Wharton County Junior College

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" or 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: 2020.06.08 09:21:40 -05'00'	6-8-2020
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: 2020.06.08 09:21:52 -05'00'	6-8-2020
Division Chair:	Jennifer Mauch Digitally signed by Jennifer Mauch DN: cn=Jennifer Mauch, o=Wharton County Junior College, ou=Mathematics, email=mauchj@wcjc.edu, c=US Date: 2020.06.07 15:35:32 -05'00'	6-7-2020
Dean/VPI:	Leigh Ann collins Digitally signed by Leigh Ann collins DN: cn=Leigh Ann collins, o=WCJC, ou=VPI, email=lacollins@wcjc.edu, c=US Date: 2020.06.12 10:38:39 -05'00'	6-12-20
Approved by CIR:	Paul J. Quinn Digitally signed by Paul J. Quinn Date: 2020.06.12 11:58:02 -05'00'	06/12/2020

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 – Inequalities; Functions Value
3.6 – Functions
8.1 – Graphing and Writing Linear Functions
8.2 – Reviewing Function Notation and Graphing Nonlinear Functions
2.8 – Solving Linear Inequalities
9.1 – Compound Inequalities
9.2 – Absolute Value Equations
9.3 – Absolute Value Inequalities

Unit 2 – Factoring and Quadratic Equations
6.1 – The Greatest Common Factor and Factoring by Grouping
6.2 – Factoring Trinomials of the Form x^2+bx+c
6.3 – Factoring Trinomial of the Form ax^2+bx+c and Perfect Square Trinomials
6.5 – Factoring Binomials
6.6 – Solving Quadratic Equations by Factoring
6.7 – Quadratic Equations and Problem Solving

Unit 3 – Rational Expressions
7.1 – Rational Functions and Simplifying Rational Expressions
7.2 – Multiplying and Dividing Rational Expressions
7.3 – Adding and Subtracting Rational Expressions with Common Denominators and Least Common Denominator
7.4 – Adding and Subtracting Rational Expressions with Unlike Denominators
7.5 – Solving Equations Containing Rational Expressions

Unit 4 – Rational Exponents, Radicals
10.1 – Radicals and Radical Functions
10.2 – Rational Exponents
10.3 – Simplifying Radical Expressions
10.4 – Adding, Subtracting, and Multiplying Radical Expressions
10.5 – Rationalizing Denominators and Numerators of Radical Expressions
10.6 – Radical Equations and Problem Solving

Unit 5 – Complex Numbers, Quadratic Equations with Complex Numbers
10.7 – Complex Numbers
11.1 – Solving Quadratic Equations by Completing the Square
11.2 – Solving Quadratic Equations by the Quadratic Formula

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 strands of mathematics in situations and problems, as well as in the study of other disciplines.

Methods of Assessment:

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 Elyan Martin-Gay, Pearson, 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. Departmental Final Exam 15-30%
B. Other Course Requirements 70-85%

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