Fond du Lac Tribal and Community College
COURSE OUTLINE FORM

Updated 11/25/14

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

1. Prepared by: _____________________________________________
2. Date submitted: ___________________________________________
3. Date approved: 3/9/2007 Date revised: 05/05/16
4. Department/discipline: Mathematics
5. Department(s) endorsement(s): _____________________________________________
   (Signatures of the person(s) providing the endorsement are required.)
6. Course Title: Introduction to Contemporary Mathematics
   Abbreviated course title (25 characters or less):
7. Course Designator: MATH
8. Course Level: 1025
9. Number of Credits: Lecture: 3 Lab: 0
10. Control Number (on site): 30
    Control Number (online): 0
11. Catalog/Course description:
    This course is designed for students not pursuing a math or science major. The emphasis is on developing quantitative skills that can analyze a variety of practical applications. The main topics include counting methods, probability and statistics, exponential growth and network analysis. Optional topics could include logic, linear programming, set, voting theory, optimization, polygons, and polyhedral and game theory. (Meets MnTC goal area 4). (Prerequisite: C grade in MATH 0020 or appropriate Accuplacer score).
12. Course prerequisite(s) or co-requisite(s):
   Prerequisite(s): C grade in MATH 0020 Beginning Algebra or appropriate Accuplacer score
   Co-requisite: None
13. Course Materials (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

14. **Course Content** (Provide an outline of major topics covered in course)

1. The Art of Problem Solving
2. Basic Concepts of Set Theory: Venn diagrams
3. Introduction to logic
4. Basic concepts of algebra
5. Graph, functions and systems of equations and inequalities
6. Geometry
7. Counting methods
8. Personal financial management
9. Probability
10. Statistics

15. **Learning Goals, Outcomes, and Assessment**

   At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

   A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)

   B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)

   C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)

   D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one’s own traditions and culture, knowledge of others’ traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

*Course learning outcomes will fulfill the identified competencies:*

**Course Learning Outcomes:**

Upon completion of this course, students will be able to:

1. Identify and apply various problems solving strategies, including both inductive and deductive reasoning. (C)
2. Apply set operations on sets and Venn diagrams, area, perimeter, surface area and volume formulas to 2-D and 3-D figures. (C)
3. Solve applications, such as survey analysis, using set theory, linear equations, including percent. (C)
4. Practice logic and the operations used on statements, including building truth tables, and optimization with parabolas and linear programming. (C)
5. Analyze arguments using Euler diagrams and truth tables. (C)
6. Graph points, lines and circles on the Cartesian coordinate system. (C)
7. Practice trigonometric function to solve right triangle problems. (C)
8. Find measures of central tendency, variation and position on a data set. (C)

16. **Minnesota Transfer Curriculum (MnTC):** If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See [www.mntransfer.org](http://www.mntransfer.org)

Goal Area(s): 4

Goal and Outcomes:
Goal: Mathematical/Logic & Reasoning
Outcome:
1. Illustrate historical and contemporary applications of mathematics/logical systems.
2. Clearly express mathematical/logical ideas in writing.
3. Explain what constitutes a valid mathematical/logical argument (proof).
4. Apply higher-order problem-solving and/or modeling strategies
Complete the following only if you are proposing a new course:

1. Planned pattern of offering:
2. Rationale for course: If this course is an ADDITION or replacement to current offerings, add a detailed explanation of the necessity for the change.
3. Does this course overlap with any course(s) offered at FDLTCC? If so, justify such duplication or indicate other adjustments to be made. Obtain signatures from affected departments.
4. What is the apparent or expressed student need for this course?
5. If this course includes a Native American or specifically Anishinaabe component list campus resource person/s—i.e., campus cultural/spiritual resource person/s and, if necessary, elder/s—consulted and include specific comments and written responses as appropriate.
6. Are there any additional licensing/certification requirements involved?
   a. Provide a copy of the required licensing/certification standards to the AASC chair and to the vice president of academic affairs.
   b. Attach the required documentation to show course meets required licensing/certification standards.
7. What types of tutoring will be made available through the CAA to students taking this course?
8. How will the course be evaluated?
9. Special resources—e.g. faculty, space, equipment, library, etc
10. Special course fees:
11. Relationship of course to the college mission statement and goals.
12. Relationship of course to the department’s mission statement and goals.
13. Relationship of course to colleges/university offerings (include tribal colleges).

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<th>College or University</th>
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<th>Credits Awarded</th>
<th>General Education</th>
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