Math 100C-002 Intermediate Algebra   Spring 2009   Daily, 12-12:50 am, Hertz 105

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Office Hours: 10 am daily   *Final:* Thursday, June 11, noon

Course Description: This course is designed to provide students with the algebra, problem solving, and academic skills needed to be successful in a college Pre-Calculus course. Each lesson will be taught using at least two instructional methods as well as a problem solving or critical thinking application. The course will emphasize appropriate use of the graphing calculator as a mathematical tool.

Course Rationale: The course reinforces numerical, graphical, and traditional algebraic approaches to give the student a better understanding of the mathematical concepts underlying algebra. The use of graphing calculators as a way to visualize mathematical concepts will be emphasized.

Text: *Intermediate Algebra* by Jay Lehmann with MathXL registration code. Register for homework assignments.
We will cover sections 1 through 4, 6, and parts of 7, 8, and 11.
Calculator: a graphing calculator is required (TI-83+ or TI-84)

Learner Outcomes
Concepts and Procedures
- Model real-world phenomena with a variety of functions.
- Translate among numeric, symbolic, graphical, and real-world representations of functions.
- Identify and use commutative, associative, and distributive properties of the real numbers.
- Recognize, apply, and model the four basic operations of the real numbers numerically, symbolically, and graphically.
- Recognize a variety of problem situations, including real-world phenomena, that can be modeled by the following library of functions: linear (master), quadratic (develop), exponential (develop), and absolute value (develop).

- Solve a system of equations in symbolic and real-world problem form.
- Manipulate rational and radical expressions.
- Model and solve problems using simple rational and radical expressions.
- Understand and use the order of operations for numerical calculations and for algebraic manipulations.
- *Model and solve a variety of problem situations using sequences and series (optional).*
- *Model and solve a variety of problem situations using conic sections (optional).*

Performance Skills
Problem Solving
- modeling real-world phenomena mathematically
- working on extended problems
- drawing on diverse knowledge and methods to solve problems
- applying appropriate technology to solve problems
- posing questions related to a problem
- generalizing problems

Critical Thinking
- Understand the difference between a fact and a hypothesis.
- Make and test hypotheses.
- Create simple arguments to support a position.
- Read and critique another's simple arguments.

Writing and Communication
- reading and understanding complex problems
- summarizing the essential ideas of a problem
- describing methods used to approach a problem
- expressing solutions and solution paths in written and verbal form
- evaluating and improving quality of written work

Technology Skills (Basic)
- Find the viewing window of a complete graph.
- Analyze graphs: trace graph, find roots, identify visual illusions.
- Find numerical data to specified accuracy.

Group Work—Peer Tutoring
- working cooperatively with others, sharing ideas
- asking for assistance

Guidelines for evaluating and assessing the student's ability to meet the learner outcomes

Student Advancement: Passing this course requires satisfactory performance in the areas of scholastic behavior, coursework, and basic skills. Students must meet EACH OF the following standards:
- No more than 6 absences and/or missed assignments (excused absences must be permitted by the director).
- 73% or better on coursework (including a passing grade on the final).
- Successful completion of Basic Skills tests.

Coursework: The coursework will consist of homework, projects, quizzes, and exams. Homework will require the use of MathXL. Projects will involve a written component.

Mastery of Basic Skills: The Basic Skills tests cover skills that students are expected to know when entering the course. Students must pass both Basic Skills tests at an 80% proficiency level. Students may retake these tests in order to meet the required proficiency level. Dates will be announced.

Final Exam: A comprehensive final exam worth 20% of the final grade will be given at the end of the quarter covering all of the course's learner outcomes. The content and type of questions will be similar to quizzes and exams given during the quarter.

Grading
Grades will be determined by the following weights:
Homework 20% Quizzes 10% Exams 50% Final Exam 20%
Grades will be determined by the following scale:
91 -100% = A   81 - 90% = B   73 – 80% = C   60 – 72% = D   Below 60%=F

Conferences
I will set up meetings with those students who show difficulty in progressing in the class.   Such meetings are a requirement to passing the course. You are always welcome to meet with me.

Support Services
A drop-in lab is available for students who need help on their coursework. Additional tutoring support may be offered to students who require it—talk to your instructor for more details. Students who have special needs or disabilities that may affect their ability to access information and/or material presented in this course are encouraged to contact the office of Disability Support Services on campus (963-2171).

If you have any requests to allow for special needs, let me know as soon as possible.

The purpose of this class is to prepare you for Math 153, Precalculus I. The goal is <u>not</u> to achieve a specific percentage grade. Our only goal is to prepare you for Precal. Do not be content with merely passing. Use this class to improve your overall algebra skills.

Note the date for the final. Early final exams will not happen.

For this class to be a success, we need to build an atmosphere of mutual respect. My expectation is for us all to behave in a manner that will let this happen. If we succeed in this, we can build an environment that will help us get the job done.

ALGEBRA REVIEW   These exercises will give you an idea of the competency level you need to bring to 100C. Consider them as a diagnostic. We will have a quiz similar to this on Thursday.

Simplify the expression: $2(y - q) + 3q$.

Solve for *b*: $-2 - \dfrac{b}{4} = -8$.

Evaluate $y = 2k^2 - 4k - 3$ when *k* = -2.

Multiply: $(x - 2)(x - 8)$.

Five dollars worth of quarters weighs about 2 ounces. About how much would 16 million dollars in quarters weigh?

Find the slope of the line passing through points (1, 3) and (0, 7).