER

If the proposed course is a 1000- or 2000-level course, state either, "A community college course may be judged equivalent to this course" OR "A community college course will not be judged equivalent to this course." A community college course will not be judged equivalent to a 3000- or 4000-level course but may be accepted as a substitute; however, upper-division credit will not be awarded.

A community college course may be judged equivalent to this course

## PART VII: APPROVALS

Date approved by the department or school: August 12, 2011

Date approved by the college curriculum committee: August 17, 2011

Date approved by the Honors Council (*if this is an honors course*):

Date approved by CAA: September 1, 2011

\*In **writing-active courses**, frequent, brief writing activities and assignments are required. Such activities -- some of which are to be graded -- might include five-minute in-class writing assignments, journal keeping, lab reports, essay examinations, short papers, longer papers, or a variety of other writing-to-learn activities of the instructor's invention. Writing assignments and activities in writing-active courses are designed primarily to assist students in mastering course content, secondarily to strengthen students' writing skills. In **writing-intensive courses**, several writing assignments and writing activities are required. These assignments and activities, which are to be spread over the course of the semester, serve the dual purpose of strengthening writing skills and deepening understanding of course content. At least one writing assignment is to be revised by the student after it has been read and commented on by the instructor. In writing-intensive courses, students' writing should constitute no less than 35% of the final course grade. In **writing-centered courses** (English 1001G, English 1002G, and their honors equivalents), students learn the principles and the process of writing in all of its stages, from inception to completion. The quality of students' writing is the principal determinant of the course grade. The minimum writing requirement is 20 pages (5,000 words).

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