Reference #386779   06-2   MAT 0020 College Preparatory Mathematics   Spring 2006 (16-Weeks)
Class Schedule: TR 12:40 PM - 2:45 PM   Room: 7216   Class Instructor: Alice Wong
Scheduled Labs: 48 Hours – Open Lab   Room: 2222

Welcome class to our learning community! Professor Sarah Garman and I have created an exciting curriculum for you this semester. We will cover interesting themes such as health and wellness, global and environmental awareness, minority issues, civic duties, and budgeting in our learning community linking REA 0002 and MAT 0020. I look forward to sharing with you wonderful topics and projects in your learning process. This syllabus contains important information you should keep handy at all times. Feel free to contact me if you have questions. Your success depends on mastering homework assignments, effectively studying one to two hours daily, and being motivated and willing to seek personal assistance from the Math Resource Center (Room 2222) or professor when needed.

Instructor: Alice Wong, *Associate Professor*   **Telephone #:** (305) 237-8041
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Catalog Description

This course combines arithmetic and beginning algebra. Topics introduces sets, operations on signed numbers, solving linear equations and inequalities in one variable, operations on polynomials, factoring, integer exponents, radicals, graphing, and applications of these topics.

MAT 0020 is an institutional credit course that may not be used to satisfy graduation requirements. It may be repeated.

Prerequisite

Admission is determined by one of the following:
      1) An adequate score on a placement test.
      2) MAT 0003 or MAT 0002 with a grade of "S".
      3) MAT 0020 (MAT 0012) with a grade of "P".

Credit

5 semester hours. Special fees.

Textbook

Introductory and Intermediate Algebra *with a Review of Basic Mathematics*, by Charles P. McKeague; Thomson Publisher
Specially packaged with a Digital Video Companion CD and "iLrn" on-line system

Materials

Index cards, at least four different color pens, pencils, eraser, highlighters, a ruler, 1 binder for lecture handouts, homework, quizzes, tests and note cards, binder paper for homework, Ziploc bags (quart size) for note cards, a simple scientific calculator.

Classroom Procedures and Grading Policy

Attendance

Attendance is required and will be recorded daily. In case of absence, a student is responsible for material covered, assignments announced, etc. If a student is absent for a period of two weeks or longer, the instructor <u>can purge</u> the student from the class. **All pagers and cellular phones** must be **OFF** during class.

Scheduled Labs and The Math Resource Center (The Math Lab) (Minimum Total of 48 hours of study)

Students are required to attend the Math Resource Center for a total of 48 hours during the term.
The Math Resource Center (Room 2222), an open lab, is always available to the student. Students are required to attend the Math Resource Center ***at least 48 hours*** during the term. There are tutors, videotapes, and software available for students' use in the Math Resource Center. You are expected to **<u>work</u>** on your mathematics homework, projects, or scheduled quizzes.

Participation

Students are expected to do assignments, participate in class activities, and attend class. You will be exposed to a learning environment consisting of lectures, group work, projects, and collaborative and cooperative learning. Homework must be done on time in order to learn the material. Make full use of the resources available to you: the Math Resource Center, your peers and professor, media services, the textbook, and video/CD-Rom supplements.

Tests
There will be a midterm and one cumulative Final Exam. Students must take both the midterm and final. A student absent (excused or unexcused) for the midterm or final will receive a zero for the grade. If you know in advance that you will be absent on the day of the midterm or final exam, you may schedule to take it earlier. Calculators are **NOT** to be used on homework and exams. No calculators are to be used unless indicated by the professor.   There will be assigned seats for each quiz and test. In addition, all books and belongings must be placed in front of the classroom on test days. *Cellular phones are not allowed on desks during tests*. Feedback on tests will be given a week from the exam date.

Honor Code
The Honor Code is strictly observed. Infractions result in a grade of "F" for the course and referral to the Dean of Students.

Homework
Homework is a mandatory assignment. All homework and written assignments must be done on loose-leaf paper showing the original questions with all the work to support the results. Homework assignment sheets will be given and is readily available on my webpage. I will have study sessions where students can come individually or as a group to work on their homework. Homework allows you to practice the concepts that I presented in class. Doing and mastering your homework will help you prepare for the in-class quizzes.

In-class Quizzes
There will be 8 in-class quizzes. The six highest of your eight quiz grades will count towards your final grade for the course. That is, the two lowest quiz grades will not count.

Student must be present at the lecture to receive an in-class quiz. **There are no make up for quizzes.** Please show up on time since it will be a timed quiz. There will be no extra time for those who start the quiz late. If you know you will be absent on the day of a scheduled quiz, you may schedule to take it earlier. If a student is absent for a scheduled in-class quiz, he or she will receive a zero for the grade.

There will be assigned seats for each quiz. In addition, all books and belongings must be placed in front of the classroom on quiz days. *Cellular phones are not allowed on desks during quizzes*. Feedback on quizzes will be given a week from the scheduled quiz date.

In-class and out-of-class Projects and Topics
There will be 12 projects. Topics related to the project will be discussed and covered. Each project is worth a total of 2 Math Lab Hours upon a "satisfactory" completion and will count towards your math lab requirements of 48 hours. Projects assignments highlight topics in this course. Quantitative reasoning and mathematical knowledge and understanding will be assessed in these assignments. Due dates for these projects will be announced in class.

Grades

Course Requirements
- ☒ *Students must attend the scheduled lab recitations and the Math Lab to total a recorded 48 hours of study.*
- ☒ *Students must have an overall average of 70% or based on quizzes, the midterm and the State of Florida Exit Exam.*
- ☒ *Students must pass the State of Florida Exit Exam with at least a 60%.*
- ☒ *Students must complete all project assignments.*

Quizzes, Midterm, and Final Exam		
Assessment	Total Point Worth	Keep Track of Your Grade Here
Quiz #1	20 points	
Quiz #2	20 points	
Quiz #3	20 points	
Quiz #4	20 points	
Quiz #5	20 points	
Midterm	100 points	
Quiz #6	20 points	
Quiz #7	20 points	
Quiz #8	20 points	
Final Exam	100 points	
Project 1	2 Math Lab Hrs	
Project 2	2 Math Lab Hrs	
Project 3	2 Math Lab Hrs	
Project 4	2 Math Lab Hrs	

Project 5	2 Math Lab Hrs	
Project 6	2 Math Lab Hrs	
Project 7	2 Math Lab Hrs	
Project 8	2 Math Lab Hrs	
Project 9	2 Math Lab Hrs	
Project 10	2 Math Lab Hrs	
Project 11	2 Math Lab Hrs	
Project 12	2 Math Lab Hrs	
Total possible points for the course: 320 points Note: Only the top six quiz scores will calculate into your final grade. All 12 project grades will calculate into your Math Lab Hour Requirements.		

Grades

S	270-320 points	=	90%-100%	Average
S	240-269 points	=	80%-89.9%	Average
S	210-239 points	=	70%-79.9%	Average
P	150-209 points	=	50%-69.9%	Average
U	000-149 points	=	0%-49.9%	Average

MAT 0024 is a college preparatory course. The departmental grading policy is as follows:

S (satisfactory) Student must have an overall exam average of 70% or higher based on quizzes, midterm and State Exit Exam, must have completed the 48-hour Math Lab requirement, and must have passed the State of Florida Exit Exam with at least a 60%.

This is the only grade that will allow a student to progress to MAT 1033 (Intermediate Algebra).

P (progress) A "P" grade is intended for those students who have completed the 48-hour Math Lab requirement and have an overall unit average of at least 55% based on quizzes, midterm and State Exit Exam. These students will enroll in MAT 0020 again or MAT 0024 with the recommendation by the professor.

U (unsatisfactory) A student who does not fulfill the above requirements will receive a grade of "U" and must repeat the MAT 0020.

Incomplete
In order to receive an incomplete, the student must be passing the course with an average of 70% or better on all the original exams and must have attended at least 90% of the classes. Incompletes are granted only in rare circumstances.

Make-up/ Retake
There will be **NO** make-up/retake during the term. If you are absent for a test or quiz, you will receive a grade of zero.

If you know in advance that you will be absent for a scheduled exam or a scheduled quiz, you may make arrangements with me to take the exam or quiz on an *earlier* date and time to avoid the zero-grade penalty.

Assessments and Progress Reports
Student learning will be assessed by hand grading students' work such as exams and quizzes. The grade and any written comments on returned exams and quizzes are considered reports to the students of their progress. Students are expected to record all points they earned on the last page of this syllabus. This will allow the students to keep track of the grades for each unit. During the semester students may conference with the professor on his or her grades.

Bonus Hours
As an added incentive, students who perform well on quizzes can earn bonus hours toward the 48-hour lab requirement.

Total Quiz Score	18 points – 20 points	2 bonus lab hrs	&	16 points – 18 points	1 bonus lab hr
Total Midterm Score	90 points – 100 points	8 bonus lab hrs	&	80 points – 90 points	5 bonus lab hrs

Note: **No** bonus lab hours will be awarded on the State of Florida Exit Exam. Bonus hours apply only to points earned on the original scheduled quizzes and midterm.

Course Objective
This course prepares students for the successful study of Intermediate Algebra.

Behavior Objectives
At the completion of this course, a student will be able to:
1. Perform any combination of operations on whole numbers
2. List all factors of a given whole number and write the prime factorization of a given whole number
3. Change improper fractions to mixed numbers and mixed numbers to improper fractions
4. Add, subtract, multiply, and divide fractions and mixed numbers
5. Do any combinations of operations with fractions
6. Change decimals to fractions
7. Round off a given decimal, or write approximate decimal as indicated
8. Add, subtract, multiply, and divide decimals
9. Work with numbers in scientific notation
10. Solve a proportion
11. Solve word problems using proportions
12. Convert any number from one of its form (fraction, decimal, percent) to another
13. Solve problems written in the form "A is R% of B" or "R% of B is A"
14. Solve percent word problems
15. Simplify numerical expressions using the rule for order of operations
16. Add, subtract, multiply, and divide real numbers
17. Compare signed numbers using $<, >, \leq, \geq,$ or $=$
18. Recognize the commutative, associative, identity, inverse, and distributive properties of real numbers
19. Determine the absolute values of signed numbers
20. Add and subtract absolute values
21. Combine like terms
22. Solve first-degree equations
23. Solve for variables that are used in elementary formulas
24. Solve elementary word problems
25. Solve first-degree inequalities and graph each solution set
26. Write the solution set for inequalities using interval notation
27. Graph linear equations
28. Determine the intercepts of a linear equation
29. Use elementary properties of exponents to simplify exponential expressions
30. Conversion of numbers to Scientific Notation and conversion of Scientific Notation to decimal form
31. Add, subtract, multiply and divide monomials
32. Add, subtract, and multiply polynomials
33. Division of polynomials by monomials
34. Factor polynomial expressions by taking out the greatest common factor
35. Factor by grouping
36. Factor trinomials
37. Factor the difference of two squares
38. Factor the sums and differences of cubes
39. Solve quadratic equations by factoring
40. Simplify rational expressions
41. Simplify basic radical expressions
42. Multiply and simplify radical expressions
43. Add and subtract simplified radical expressions

Sections	Topics to Be Covered
1.1	Notations and Symbols
1.2	Real Numbers
1.3	Addition of Real Numbers
1.4	Subtraction of Real Numbers
1.5	Properties of Real Numbers
1.6	Multiplication of Real Numbers
1.7	Division of Real Numbers
1.8	Subsets of Real Numbers

1.9	Addition and Subtraction with Fractions
2.1	Simplifying Expressions
2.2	The Addition Property of Equality
2.3	The Multiplication Property of Equality
2.4	Solving Linear Equations
2.5	Formulas
2.6	Proportions
2.8	Number Applications
2.9	Geometry Applications
2.11	Linear Inequalities
3.1	Paired Data and Graphing Ordered Pairs
3.2	Solutions to Linear Equations in Two Variables
3.3	Graphing Linear Equations in Two Variables
3.4	More on Graphing Intercepts
4.1	Multiplication with Exponents
4.2	Division with Exponents
4.3	Operations with Monomials
4.4	Addition and Subtraction with Polynomials
4.5	Multiplication with Polynomials
4.6	Binomial Squares and Other Special Products
4.7	Dividing a Polynomial by a Monomial
5.1	Greatest Common Factor and Factor by Grouping
5.2	Factoring Trinomials
5.3	More Trinomials to Factor
5.4	The Difference of Two Squares
5.6	Factoring: A General Review
5.7	Solving Equations By Factoring
6.1	Simplifying Rational Expressions
Square Roots	Radical Handout
R.1	The Meaning and Properties of Fractions
R.2	Prime Numbers, Factors, and Reducing to Lowest Terms
R.3	Arithmetic with Fractions
R.4	Mixed Numbers Notation
R.5	Multiplication and Division with Mixed Numbers
R.6	Addition and Subtraction with Mixed Numbers
2.7	Percents

Date	Sections	Projects/Quizzes

1	Thurs Jan 4	Introduction, 1.1	Tour of the Math Resource Center
2	Tues Jan 9	1.2, 1.3	Project 1 & Topic 1
3	Thurs Jan 11	1.3, 1.4	Project 1 & Topic 1
4	Tues Jan 16	1.4, 1.5	Project 2 & Topic 2
5	Thurs Jan 18	1.6, 1.7	**Quiz #1 (1.1, 1.2, 1.3)**
6	Tues Jan 23	1.7, 1.8	Project 2 & Topic 2
7	Thurs Jan 25	1.9	**Quiz #2 (1.4, 1.5, 1.6)**
8	Tues Jan 30	2.1, 2.2	Project 3 & Topic 3
9	Thurs Feb 1	2.2, 2.3	**Quiz #3 (1.7, 1.8, 1.9)**
10	Tues Feb 6	2.3, 2.4	Project 4 & Topic 4
11	Thurs Feb 8	2.4, 2.5	Project 4 & Topic 4
12	Tues Feb 13	2.6	**Quiz #4 (2.1, 2.2, 2.3, 2.4)**
13	Thurs Feb 15	2.8, 2.9	Project 5 & Topic 5
14	Tues Feb 20	2.9, 2.11	Project 6 & Topic 6
15	Thurs Feb 22	2.11	**Quiz #5 (2.5, 2.6, 2.8, 2.9)**
16	Tues Feb 27	3.1, 3.2, 3.3	Project 6 & Topic 6
17	Thurs Mar 1	*OFF*	*OFF*
18	Tues Mar 6	*Midterm (Secs 1.1-1.9 & 2.1-2.11)*	*Conferences*
19	Thurs Mar 8	4.1, 4.2	Project 7 & Topic 7
20	Tues Mar 13	4.1, 4.2	Project 7 & Topic 7
21	Thurs Mar 15	4.3, 4.4	Project 8 & Topic 8
22	Tues Mar 20	4.5, 4.6	**Quiz #6 (3.1, 3.2, 3.3, 4.1, 4.2)**
23	Thurs Mar 22	4.7, 5.1	Project 9 & Topic 9
24	Tues Mar 27	5.1, 5.2	Project 9 & Topic 9
25	Thurs Mar 29	5.2, 5.3	**Quiz #7 (4.3, 4.4, 4.5, 4.6, 4.7)**
26	Tues Apr 3	5.3, 5.4	Project 10 & Topic 10
27	Thurs Apr 5	5.6, 5.7	Project 11 & Topic 11
28	Tues Apr 10	5.7	Project 11 & Topic 11
29	Thurs Apr 12	6.1	**Quiz #8 (5.1, 5.2, 5.3, 5.4, 5.6)**
30	Tues Apr 17	Handout on Square Roots	Project 12 & Topic 12
31	Thurs Apr 19	Handout on Square Roots	Project 12 & Topic 12
32	Tues Apr 24	*Exit Exam 12:40 PM – 2:10 PM*	

Note: This is a tentative schedule. Any changes in the course outline and syllabi will be announced.

Classmates' Contact Information

Classmates	Phone #

Conference with Lab Instructor

Date	Number of Absences	Hours Owed	Additional Comments

Tracking Your Progress

In-Class Quiz Scores & Midterm Points & Final Exam Points

	YOUR EARNED POINTS
QUIZ #1	
QUIZ #2	
QUIZ #3	
QUIZ #4	
QUIZ #5	
QUIZ #6	
QUIZ #7	
QUIZ #8	
TOTAL (Top 6 highest scores only)	

	YOUR EARNED MATH LAB HRS
PROJECT #1	
PROJECT #2	
PROJECT #3	
PROJECT #4	
PROJECT #5	
PROJECT #6	
PROJECT #7	
PROJECT #8	
PROJECT #9	
PROJECT #10	
PROJECT #11	
PROJECT #12	
TOTAL (All 12 projects)	

	YOUR EARNED POINTS
MIDTERM	
QUIZZES (Total of top 6 scores only)	
EXIT EXAM	

INDIVIDUAL QUIZ, PROJECT, AND EXAM - PROGRESS REPORT

GRADE	QUIZZES (20 points each)	PROJECTS (2 Math Lab Hours)	MIDTERM/EXIT EXAM (100 points each)
S+ (MASTERY OF 90%)	18 – 20.0 points	S+ = 3 Math Lab Hrs	90 – 100.0 points
S (MASTERY OF 80%)	16 – 17.9 points	S = 2 Math Lab Hrs	80 – 90.9 points
S− (MASTERY OF 70%)	14 – 15.9 points	S− = 1 Math Lab Hr	70 – 79.9 points
P (MASTERY OF 50%)	10 – 13.9 points	P = Unsatisfactory Must Redo Assignment	50 – 69.9 points
	0 – 9.9 points	U = Incomplete Unacceptable	0 – 49.9 points

Note: Your final grade is based on the total number of points earned on the six highest of eight quizzes, a midterm, a State Exit Exam, and satisfactory completions of the 12 projects.

<u>Grades</u>

S	270-320 points	=	90%-100%	Average
S	240-269 points	=	80%-89.9%	Average
S	210-239 points	=	70%-79.9%	Average
P	150-209 points	=	50%-69.9%	Average
U	000-149 points	=	0%-49.9%	Average