1. COURSE TITLE*: Intermediate Algebra

2. CATALOG – PREFIX/COURSE NUMBER/COURSE SECTION*: MATH 1118

3. PREREQUISITE(S)*:

Student must meet one of the following criteria to register for this course:

- Math 1117 or Math 1116 with a grade of B or higher
- Students with a C in MATH 1116 must meet with an advisor before registering.
- Three High school STEM or Core Math courses with grades of B or higher
- Accuplacer QAS with a score of 253 or higher

COREQUISITE(S)*: None

4. COURSE TIME/LOCATION/MODALITY: (*Course Syllabus – Individual Instructor Specific*)

5. CREDIT HOURS*: 4 **LECTURE HOURS*:** 4
LABORATORY HOURS*: 0 **OBSERVATION HOURS*:** 0

6. FACULTY CONTACT INFORMATION: *(Course Syllabus – Individual Instructor Specific)*

7. COURSE DESCRIPTION*:

This course is a continuation of algebra concepts. Topics include a review of elementary algebra concepts, rational expressions, linear equations, polynomials and factoring, radicals, quadratic equations, functions and graphs, exponents, logarithms, and systems of equations. This course cannot be used to meet general education or math requirements in a program. This course may be able to be used as elective credit toward a degree. Check with an advisor.

8. LEARNING OUTCOMES*:

At the completion of this course the student will:

1. Be able to manipulate and simplify polynomial, rational and algebraic expressions.
2. Be able to factor polynomials.
3. Be able to identify properties of linear graphs, systems of equations,

systems of inequalities, and use these structures in applications.
4. Be able to solve rational and polynomial equations.
5. Be able to identify properties of functions and use appropriate notation.
6. Be able to graph exponential and logarithmic functions and apply these structures to applications.
7. Be able to effectively use a scientific calculator as an aid to problem solving.

9. ADOPTED TEXT(S)*:

Intermediate Algebra for College Students
8th Edition, 2021
Robert Blitzer.
Pearson.
E-text Only: ISBN-13 9780136880578
Rental: ISBN-13 9780136553434

OR

Intermediate Algebra 2e
OpenStax - Open Resource Textbook
Download for free at https://openstax.org/details/books/intermediate-algebra-2e
Lynn Marecek, Andrea Honeycutt Mathis

9a: SUPPLEMENTAL TEXTS APPROVED BY FULL TIME DEPARTMENTAL FACULTY (INSTRUCTOR MUST NOTIFY THE BOOKSTORE BEFORE THE TEXTBOOK ORDERING DEADLINE DATE PRIOR TO ADOPTION) ***.

10. OTHER REQUIRED MATERIALS: (SEE APPENDIX C FOR TECHNOLOGY REQUEST FORM.)**

Students must have a scientific calculator, but may not use any calculator that is classified as a symbolic manipulator, which is a calculator than can do algebraic symbol manipulations.

11. GRADING SCALE***:

Grading will follow the policy in the catalog. The scale is as follows:

A: 90 – 100
B: 80 – 89
C: 70 – 79
D: 60 – 69
F: 0 – 59

12. GRADING PROCEDURES OR ASSESSMENTS: (*Course Syllabus – Individual Instructor Specific)*

Example 1 - By Percent	
Homework	10%
Quizzes/Tests	90%
Total	100%

Example 2		
Category	*By Total Points*	*% of Grade*
Homework (20x10)	200	10%
Quizzes/Tests (5x360)	1800	90%
Total	2000	100%

Example 3		
Category	*By Total Points*	*% of Grade*
Online Quizzes	400	100%
Online Tests (6x100)	600	15%
Notebook (2x500)	1000	25%
Midterm	1000	25%
Final	1000	25%
Total	4000	100%

13. COURSE METHODOLOGY: *(Course Syllabus – Individual Instructor Specific)*

The course design provides instruction and materials to support the course objectives. Classes may consist of a variety of means to accomplish this including but not limiting to: lectures, class discussions, small group projects, supplemental materials, and outside assignments. Practice is an important part of the learning process. For every one hour of class time, two additional hours of study time should be expected.

14. COURSE OUTLINE: ***(Course Syllabus – Individual Instructor Specific)***

Chapter 1: Algebra, Mathematical Models and Problem Solving

1.1	Algebraic Expressions, Real Numbers and Interval Notation	REVIEW AS NEEDED
1.2	Operations with Real Numbers and Simplifying Algebraic Expressions	REVIEW AS NEEDED
1.3	Graphing Equations	REVIEW AS NEEDED
1.4	Solving Linear Equations	REVIEW AS NEEDED
1.5	Problem Solving and Using Formulas	REVIEW AS NEEDED
1.6	Properties of Integral Exponents	REVIEW AS NEEDED
1.7	Scientific Notation	REVIEW AS NEEDED

Chapter 2: Functions and Linear Functions – LO3, LO5

2.1	Introduction to Functions	
2.2	Graphs of Functions	
2.3	The Algebra of Functions	OPTIONAL
2.4	Linear Functions and Slope	
2.5	The Point-Slope Form of the Equation of a Line	

Chapter 3: Systems of Linear Equations – LO3

3.1	Systems of Linear Equations in Two Variables	
3.2	Problem Solving and Business Applications using Systems of Equations	
3.3	Systems of Linear Equations in Three Variables	OPTIONAL
3.4	Matrix Solutions to Linear Systems	OPTIONAL

Chapter 4: Inequalities and Problem Solving – LO3

4.1	Solving Linear Inequalities	
4.2	Compound Inequalities	OPTIONAL
4.3	Equations and Inequalities Involving Absolute Value	OPTIONAL
4.4	Linear Inequalities in Two Variables	

Chapter 5: Polynomials, Polynomial Functions, and Factoring – LO1, LO2, LO4

5.1	Introduction to Polynomials and Polynomial Functions
5.2	Multiplication of Polynomials
5.3	Greatest Common Factors and Factoring by Grouping (Factoring by Grouping – Optional)
5.4	Factoring Trinomials
5.5	Factoring Special Forms (Sum of Cubes & Difference of Cubes – Optional)
5.6	A General Factoring Strategy
5.7	Polynomial Equations and Their Applications (Applications – Optional)

Chapter 6: Rational Expressions, Functions, and Equations – LO4

6.1 Rational Expressions and Functions: Multiplying and Dividing
6.2 Adding and Subtracting Rational Expressions
6.3 Complex Rational Expressions OPTIONAL
6.6 Rational Equations
6.7 Formulas and Applications of Rational Equations
6.8 Modeling Using Variation

Chapter 7: Radicals, Radical Functions, and Rational Exponents – LO7

7.1 Radical Expressions and Functions
7.2 Rational Exponents
7.3 Multiplying and Simplifying Radical Expressions OPTIONAL
7.4 Adding, Subtracting and Dividing Radical Expressions OPTIONAL
7.7 Complex Numbers

Chapter 8: Quadratic Equations and Functions – LO4

8.1 The Square Root Property and Completing the Square
8.2 The Quadratic Formula

Chapter 9: Exponential and Logarithmic Functions – LO6, LO7

9.1 Exponential Functions
9.2 Composite and Inverse Functions OPTIONAL
9.3 Logarithmic Functions

Suggested Weekly Outline

Week 1 – Chapter 1
Week 2 – Chapter 1
Week 3 – Chapter 2
Week 4 – Chapter 2
Week 5 – Chapter 3
Week 6 – Chapter 3
Week 7 – Chapter 4
Week 8 – Chapter 5
Week 9 – Chapter 5
Week 10 – Chapter 6
Week 11 – Chapter 6
Week 12 – Chapter 7
Week 13 – Chapter 8
Week 14 – Chapter 8
Week 15 – Chapter 9
Week 16 – Finals

15. SPECIFIC MANAGEMENT REQUIREMENTS***:

16. FERPA: *

Students need to understand thattheir work may be seen by others. Others may see your work when being distributed, during group project work, or if it is chosen for demonstration purposes. Students also need to know that there is a strong possibility that your work may be submitted to other entities for the purpose of plagiarism checks.

17. ACCOMMODATIONS: *

Students requesting accommodations may contact Ryan Hall, Accessibility Coordinator at rhall21@sscc.edu or 937-393-3431 X 2604.

Students seeking a religious accommodation for absences permitted under Ohio's Testing Your Faith Act must provide the instructor and the Academic Affairs office with written notice of the specific dates for which the student requires accommodation and must do so no later than fourteen (14) days after the first day of instruction or fourteen (14) days before the dates of absence, whichever comes first. For more information about Religious Accommodations, contact Ryan Hall, Accessibility Coordinator at rhall21@sscc.edu or 937-393-3431 X 2604.

18. OTHER INFORMATION***:

SYLLABUS TEMPLATE KEY

***** Item cannot be altered from that which is included in the master syllabus approved by the Curriculum Committee.

****** Any alteration or addition must be approved by the Curriculum Committee

******* Item should begin with language as approved in the master syllabus but may be added to at the discretion of the faculty member.