

SOUTHEAST COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES
Mathematics
Revision Date: 2015-07-21

Term: 2015 Summer
Course: MATH-1100-ES32 (Intermediate Algebra)
Class Time: TT 10:00–11:55 CDT
Class Room: ESQ 100C

Instructor: Toby Bartels, PhD
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Course policies are available at <http://TobyBartels.name/MATH-1100/2015ss/>.

I. CATALOG DESCRIPTION

Course Number: MATH-1100
Course Title: Intermediate Algebra
Prerequisite: A grade of C or higher in MATH-0950 or MATH-0999, or a grade of B or higher in MATH-0953 or an appropriate score on math placement test.
Catalog Description: Study of second-year algebra at a college level with emphasis on: Techniques for simplifying algebraic expressions and solving algebraic equations and inequalities, functions (their properties and graphs), complex numbers, and graphs of quadratic functions. May not fulfill the math requirement for the associate degrees—check with transfer institution.
Credit Hours: 4.5
Class Hours: 40¼
Lab Hours: 0
Total Contact Hours: 40¼

II. COURSE OBJECTIVES: *Course will:*

- A. Develop a familiarity with real and complex numbers and their properties.
- B. Develop techniques for simplifying algebraic expressions.
- C. Develop techniques for factoring polynomial expressions.
- D. Develop techniques for solving polynomial, rational, and radical equations.
- E. Develop techniques for performing operations on algebraic expressions.
- F. Introduce functions, function notation, and interpretation of functions and their graphs.
- G. Graph quadratic functions and solve quadratic equations.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

- A. Student Learning Outcomes: *Student will be able to:*
- 1. Simplify expressions involving real and complex numbers.
 - 2. Use properties of real numbers to simplify algebraic expressions.
 - 3. Use a variety of techniques to solve algebraic equations (polynomial, rational, and radical equations).
 - 4. Use a variety of techniques to perform operations on algebraic expressions.

5. Graph elementary functions, find the domain and range of elementary functions, and interpret the graph of a function as related to applications.
 6. Use problem solving skills to model and solve applications (quadratic and rational models).
- B. General Education Learning Outcomes**
1. **GELO 6: Quantitative Reasoning**
The student will demonstrate the ability to reason and solve quantitative problems using mathematical applications such as formulas, data sets, graphs, tables, etc.

IV. CONTENT/TOPICAL OUTLINE

- A.** Factoring and Solving Polynomial Equations with Applications.
- B.** Simplifying Rational Expressions, and Solving Rational Equations with Applications.
- C.** Functions and Their Graphs with Applications.
- D.** Simplifying Radical Expressions and Expressions with Rational Exponents.
- E.** Solving Radical Equations and Equations with Rational Exponents.
- F.** Simplifying Expressions involving Complex Numbers.
- G.** Solving Quadratic Equations and Equations Quadratic in Form.
- H.** Graphing Quadratic Functions.

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s):**
 1. Sullivan, *Elementary & Intermediate Algebra*, 3rd Edition, Pearson (Prentice-Hall): hardback, looseleaf, or through MyMathLab.
- B. Optional Resources:**
 1. A scientific calculator
 2. MyMathLab access code

VI. METHODS OF PRESENTATION/INSTRUCTION

- A.** Lecture
- B.** Class discussion
- C.** Small group activities
- D.** MyMathLab (optional)

VII. METHODS OF EVALUATION

- A.** Individual homework
- B.** In-class assignments in small groups
- C.** Individual extra-credit and make-up homework
- D.** Comprehensive final exam
- E.** SCC grading scale:

A+	95%+	C+	75%+	F	59%–
A	90%+	C	70%+		
B+	85%+	D+	65%+		
B	80%+	D	60%+		

VIII. SPECIFIC COURSE REQUIREMENTS

None

Southeast Community College Syllabus Statements

Academic Integrity

Academic integrity is one of the basic principles of a college community. SCC encourages and expects the highest standards of academic honesty from all students. Please note that cheating, plagiarism, or other forms of academic dishonesty are monitored and subject to disciplinary action.

Americans with Disabilities Act - Reasonable Accommodations

If you have a disabling condition that may substantially limit your ability to participate in this class, please contact the Dean of Student Services for additional information and assistance. The campus telephone numbers are: Beatrice (402) 228-8220, Lincoln (402) 437-2619, Milford (402) 761-8270.

Electronic Devices

Instructors may allow the use of cell phones and personal electronic devices in the classroom or lab for instructional purposes to help meet course objectives or participation in course activities. The use of cell phones or other electronic devices for **personal use** during class time may not be allowed. Each instructor can identify when the use of cell phones or personal electronic devices will be allowed. Failure to follow the instructor's directions may lead to formal disciplinary action.

Firearms/Weapons Strictly Prohibited

SCC policy prohibits the possession of firearms, weapons, or fireworks on College property or at any College-sponsored event. Effective January 1, 2007, Nebraska State Statute 69-2441 makes it unlawful to carry a concealed handgun into a meeting of the governing body of a political subdivision, a collegiate athletic event, a school, school grounds, a school-owned vehicle, or a school-sponsored activity or athletic event. These prohibitions apply to EVERYONE (employees, students, invitees, and visitors) and are enforceable EVERYWHERE (all college property and all college-related events.) Violations of the prohibitions will result in disciplinary and/or law enforcement action.

Hazardous Chemicals – Right to Know Statement

Some courses offered at Southeast Community College use hazardous chemicals as part of their curriculum. If the course you are attending requires you to use or exposes you to hazardous chemicals, your instructor will provide you with information and instruction about those chemicals. That information will include: requirements regarding personal protective equipment, methods of safe handling, use, clean up, first aid measures, and etc.

Statement of Equal Opportunity

The policy of Southeast Community College is to provide equal opportunity and nondiscrimination in all admission, attendance, and employment matters to all persons without regard to race, color, religion, sex, age, marital status, national origin, ancestry, veteran status, sexual orientation, disability, or other factors prohibited by law or College policy. Inquiries concerning the application of Southeast Community College's policies on equal opportunity and nondiscrimination should be directed to the Vice President of Affirmative Action, Equity and Diversity, 301 S 68th Street Pl, Lincoln NE 68510-2449; Phone 402-323-3412; Fax 402-323-3420; Email JSoto@Southeast.edu.