

Senate Transmittal
Academic Council for Lexington Community College
October 6, 2003

OCT 17 2003

Approved by Academic Council for Lexington Community College via electronic vote on October 6, 2003.

LEXINGTON COMMUNITY COLLEGE

OCT 17 2003

GENERAL EDUCATION INCLUSION

No change to this course, but it will automatically be added to the LCC General Education list.

PHYSICAL SCIENCES AND ENGINEERING TECHNOLOGIES

MA 111 INTRODUCTION TO CONTEMPORARY MATHEMATICS



Application for Inclusion on General Education List

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| 1 | Course Prefix and Number: | MA 111 |
| | Course Title: | Introduction to Contemporary Mathematics |
| | Credit Hours: | 3 |
| | Program/Area and Division Offering Course: | Mathematics – Physical Sciences and Engineering Technologies |
| 2. | Effective Date (semester and year): | Spring 2004 |
| 3. | Degree Area (AA/AS, AAS, or both): | Both AA/AS and AAS |
| | Required Area of Study (Humanities, Social Science, etc.): | Mathematics |
| 4. | General Education Outcomes Statement (outcomes, course objectives, and instructional objectives for this course) | |

COURSE DESCRIPTION An introduction to concepts and applications of mathematics, with examples drawn from such areas as voting methods, apportionment, consumer finance, graph theory, tilings, polyhedra, number theory and game theory. This course is not available for credit to persons who have received credit in any mathematics course of a higher number with the exceptions of MA 112, 123, 162, 201 and 202. This course does not serve as a prerequisite for any calculus course. Credit not available on the basis of special examination. Prereq: Two years of high school algebra and a Math ACTE score of 19 or above, or MA 108R, or math placement test.

COMMUNICATE EFFECTIVELY

Learning Outcome: Write clearly
Course Objective: Describe patterns, processes and arguments clearly and completely
Instructional Objective: Students will use standard written English to complete written assignments justifying their solution or response.

THINK CRITICALLY

Learning Outcome: Demonstrate problem-solving skills
Course Objective: Apply apportionment techniques
Instructional Objective: Students will listen to lecture, participate in discussion, and complete worksheets and homework assignments to perform calculations needed to increase or decrease the number of seats allocated to a state according to different apportionment methods.

Learning Outcome: Integrate knowledge
Course Objective: Make connections between Eulerian or Hamiltonian circuits or polygons and real world situations
Instructional Objective: Students will listen to lecture, participate in discussion,

and complete worksheets and homework assignments to use concepts from graph theory to find the best route meeting given restrictions or use concepts about polygons to create tilings meeting certain requirements.

- Learning Outcome:** Use logical thinking to draw conclusions
Course Objective: Compare different voting choices
Instructional Objective: Students will listen to lecture, participate in discussion, and complete worksheets and homework assignments to determine if voting strategically can obtain a preferable outcome using different voting methods.

LEARN INDEPENDENTLY

- Learning Outcome:** Apply learning
Course Objective: Apply number theory or game theory to real world situations
Instructional Objective: Students will listen to lecture, participate in discussion, and complete worksheets and homework assignments to draw game trees that describe alternate move games or use modular arithmetic to determine check digits for identification numbers.

EXAMINE RELATIONSHIPS IN DIVERSE AND COMPLEX ENVIRONMENTS

- Learning Outcome:** Use mathematics to analyze physical relationships
Course Objective: Compare payment or investment plans to find the most advantageous option
Instructional Objective: Students will listen to lecture, participate in discussion, and complete worksheets and homework assignments to calculate the present and future value of single investments or a series of payments.

5. **Justification:** MA 111 (which we offered last year as A&S 100) was developed to be an alternative to MA 109 for students who do not need to take calculus. It is a college-level math course and has the same prerequisite as MA 109, but it is not an algebra course. This course would be an appropriate choice for associate degree students who need only one math course or those whose second course will be STA 200. MA 111 has been approved at UK to satisfy the University Studies Basic Skills Math requirement.

6. Within the program/area, who is primarily responsible for this proposal:

Name	Phone	Email
Peggy Saunier	257-4872, ext. 4128	psaunie@uky.edu

7. Others participating in the development of this proposal:

Name	Phone	Email
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