

RICHLAND COMMUNITY COLLEGE

Mathematics and Sciences Division

Master Course Syllabus

Course: Math 098 Intermediate Algebra

Course Credits: 4 Lecture, 0 Lab, 4 Credit Hours

Course Prerequisite

(Prerequisite: **all of the following**: (1) Math. 091 (completed with a C or above) OR – completion with a C or better both Mathematics 091A and Mathematics 091B, or satisfactory score on the mathematics placement exam, **AND** (2) Math. 095 (completed with a C or above) or one year of high school geometry, **AND** (3) eligibility for Engl. 101 or concurrent enrollment in Engl. 090 and 091)

Note: Any student found not meeting the prerequisite will be withdrawn from the course, regardless of the date of the course and regardless of the student's grade. Note that a grade of incomplete in a prerequisite fails to meet the qualifications of meeting the prerequisite, and the student found with an incomplete will be withdrawn from the course.

Mode of Delivery: Lecture, Discussion, Computer software

Developer: Jon Odell, Professor of Mathematics

Developed Date: January, 2012

Projected Date of Initial Offering: Summer 2012

Course Description

Intermediate Algebra, Mathematics 098 is designed for (1) students who have successfully completed two years of high school algebra or (2) students who need to review Intermediate Algebra concepts. The topics include a review of real numbers, polynomials, linear equations, factoring, solving quadratic equations by factoring and systems of equations. The course concentrates on rational expressions, rational equations, inequalities, problem solving, graphing, functions, and relations and equations of lines. A graphing calculator is required.

Applicable toward graduation where program structure permits:

Certificate or Degree - All Certificates, A.L.S.

Group Requirement - Not Applicable
Area of Concentration - Not Applicable

Learning Objectives

- Perform arithmetic operations with real numbers, and algebraic expressions including polynomials, and rational expressions
- Solve linear, rational, absolute value, equations in one and two variables with applications of domain and range
- Solve linear inequalities and compound inequalities in one and two variables
- Factor polynomials, including binomials and trinomials, and identify prime polynomials
- Write equations of lines and determine if lines are parallel or perpendicular
- Use graphs to identify solutions to linear equations and inequalities in one and two variables, as well as systems of equations and inequalities in two variables
- Solve systems of linear equations in two and three variables
- Graph quadratic, functions
- Solve applications involving linear expressions, equations and inequalities, rational equations,
- Identify and solve applications involving direct, inverse, and or joint variation.
- Simplify and perform operations of radical expressions; solving radical equations and applications
- Compute elementary operations involving complex numbers
- Solve quadratic equations and inequalities, including rational inequalities
- Solving and modeling applications of exponential and logarithmic functions

Cross Disciplinary Outcome(s)

Students will solve problems by performing deductive and inductive reasoning.

Topical Outline

INTERMEDIATE ALGEBRA

Topics to be covered (not necessarily in this order) :

Review

1. Basic Properties and Definitions - Review
2. Coordinate plane, Functions and graphing
3. Linear Equations
4. Polynomials
5. Factoring and solving quadratic equations by factoring
6. Rational Expressions
7. Rational Equations
8. Compound Inequalities

9. Absolute value equations and inequalities
10. Functions, domains and ranges
11. Use of graphing calculator to graph functions and evaluate
12. Direct, inverse and joint variation
13. Radicals and radical equations
14. Solving quadratic equations by completing the square and quadratic formula
15. Equations quadratic in form and quadratic inequalities
16. Graphing quadratic equations
17. Exponential functions and equations
18. Logarithmic functions properties and equations

Methods of Evaluation:

- tests
- quizzes
- homework
- comprehensive final examination

Grade Determination

grades are determined by dividing the students actual points by the total points possible. The percent of grade determines the grade.

Grading Scale

percent = x	
$x \geq 90\%$	= A
$80\% \leq x < 90\%$	= B
$70\% \leq x < 80\%$	= C
$60\% \leq x < 70\%$	= D
$x < 60\%$	= F

Texts and Recommended Supplements

Title

Intermediate Algebra: A Graphing Approach; Fourth Edition

Author(s)

Elayn Martin-Gay and Margaret Greene

Publisher

Pearson, Addison Wesley

Date published

2009

Required Software – MyMathLab

Recommended – Martin-gay’s Interactive Video Lectures (found in MyMathLab or Richland library)

Recommended – Video test prep – (comes with textbook)

Recommended Student Supplements

Title Student Solutions Manual Beginning & Intermediate Algebra

Author(s) Gay and Greene

Publisher Pearson, Addison Wesley

Year Published 2009

Required Equipment for Course

GRAPHING CALCULATOR REQUIRED

A graphing calculator is **required** for the course.

The Texas Instruments TI-84 Plus or TI-84 or TI-83 plus Silver Edition or TI-83 Plus are recommended. A TI-83 or TI-82 will be satisfactory. The instructor may provide students with programs for these calculators, but is not able to provide programs for other kinds of calculators. The instructor will not be able to provide assistance with other makes of calculators and some other calculators do not have all the necessary functions necessary for the classroom activities. The tutors in the Student Learning Center have been trained in the use of these recommended calculators.

THE STUDENT IS TO BRING THE GRAPHING CALCULATOR TO ALL CLASS MEETINGS.

The graphing calculator will be an integral part of the learning process. The student will be given homework and examinations, which will require its use.

The student is highly encouraged to copy the serial number of the calculator and write their name on the calculator with a permanent marker.

Attendance Policy

Regular attendance is necessary for satisfactory completion of a course. Richland faculty will take roll at each class meeting at least through midterm. If a student is absent for one week plus one day (or less, if specified by the instructor in the course outline), the student may be dropped from the course. At midterm the College will administratively drop any student who has failed to meet the attendance standard as certified by the instructor. This report will be used to determine certain financial aid awards. A student who fails to attend the first two classes of a course may also be dropped from the class.

Additional attendance requirements will be announced by the instructor

Classroom Procedures:

The instructor will announce specific classroom procedures or rules.

Human Relations Policy

Richland Community College Human Resources Statement

** It is the policy of Richland Community College that discrimination against any individual or group of individuals on the basis of race, color, religion, sex, marital or parental status, national origin or ancestry, age, mental or physical disability (except where it is a bonafide occupational qualification), sexual orientation, military status, or status as a disabled or Vietnam-war veteran, is specifically prohibited.

RCC Academic Integrity Policy

Each student is expected to be honest in his/her class work or in the submission of information to the College. The College regards dishonesty in classroom and laboratories and on assignments and examinations and the submission of false and misleading information to the College as a serious offense. A student who cheats, plagiarizes, or furnishes false, misleading information to the College is subject to disciplinary action up to and including failure of a class or suspension/expulsion from the College.

National/State Standards

STANDARDS

Objectives and Standards meeting the criteria of the American Mathematical Association of Two-Year Colleges

Standard I-1: **Problem Solving**

Students will engage in substantial mathematical problem solving.

Standard I-2: **Modeling**

Students will learn mathematics through modeling real-world situations.

Standard I-3: **Reasoning**

Students will expand their mathematical reasoning skills as they develop convincing mathematical arguments.

Standard I-4: **Connecting With Other Disciplines**

Students will develop the view that mathematics is a growing discipline, and interrelated with human culture.

Standard I-5: **Communicating**

Students will acquire the ability to read, write, listen to, and speak mathematics.

Standard I-6: **Using Technology**

Students will use appropriate technology to enhance their mathematical thinking and understanding and to solve mathematical problems and judge the reasonableness of their results.

Standard I-7: **Developing Mathematical Power**

Students will engage in experiences that encourage independent exploration in mathematics, develop and reinforce tenacity and confidence in their abilities to use mathematics.

Standard C-1: **Number Sense**

Students will perform arithmetic operation, as well as reason and draw conclusions from numerical information.

Standard C-2: **Symbolism and Algebra**

Students will translate problems situations into their symbolic representations and use those representations to solve problems.

Standard C-3: **Geometry**

Student will develop a spatial and measurement sense.

Standard C-4: **Function**

Students will demonstrate understanding of the concept of function by several means including verbal, numerical, graphical, and symbolic and incorporate the understanding as a central theme into their use of mathematics.

Standard C-5: **Discrete Mathematics**

Students will use discrete mathematical algorithms in order to solve problems of finite character.

Standard C-6: **Probability and Statistics**

Students will analyze data and use models to make inferences about real-world situations.

Standard C-7: **Deductive Proof**

Students will be exposed of the deductive nature of mathematics as an identifying characteristic of the discipline, recognize the roles of definitions, axioms, and theorems, and identify and construct valid deductive arguments.

Standard P-1: **Teaching with Technology**

Mathematics faculty will model the use of appropriate technology in mathematics, so that students can benefit from the opportunities it presents as a medium of instruction.

Standard P-2: **Interactive and Collaborative Learning**

Mathematics faculty will foster interactive learning through student writing, reading, speaking, and collaborative activities so that students can learn to work effectively in groups and communicate about mathematics both orally and in writing.

Standard P-3: **Connecting with Other Experiences**

Students will be actively involved in meaningful mathematical problems that build upon their experiences, focus on broad mathematical themes, and build connections within branches of mathematics and between mathematics and other disciplines so that student will view mathematics as a connected whole relevant to their lives.

Standard P-4: **Multiple Approaches**

The curriculum will model the use of multiple approaches- numerical, graphical, symbolic, and verbal - to help students learn a variety of techniques for solving problems

my.richland.edu

Richland uses my.richland.edu as the information portal for students. users can access a wide variety of web-based services, including online registration, academic information, Richland e-mail, the Angel Learning Management System, and the LRC research databases. Academic information available includes current semester schedule, unofficial transcripts grade point average projection financial aid information review, online payment services, and degree auditing to determine degree completion progress. Student grades are posted only on the my.richland.edu website. Grades will not be mailed to students unless requested.

Students with a "hold" placed on their records due to a financial obligation to the College or other unmet requirement will be unable to view academic records.

RCC College Telephone Number 217-875-7200 or

217-875-7211 (with extension number)

Academic Success Center

Accommodations, Room C 148 Ext. 379

Responsibilities: Services for students with documented disabilities, including advisement, counseling adaptive equipment and materials, instructional aides, tutors, note takers, interpreters, and testing accommodations.

Testing, Room S 116, Ext 2389

Responsibilities: Placement testing in English, mathematics, reading health courses, make up testing as arranged by instructor, testing for on-line courses.

Tutoring, room S118 Ext. 419

Responsibilities; Tutoring on walk-in or appointment basis, study groups, computers.

Enrollment Services

Advising and Registrations, Room C129, ext 267

Responsibilities: Advisement, registration, general student services

Financial and Veteran Affairs, room N136, ext 274

Responsibilities: federal and state aid, veteran and entitlement benefits, scholarships

Student Records, Room C129, Ext 257

Responsibilities: grades, transcripts, graduation.

Learning and Resources center (Library) Room C152, Ext 303

Responsibilities: Manages print and electronic resources for students, faculty, and broader College community. Offers research assistance, information literacy sessions, course reserves, and individual and group study areas.

Online Learning Support, ochelp@richland.edu Room W143, Ext 376

Responsibilities: Assists students with navigation in an online course, access and navigation in the student information system, and technical questions regarding personal computer system requirements and troubleshooting. Assistance is also given to students in hybrid and technology enhanced courses. Staff provide technical support thorough e-mail, telephone, and walk-in service. The best way

for students to contact the Online Help Desk is to use the Tech Request Support Form at <http://www.richland.edu/online/support> or e-mail at ochelp@richland.edu. The request goes directly to the Help Desk e-mail as well, and this e-mail is checked regularly.

Open Computer Labs

Students may use computers in the Learning Resources Center and in the Academic Success Center.

Student and Career Development

Career Services, Room C129, Ext 307, 205

Responsibilities: Career Assessments job placement information and transfer information and assistance

Counseling Services, Room 129, Ext 307, 205

Responsibilities, Academic advising personal counseling.

Transfer Center, Room C129, Ext. 222

Responsibilities, Transfer information college visits and campus representatives on campus

Veterans Services, Room C129, Ext 307, 205

Responsibilities: assist veterans with comprehensive college services

Student Engagement

Student Success, Room C131, Ext. 314

Responsibilities: Passport workshops, academic success strategies and workshops, Success. net, (assist with identifying academic needs early) probation and suspension students.

Student Support Services/TRIO Program, Room C143, Ext. 440

Responsibilities: Program designed for first-generation college students, offering academic and personal support.

Security Services

Richland has around-the-clock security officers. Evening escort service is available. Richland's security works with local law enforcement officers with campus interventions.

Student Support Services/TRIO (assuming funding is available)

Student Support Services/TRIO, a federally funded program, provides educational support to low-income, first generation students (neither parent with a bachelor's degree) and to students with physical or learning disabilities who are admitted to the program. Participants must also be accepted as Richland students and have citizenship, permanent residency, or refugee status. The purpose of the program is to help students improve academic performance, graduate from Richland, and transfer to a four-year institution of their choice.

Services include advising, tutoring, mentoring in addition to academic improvement services, cultural trips, college trips, leadership activities, and technology loans. Applications are available in the TRIO Office.

www.richland.edu/sas/retention/trio/.

Proficiency Exam

The fee for a proficiency exam is one-half of the tuition normally charged for a course. See the Dean for information about the process of proficiency.

Full-Time Academic Load

An academic load of 12-17 semester hours is considered normal for a full-time student during regular semesters. During the summer session, 6-8 semester hours is considered a full load.

Part-time students are those students enrolled for less than the normal full load. Students with jobs or other outside commitments should limit their credit loads accordingly.

Students planning an overload of courses (more than 17 semester hours) must have at least a "B" average for 12 or more hours during the previous semester. An advisor or counselor in Retention Services before registration must approve all such overloads.

Appealing a Grade

A student who feels he/she has received an unfair or inaccurate grade may appeal through the Judicial Board.

Grade appeals must be filed no later than one year from the last day of the semester for which the grade was received. A student wishing to appeal should follow the procedures set forth in the Student Resolution Process Chart on page 44 under Student Grievance and Disciplinary Proceedings.

Dropping a Course

Dropping a course at Richland can occur under two circumstances: Student-Initiated or Administrative.

1. Student-Initiated

A student may drop a course through the last day before final exam week of any term. A grade of "W" will be recorded for the course dropped. **Students are encouraged to consult with their instructor before dropping a course.**

A "Change of Schedule" form may be obtained in the Student Services Center or any academic division office and must be signed by the class instructor.

Students dropping two or more courses for two consecutive terms are advised to see a counselor in Retention Services to establish a reasonable academic load for the next term of attendance.

2. Administrative

A student may be administratively dropped due to nonpayment of tuition and fees or for poor attendance as follows:

1. Any time a student's attendance violates the standard set by the course instructor (as stated in the course syllabus). At midterm, the College will administratively drop students who have failed to meet the attendance standard for the course.
2. Failure to attend the first two classes of a course.
3. Students having unsatisfactory attendance during the period from midterm through the last regular week of class before finals may be administratively dropped.

When a student stops attending a course, he/she should not assume the College has issued an Administrative Drop. If the Administrative Drop is not issued, the student may receive an "F" for the course. Students who stop attending a class should complete the "Change of Schedule" form and have it signed by their instructor. This form must be turned in to Student Records before the deadline to complete the withdrawal process.

Students who miss a class are responsible for work assigned during their absence. Instructors may, at their option, accept late work, but such work may receive a lower grade.

Students may also be required to withdraw from a course or the College if they cannot make satisfactory academic progress despite special assistance, advising, and counseling.

Withdrawing from a Course or the College

Students withdrawing from the College are required to settle all obligations, including money owed to the College, and must see a counselor or advisor as part of the withdrawal process. Students may withdraw in person or by telephone.

Students may withdraw at any time, up to the last day of class before the final examination period of any term. A grade of "W" will be given for all current courses, if the courses are officially dropped.

"Change of Schedule" forms are available in the Student Services Center, Room C129. To withdraw by phone, call 875-7211, Ext. 267.

Auditing a Course

Any credit class offered by Richland may be taken on an audit basis unless otherwise specified.

Students wishing to audit a class will be assessed the credit hour rate and other applicable fees and must complete an audit form in the Student Records Office by the 10th day of the semester. Change to the grading status cannot be made after the 10th day, and a grade of AU will be assigned at the completion of the course. No credit will be awarded for auditing a course.

Statement of Student Responsibilities

Listed below are the responsibilities that Richland students accept through membership in the College's learning community. Each student should approach academic endeavors, relationships, and personal responsibilities with a strong commitment to personal integrity and mutual respect. As members of the Richland teaching and learning community, students have a responsibility to:

- Read the College Catalog and Student Handbook
- Become knowledgeable about College policies and procedures.
- Abide by College policies and procedures.
- Be aware of academic and graduation requirements.
- Provide accurate information on College forms.
- Meet financial obligations to the College.
- **Attend classes and be on time.**
- **Complete assignments and exams based upon course syllabus information.**
- **Participate in class.**
- Fulfill their academic responsibilities in an honest and forthright manner.
- Utilize appropriate support services when needed.

- Seek help from faculty when needed.
- Seek out answers to questions.
- Abide by the equipment usage policy.
- Meet published deadlines.
- Notify College officials if a condition exists which is in violation of student's rights, College policies, rules, standards, and procedures.
- Join/seek out groups and individuals that will help students achieve their goals.
- Abide by state and federal laws.
- Conduct themselves in a responsible manner in and out of the classroom.
- Protect, support, and contribute to a safe environment within the learning community.
- Show regard for the property of the College, its community members and visitors. Assist the College in fulfilling its administrative responsibilities.

Student Conduct

Students enrolled at Richland Community College are considered by the College to have reached the age of responsible citizenship and are expected to conduct themselves in a responsible manner while on campus.

By the act of registration for classes at the College, students obligate themselves to adhere to the rules and regulations, which the institution formulates and publishes in the College Catalog, Student Handbook, and other, published materials. Accordingly, students are expected to assume primary responsibility for their own conduct.

Disciplinary action may be imposed upon a student by an instructor or an administrator of the College for gross misconduct that would tend to interfere with educational process, disrupt the normal activities of the institution, or infringe upon the rights of others while the student is on the College premises (owned, leased, or rented) or at functions under the sponsorship of the College. In addition, the College reserves the right to remove any individual from the campus who is physically or verbally disrupting a class or disturbing the peace.

Students charged with misconduct or with violation of the law and/or College rules and policies may be subject to written reprimand, restitution, temporary expulsion, disciplinary probation, suspension, or expulsion. Individuals who are not students and who violate these regulations will be considered trespassers and will be treated accordingly.

Academic Dishonesty Policy

The student is expected to be honest in his/her class work or in the submission of information to the College. The College regards dishonesty in classroom and laboratories and on assignments and examinations and the submission of false and misleading information to the College to be a serious offense.

Those students who cheats, plagiarizes, or furnishes false, misleading information to the College is subject to disciplinary actions up to and including failure of a class or suspension/expulsion from the College

Removal from a Class or the College

The College reserves the right to remove any individual from a class or the College for the following reasons?

- 1. For physically or verbally disrupting a class or disturbing the peace.**
2. For unsatisfactory academic progress.
- 3. For gross misconduct or any other actions or unlawful conduct which would tend to interfere with the educational process, disrupt the normal activities of the institution, or infringe upon the rights of others while the individual is on the College premises (owned, leased, or rented) or at functions under the sponsorship of the College.**