Administrative Master Syllabus

Course Information
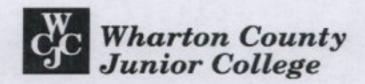
Course Title	Intermediate Algebra
Course Prefix, Num. and Title	MATH 0312
Division	Math & Physical Sciences
Department	Math/College Readiness
Course Type	Academic General Education Course (from ACGM, but not WCJC Core)
Course Catalog Description	A study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations. This course must be successfully completed with a "C" of better. This course is intended for students that need to meet the TSI requirements for programs that do not require a credit level math course.
Pre-Requisites	MATH 0308 or TSI Placement
Co-Requisites	None

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours: Lab/Other Hours	3:3:0
Equated Pay Hours	3
Lab/Other Hours Breakdown: Lab Hours	0
Lab/Other Hours Breakdown: Clinical Hours	0
Lab/Other Hours Breakdown: Practicum Hours	0
Other Hours Breakdown	0

Approval Signatures

Title	Signature	Date
Prepared by:	Yvonne Smith — Digitally signed by Yvonne Smith DN: cn=Yvonne Smith, o=WCJC, ou=Math and Physical Science, email=smithy@wcjc.edu, c=US Date: 2023.02.21 14:11:07 -06'00'	
Department Head:	Yvonne Smith — Digitally signed by Yvonne Smith DN: cn=Yvonne Smith, o=WCJC, ou=Math and Physical Science, email=smithy@wcjc.edu, c=US Date: 2023.02.21 14:11:33 -06'00'	
Division Chair:	Jennifer Mauch — Digitally signed by Jennifer Mauch DN: cn=Jennifer Mauch, o, ou=Wharton County Junior College, email=mauchj@wcjc.edu, c=US Date: 2023.02.21 14:14:47 -06'00'	
Dean/VPI:	Leigh Ann Collins — Digitally signed by Leigh Ann Collins Date: 2023.02.22 15:25:21 -06'00'	
Approved by CIR:	*[signature]*	3/9/23

Additional Course Information

Topical Outline: Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

Unit 1 – Relations and Functions
8.1 Introduction to Relations
8.2 Introduction to Functions
8.3 Graphs of Functions

Unit 2 – More Equations and Inequalities
9.1 Compound Inequalities
9.2 Polynomial and Rational Inequalities
9.3 Absolute Value Equations

Unit 3 – Factoring Polynomials
6.1 Greatest Common Factor and Factoring by Grouping
6.2 Factoring Trinomials of the Form $x^2 + bx + c$
6.3 Factoring Trinomials: Trial-and-Error Method
6.4 Factoring Trinomials: AC-Method
6.5 Difference of Squares and Perfect Square Trinomials
6.6 Sum and Difference of Cubes
6.7 Solving Equations Using the Zero Product Rule
6.8 Applications of Quadratic Equations

Unit 4 – Rational Expressions and Equations
7.1 Introduction to Rational Expressions
7.2 Multiplication and Division of Rational Expressions
7.3 Least Common Denominator
7.4 Addition and Subtraction of Rational Expressions
7.6 Rational Equations

Unit 5 – Radicals and Complex Numbers
10.1 Definition of an nth root
10.2 Rational Exponents
10.3 Simplifying Radical Expressions
10.4 Addition and Subtraction of Radicals
10.5 Multiplication of Radicals
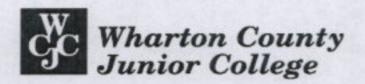10.6 Division of Radicals and Rationalization
10.7 Solving Radical Equations

Unit 6 – Complex Numbers and Quadratic Equations
10.8 Complex Numbers
11.1 Square Root Property and Completing the Square
11.2 Quadratic Formula

![Wharton County Junior College](WCJC logo)

Course Learning Outcomes:

Learning Outcomes – Upon successful completion of this course, students will:

1. Define, represent, and perform operations on real and complex numbers.
2. Recognize, understand, and analyze features of a function.
3. Recognize and use algebraic (field) properties, concepts, procedures (including factoring), and algorithms to combine, transform, and evaluate absolute value, polynomial, radical, and rational expressions.
4. Identify and solve absolute value, polynomial, radical, and rational equations.
5. Identify and solve absolute value and linear inequalities.
6. Model, interpret and justify mathematical ideas and concepts using multiple representations.
7. Connect and use multiple stands of mathematics in situations and problems, as well as in the study of other disciplines.

Methods of Assessment:

Midterm (Required)
Final Exam (Required)

Other Methods of Assessment:
- Hour Exams
- Homework
- Quizzes
- Short Answer
- Discussion Board
- Participation
- Projects

Required text(s), optional text(s) and/or materials to be supplied by the student:

"Beginning and Intermediate Algebra" by Miller, McGraw Hill, 6th edition.

Students must have computer access to the WCJC website, their WCJC student email and online accounts. WCJC has open computer labs, with internet access, on all campuses for students to use.
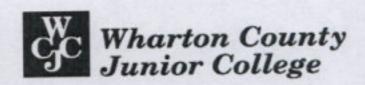
Suggested Course Maximum:

30

List any specific or physical requirements beyond a typical classroom required to teach the course.

None

Course Requirements/Grading System: Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

A. Midterm Exam	10-20%
B. Departmental Final Exam	10-20%
C. Other Course Requirements, such as Homework, Quizzes, Unit Tests	60-80%

Rev. January 2020

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A = 100-90
B = 89-80
C = 79-70
D = 69-60
F = 59 or below

Curriculum Checklist:

☒**Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.

☐**Administrative WCJC Core Course**. Attach the Core Curriculum Review Forms

    ☐Critical Thinking

    ☐Communication

    ☐Empirical & Quantitative Skills

    ☐Teamwork

    ☐Social Responsibility

    ☐Personal Responsibility

☐**WECM Course** -If needed, revise the Program SCANS Matrix and Competencies Checklist