



Beginning & Intermediate Algebra

MAT 039.03 & MAT 131.03 Co-Req Blend
Fall 2019

Number of Credits: 8

Office: JM 249

Days Class Meets: M/T/W/Th

Contact Phone: 517-796-8472

Meeting Times: 1:30 – 3:20 pm

Contact Email: priceallisonr@jccmi.edu

Location: JM 241

Office Hours: see schedule on MML

Instructor: Allison Price

Online: MML ID – price84919

Course Descriptions

MAT 039

Students will build algebraic skills working with expressions and linear and quadratic equations. The course particularly emphasizes graphs and equations of lines, factoring techniques, methods of solving quadratic equations, and linear and quadratic modeling.

MAT 131

This course emphasizes simplifying expressions, solving equations, and graphing functions, including linear, quadratic, polynomial, rational, radical, exponential and logarithmic. Problem solving and mathematical modeling are integrated throughout.

Prerequisite(s)

Course placement or equivalent SAT/ACT score.

Course Goals

The purpose of this course is to develop a progressive understanding of basic and intermediate algebraic skills, concepts, and problem solving techniques; to obtain a sense of how and why algebra is used, and to be able to relate these problems and use the learned problem solving techniques to real life applications. Great emphasis will be placed on understanding of terms, concepts, principles and theories rather than cramming and memorization.

Course Objectives

MAT 039 – Students completing MAT 039 – Beginning Algebra should be able to:

1. Simplify basic algebraic and exponential expressions using mathematical processes and symbol manipulation.
2. Use algebraic processes to solve linear, quadratic and literal equations and linear systems of equations.
3. Demonstrate understanding of concepts of linear equations by: graphing a linear equation, finding x- and y- intercepts, and finding the slope of a line.
4. Solve application problems using algebraic processes and procedural techniques.
5. Demonstrate knowledge of current technology and its uses and/or scientific issues.

MAT 131 – Students successfully completing Math 131 should be able to:

1. Simplify Algebraic expressions involving polynomial, rational, radical, exponential, and logarithmic functions.
2. Solve equations, inequalities, and systems of equations and inequalities.
3. For functions described algebraically or graphically:
 - a. evaluate, find domain and range, find inverse
 - b. perform algebraic operations and graphical translations
4. Solve application problems, including the ability to:
 - a. represent a situation using a graph, table or equation
 - b. forecast outcomes from above representations
 - c. solve optimization problems
5. Use appropriate technology as part of their completing the objectives above.
6. Demonstrate knowledge of current technology and/or scientific issues.

GENERAL EDUCATION OUTCOMES: The course goals and objectives incorporate specific General Education Outcomes (GEOs) established by the JC Board of Trustees, administration, and faculty. These goals are in concert with four-year colleges and universities and reflect input from the professional communities we serve. GEOs guarantee students achieve goals necessary for graduation credit, transferability, and professional skills needed in many certification programs. The GEOs and course objectives addressed in this class include the following:

MAT 131: GEO3 - Demonstrate Computational Skills and Mathematical Reasoning

Textbook

- MAT 039 / 131 Course Co-Req Blend Course Pack Notes
- MyMathLab Access
- Elementary and Intermediate Algebra, 3e by Lehmann*

**Text Book Zero! This text is available in a digital format and is included with your MyMathLab access and registration.*

**Printed book is optional and available to rent or purchase through the JC Bookstore*

Extras

- 3-Ring Binder, Pencils, Pens, Highlighters, Dry Erase Markers, Erasers, Ruler/Straight Edge
- Device with internet access such as a laptop, chromebook, or smartphone [NOTE: We will use DESMOS as a graphing calculator, but you may wish to bring a graphing or scientific calculator.]

Grading Procedure

In-Class Activities: There will be frequent partner and group-based in-class activities. These may be turned in for credit or scored during class (either for participation or correctness). Students may be able to choose their own partner/group or may have a partner/group assigned by the instructor. There are no excused absences; students may *not* make up the missed in-class assignments.

In-Class Worksheets: There will be frequent in-class assignments (turned in for credit). These may be individual or group assignments, closed or open notes at the instructor's discretion. There are no excused absences; students may *not* make up the missed in-class assignments.

MML Homework: These assignments must be done outside of class time on a computer with internet access at MyMathLab (reachable through <http://www.mymathlab.com>). Homework will be due every week, as announced in class, usually twice per week such as Monday and Wednesday. Check MyMathLab for particular due dates.

- You have an unlimited number of tries to do the homework (up until the due date). Thus, all of your homework should receive full credit, if you keep trying until you get a perfect score.
- Late homework assignments are penalized 10% for any problems submitted after the due date.

MML Quiz/Tests: These assignments must be done outside of class time on a computer with internet access at MyMathLab. MML Quiz/Tests are assigned at the end of each Unit. There may also be additional quizzes posted on MyMathLab for students to take outside of class.

- You have an unlimited number of tries to do each quiz/test (up until the due date), however the entire quiz/test must be resubmitted each time.
- Late Quiz/Tests assignments are penalized 5% off the total score.

Exams or Interviews: Each exam, or interview, will include written portion, a group portion, and an oral portion. A standard formula sheet may be provided given by the instructor; students are not permitted to use other note sheets. The final exam is cumulative for the entire course.

- Exams may not be made up except under extreme, well-documented circumstances. Final decisions as to whether a make-up exam will be allowed rest solely with the instructor, so contact me immediately if there is a problem. Make-up exams must be arranged before the exam is passed out to the class (i.e. the next class period) or a zero will be given for that exam.
- Exams may be given in class or at the JC Testing Lab.
- The Final Exam is during the last week of the course and can NOT be taken early so do NOT schedule travel plans during that week or you will receive a ZERO on the final.

Grading Scale

| GPA | GRADE RANGE | GRADE CALCULATION | |
|-----|-------------|-----------------------|-----------------------|
| 4.0 | 90-100% | <u>MAT 039</u> | <u>MAT 131</u> |
| 3.5 | 85-89% | Homework (MML) – 25% | Worksheets – 20% |
| 3.0 | 80-84% | Activities – 25% | Quizzes (MML) – 10% |
| 2.5 | 75-79% | Oral Interviews – 40% | Written Exams – 50% |
| 2.0 | 70-74% | Final Exam – 10% | Final Exam – 20% |
| 1.5 | 65-69% | | |
| 1.0 | 60-64% | | |
| 0.5 | 55-59% | | |
| 0.0 | 0-54% | | |

Attendance Policy

In compliance with Federal Title IV funding requirements, as well as college initiatives, student attendance will be reported daily. Attendance records are available to students through JetStream. In addition, instructors may assign one of three non-transcripted participation/progress letters to each student during each of the three reporting periods (see below). Students identified as no longer participating will be dropped or administratively withdrawn from the class, and students identified as needing academic assistance will be contacted.

Participation/Progress Symbols

- H – The student is not doing acceptable work and needs **H**elp to be successful.
- Q – The student has not participated and the instructor believes they have unofficially withdrawn (**Q**uit). These students will be dropped/withdrawn from the class.
- V – The instructor **V**erifies that the student is participating and doing acceptable work.

Incomplete Policy

A student may request an incomplete from the instructor, who will follow the JC Incomplete Policy. An incomplete may be granted only if the student can provide documentation that his or her work up to that point is sufficient in quality, but lacking in quantity, due to circumstances beyond the student's control. Furthermore, a written plan for making up the missing work within one semester must be completed by the student. Final determination of whether an incomplete will be given is the instructor's decision. Note: An "Incomplete" grade is not a way to avoid a failing one.

Absence Policy

Students are expected to attend all class meetings, arriving on time, and staying until the end. We do a variety of in-class activities which cannot be made up outside of class for any reason. Please remember that office hours are not a replacement for class time. If absence is unavoidable the student is responsible for doing the following:

1. Go to the "Course Materials" page (linked from our MyMathLab course). Click on the lecture notes for the section(s) missed and fill out the associated coursepack notes pages.
2. Scan and submit a single PDF file of any worksheets that were due for that class by the start of class time. I recommend free apps such as CamScanner or GeniusScan for mobile devices.
3. Email the instructor regarding your absence.
4. Request and print any new worksheets handed out in class, and complete them.

Academic Honesty Policy

Academic Honesty is defined as ethical behavior that includes student production of their own work and not representing others' work as their own, by cheating or by helping others to do so.

Plagiarism is defined as the failure to give credit for the use of material from outside sources.

Plagiarism includes but is not limited to:

- Submitting other's work as your own
- Using data, illustrations, pictures, quotations, or paraphrases from other sources without adequate documentation
- Reusing significant, identical or nearly identical portions of one's own prior work without acknowledging that one is doing so or without citing this original work (self-plagiarism)

Cheating is defined as obtaining answers/material from an outside source without authorization.

Cheating includes, but is not limited to:

- Plagiarizing in any form
- Using notes/books/electronic material without authorization
- Copying
- Submitting others' work as your own or submitting your work for others
- Altering graded work
- Falsifying data
- Exhibiting other behaviors generally considered unethical
- Allowing your work to be submitted by others

Extra Credit Policy

There will be no opportunities for extra credit. Your grade calculation is based solely on your performance on course assignments listed above.

Where to Get Help

Your fellow students and I are your best, most immediate, resources for learning. Even so, there are many other sources to consider and investigate. Be creative, be resourceful, and share what you find -- we're all in this together!

I strongly suggest you start up a regular study group as soon as you are able with some of your classmates. At the very least, write down names and contact information for your peers and call on each other when needed. For more information on starting and maintaining a study group, check out the following link: <http://bit.ly/math-study-group>

Other sources of help:

- Office Hours: Meet with me during office hours.
- Jackson College's Center for Student Success (CSS): Free tutoring in 138 Bert Walker Hall is available most weekdays (<http://www.jccmi.edu/Success/Tutor/>). Remember, finding tutoring for upper-level mathematics often takes time and patience.
- Supplemental Instruction: Some sections of the course have Supplemental Instruction (SI) Leaders assigned to them. These students will serve as peer "math coaches" for the students in that section, and will facilitate weekly study sessions. These study sessions are open to all MAT 039/131 students and are completely voluntary, but highly recommended. In a recent semester, students that utilized SI study sessions experienced an increase of over 18% in their pass rates, compared to those who did not. Even if your class doesn't have an SI Leader, you are encouraged to attend SI Sessions for your course. For times and locations of SI sessions, visit the Center for Student Success webpage and click on "Supplemental Instruction" in the menu or go to (<http://bit.ly/jcsischedule>)
- MyMathLab: There are videos, extra problems, sample exams, lecture notes, PowerPoint lectures and more available in MyMathLab. It's a great resource! In particular, the Study Plan in MyMathLab can help with studying for exams as it gives you unlimited extra problems to do for practice.

[Accommodations for students with disabilities](#)

It is important to contact a Center for Student Success professional prior to the start of the semester in order to receive accommodations in a timely manner. While we will make every effort to coordinate accommodations in a timely manner, failure to self-identify prior to the start of the semester may delay notification to instructors and timeliness of acquiring accommodations. Accommodations do not automatically carry over to the next semester.

Important Dates:

| DATE | EVENT |
|------------------|---|
| SEPT. 3 | CLASSES BEGIN |
| SEPT. 17 | NO CLASSES – FACULTY AND STAFF IN-SERVICE DAY |
| OCT. 4 | PATHWAYS SHOWCASES |
| NOV. 27 – DEC. 1 | THANKSGIVING BREAK |
| DEC. 19 | END OF FA19 SEMESTER |
| DEC. 21 | GRADES DUE |

Calendar

**Calendar dates are an approximation and are subject to change.*

| Week | Date | Sections | Topics | Assignments |
|------|------|-----------|---|---|
| 1 | 9/3 | 1.1 | Course Intro, MML Intro, Group up activity, Roman Numerals | Unit P (Independent - MML); 1.1 Worksheet; 1.2A Video Notes (MML) |
| | 9/4 | 1.2 | Simplifying Expressions | 1.2 Worksheet |
| | 9/5 | 1.3 | Solving Linear Equations with One Solution | 1.3 Worksheet; 1.4A Video Notes (MML) |
| 2 | 9/9 | 1.4 | Special Types of Linear Equations; Expressions vs equations | 1.4 Worksheet (A & B) |
| | 9/10 | 1.5 | Mathematical Notation | 1.5 Worksheet; 1.6 Video Notes (MML) |
| | 9/11 | 1.6 | Solving Linear Inequalities and Interval Notation | 1.6 Worksheet |
| | 9/12 | Review | Review Unit 1 | Unit 1 Review |
| 3 | 9/16 | Unit 1 | Unit 1 Exam | 2.1 Video Notes (MML) |
| | 9/18 | 2.1, 2.2A | Scattergrams; Exact Linear Relationships | 2.2A Worksheet, 2.3 Video Notes (MML) |
| | 9/19 | 2.2B, 2.3 | Approximate Linear Relationships; Slope of a Line | 2.2B Worksheet, 2.3AB Worksheet, 2.3CD Worksheet |
| 4 | 9/23 | 2.4 | Finding Linear Equations | 2.4 Worksheet, 2.5 Video Notes (MML) |
| | 9/24 | 2.5 | Function Notation | 2.5 Worksheet |
| | 9/25 | 2.6 | Exact Linear Models | 2.6 Worksheet |
| | 9/26 | 2.7 | Linear Regression Models | 2.7 Worksheet |
| 5 | 9/30 | Review | Review Unit 2 | Unit 2 Review |
| | 10/1 | Unit 2 | Unit 2 Exam | 3.1 Video Notes (MML) |

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| | 10/2 | 3.1 | Adding and Subtracting Polynomial Expressions and Functions | 3.1 Worksheet |
| | 10/3 | 3.2 | Properties of Exponents | 3.2 Worksheet |
| 6 | 10/7 | 3.3 | Integer Exponents and Scientific Notation | 3.3 Worksheet |
| | 10/8 | 3.4 | Multiplying Polynomials, Monomial Division | 3.4 Worksheet, 3.5 Video Notes (MML) |
| | 10/9 | 3.5 | Simplifying Square Root Expressions; Imaginary Numbers | 3.5 Worksheet |
| | 10/10 | Review | Review Unit 3 | Unit 3 Review |
| | 10/14 | Unit 3 | Unit 3 Exam | 4.1 Video Notes (MML) |
| 7 | 10/15 | 4.1 | Factoring GCF, Grouping | 4.1 Worksheet; 4.2 Video Notes (MML) |
| | 10/16 | 4.2 | Factoring Trinomials with $a=1$ | 4.2 Worksheet, 4.3 Video Notes (MML) |
| | 10/17 | 4.3 | Factoring Trinomials with a Coefficient; Factoring Strategies | 4.3 Worksheet, 4.4 Video Notes (MML) |
| 8 | 10/21 | 4.4 | Solving Polynomial Equations: Factoring | 4.4 Worksheet |
| | 10/22 | 4.5 | Solving Quadratic Equations: Square Root Property | 4.5 Worksheet |
| | 10/23 | 4.6 | Solving Quadratic Equations: Quadratic Formula | 4.6 Worksheet |
| | 10/24 | Review | Choose your solving technique; Review Unit 4 | Unit 4 Review |
| 9 | 10/28 | Unit 4 | Unit 4 Exam | 5.1 Video Notes (MML) |
| | 10/29 | 5.1 | Solving Linear Systems of Equations with Technology | 5.1 Worksheet; 5.2 Video Notes (MML) |
| | 10/30 | 5.2 | Solving Linear Systems of Equations by Hand | 5.2 Worksheet |
| | 10/31 | 5.3 | Using Linear Systems to Model Data | 5.3 Worksheet |
| 10 | 11/4 | 5.4 | Applications of Systems of Linear Equations Value, Interest, and Mixture Problems | 5.4 Worksheet; 5.5 Video Notes (MML) |
| | 11/5 | 5.5 | Graphing Quadratic Functions | 5.5 Worksheet |
| | 11/6 | 5.6 | Modeling with Quadratic Functions | 5.6 Worksheet(s) |
| | 11/7 | 5.7 | Regression Recap (Linear vs Quadratic) | |
| 11 | 11/11 | Review | Review Unit 5 | Unit 5 Review |
| | 11/12 | Unit 5 | Unit 5 Exam | 6.1 Video Notes (MML) |
| | 11/13 | 6.1 | Introducing Exponential Functions | 6.1 Worksheet |
| | 11/14 | 6.2 | Modeling with Exponential Functions | 6.2 Worksheet; 6.2 Video Notes (MML) |
| 12 | 11/18 | 6.3 | Introducing Logarithmic Functions | 6.3 Worksheet |
| | 11/19 | 6.4 | Solving Exponential and Logarithmic Equations | 6.4 Worksheet; 6.5 Video Notes (MML) |

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| | 11/20 | 6.5 | Modeling with Exponential Functions (revisited) | 6.6 Worksheet |
| | 11/21 | 6.6 | Formulas | 6.7 Worksheet |
| 13 | 11/25 | Review | Review Unit 6 | Unit 6 Review |
| | 11/26 | Unit 7 | Unit 7 Exam | 7.1 Video Notes (MML) |
| 14 | 12/2 | 7.1 | Simplifying Rational Expressions | 7.1 Worksheet |
| | 12/3 | 7.2 | Operations on Rational Expressions | 7.2 Worksheet; 7.3 Video Notes (MML) |
| | 12/4 | 7.3 | Unit Conversion | 7.3 Worksheets |
| | 12/5 | 7.4 | Solving Rational Equations and Models | 7.4 Worksheet; 7.5 Video Notes (MML) |
| 15 | 12/9 | 7.5 | Applications of Rational Equations | 7.5 Worksheet |
| | 12/10 | Review | Review Unit 7 | Unit 7 Review |
| | 12/11 | Unit 6 | Unit 6 Exam | 8.1 Video Notes (MML) |
| | 12/12 | 8.1 | Simplifying Radical Expressions | 8.1 Worksheet; 8.2 Video Notes (MML) |
| 16 | 12/16 | 8.2 | Solving Radical Equations | 8.2 Worksheet |
| | 12/17 | Review | Review Units 1-6 | |
| | 12/18 | Review | Review Units 1-6 | |
| | 12/19 | Units 1-7 | Cummulative Final Exam | |