



COURSE OUTLINE SPRING 2009

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| Course Number MAT037B | Course Title Beginning Algebra Part B | Credits 3 |
| Hours: lecture/Lab/Other 3 lecture | Co- or Pre-requisite Passed MAT037A with at least a C | Implementation sem/year Spring 2009 |

Catalog description (2006-2009 Catalog):

The second half of a two-semester sequence for students with minimal experience in algebra. Topics include polynomials, exponents, factoring techniques, solving quadratic equations, rational expressions and square root expressions. Completion of MAT037A and MAT037B fulfills foundation requirement in algebra. [Foundation course does not fulfill mathematics elective requirement.]

Is course New, Revised, or Modified? New

Required texts/other materials:

Textbook: Blitzer, Robert. Introductory Algebra. 5th Edition. Pearson Publishing, 2008. ISBN-10: 0-13-235679-1

Or

MyMathLab available in bookstore or at www.mymathlab.com. An access code is required from an instructor and will be provided first day of class.

Scientific calculator

Notebook

Revision date:

Spring 2008

Course coordinator:

Betty Peterson, ext 3421, petersob@mccc.edu

Information resources:

The library has an extensive collection of books that students may use for extra reinforcement of the skills being taught in this course. Supplemental materials are available from the publisher which includes student's solution manual, a DVD series and MyMathLab. MyMathLab is an online learning resource which includes an interactive textbook with guided solutions and a series of video lectures.

Other learning resources:

Tutors available at both campuses.

Course Competencies/Goals:

As this is a foundation level mathematics course, the course should first and foremost prepare the students for future college level work in mathematics. The students should develop confidence in their abilities to perform successfully. They should also gain experiences that connect their classroom learning with real world applications of mathematics and should be able to build techniques of reasoning for effective problem solving.

The student will be able to:

- I. Perform arithmetic operations on polynomials.
- II. Distinguish polynomials to apply correct factoring techniques.
- III. Perform arithmetic operations on rational expressions.
- IV. Apply correct techniques to simplify radicals.
- V. Perform arithmetic operations on radical expressions.
- VI. Develop skills in applying the language of mathematics to written English.

Course-specific General Education Knowledge Goals and Core Skills.

General Education Knowledge Goals

Goal 2. Mathematics. Students will use appropriate mathematical and statistical concepts and operations to interpret data and to solve problems.

MCCC Core Skills

Goal B. Critical Thinking and Problem-solving. Students will use critical thinking and problem solving skills in analyzing information.

Goal F. Collaboration and Cooperation. Students will develop the interpersonal skills required for effective performance in group situations.

Units of study in detail.

Unit I Exponents and Polynomials

Learning Objectives

The student will be able to...

- Apply the special product rules to multiply polynomials. (Course Competency I, MCCC Core Skill 2)
- Evaluate polynomials (Course Competency I, MCCC Core Skill 2)
- Use the quotient rule of exponents to divide monomials. (Course Competency I, MCCC Core Skill 2)
- Apply the zero power rule and quotients to power rule. (Course Competency I, MCCC Core Skill 2)
- Apply the negative exponent rule to scientific notation. (Course Competency I, MCCC Core Skill 2)
- Solve application problems involving polynomials and scientific notation. (Course Competencies I & VI, MCCC Core Skills 2, B, F)

Unit II Factoring and Quadratic Equations

Learning Objectives

The student will be able to...

- Identify the greatest common factor and use it to factor a polynomial. (Course Competency II, MCCC Core Skill 2)
- Factor by grouping. (Course Competency II, MCCC Core Skill 2)

- Factor quadratic expressions, $ax^2 + bx + c$ when $a = 1$ and when $a \neq 1$. (Course Competency II, MCCC Core Skill 2)
- Factor trinomials of higher order by removing a GCF first then factoring the remaining quadratic factor. (Course Competency II, MCCC Core Skill 2)
- Factor special products such as difference of two squares and perfect square trinomials. (Course Competency II, MCCC Core Skill 2)
- Solve quadratic equations by factoring. (Course Competency II, MCCC Core Skill 2)

Unit III Rational expressions

Learning Objectives

The student will be able to...

- Simplify rational expressions. (Course Competency III, MCCC Core Skill 2)
- Perform arithmetic operations with rational expressions. (Course Competency III, MCCC Core Skill 2)
- Solve rational equations. (Course Competency III, MCCC Core Skill 2)
- Solve application problems involving rational expressions. (Course Competencies III & VI, MCCC Core Skills 2, B, F)

Unit IV Radical expressions

Learning Objectives

The student will be able to...

- Simplify radicals. (Course Competency IV, MCCC Core Skill 2)
- Simplify radicals that contain algebraic expressions. (Course Competency IV, MCCC Core Skill 2)
- Perform arithmetic operations with radicals. (Course Competency V, MCCC Core Skill 2)
- Solve application problems involving radicals. (Course Competencies V & VI, MCCC Core Skills 2, B, F)

Evaluation of student learning:

Grade will be based on the following percentages:

Four unit tests 60%

Group Projects 10%

Homework and Quizzes 10%

Final 20%

Multiple choice questions on the departmental unit tests will reflect each of the unit objectives listed above and administered in the testing center. No extra credit should be given on these tests. Partial credit should not be given for work. As an alternative to this policy, instructors may write their own free answer tests, but these tests need to be reviewed by the course coordinator before administration to ensure that both the learning objectives are being met and that the tests are clearly written to be fair for the students.

The textbook chosen for this course has group projects at the end of each chapter. During the review period for the unit, the students should complete a group project which will reinforce the material in the unit as well as connect it with a real world application. A minimum of two projects should be collected for a grade.

For the homework and quizzes portion of the grade instructors are free to do any or all of the following suggestions. Homework could be checked for completion or collected and graded. Quizzes should be

given on a weekly basis when there are no tests assigned for completion. Most students need to practice the skills presented in class in order to perform well on a test. Attendance in class is important but is not enough and weekly graded opportunities should be used to ensure that the students are practicing on a regular basis. Two other possibilities for a grade in this area would be to check notebooks to ensure that the students are taking notes during class or assigning minute papers to check for understanding of the day's material.

The final is comprehensive and passing the final is required to pass the class.

Academic Integrity Statement:

Mercer County Community College is committed to academic integrity – the honest, fair and continuing pursuit of knowledge, free from fraud or deception.

- Students should never:
 - Knowingly represent the work of others as their own
 - Knowingly represent previously completed academic work as current
 - Fabricate data to support academic work
 - Use or obtain unauthorized assistance in the execution of any academic work
 - Give fraudulent assistance to other students
 - Unethically use technological means to gain academic advantages

Violators of the above actions will be penalized. For a single violation the faculty member will determine the course of action. This may include, assigning a lower grade on the assignment, lowering the course grade, failing the student, or another penalty that is appropriate to the violation. The student will be reported to the Academic Integrity Committee, who may impose other penalties for a second (or later) violation. The student has right to a hearing and also to appeal any decisions. These rights are outlined in the student handbook.