

Math 97

Intermediate Algebra

Winter 2009

Class Meeting Time: Tu/Th 7:00-9:20 p.m.

Class Meeting Place: SMT-222

Item Number: 5929

Instructor: David Nelson
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Office: SMT 329
Office Hours: Daily 6:30-7:00 p.m., or by appointment

Class Web Site: www.instruction.greenriver.edu/dnelson

Prerequisite: Math 72 with a grade of 2.5 or higher, or appropriate placement score.

Calculator: A graphing calculator is required for this course.

Textbook: *Beginning and Intermediate Algebra*, by Hall and Mercer (REQUIRED)

Exams: Thursday, January 15 (Exam #1)
Thursday, February 5 (Exam #2)
Thursday February 26 (Exam #3)
Thursday, March 19 (Final Exam)

COURSE DESCRIPTION

Study of the definition of a function; graphs and solutions of linear equations and inequalities; graphs and solutions of quadratic, rational, radical, and literal equations; complex numbers; radical expressions; variation; and applications. Graphing calculator required. RECOMMENDED: Eligible for READ 104

EMAIL

Email is the best way to contact me outside of class. I won't necessarily be able to answer a detailed math question in writing, though it is a good way to set up an appointment if you need to see me but cannot make it to my office hour.

Green River Community College has provided email accounts for all students, with addresses that end with @mail.greenriver.edu. (Incidentally, having such an address will allow you to receive special offers, for example on software prices, which are only available to students.)

Your first homework assignment will require you to activate this account if you have not already done so. I will send messages to these accounts during the quarter, and you will be responsible for any information sent to yours. You must therefore either read that account regularly, or set up automatic forwarding to an account that you do read regularly. The website where you can set-up and start using your GRCC email is:

<http://www.greenriver.edu/studentemail>

CALCULATOR

A graphing calculator is required for this course. I will be using the TI-84 calculator for class demonstrations. I recommend a TI-83, TI-83+, or TI-84. If you use another calculator, I will not be able to assist you with its use, and you'll be expected to learn how to use it entirely on your own. If you would prefer not buying a calculator, you can rent one for the quarter from the Math Learning Center in SMT 355. You must have your own calculator because *sharing calculators on quizzes and exams is prohibited*.

CLASS FORMAT

We will use all of the following in this course: lectures, exams, quizzes, and in-class activities. Students will also submit homework for grading.

Attendance is very important! Since there are no make-ups for missed work, your grade will be affected by absences. I expect you to be here and to be on time each day. *Please make a decision today as to whether you can fulfill this obligation.*

WORK OUTSIDE CLASS

In my opinion, the most important part of this course is the work you do *outside of class time*. You don't get stronger by watching someone else exercise, and you don't get better at math by watching someone else solve problems. To develop skill with mathematics, you have to try it for yourself.

Study groups are *strongly encouraged*. Part of what I want you to learn in this course is how to communicate with mathematics effectively, in both written and verbal modes. Plan to meet with your group on a regular basis, and always prepare for those meetings by attempting the problems beforehand.

BEHAVIOR

Absolutely no cheating or plagiarism will be tolerated in this class. At the very least, a grade of zero will be given on the assignment. The consequences may be even more severe, at the instructor's discretion, up to and including a failing grade for the entire course.

Do not engage in any behavior that even makes the instructor *suspect* that you might be cheating, like glancing at another student's quiz, talking during an exam, having notes in view when they are not permitted, etc. The instructor may think you are cheating, but even if you are not, these would be unacceptable behaviors and subject to the same sanctions.

Respect of all others in this class is a necessity. Please refer to the GRCC Student Code of Conduct for rules governing appropriate behavior both inside and outside the classroom. Behavior that disrupts the class, or that is distracting to students or instructor, is not allowed. Such behavior will result in *negative* credit for the in-class activities component of the grade since it detracts from the learning environment. If disruptive behavior persists, the instructor may require students to change their seat or to leave the classroom.

ADA STATEMENT

If you believe you qualify for course adaptations or special accommodations under the Americans With Disabilities Act, it is your responsibility to contact the Disability Support Services Coordinator in LSC 126 and provide the appropriate documentation. If you have already documented a disability or other condition through the GRCC Disability Support Services Office, which would qualify you for special accommodations, or if you have emergency medical information or special needs I should know about, please notify me during the first week of class. You can reach me by phone at 253-833-9111, x4226. Or, you can schedule an office appointment during my posted office hours or at another mutually determined time. If this location is not convenient for you, we will schedule an alternative place for the meeting. If you use an alternative medium for communicating, let me know well in advance of the meeting (at least one week) so that appropriate accommodations can be arranged.

INCLEMENT WEATHER, EMERGENCIES AND CLASS CANCELLATIONS

If an assignment or test is scheduled for a day when class is cancelled, students should expect the assignment or test to be due the next day that class actually meets. If classes are cancelled a day

immediately or shortly before something is due, but not on the due date itself, students should expect the due date to remain unchanged. If classes are cancelled for several days before an assignment or test is due, the instructor reserves the right to make changes to due dates.

Announcements of such changes will be made on the class web site and sent to your mail.greenriver.edu email.

If school is closed on the day of the final exam, I will use your average on the first two exams to give you a grade for the final. This way I will be able to assign grades so that you can enroll for next quarter. If you then wish to take the final to try to improve your grade, you can do so the first week of the next quarter. It is your responsibility to contact me if you wish to schedule such an exam.

EVALUATION

Exams: You will be given three tests in this class covering most of Chapters 7, 8 and 9, some parts of Chapters 3, 4 and 11, plus some supplementary materials. There will be *no make-up tests* except for reasons of serious illness, religious reasons or issues of grave personal import, and any missed test will receive a grade of 0. I will require documentation (for example, a doctor's note) before allowing a make-up. However, if you know that you will have a scheduling conflict with a test (or any assignment) in advance, notify me as soon as possible because sometimes arrangements can be made ahead of time. All exams will be *closed notes, closed book* unless the instructor states otherwise.

Final Exam: The final exam will be given in class on Wednesday, March 18, from 9:00 to 10:50 a.m. The final exam *will be comprehensive*. The Final Exam will be *closed notes, closed book* unless the instructor states otherwise.

Homework: Your homework score is based on two components: problems from the text and in-class assignments.

Required problems from the text are listed later in the syllabus. On days homework is due, I will select 4 or 5 problems from the list and will ask for volunteers to come to the board and answer the questions. You will earn up to 10 points for each problem you do. Points will be awarded for volunteering and being prepared to provide an answer to the questions. I expect every student will make at least 3 trips to the board during the quarter. Homework papers will not be collected; however they should become part of your notebook.

In-class assignments: Occasionally we will have in-class assignments or group mini-projects that will count as homework as well. These in-class assignments may be turned in late, but will be subject to at least a 10% penalty.

Projects: There will be a project for almost every unit of material we cover. These will be written reports and should look similar to something you would turn into your supervisor as an employee. You will have at least a week to complete each project. No late projects will be accepted; however you may always turn them in early.

Notebinder for Extra Credit: You will receive up to 2 percent extra credit at the end of the course for having maintained a binder with all of the following materials in it: the course syllabus; all returned in-class worksheets, written homework, quizzes and exams; notes you take throughout the course; and a cover sheet (which will be provided to you later) on which you have recorded all your scores throughout the course. Organization and completeness are key elements for earning the extra credit points. (You may keep notes from class in a separate notebook if you choose.)

GRADING SYSTEM

We will have three tests that will account for 30% of your total grade. In addition, homework will count for 20% of your total grade. We will also have several projects that will be worth 30% of your final grade. Finally, the final exam will be worth 20% of your final grade. I will calculate your overall percentage to the nearest whole number. The final decimal grades will be based on the following percentage scale:

Percent	95%	90%	85%	80%	75%	70%	65%	60%	55%
Grade	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.5	0.0

Percentages falling between these will receive decimals proportionally between them. (For example, an 89% will be a 3.4 and an 88% will be a 3.3.) Percentages above 95% will receive a 4.0, and percentages below 55% will receive a 0.0.

If you choose to satisfy the Quantitative Skills requirement for the AA degree by passing this class, you need to earn a grade of 2.0. If you wish to take this class “Pass/No-Credit”, you must fill out a form at the Registrar's Office. There is a deadline for doing this (see below). A “Pass” will be recorded on your transcript if you earned a grade of 1.5 or better. If you are planning on taking another math class after this, you must receive a 2.0 or above in this class to continue. A “Pass” will not be sufficient to get you into the next course, nor to satisfy the Quantitative Skills requirement for the AA degree. A grade of “I” (incomplete) will only be given for emergency situations and only if at least 75% of the work has been completed with a projected passing grade.

Here is a list of registration deadlines for the current quarter:

Withdrawal Without Grades Posted on Transcript	January 26
Pass/No-Credit Petition or Official Withdrawal	February 27
Registration for Spring Quarter	February 9

ASSESSMENT OUTCOMES

The following GRCC Campus Wide Assessment Outcomes are applicable in this course:

Quantitative/Symbolic Reasoning:

- Student evaluates and interprets information and data.
- Student recognizes which processes or methods are appropriate for solving a given problem, and correctly implements those processes.
- Student demonstrates the ability to estimate a solution to a presented problem.
- Student translates data into formats such as graphs, tables, formulas, and sentences.

Critical Thinking:

- Student provides reasons for the conclusions they reach and assess the relevance and adequacy of those reasons.
- Student connects past learning with current topics.

COURSE LEARNING OBJECTIVES

Students will demonstrate the ability to:

- 1) define a function;
- 2) graph linear and quadratic functions in various forms;
- 3) solve linear equations and inequalities graphically, symbolically, and numerically;
- 4) solve quadratic equations using factoring, graphing, completing the square, and the quadratic formula;

- 5) manipulate complex numbers using the rules which govern them;
- 6) solve problems involving ratios, proportions, and variation;
- 7) manipulate rational expressions (including simplifying, multiplying, dividing, adding, and subtracting);
- 8) solve equations involving rational expressions, exponents, and radicals;
- 9) apply exponent rules to real numbers and scientific notation;
- 10) manipulate rational exponents;
- 11) solve systems of equations using substitution, elimination, graphing, and (if time allows) matrices;
- 12) use mathematics to solve practical applications.

HOW TO BE SUCCESSFUL IN THIS COURSE

- 1) **Keep up with the material.** There's going to be a lot of it, far too much to try to cram right before a test. Your best bet is to come to every class and do at least a little bit of work on your own every day.
- 2) **Make good use of class time.** Don't use it to socialize or to text message with your friends. If you waste class time, you will have to put in more time on your own to make up for what you missed.
- 3) **Be focused when you work on your own.** An hour of watching television with your book open next to you *does not count* as an hour of studying.
- 4) **Be prepared for your meetings with study groups.** Always show up having attempted the problems on your own, even if you don't think you'll get it all by yourself. You'll learn more from your mistakes than you would from just copying others' solutions.
- 5) **Learn to read the textbook.** In addition to listening to my lessons in class and taking notes, you should be using your textbook to cover the same material. The more approaches you take to learning the material, the more pathways your brain develops to help you retrieve that information when you need it. (This is another reason why we encourage you to work in groups, since talking about math with other people is yet another way to build those mental pathways.)
- 6) **Know the syllabus, and keep it handy.** If you're always unsure when the next test is, or when homework is due, or when your instructor holds his office hours, that's a good sign that you need to take the course more seriously. You need to know things like this in order to be able to manage your time well. Having this information available will help you in the course, *and* it will help you to avoid surprises that interfere with the rest of your life.
- 7) **Be patient with yourself.** Don't just give up when things seem hard. This course is supposed to be hard! You will grow as a student by struggling to overcome the challenges.

The list of student attributes on the following page is taken from the College Readiness Mathematics Standards, a document created by the Transition Mathematics Project. The aim of this document was to identify the elements of successful preparation for students taking mathematics in college. You should take a few minutes to read these attributes and to think about how you can take advantage of your strengths and improve on any weaknesses. For more on this project, visit www.transitionmathproject.org.

Student Attributes

Success in college depends on a student’s ability to respond to the challenges presented by new problems and new ideas. In addition to the process and content standards that follow, the attributes described below are crucial to success in college-level courses, both in mathematics and in other disciplines.

Attributes	Evidence of Achievement
Demonstrates intellectual engagement	<p>Perceives mathematics as a way of understanding — a view that mathematics must make sense, and is not a sequence of algorithms to be memorized and applied.</p> <p>Actively explores new ideas, posing questions about their meaning, significance, and implications.</p> <p>Recognizes patterns—as well as deviations—from previously learned patterns in data, diagrams, symbols, and words.</p> <p>Appreciates that abstraction and generalization are important sources of the power of mathematics.</p> <p>Is willing to take risks and be challenged as part of the learning process.</p> <p>Contributes to and benefits from group problem-solving activities.</p>
Takes responsibility for own learning	<p>Attends nearly every class session and when absent, seeks ways to learn the material covered in class.</p> <p>Conscientiously prepares work assigned for class.</p> <p>Examines and learns from his or her errors and seeks help when needed.</p> <p>Takes advantage of available resources — class time, notes, textbook, assignments, tutoring services, supplemental materials.</p> <p>Sets aside the time necessary to be successful.</p>
Perseveres when faced with time-consuming or complex tasks	<p>Is willing to work on problems that require time and thought, particularly problems that cannot be solved by mimicking a previously seen example.</p> <p>Successfully completes tasks that require organizing and implementing multiple steps, concepts, or techniques.</p> <p>Recognizes when an approach is unproductive and makes logical modifications to that approach or switches to another approach.</p> <p>Is convinced that effort is an important component of success in mathematics.</p>
Pays attention to detail	<p>Correctly follows all parts of oral and written directions without needing additional reminders.</p> <p>Makes few notational errors, e.g., accidentally changing digits, dropping or altering algebra symbols, incorrectly positioning points on a grid, etc.</p>