Math 131: Course Syllabus

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Class Time/Location:	Room 12, 4-6pm
Office Hours:	Upon Request

Required Materials: Textbook (Intermediate Algebra: Functions and Authentic Applications, 4th edition, Author: Jay Lehmann, Publisher: Prentice Hall), LARGE eraser, pencils, TI-84 Calculator **strongly recommended** (Note: TI-83's cannot run the newest operating system, which puts students using them at a big disadvantage, all notes and instructions assume a TI-84)

Course Description: Emphasizes simplifying expressions, solving equations, and graphing functions, including linear, quadric, polynomial, rational, radical, exponential and logarithmic. Problem solving and mathematical modeling are integrated throughout. Appropriate technology includes a graphing calculator. *Prerequisite:* A 2.0 in MTH 031 or course placement by exam.

Math 131 Core Course Objectives: 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.

Math 131 Associate Degree Outcomes: All courses at Jackson Community College address one or more of the institutionally defined Associate Degree Outcomes (ADOs). Math 131 contributes to the following outcomes.

ADO 3: - Proficient - Demonstrate computational skills and mathematical reasoning

- Demonstrates algebraic skills using polynomial, rational, radical, exponential, logarithmic, and trigonometric expressions and equations
- Applies properties of numbers and laws of exponents
- Displays "algebra sense" , avoiding common mathematical misconceptions, such as: $(x+4)^2 \neq x^2 + 16$

  $\sqrt{x^2+9} \neq x+3 \quad \dfrac{x+3}{x} \neq 3$

- Demonstrates fluency manipulating and communicating with mathematical symbols and terminology
- Uses symbolical, visual, numerical and verbal representations to analyze information.
- Demonstrates logical reasoning

- Carefully documents process used to reach conclusion
- Estimates and checks mathematical results for reasonableness
- Acquires and applies a broad range of mathematical skills and concepts as well as technology to facilitate efforts to visualize, interpret, and solve mathematical problems
- Uses graphic calculator and/or computer algebra systems to support mathematical reasoning and problem solving

ADO 7 – <u>Developing</u> - Critical Thinking
- Incorporates new knowledge with old
- Converts complex concepts into useful personal language
- Solves new problems in new contexts.

Course Requirements:

<u>Grading Information:</u> A 2.0 or "C" is a passing grade. Only courses with passing grades count toward graduation. Other colleges transfer in only courses with passing grades. Many financial aid sources, including most employers, require passing grades. Additionally, earning less than a 2.0 in a class results in being unable to participate in the next level of courses in a discipline which requires this course as a pre-requisite. Registering for the next course sequence without passing the pre-requisite course may result in you being dropped from that class.

Grading Scale:		Grading Policy:
90 -100%	**4.0**	
85 - 89%	**3.5**	**Homework:** 10%
80 - 84%	**3.0**	**In-Class Work, Quizzes, etc.:** 10%
75 - 79%	**2.5**	**Exam 1 (ch 1-3):** 15%
70 - 75%	**2.0**	**Exam 2 (ch 4-5):** 15%
65 - 69%	**1.5**	**Exam 3 (ch 6-8):** 15%
60 - 64%	**1.0**	**Projects:** 10%
50 - 59%	**0.5**	**Cumulative Final (ch 1-9):** 25%
0-49%	**0.0**	

<u>Homework:</u>
1. **Homework Folders**
   The homework folder will be collected at the beginning of each testing period. The folder should include all of the completed assignments, in order, labeled with the section numbers, and done neatly in pencil. Your grade will be based on effort and completeness. These assignments will be worth 15% of your homework grade.
2. **Daily Assignments**
   These will be assigned most class periods and due at the beginning of the following class period. In these assignments, each problem will be graded and partial credit given. (These will be graded similar to the way tests will be graded).

<u>In-Class Work, Quizzes, etc.:</u> 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 may also be additional quizzes posted on JetNet for students to take outside of class and turn in the following period. Students that are absent may not make up the missed in-class assignments for any reason.

Projects: There are two mandatory projects in the course. These are done entirely outside of class and will require the use of a computer, the Internet, YouTube, and Excel. You can use school computers to complete the projects, if necessary.

Exams: Every exam has a few cumulative review questions on it. The final exam is cumulative for the whole course and a formula sheet will be provided for this exam. 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 them **immediately** if there is a problem. Make-up tests must be taken before the exam is passed out to the class (i.e. the next class period) or a zero will be given for that exam. There will be an official, instructor-given formula sheet that can be used on the final exam.

Intermediate Grading: To comply with college policy and federal regulations you will receive three intermediate grades during the semester. The grades assigned are letters with the following meanings:

- **V:** Verifies that you are participating and your work so far has been acceptable
- **H:** Means that you are participating, but your work shows that you may require Help in order to complete the class successfully. If you receive an H grade, you will be contacted by the Center for Student Success (located in 125 Bert Walker Hall) and offered tutoring services.
- **Q:** Means that you have quit participating in the course. If you receive a Q grade, you will automatically be withdrawn from the course. A Q grade is normally assigned if you have not submitted work (classwork, exams, participation, etc.) for two weeks and have not contacted your instructor regarding your absences.

Important Dates: Be sure to check out the JCC Academic Calendar for Project Success Day, Holidays with no classes, last day to withdraw, etc. at http://www.jccmi.edu/academics/academic_calendar.htm

Extra Credit Policy: There will be no opportunities for extra credit. Your grade is based on your performance in class, not on extras.

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 involving other students and group participation and therefore cannot be made up outside of class for any reason. If absence is unavoidable the **student is responsible** for obtaining the missed lecture notes from another student and continuing with the homework and assignments on their own. Please remember that office hours are not a replacement for class time.

Incompletes Policy: (Excerpt from JCC Policy) "A student may request an incomplete from the instructor. The incomplete will 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."

Academic Honesty Policy: **You are *encouraged* to talk to each other, but all your work must be your own.** In other words, "group-work" is a great way to learn material, but anything you submit for a grade must be done by you - reflecting your own thought processes, not that of someone else. If I suspect you of academic dishonesty, I will follow JCC's Academic Honesty Policy and take appropriate action up to and including assigning a **failing grade** for the paper, project, report, exam, or the course itself (whichever I deem necessary). The policy can be seen here:
http://www.jccmi.edu/policies/Academics/Policies/1004.pdf

Classroom Behavior Policy: *"We know what a person thinks not when he tells us what he thinks, but by his actions."* - **Issac B. Singer**

1. Be Responsible: for your work, for your learning, for your behavior in class, etc.

The online homework and take-home quizzes in particular are going to require great levels responsibility on your part. You will need to stay on top of your schedule and your life to make sure that all coursework is done in a timely fashion.

2. Be Respectful: of other students, of the instructor, of the material, of yourself...

Turn OFF your cell phones and pagers, no chewing tobacco, come on time, stay the full time, be prepared to answer questions and work together.

Where to Get Help…

Office Hours: Office hours are there for you to come get help. Please come see me if you need questions answered. Remember, though, that office hours are not a replacement for attending class. Please ask after class to schedule meeting times.

Center for Student Success: The Center for Student Success has tutoring available for free to students enrolled in Math 131. Ask a the front desk for more information.

YouTube Videos: I have created a number of videos showing how to use the TI-83/84 calculator in this course. Go to: http://www.youtube.com/user/tuckeyalanaj and check out any 131 playlists.

Exam Reviews: Exam reviews will be posted on JetNet for your use before each exam. Make sure you do them before each test!!

Each Other: Get a regular study group. Write down names and numbers of your peers and call on each other when needed!

Math 131 - Tentative 15-Week Schedule

2 hours, twice a week

Date	Day	Material Covered	Topics
	1	1.1-1.3	Using Qualitative Graphs; Graphing Linear Equations; Slope of a Line
	2	1.4-1.6	Slope; Finding Linear Equations; Functions
	3	2.3 - Part 1, 2.1, 2.2	Function Notation; Linear Modeling
	4	2.3 - Part 2, 2.4	Regression Functions; Slope as a Rate of Change
	5	3.1, 3.2, 3.3	Solving Systems by Graphs, Tables, Substitution, and Elimination; Modeling Systems
	6	3.4, 3.5	Value, Interest, and Mixture Problems; Linear Inequalities
	7	**Review for Exam 1**	**Review**
	8	**Exam 1 - Ch 1-3**	
	9	4.1-4.2	Properties of Exponents; Rational Exponents
	10	4.3-4.4	Graphing and Finding Exponential Functions
	11	4.5-5.1	Exponential Models, Inverse Functions
	12	5.2-5.3	Logarithmic Functions and Properties
	13	5.4-5.5	Power Property with Exponential Models; Properties of Logarithms
	14	5.6; **Exam 2 Review**	Natural Logarithms; **Review**
	15	**Exam 2 - Ch 4-5**	
	16	6.1-6.2	Adding, Subtracting, and Multiplying Polynomials
	17	6.3-6.4	Factoring: GCF, Trinomials, by Grouping, etc.
	18	6.5-6.6	More Factoring; Using Factoring to Solve Polynomials
	19	7.1-7.2	Graphing Quadratic Functions
	20	7.3-7.5	Solving Quadratic Equations: Square Root, Completing the Square, Quadratic Formula
	21	7.7-7.8, 8.1	Quadratic Models; Rational Expressions: Domain, Lowest Terms, Graphs and Models
	22	8.2-8.3	Multiplying, Dividing and Adding Rational Expressions
	23	8.5, 8.6	Solving Rational Equations; Rational Models
	24	**Review for Exam 3**	**Review**
	25	**Exam 3 - Ch 6-8**	
	26	9.1-9.2	Simplifying, Adding, Subtracting, and Multiplying Radical Expressions;
	27	9.3-9.4	Dividing Radical Expressions; Graphing Square Root Functions
	28	9.5-9.6	Solving Radical Equations; Modeling with Square Root Functions
	29	**Review for Final Exam**	
	30	**Final Exam - Ch 1-9**	

NOTE!! This schedule is subject to change as the course progresses. To know exactly what was covered, you must attend class!