GPRC

DEPARTMENT OF ACADEMIC UPGRADING

COURSE OUTLINE – FALL 2010

<u>INTRODUCTION TO MATH 0131</u>

INSTRUCTOR: Christine Frattini   **PHONE:**   (780) 539-2810

OFFICE: Math Lab A210   **E-MAIL:**   cfrattini@gprc.ab.ca

OFFICE HOURS: Daily, 2:30-3:30 pm in the Math Lab

PREREQUISITE(S)/COREQUISITE:

MA0120 or equivalent (Pre- or Co-requisite MA0130)

REQUIRED TEXT/RESOURCE MATERIALS:

Package of MA0131 modules, 2007

Scientific calculator, graphing paper

CALENDAR 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.

CREDIT/CONTACT HOURS:

MA 0131Mathematics Grade 12 Calculus Equivalent 5 (5-0-0)

Time: 75 Hours

DELIVERY MODE:

MA0131 is a modularized math course divided into 9 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 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 marks will be averaged.

A 50-minute midterm, which will cover the first five modules, must be written by **Tuesday, October 19.** 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 back of 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 by Tuesday, December 7.**

> **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.

TRANSFERABILITY:

This course is listed in the Alberta Transfer Guide. It is accepted at colleges and universities in Alberta as equivalent to Math 31.

GRADING CRITERIA:

Your final mark is determined by:

9 module tests	45%
Midterm	15%
Final Exam	40%

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	**4-point Equivalent**	**Percentage Guidelines**	**Designation**
A⁺	4.0	90 – 100	**EXCELLENT**
A	4.0	85 – 89	
A⁻	3.7	80 – 84	**FIRST CLASS STANDING**
B⁺	3.3	77 – 79	
B	3.0	73 – 76	**GOOD**
B⁻	2.7	70 – 72	
C⁺	2.3	67 – 69	**SATISFACTORY**
C	2.0	63 – 66	
C⁻	1.7	60 – 62	
D⁺	1.3	55 – 59	**MINIMAL PASS**
D	1.0	50 – 54	
F	0.0	0 – 49	**FAIL**
WF	0.0	0	**FAIL, withdrawal after the deadline**

MA0131 FALL 2010
OBJECTIVES / TESTS / EXAMS

Module	TOPIC/DESCRIPTION	Recommended Time & Test Date	Date written	Your mark
1	Review -review of factoring, rational expressions, rationalizing numerators & denominators, functional notation, graphs of functions.	6 days September 10 Friday		
2	Limits -limits of sequences and series -left and right-hand limits; continuity	7 days September 21 Tuesday		
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	8 days October 1 Friday		
4	More Derivatives - chain rule, product rule, quotient rule -implicit differentiation -derivatives of higher order	9 days October 15 Friday		
	MIDTERM - must be written on or before	**Tuesday** **October 19**		
5	Curve Sketching -graph sketching using first and second derivatives	5 days October 26 Tuesday		
6	Applications: Maximum/Minimum -maximum/minimum problems involving numbers or geometry -extreme values of distance and time	6 days November 3 Wednesday		
7	Applications: Rate of Change -applications involving velocity, acceleration, area, volume, related motion	7 days November 16 Tuesday		
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 days November 29 Monday		
9	Derivatives of Trigonometric Functions -trigonometric identities -limits of trigonometric functions -derivatives of trigonometric functions	6 days December 7 Tuesday		
	FINAL EXAM - 3 HOURS	**To be announced** **(Dec. 9 – 18)**		

MA0131 Fall 2010
Homework Schedule

1. Review

1	2	3	4	5		**Test: Friday Sept. 10**
Sept.2	**3**	**7**	**8**	**9**		

2. Limits

1	2	3	4	5	Review	**Test: Tuesday Sept. 21**
Sept.13	**14**	**15**	**16**	**17**	**20**	

3. The Derivative

1	2	3	4	5	6	Review	**Test: Friday Oct. 1**
Sept.22	**23**	**24**	**27**	**28**	**29**	**30**	

4. More Derivatives

1	2	2&3	3	4	4	5	Review	**Test: Friday Oct. 15**
Oct.4	**5**	**6**	**7**	**8**	**12**	**13**	**14**	

Midterm Exam on Tuesday October 19

5. Curve Sketching

1	2	2	Review	T**est: Tuesday Oct. 26**
Oct.20	**21**	**22**	**25**	

6. Applications: Maximum/Minimum

1	2	3	4	Review	**Test: Wed. Nov. 3**
Oct.27	**28**	**29**	**Nov.1**	**2**	

7. Applications: Rate of Change

1	2	3	4	5	Review	**Test: Tuesday Nov. 16**
Nov.4	**5**	**8**	**9**	**10**	**15**	

8. Anti-derivatives and Area

1	2	3	4	5	6	7	Review	**Test: Monday Nov. 29**
Nov.17	**18**	**19**	**22**	**23**	**24**	**25**	**26**	

9. Derivatives of Trigonometric Functions

1&2	3	4	5	Review	**Test: Tuesday Dec. 7**
Nov.30	**Dec.1**	**2**	**3**	**6**	

Final exam to be announced (Dec. 9-18)

STUDENT RESPONSIBILITIES:

In addition to the *Student Rights and Responsibilities* as set out in the **College Calendar** (pages 47-50), the following guidelines will maintain an effective learning environment for everyone:

1. 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 daily.

2. Students are expected to be punctual. Arrive on time for classes and remain for the duration of scheduled classes.

3. Refrain from disruptive talking or socializing during class time.

4. Be respectful of others regarding food or beverages in the classroom. Clean up your eating area and dispose of garbage.

5. Recycle paper, bottles and cans in the appropriate containers.

6. Children are not permitted in the classrooms.

7. Students are expected to notify the instructor of any extenuating circumstances.

ELECTRONIC DEVICES:

Students are expected to turn off cell phones during class time or in labs. No unspecified electronic devices will be allowed in exams.

STATEMENT ON PLAGIARISM:

Please refer to pages 48-49 of the College Calendar regarding plagiarism, cheating, and the resultant penalties. These are serious issues and will be dealt with severely.