



## **COURSE OUTLINE - Winter (Evening) 2009**

### **Math 0131 Introduction to Calculus**

**Instructor** Sheryl Heikel      **Phone** Office: 780-539-2059  
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**Office Hours:** MTRF 12:00 - 1:00 PM or by appointment

#### **Calendar Description:**

MA 0131 Mathematics Grade 12 Calculus Equivalent 5 (5-0-0) Time: 75 Hours

**Description:** This course includes slopes and tangents, distance, velocity and acceleration, maxima and minima, sequences, limits and derivatives, derivatives of functions, tangents, derivatives and graphs, further applications of derivatives and anti-derivatives.

Prerequisite: MA 0120 or equivalent (Pre- or Co requisite MA 0130).

**Resource requirements:** Scientific calculator  
Package of MA0131 Modules (2007)

#### **Attendance:**

Regular attendance is expected of all students in all mathematics courses. Your success in math is directly linked to your attendance. Attendance will be taken during class. Any student missing more than 15 classes may be debarred from writing the final exam.

#### **Course Delivery and Evaluation:**

This course is divided into separate units called modules. The instructions for each topic are given in the modules, followed by several examples and exercises. Study the instructions and work through the examples before starting each exercise. The answers for each exercise are given at the end of the module. Check your work often to make sure you understand each new topic.

The key to success in working with modules is to ask questions whenever you have difficulty understanding the instructions, the examples, or the exercises. Do not hesitate to ask for help.

After each module you must write a test. When writing a test, be sure to show all of your work on the test paper. Marks are given for method as well as final answer. A passing mark of 50% is required on the test before continuing on to the next module. If you are unable to attain this mark, you must review the material and rewrite the test. The first and second test mark will be averaged.

**Bonus** When you write your module tests on or before the given date, you will be awarded an additional 2% on your score for each test.

A 50-minute midterm, which will cover the first half modules, must be written by the scheduled date. If you miss this date, you will receive a mark of 0% on your midterm. Upon completion of all the course modules, you will write a three hour final exam. Be sure to leave time to prepare for these important exams! They are worth a large percentage of your final grade. The recommended test date for each module and the midterm is on the next page. Follow these dates as closely as you can. You are encouraged to write a test early if you are prepared. Consult your instructor immediately if you find yourself falling behind schedule. Your instructor may need to reassess your math skills to ensure that you are placed in a course where you can be successful.

All tests must be written before the final exam date.

Your final mark is determined by:	9 module tests	45% (5%each)
	Midterm	20%
	Final Exam	35%

### Course Evaluation Academic Upgrading Department Grading Conversion Chart

Alpha Grade	4-point Equivalent	Percentage Guidelines	Designation
A+	4	90 - 100	EXCELLENT
A	4	85 - 89	
A-	3.7	80 - 84	FIRST CLASS STANDING
B+	3.3	76 - 79	
B	3	73 - 75	GOOD
B-	2.7	70 - 72	
C+	2.3	67 - 69	SATISFACTORY
C	2	64 - 66	
C-	1.7	60 - 63	
D+	1.3	55 - 59	MINIMAL PASS
D	1	50 - 54	
F	0	0 - 49	FAIL

### AUD STUDENT CLASSROOM DEPARTMENT GUIDELINES

The Academic Upgrading Department is an adult education environment. Students are expected to show respect for each other as well as faculty and staff. They are expected to participate fully in achieving their educational goals in a timely manner.

Certain activities are disruptive and not conducive to an atmosphere of learning. In addition to the **Student Rights and Responsibilities** as set out in the College calendar, the following guidelines will maintain an effective learning environment for everyone. We ask the cooperation of all students in the following areas of classroom department.

1. Students are expected to turn off cell phones during class time or in labs.
2. Refrain from disruptive talking or socializing during class time.
3. Be respectful of others regarding food or beverages in the classroom.  
Clean up your eating area and dispose of garbage.
4. Recycle paper, bottles and cans in the appropriate containers.
5. Students are expected to arrive on time and to remain for the duration of scheduled classe.
6. Children are not permitted in the classrooms.
7. Students are expected to notify his/her instructor of any extenuating circumstances.

**Electronic Devices** No unspecified electronic devices will be allowed in exams.

#### **Success Standard**

Although 50% is considered a pass in most courses, if you wish to be successful at the next level, we strongly recommend that you have a mark of 60% or better in your pre-requisite courses.

**Examinations:** The final exam will be 3 hours long and is scheduled by the registrars' office.

**Statement on Plagiarism:** The instructor reserves the right to use electronic plagiarism detection services.

Module	TOPIC/DESCRIPTION	Date Written	Your Mark
1	Review -review of factoring, rational expressions, rationalizing numerators & denominators, functional notation, graphs of functions.		
2	Limits -limits of sequences and series -left and right-hand limits; continuity		
3	The Derivative -secants, tangents and normals -derivatives from first principles -power rule; sum or difference rule; derivative of a constant; derivative and slope relation		
4	More Derivatives - chain rule, product rule, quotient rule -implicit differentiation -derivatives of higher order		

**MIDTERM - must be written on or before the scheduled date Oct. 21**

5	Curve Sketching -graph sketching using first and second derivatives		
6	Applications: Maximum/Minimum -maximum/minimum problems involving numbers or geometry -extreme values of distance and time		
7	Applications: Rate of Change -applications involving velocity, acceleration, area, volume, related motion		
8	Anti-derivatives and Area -introduction to antiderivatives; families of curves -differential equations -the antiderivative as an area -position from velocity, velocity from acceleration		
9	Derivatives of Trigonometric Functions -trigonometric identities -limits of trigonometric functions -derivatives of trigonometric functions		

All Module exams must be written before the scheduled date of the final exam.

**FINAL EXAM - 3 HOURS**

# Winter 2009 **Math 0131**

Instructor Sheryl Heikel

Tuesday Thursday evening 6:00 - 8:30 pm

	<b>Tuesday</b>	<b>Thursday</b>
<b>January</b>	<b>6</b> Module 1 Sections 1-4	<b>8</b> Module 1 Sections 5 Review and Exam
	<b>13</b> Module 2 Sections 1-5	<b>15</b> Module 2 Review and Exam
	<b>20</b> Module 3 Sections 1-3	<b>22</b> Module 3 Sections 4-6
	<b>27</b> Module 3 Review and Exam	<b>29</b> Module 4 Sections 1-3
<b>February</b>	<b>3</b> Module 4 Sections 4-5	<b>5</b> Module 4 Review and Exam
	<b>10</b> Midterm Review	<b>12</b> <b>MIDTERM Feb 12</b>
Reading week	<b>17</b> NO CLASS	<b>18</b> NO CLASS
	<b>24</b> Module 5 Sections 1-2	<b>26</b> Module 5 Review and Exam
<b>March</b>	<b>3</b> Module 6 Sections 1-3	<b>5</b> Module 6 Sections 4, Review
	<b>10</b> Module 6 Exam Module 7 Section 1-2	<b>12</b> Module 7 Sections 3-5
	<b>17</b> Module 7 Review and Exam	<b>19</b> Module 8 Sections 1-4
	<b>24</b> Module 8 Sections 5-7	<b>26</b> Module 8 Review and Exam
<b>April</b>	<b>31</b> Module 9 Sections 1-3	<b>2</b> Module 9 Sections 4-5
	<b>7</b> Module 9 Review and Exam	<b>9</b> Year End Review
	<b>14</b> <b>FINAL EXAM</b>	