

Dr. Donald Adongo, FH 6A-2

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Office Hours: MTRF 8:30 – 10:00 am; and by appointment

Section 1 CRN 51245 Summer 2016

Meeting: 10:15 am – 12:55 pm MTRF FH 307

<http://campus.murraystate.edu/faculty/dadongo>

**DEPARTMENT:** Mathematics and Statistics

**COURSE PREFIX:** MAT

**COURSE NUMBER:** 097

**CREDIT HOURS:** 4

**I. TITLE:**

**Intermediate Algebra**

**II. COURSE DESCRIPTION AND PREREQUISITE(S):**

The algebra of polynomials, rational expressions, and radicals; solving polynomial, rational, and radical equations and inequalities; graphing of lines and parabolas, systems of equations, and mathematical modeling. Students who have received a grade of C or better in any course numbered MAT 120 or above can not enroll in this course without written permission of the departmental chair. Credit earned in this course cannot be counted toward graduation requirements and cannot be used to fulfill university studies requirements. Required for students with degree requirements which include MAT 115, 215, 120, 130, 135, 140, 145, or MAT 150 and who do not already meet the prerequisites for their required course.

**Prerequisite(s):** ACT Mathematics sub-score of 19, or MAT 096.

**III. COURSE OBJECTIVES:**

The student will be able to:

- A. Add, subtract, multiply, and divide polynomials with one or more variables;
- B. Factor polynomials including finding the greatest common factor, using grouping, recognizing special products, and factoring general trinomials;
- C. Use the properties of rational exponents and simplify expressions containing rational exponents;
- D. Add, subtract, multiply, and divide rational expressions;
- E. Solve quadratic equations using factoring, completing the square, and the quadratic formula;
- F. Solve polynomial, rational, absolute value, and radical equations;
- G. Solve systems of linear equations in two unknowns;
- H. Solve and graph linear and absolute value inequalities;
- I. Distinguish between situations that can be modeled with linear, quadratic, and exponential functions;
- J. Convert expressions between rational exponents and radical and evaluate real numbers raised to rational exponents;
- K. Determine the slope of a line given two points, its graph or its equation;
- L. Determine an equation of a line given two points or a point and a slope, or a point and a parallel or perpendicular line;
- M. Determine whether a given correspondence or graph represents a function;
- N. Evaluate functions and find the domains of polynomial, rational, and square root functions;
- O. Introduce complex numbers;
- P. Apply the concepts above to solve application problems.

**IV. CONTENT OUTLINE:**

- A. Solving equations and inequalities;
- B. Linear equations, their characteristics and their graphs;
- C. Systems of linear equations;
- D. Natural number and integer exponents;
- E. Polynomials, operations on polynomials, and factoring;
- F. Rational number exponents, and radical expressions;
- G. Rational expressions and operations on rational expressions;
- H. Absolute value equalities and inequalities;
- I. Functions, domain, and graphing;
- J. Complex numbers;

K. Quadratic functions and their graphs.

**V. INSTRUCTIONAL ACTIVITIES:**

**A.** The development of mathematical skills requires hands-on experiences by the student. With this in mind, activities and assignments are chosen to allow students to study and practice the mathematical skills introduced in the course. In the classroom an interactive format is used; student input is critical to the presentation of the day's material. On occasion, the class is broken into small groups where students work in teams to solve more complicated problems, wrestle with challenging concepts and experience the synthesis of knowledge that occurs in explaining concepts to one another. Students are encouraged to continue these small group experiences by forming study partner relationships with other members of the class.

**B.** The development of the mathematical framework is a continuous exercise in critical thinking. Applied problems are approached by a four step process: 1) read and understand the problem -- illustrate the situation by a diagram or table; 2) develop a strategy -- look for patterns, think of analogous problems, find a way to connect the known information with the unknown; 3) carry out the strategy; and 4) interpret the results within the context of the original situation. Students are expected to be able to explain their steps with words, graphs and/or charts and tables; this explanation is a fundamental part of the problem.

**VI. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:**

None.

**VII. TEXT(S) AND RESOURCES:**

Wright, D. Franklin Introductory & Intermediate Algebra 2<sup>nd</sup> Edition, Hawkes Learning Systems

**CALCULATOR:** You will be permitted to use a basic calculator, one with the four operations of addition, subtraction, multiplication, and division. No other calculator usage will be permitted.

**VIII. EVALUATION AND GRADING PROCEDURES:**

Exams, projects and/or quizzes are used to assess the student's development of mathematical skills, their understanding of key concepts and their ability to express this understanding via numerical and graphical and narrative methods. Critical thinking and mathematical writing are major components of exams and quizzes. These skills are evaluated in terms of clarity, organization, notation, correctness of mathematical procedures and ability to explain results. Group work may be evaluated or not (e.g. activity may be for learning purposes); graded group work is usually in the form of a group quiz -- with each group member receiving the same grade. There will be written homework, 4 exams and a final exam. These are weighted:

Exam	64%
Written Homework	12%
Final Exam	24%

Letter grades will be assigned by the following scale:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60%	E

**Exams:** The Exams will test your comprehension of concepts and skills not covered on a previous exam. Exams occur for everyone (to be fair to everyone) on the scheduled date. Sometimes, however, extenuating circumstances do exist. If you absolutely must miss an exam, you are to stop by or call me (or leave a message with the office if I am not in when you call) before the exam to tell me why you cannot be at the exam. In addition, you must complete the "missed exam form" (see the course website) within one day. If you do not, you will get a zero on that exam with no opportunity to make it up. An excused missed exam will be made up in my office within two days (an extension may be granted in rare cases), with the grade to be determined as explained at that time. Our four exams will be **July 11** (Sections 2.5 – 3.5), **July 18** (Sections 4.1 – 5.6), **July 25** (Sections 6.1 – 6.7), and **August 1** (Sections 7.1 – 8.3).

**Final:** The Final will be a comprehensive exam covering any material addressed during the semester. The Final exam will be on **Friday, August 5<sup>th</sup>** at **10:15 a.m.** in **FH 307**.

**Homework:** Homework (written) will be assigned at the beginning of each section and will also be listed on the course web site. Homework will be collected generally twice a week (Mondays and Thursdays) except for 7/8. **(No Late Homework).** Homework must be completed in pencil, separate from your notes, and on loose-leaf paper or paper without rough edges. **Staple** your papers together if you have used more than one sheet other wise your homework **will not be graded.** Your name and class meeting time should be written on the top right part of the first page.

**Important Grade-dates:** The last day to drop a course without receiving a grade (or a W) is Wednesday, July 6. The last day to drop individual courses and receive a grade of "W" (no penalty) is Friday, July 29. The last day to change from AUDIT to CREDIT is Wednesday, July 6. The last day to change a class from CREDIT to AUDIT is Wednesday, July 6.

**B. Auditing:** If you seek to change your status to audit, you must continue to do all the graded assignments, to attend classes regularly after the audit is given, to miss no more than 1 class period after the audit is given, and to maintain at least a 40% average in the course. If these requirements are not followed, then an "E" will be earned for this course.

## **IX. ATTENDANCE POLICY:**

*Students are expected to adhere to the MSU Attendance Policy outlined in the current MSU Bulletins.*

**Class attendance will be taken daily. If you miss class you are responsible for obtaining the day's notes and assignments. While you are not graded on class attendance, YOU ARE EXPECTED TO ATTEND EVERY CLASS PERIOD or your grade will suffer (indirectly) if you do not attend. If you have one or do not miss at all this semester, I will drop your two lowest written homework scores. To level the playing field between those who must miss classes because of MSU and those who do not, the only kind of absence which will not be counted in this regard is a university-required absence. Thus, anything else (for instance, being sick, going on a job interview, taking care of a sick relative, etc.) will count as one of these absences.**

**Note the following provisions on arriving late to class or leaving early:**

**Every two tardies (arriving late) will count as an absence.**

**Leaving class early will count as an absence unless you provide me with a reason in advance.**

## **X. ACADEMIC HONESTY POLICY:**

Murray State University takes seriously its moral and educational obligation to maintain high standards of academic honesty and ethical behavior. Instructors are expected to evaluate students' academic achievements accurately, as well as ascertain that work submitted by students is authentic and the result of their own efforts, and consistent with established academic standards. Students are obligated to respect and abide by the basic standards of personal and professional integrity.

**Violations of Academic Honesty include:**

**Cheating** - Intentionally using or attempting to use unauthorized information such as books, notes, study aids, or other electronic, online, or digital devices in any academic exercise; as well as unauthorized communication of information by any means to or from others during any academic exercise.

**Fabrication and Falsification** - Intentional alteration or invention of any information or citation in an academic exercise. Falsification involves changing information whereas fabrication involves inventing or counterfeiting information.

**Multiple Submission** - The submission of substantial portions of the same academic work, including oral reports, for credit more than once without authorization from the instructor.

**Plagiarism** - Intentionally or knowingly representing the words, ideas, creative work, or data of someone else as one's own in any academic exercise, without due and proper acknowledgement.

Instructors should outline their expectations that may go beyond the scope of this policy at the beginning of each course and identify such expectations and restrictions in the course syllabus. When an instructor receives evidence, either directly or indirectly, of academic dishonesty, he or she should investigate the instance. The faculty member should then take appropriate disciplinary action.

Disciplinary action may include, but is not limited to the following:

- 1) Requiring the student(s) to repeat the exercise or do additional related exercise(s).
- 2) Lowering the grade or failing the student(s) on the particular exercise(s) involved.
- 3) Lowering the grade or failing the student(s) in the course.

**If the disciplinary action results in the awarding of a grade of E in the course, the student(s) may not drop the course.**

Faculty reserve the right to invalidate any exercise or other evaluative measures if substantial evidence exists that the integrity of the exercise has been compromised. Faculty also reserve the right to document in the course syllabi further academic honesty policy elements related to the individual disciplines.

A student may appeal the decision of the faculty member with the department chair in writing within five working days. Note: If, at any point in this process, the student alleges that actions have taken place that may be in violation of the Murray State University Non-Discrimination Statement, this process must be suspended and the matter be directed to the Office of Equal Opportunity. Any appeal will be forwarded to the appropriate university committee as determined by the Provost.

**In this Course, violations of Academic Honesty will result in a failing grade awarded on the particular exercise involved.**

## **XI. NON-DISCRIMINATION POLICY AND STUDENTS WITH DISABILITIES:**

### Policy Statement

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact the Executive Director of Institutional Diversity, Equity and Access, 103 Wells Hall, (270) 809-3155 (voice), (270) 809-3361 (TDD).

### Students with Disabilities

Students requiring special assistance due to a disability should visit the Office of Student Disability Services immediately for assistance with accommodations. For more information, students should contact the Office of Student Disability Services, 423 Wells Hall, Murray, KY 42017. 270-809-2018 (voice) 270-809-5889 (TTD).

## **XII. Other required departmental or collegiate committee information**

**Electronic Communication Policy: It is the default policy of the Department of Mathematics and Statistics that, without the prior consent of the course instructor, no device may be used for electronic communication in class. This shall include cell phones, smart-phones, computers, laptops, and tablets. In addition, this includes verbal calling, incoming calls, email, text messaging, the use of cell phone calculators on tests and quizzes, and the use of the wireless capabilities of calculators or other electronic devices. Unless given special permission in advance from the course instructor for potential cases of emergency or critical family situations, cell phones must be kept on silent and out of sight (i.e. secured to a person's belt or kept in a bag or purse away from desks). Should a student's cell phone be visible, ring, or should the student be engaged in some other form of unauthorized usage that the course instructor finds to be disruptive to the class, the student may be asked to leave class and not return for that class period, and be counted absent for that day. Similar restrictions and penalties apply to use of other electronic devices, unless permitted by the instructor for that class period.**

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Please fill out this portion, detach and return to the instructor by **Wednesday July 6, 2016**.

By my signature below, I certify that I have received a copy of the course syllabus for MAT 097-(01) taught by Dr. Donald Adongo during the Summer 2016 Semester. Furthermore, I certify that I have read and understand the contents of the course syllabus.

**Printed Name:** .....

**Signature:** .....

**Date:** .....