Montezuma Community School District Iowa Valley Community College District COURSE SYLLABUS

COURSE NUMBER:	MAT 210
COURSE TITLE:	Calculus I

COURSE MEETING, DATES & TIMES: Period 2B – 9:15-10:35

DEPARTMENT:	Science and Mathematics
ACADEMIC YEAR:	2017-2018
ACADEMIC TERM:	Fall

REQUIRED MATERIALS: <u>Calculus.</u> by Larson, Hostetler, and Edwards, 8th edition. A graphing calculator is mandatory in this class.

DATE SYLLABUS WAS CO	DMPLETED: 8/15/11
BUILDING/OFFICE:	Room 116
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WORK TELEPHONE:	641-623-5121
INSTRUCTOR:	Allison Pargeon

DATE SYLLABUS LAST REVIEWED: 8/9/17

COURSE DESCRIPTION: Limits, continuity, derivatives, applications, integration.

EXPANDED DESCRIPTION: This course includes the concepts of rates of change, derivatives and integral applications for engineering and the sciences. Area, velocity, slope, and extrema are some of the topics to be tested. Time will be devoted to introduce students to technology in problem solving.

PREREQUISITIES: COMPASS college algebra score greater than or equal to 60 and COMPASS trigonometry score greater than or equal to 51, ACT math score greater than or equal to 28, or grade of C- or better in MAT129 Precalculus

QUALITY STANDARDS/Performance Objectives/Course Objectives:

Upon successfully completing this course, students should be able to:

1. Find the limit (if it exists) of functions by using more than one method including symbolic, graphical and numeric methods.

- 1.1 Know and perform symbolic limit techniques including rationalization, elimination and use of derivative based techniques
- 1.2 Understand and interpret graphical concepts of limits
- 1.3. Use tables of values to make hypotheses about functions with and without limits

2. Find derivatives using the derivative definition and communicate verbally the relationship of the derivative to the graph of a function.

- 2.1 Write the derivative definition, interpreting each symbol
- 2.2 Communicate the meaning of derivative as slope and as rate of change

2.3 Calculate various derivatives by using the limit definition

3. Use derivative formulas of written problems with powers, products, quotients, logs and exponentials.

3.1 Know how to use each of the derivative formulas to calculate derivatives

3.2 Know how to combine formulas to perform more complex derivatives.

4. Recognize and apply derivative solution methods to written extrema, optimization, mean value, Newton's method, and linear approximation problems.

- 4.1. Calculate critical points and inflection points of functions and interpret their meaning
- 4.2. Perform function optimization over specified intervals
- 4.3. Identify the mean value, c, over an interval
- 4.4. Understand and utilize Newton's Method to find roots and intersections
- 4.5. Know linear approximation formulas like Euler's to predict function values and error
- 5. Integrate polynomial, exponential and logarithmic problems on paper and verbally.
 - 5.2 Find the area under functions with definite integrals
 - 5.2 Find the average value of functions using integration
 - 5.3 Demonstrate estimation of area with summation of rectangle and trapezoid areas.
- 6. Demonstrate the relationship given in the Fundamental Theorem of Calculus.
 - 6.1 Use the theorems to calculate area via antiderivatives
 - 6.2 To find functions given the derivatives of those functions.

PERFORMANCE STANDARDS ANI	D ASSIGNMENTS MATRIX
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Standard	Exam	Home	Quizzes
		work	
1	Х	Х	Х
2	Х	Х	Х
3	Х	Х	Х
4	Х	Х	Х
5	Х	Х	Х
6	Χ	Χ	Х

GRADING AND EVALUATION: Students are expected to come to class, work on the course regularly, read the book, watch the lectures for each section when additional exposure to content is needed, complete all homework, quizzes and tests, and work with classmates. **Homework** for each section will be assigned.

There will be multiple formative assessments per Chapter. There will be a total of four tests and a final exam.

		homework.
		No credit will be given for late
Final Exam	15%	test.
Homework Assignments	20%	may not be allowed to take the chapter
Tests	65%	you have not turned in the homework, you
		Homework is due on the specified date. If

The lowest 1 homework grade will be dropped at the end of the semester.

GRADING SCALE:	A- 90-92%	A 93 – 100%	
	B- 80-82.9%	B 83 - 86.9%	B+ 87-89.9%
	C- 70-72.9%	C 73 – 76.9%	C+ 77-79.9%
	D- 65-66.9%	D 67 – 68.9%	D+ 69-69.9%
		F Below 65	

Students must keep up with the class, as new material builds on previous material. You are responsible for completing assignments, quizzes and tests by the deadline. It is your responsibility to notify me BEFORE the deadline if you have extenuating circumstances. Don't miss a quiz or test and expect me to accommodate your lack of professionalism.

METHOD OF INSTRUCTION: Lecture, Small Groups, Question and Answer.

EVALUATION/CLASS POLICIES:

<u>Academic Integrity</u>: The very nature of higher education requires that students adhere to accepted standards of academic integrity. The Code of Academic Conduct for Iowa Valley Community College District is found in the Student Handbook Violations include cheating, plagiarism, and fabrication, abuse of academic materials, complicity in academic dishonesty, falsification of records and official documents.

<u>Consequences</u>: Cheating will result in a zero on the quiz or test. Subsequent infractions will result in failing the course.

		Assessment	
Timeline	Topics	Plan	
Week 1:	Review		
Week 2:	1.2-1.5		
Week 3:		Assessment	
Week 4:	2.1-2.3		
Week 5:			
Week 6:	2.4-2.6		
Week 7:		Assessment	
Week 8:	3.1-3.4		
Week 9:			
Week 10:	3.5-3.7		
Week 11:			
Week 12:		Assessment	
Week 13:	4.1-4.3		
Week 14:			
Week 15:	4.4-4.5		
Week 16:		Assessment	
Week 17:			
Week 18:	Semester Re	Semester Review	
Final			

TENTATIVE SCHEDULE:

This syllabus is tentative and subject to change.