

Fond du Lac Tribal and Community College
COURSE OUTLINE FORM

Updated 9/23/14

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: _____ Date revised 10/14/14

4. Department/discipline: Mathematics

5. Department(s) endorsement(s): _____

(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: Higher Algebra

Abbreviated course title (25 characters or less): _____

7. Course Designator: MATH 0030 8. Course Level: 1XXX 9. 2XXX

10. Number of Credits: Lecture 3 Lab _____

11. Control Number (on site) 30 Control Number (online) _____

12. Catalog/Course description:

Review of operations with real numbers and with polynomials; solutions of linear equations and applications; factoring; operations with rational expressions and applications; solutions of quadratic equations, graphing techniques; solutions of systems of linear equations.
(Prerequisite: MATH 0020 OR placement through Accuplacer OR instructor permission).

13. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s): MATH 0020 Beginning Algebra OR placement through Accuplacer OR instructor permission.

Co-requisite:

14. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

- 1) Textbook: One suitable textbook is Algebra: Introductory and Intermediate, by Aufman, Barker, & Lockwood
- 2) Graphing calculator

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

1. Systems of linear equations and inequalities
2. Polynomials: multiplication and division
3. Factoring polynomials
4. Rational expressions and applications
5. Rational exponents and radicals
6. Quadratic equations
7. Functions and relations
8. Exponential and logarithmic functions

16. 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. Explain mathematical algorithms in words. For example, explain how synthetic division works as an alternative to long division. (C)
2. Derive the quadratic formula by completing the square. (C)
3. Create polynomials to fit given roots, and find roots of polynomials. (C)
4. Demonstrate successful techniques for solving application problems. (C)
5. Create linear and quadratic functions to model data in order to interpolate and extrapolate solutions. (C)
6. Solve exponential growth and decay problems by modeling and using properties of logarithms. (C)
7. Use common technology to graph and analyze functions. (C)

17. **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

Goal Area(s): _____

Goal and Outcomes: