

<b>MIAMI-DADE COLLEGE, Hialeah Campus</b>		
<b>Department of Mathematics</b>		
<b>1776 West 49th Street, Hialeah, Florida 33012</b>		
<b>Fall Term, 2007 (Wednesday, August 29 – Friday, December 21, 2007)</b>		
<b>COURSE NAME:</b> Cal & Anal Geo 1 <b>COURSE NUMBER:</b> MAC 2311 <b>REFERENCE #:</b> 423960; <b>SEC:</b> 001 <b>CLASS SCHEDULE:</b> M / W: 5:40 PM - 7:45 PM (Room # HLH 1119)	<b>INSTRUCTOR:</b> Dr. M. Shakil <b>OFFICE:</b> 1413 - 8 <b>OFFICE HOURS (Tentative):</b> M/W (3:00 PM – 5:25 PM; 7:55 PM – 8:20 PM) T/R (1:30 PM – 2:45 PM; 4:00 PM – 5:25 PM)	<b>DROP/WITHDRAWAL DATE:</b> Tuesday, Nov. 06, 2007
<b>E-MAIL ADDRESS:</b> mshakil@mdc.edu <b>FACULTY WEBPAGE:</b> <a href="http://faculty.mdc.edu/mshakil/">http://faculty.mdc.edu/mshakil/</a>	<b>PHONE:</b> (305) 237 8805 <b>Secretary:</b> (305) 237 – 8750 (Leave a message) <b>FAX:</b> (305) 237 - 8713	<b>SAFETY &amp; SECURITY:</b> Room # 1115; Ph. (305) 237 – 8701 <b>EMERGENCY:</b> (305) 237 – 1100

**Course Description:** An introduction to analytic geometry; limits; continuity; differentiation of algebraic and trigonometric functions; differentials; introduction to integration and the fundamental theorem of calculus; application of definite integrals and derivatives.

**Pre-requisite:** MAC 1114 and MAC 1140, or MAC 1147, with a grade of C or better or equivalent.

**Credit:** 5 Semester Hours

**Textbook:** Single Variable Calculus: Early Transcendentals, James Stewart, 6th Ed, 2008, ISBN: 0-495-01169-X, Thomson Brooks/Cole Pub. Co.; Student's Solutions Manual, 6th Edition, 2008, ISBN: 0-495-01240-8 (optional).

**COURSE OBJECTIVES:** See Appendix I for "Course Competencies" & Appendix II for "Learning Outcomes"

**COVERAGE:** Please see the coverage below at the end of this syllabus where a list of sections to be covered is given. Minor adjustments may be made by the instructor for the completion of the topics. Any uncovered topic before the scheduled date of the test will be covered in the next class after that test. All class/test times/schedules are as per Miami-Dade College Academic Calendar 2007 – 2008, (Fall Term, 2007). Also, minor adjustments may be made at the discretion of the instructor in the test dates, except in the final exam date. The test grades will be available to the students during the class-period in the following class / week after the test is over. It is the responsibility of the students to make an early correction for any conflict of class or test or final exam dates. The instructor will not be responsible for it. There is no mid-term examination except the Three Tests, and the Final Exam as mentioned below. So, it will be the responsibility of the students to make their own judgment or decision to withdraw from the college or to drop this course, with a "W" or "DR," after any Test, but on or before Tuesday, Nov. 06, 2007. The instructor will not withdraw the students.

**INSTRUCTIONAL METHOD:** Lecture / Discussion

**SCIENTIFIC CALCULATORS:** A non-graphing scientific calculator, along with manual, is required in each lecture. (Some Recommended Scientific Calculators: TI-30Xa. Note that Graphing Calculators, such as TI-83, are optional in the class, but are not required. You may also consult your instructor before buying any scientific calculator. It is the responsibility of the students to study the manuals and practice on the calculators. Moreover, you are not allowed to use a cellular phone as a calculator in the class. It is the discretion of the instructor to deduct at least twenty points from the total points at the end of the term for using cellular phone as a calculator in the class. If any student is found using cellular phone as a calculator in the class or during the test or final examination, his / her name will be duly noted by the instructor and reported to the concerned authorities for further action, that is, an "F" in the course, expulsion

from the college, etc. In such a case, a student may not be allowed to take a test or final exam or attend the lecture, and may also be asked to leave the class. No written or oral excuses will be accepted in this regard. Please see Items # III and IV of Classroom Policies below for more clarifications.

**ACADEMIC SUPPORT CENTER (MATH LAB):** The tutorial services of the Academic Support Center (Math Lab), Room 1409, are available to students registered in any math course taught on campus.

**LIBRARY:** (305) 237 – 8722; ROOM 1116

**TESTING:** (305) 237 – 8791; ROOM 1224

**ADDITIONAL RESOURCES:** In addition to your text-book, you may also refer to the following online resources by using my Faculty Webpage or the given web-addresses on your personal computers or those in MDC LIBRARY / ASC: <http://faculty.mdc.edu/mshakil/>

**(I) CALCULUS:**

**a) Derivative\_&\_Integration\_Rules:**

[http://faculty.mdc.edu/mshakil/Derivative\\_&\\_Integration\\_Rules.doc](http://faculty.mdc.edu/mshakil/Derivative_&_Integration_Rules.doc)

**b) Derivative\_&\_Integration\_Rules\_Calculus:**

[http://faculty.mdc.edu/mshakil/Derivative\\_&\\_Integration\\_Rules\\_Calculus.pdf](http://faculty.mdc.edu/mshakil/Derivative_&_Integration_Rules_Calculus.pdf)

**c) Differential & Integral Calculus:** <http://www.sosmath.com/calculus/calculus.html>

**d) Introduction to Calculus:** <http://www.krysstal.com/calculus.html>

**e) MIT OpenCourseWare - Mathematics:**

<http://ocw.mit.edu/OcwWeb/Mathematics/index.htm>

**f) Calculus Notes (Professor Paul Dawkins, Lamar University):**

<http://tutorial.math.lamar.edu>

**g) Calculus Notes (Professor James Stewart, McMaster University):**

[www.stewartcalculus.com](http://www.stewartcalculus.com)

**(II)** The following Websites may also be useful for online help in your course:

**(i) Algebra Notes (Professor Paul Dawkins, Lamar University):**

<http://tutorial.math.lamar.edu>

**(ii) Trigonometry Notes (Professor Paul Dawkins, Lamar University):**

<http://tutorial.math.lamar.edu>

**(iii) Prentice Hall Math Tutor Center:** <http://www.prenhall.com/tutorcenter/>

**(iv) Purplemath: Your Algebra Resource:**

<http://www.purplemath.com/modules/fcncomp.htm>

**(v) Pearson Education InterAct Math:** <http://www.interactmath.com/>

- (vi) **S.O.S. Mathematics - A Free Resource for Math Review Material from Algebra to Differential Equations:** <http://www.sosmath.com/index.html>
- (vii) **For Mathematical Formulas and Tables:** <http://www.sosmath.com/tables/tables.html>
- (viii) **To Print Out A Graph Paper:** [http://www.mathematicshelpcentral.com/graph\\_paper/files/Form4C-BW.pdf](http://www.mathematicshelpcentral.com/graph_paper/files/Form4C-BW.pdf)

**MYMDC ACCOUNT:** A student login (MyMDC) account is required for ALL online activities as well as to use college computers. A student should visit [www.mdc.edu/sis/](http://www.mdc.edu/sis/) to register and obtain login account.

**ACCESS SERVICES:** The students, with any form of disability, should contact "Access Services" of the college as soon as the classes start. In case any accommodation or special assistance is required in the class or examination, they should obtain the relevant documents from the Access Services and provide the instructor with these. For further information, contact (305) 237 1272 (Hialeah/North Campus).

**SERVICE LEARNING:** The office of Service Learning is located at the North Campus of Miami-Dade College. For further information, contact the Center for Community Involvement, (305) 237 3848, or Professor Sherri Sinkoff, Service Learning Coordinator, MDC (Hialeah Campus).

**FACTS:** You may visit the State of Florida's new FACTS (Florida Academic Counseling and Tracking for Students) Web site at [www.facts.org](http://www.facts.org) to view/print a transcript from a Florida college you are attending or did attend, to access the catalogs of the colleges and universities in Florida, to link to all the Florida public college and university home pages, and other useful information.

#### **GRADING POLICY:**

- (I) **GRADING CRITERIA:** Your final grade will be based on Three Multiple-Choice Non-cumulative Tests (including some non-multiple choice questions, if deemed necessary), and a Multiple-Choice Non-cumulative Final Examination. The number of questions in each of the tests and final examination will be 20 to 25. Each of the tests and final exam will be worth 100 score points. In order to facilitate the students to improve their grades, some extra points questions, worth 5 - 10 points at most, will be added to each test, but not to the final exam, before administering the tests if deemed necessary. Please note that this requirement is fully at the discretion of the instructor. Further note that neither the lowest test score nor the final examination score will be dropped before averaging for the final grades; (however, please see NOTES 1- 7 below also). There will be "NO CURVE" on grades. Also note the following points about the grading policy.
  - **NOTE 1:** All tests and final exam are mandatory.
  - **NOTE 2:** If the final examination score is 90 % or above, the lowest test score may be replaced by the final examination score before averaging for the final grade provided a student has not missed any tests, and if doing so is in favor of the student. Note that none of the missed test scores will be replaced by the final examination score.
  - **NOTE 3:** All tests and final exam are mandatory. However, if a student has taken all the three tests, and his / her score is 90 % to 100 % (that is, "A" Grade in each of these tests, but not the average of these), the final grade earned by such a student will be "A" by dropping the final examination score, provided the student has taken the final exam, and the score in it is above 70 % but below 90 %. (Note that the final exam is mandatory. If any student misses the final examination, a zero will be awarded for the missed final examination and the grade earned by the student will be an "F").

- **NOTE 4:** All the students are advised to do their home-work as provided in the syllabus, and, if possible, also practice relevant problems through the software as per instruction given in your text book. If there is any technical difficulty in using software, it should be immediately reported to the instructor. In either case, all the students will be required to do their home-work as already assigned by the instructor in the syllabus as well as some supplementary H/W assignments assigned in the class. Please note that the homework (including those using software) will not be graded.
- **NOTE 5: Instructor's Discretion:** It is the discretion of the instructor to drop one of the lowest test scores (but not the final exam score), before averaging for the final course grade, provided a student has not missed any test and the final examination, and if doing so is in favor of the student. In such a case, the final course grades will be calculated out of a total of 300 points, by taking the total of the final examination score and the two best test scores, and dividing the total by 3 before averaging for the final course grade. Please note that this requirement is fully at the discretion of the instructor which will be only decided by the instructor after Test 3.
- In order to facilitate the students to improve their grades, five (5) extra points for 100 % attendance (without any absence) will be added to the total of the test, quiz and final exam scores before averaging for the final grading, if deemed necessary. Please note that this requirement is fully at the discretion of the instructor.
- **NOTE 6:** Please see the Item # III (Evaluation and Grading Scale) below also.

## **(II) HOMEWORK:**

**(a)** Usually the odd-numbered problems at the end of each section and all of the chapter reviews are suggested for the homework problems and assignments. This will increase your speed, accuracy, confidence, and understanding of doing the problems and the directions on the tests. It is strongly suggested that you should do all the homework assigned. This will also help you in memorizing the formulas and understanding of the concepts, which are very important for any math course. The homework will not be graded. Some Supplementary H/W may also be assigned in the class. The students are strongly advised and highly recommended to see their course instructor during office-hours for any help and advisement in their home-work and course materials.

**(b)** You may also visit the Academic Support Center (Room 1409) / Math Study Room at Hialeah Campus or MDC Math Lab (North Campus) for additional help. The Math Lab at MDC (Hialeah Campus / North Campus) is an open lab for currently enrolled mathematics students. There are tutors, videotapes, and software available to assist students.

**(III) EVALUATION AND GRADING SCALE:** Your final grades will be calculated out of a total of 400 points, by taking the AVERAGE of the final examination score and the three test scores. (However, minor adjustments may be made in your final grades calculation at the discretion of the instructor; please see the Item # I, NOTES 1 - 6 of Grading Criteria above for details. "Each of the tests and the final exam will have equal weight." If any student misses the final examination, a zero will be awarded for the missed final examination and the grade earned by the student will be an "F." The following scale will be used for the calculation of final grade. "Minor adjustments may be made by the instructor." Please see the Item # I (Grading Criteria) above also.

GRADE	GRADING SCALE (Note: Here x represents the average of the final examination score and the two best test scores, including any extra credit points)
A	$90 \% \leq x \leq 100 \%$
B	$80 \% \leq x < 90 \%$
C	$70 \% \leq x < 80 \%$
D	$60 \% \leq x < 70 \%$
F	Below 60 %

**(IV) MANDATORY TESTS AND FINAL EXAM:** All tests and final exam are mandatory. There will be no make-up for any missed tests, or the final exam, or missed quizzes / projects (if any). However, if you miss any test due to accident, traffic ticket, hospitalization, arrest, court date, jury duty, religious observance, etc, you must produce an authentic document to prove your absence so that your final exam score will be counted twice as to replace the missed test. A doctor's note is not acceptable unless it says "(student's name) was unable to attend school on (date of test). Please note that the replacement of a missed test by the final exam score on the above ground will be allowed only once during the entire semester. (However, the said provision for the missed test will not be applied to the missed quizzes or projects (if any given in the class). If any student misses a quiz or a project, a zero will be awarded for the missed quiz or project). Further, as it is the discretion of the instructor to apply the provision of Item # 1, NOTE 3 (Grading Criteria) above for the whole class if it is in favor of the students, then in such a case a missed test may be considered as the lowest test score and the rule of Item # 1, NOTE 5 (Instructor's Discretion of Grading Criteria) above may be applied. Tardiness is permitted on test days without penalty although you will have less time on the test than everyone else. On test days, if you are so late that someone has already turned in their test before you arrive, you will not be allowed to take the test and a zero will be given for the respective test. No written or oral excuses will be accepted for this.

**(V) NOTICE ABOUT TEST DATES:** Please see the Lecture-Schedule below. It is the responsibility of the students to note down the test and final exam dates. However, you will have at least one class notice of an upcoming test. All tests and final exam are mandatory. There will be no makeup test in any circumstances (see Item VI below also). A zero will be awarded for any missed test. No written or oral excuses will be accepted for this.

**(VI) NO MAKE UP OF TESTS / FINAL EXAM / QUIZZES / HW / PROJECTS:** There will be no make-up for any missed tests, or the final exam, or missed quizzes / projects (if any). These must be taken on due dates. In case a student misses a test due to accident, traffic ticket, hospitalization, arrest, court date, jury duty, religious observance, etc, and if a reasonable and authentic document is provided for these and, if in the opinion of the instructor, the absence is excusable, there will be no makeup test but your final exam score will be counted twice as to replace the missed test. Please note that the replacement of a missed test by the final exam score on the above ground will be allowed only once during the entire semester. In such cases, the final grades will be calculated, out of a total of 400 points, by taking the AVERAGE of the final examination score and three test scores. If no reasonable and authentic document is provided for a missed test, then a zero will be awarded for such a test, and the student will be responsible to earn a lower grade (including an "F"), if the final grades are calculated, out of a total of 400 points, by taking the AVERAGE of the final examination score and three test scores. No written or oral excuses will be accepted for this. However, it is the discretion of the instructor to apply the provision of Item # 1, NOTE 5 (Instructor's Discretion of Grading Criteria) above for the whole class if it is in favor of the students. In such a case, a missed test may be considered as the lowest test score and the rule of Item # 1, NOTE 5 (Instructor's Discretion of Grading Criteria) as given above may be applied.

**(VII) CHEATING ETC. IN THE EXAMINATION:** A “Zero, or award of an “F” in the course, or “expulsion from the college,” etc. will be given in the test for cheating in any form, including plagiarism, taking help or copying from other students, or giving help to the other students during the tests / final exam / quizzes. If any student is caught cheating during the examination, his / her name will be duly noted by the instructor and reported to the concerned authorities for further action (namely, award of an “F” in the course, expulsion from the college, etc.). For details please see the Students’ Hand-Book. No written or oral excuses will be accepted for this.

#### **CLASSROOM POLICIES:**

**(I) ATTENDANCE:** The students are encouraged to attend all the classes regularly, which is important. For any missed class, the students themselves are responsible for all course work, whether present or not, or for any makeup or catch-up of the materials. Unexcused absences for more than two consecutive classes (weeks) during the semester are considered excessive. The names of such absentees may be purged from the class roll at the discretion of the instructor without any notice as per rules and regulations stipulated by the college. Once the name of a student is purged from the class roll by the instructor, it can not be reinstated in any circumstance. Moreover, it is the discretion of the instructor to purge a student’s name from the class roll or award an “F” due to excessive absences, unsatisfactory progress, indiscipline, misconduct, or any disruptive behavior in the class. In addition, please note the following requirements:

- (a) **NOTE:** Tardiness is not acceptable. It is the discretion of the instructor to deduct at least ten points from the total points at the end of the term for each tardiness (even one second late constitutes a tardiness). No written or oral excuses will be accepted.
- (b) **NOTE:** Except in the case of an emergency, no students will be allowed to leave the class-room once the class has begun. During an emergency, the instructor’s permission must be sought before leaving the class-room. It is the discretion of the instructor to deduct at least ten points from the total points at the end of the term for each such violation. No written or oral excuses will be accepted.

**(II) DROPS OR WITHDRAWALS:** These are not initiated by the instructor. If you stop attending, you must drop the class yourself to avoid a grade of “F”.

- a) The last day to withdraw from classes with **“100% refund”** or to change courses “without penalty” or to register, add, drop, or change sections of credit courses without signature of instructor is **Wednesday, September 05, 2007.**
- b) The deadline for dropping classes with **a grade of “DR”** or the last day to withdraw from the college with **a grade of “W”** is on or before **Tuesday, November 06, 2007**, which is the responsibility of the students. The instructor will not withdraw or award a grade of “W or DR.”

**(III) ACADEMIC MISCONDUCT:** The student is responsible for any classroom misbehavior or academic misconduct or indiscipline, which is conducive to the educational process and for achieving standards of performance established by the instructor. **A student may be penalized for any misbehavior or misconduct.** The academic misconduct includes (but is not limited to) giving or receiving assistance on a test, quiz, or homework assignment for which such assistance is not permitted, falsifying a document to obtain an excusal from a test, and using unauthorized notes on a test or quiz. **“The instructor has the final authority in all matters relating to the course content, grading practices, and classroom policies & procedures.” Penalties for Academic Misconduct range from an “F” in the course to “expulsion” from the college.** A more complete definition of Academic Misconduct is given in the Student Handbook. **In the tests or final exam, no student will be allowed to use the textbook or**

**class-notes or handouts or formula-sheets.** The students should review all materials learnt in previous math classes, and memorize all the relevant formulas. It is strongly suggested that you should do all the homework assigned. This will also help you in memorizing the formulas and understanding of the concepts, which are very important for this math course. However, it is the discretion of the instructor to allow students to use some necessary and difficult formulas in the tests or final exam which should be prepared on Index Cards (not exceeding two) or on a letter-sized paper (not exceeding one, and may be written on both sides), in consultation with your instructor. If allowed by the instructor, these must be shown to the instructor before starting the examination. The students must write their names and student ID's on these. There should no examples or problems written on the cards or papers, which will be treated as cheat. A "Zero" may be given for this. The students are also advised to make photocopies of all necessary tables / charts beforehand. You will not be allowed to use textbook for formulas / tables / charts, etc, in the tests or the final exam. No written or oral excuses will be accepted for this.

**(IV) BEEPERS AND CELLULAR PHONES:** Use of cellular phones, beepers, musical instruments, CD players, etc., or keeping these in person are not allowed in the class-room. These should be kept in the bags and must be turned off before the classes start. The vibrate mode is not considered turned off. Beepers and cellular phones must not be visible to you or instructor. If they are on your belt, they are visible. If they are in your book bag or pocket, they are not. Violations of this policy will result in your having to put the beeper or cell phone in the hallway immediately outside the class. If you are afraid of it being stolen, you may choose to leave the class with it, but you will not be readmitted to the class that day. If this occurs during a test and you choose to leave rather than put the beeper or phone in the hallway, all unanswered test questions will be marked wrong. All students are required to abide by the said policy about cellular phones, beepers, musical instruments, and CD players. It is the discretion of the instructor to deduct at least ten points from the total points at the end of the term for each such violation. Further, penalties for violation of this policy may also result in an "F" in the course or "expulsion" from the class or the matter being reported to the concerned authorities in the college, such as the Chair, or Academic Dean, or others.

**(V) NO FOODS AND DRINKS ALLOWED:** It should be noted that no foods (including gums) and drinks (except water) will be allowed in the class room. It is the discretion of the instructor to deduct at least ten points from the total points at the end of the term for each such violation. Further, penalties for violation of this policy may also result in an "F" in the course or "expulsion" from the class or the matter being reported to the concerned authorities in the college, such as the Chair, or Academic Dean, or others.

**(VI) NO TALKING ALLOWED:** It should be noted that no talking will be allowed in the class room. It is the discretion of the instructor to deduct at least ten points from the total points at the end of the term for each such violation. Further, penalties for violation of this policy may also result in an "F" in the course or "expulsion" from the class or the matter being reported to the concerned authorities in the college, such as the Chair, or Academic Dean, or others.

**LECTURE / TEST SCHEDULE AND H/W ASSIGNMENTS (TENTATIVE)**  
(SOME SUPPLEMENTARY H/W MAY ALSO BE ASSIGNED IN THE CLASS)  
(Minor adjustments may be made at the discretion of the instructor)  
See below & page 9 (continued)

**Note the following:**

- (i) Minor adjustments may be made in the topics / problems at the discretion of the instructor.
- (ii) The students are directed to prepare some of the easy topics by themselves if not covered in the class due to the constriction of time. The tests and final exam will cover all the topics scheduled in the syllabus. The students are advised to consult the instructor for any help in this regard during the office hours. No written or oral excuse will be accepted for this.

- (iii) SUPPLEMENTARY H/W FROM CHAPTER EXERCISE / SUMMARY / REVIEW MAY ALSO BE ASSIGNED.
- (iv) All tests and final examination will be multiple-choice.
- (v) During the last 10 minutes of each lecture (except the test days), the instructor will answer some questions from home work. After home work session, the lecture will be resumed as usual.

**(A) TEST SCHEDULE:**

- 1) Test # 1: W, Sep 26, 2007: During Class-time
- 2) Test # 2: W, Oct 24, 2007: During Class-time
- 3) Test # 3: M, Nov 19, 2007: During Class-time
- 4) Review for Final Examination: W, Dec 12, 2007: During Class-time
- 5) Final Examination: Monday, Dec 17, 2007, 5:40 PM – 7:10 PM (90 Minutes)

**(B) LECTURE & EXAM SCHEDULE:** Please see below (continued on Page # 9).

**LECTURE-SCHEDULE AND H/W ASSIGNMENTS (TENTATIVE) (Total: 30 Lectures)**

(Minor adjustments may be made in the topics / problems at the discretion of the instructor.

**NOTE: Any uncovered topic will be covered in the next class.**

SUPPLEMENTARY H/W FROM CHAPTER SUMMARY / REVIEW MAY ALSO BE ASSIGNED.

**NOTE: All tests and final examination will be multiple-choice,  
(or, otherwise, notified by the instructor in the class).**

MTG #	DAY / DATE	SECTIONS / EXERCISES	PAGES / PROBLEMS
1	W, Aug 29	Introduction to Syllabus; 2.2 & 2.3	2.2: P. 96: # 7, 9, 15, 17, 19, 25 – 32 (ODDS) 2.3: P. 106: # 1, 3 – 9 & 11 – 30 (ODDS); 35, 39, 45, 46, 48, 49, 60, 61
<b>2</b>	<b>M, Sept 03</b>	<b>LABOR DAY</b>	<b>HOLIDAY</b>
3	W, Sept 05	2.4 & 2.5	2.4: P. 117: # 1, 3, 17, 25, 29, 31, 43 2.5: P. 128: # 3, 11, 16, 18, 20, 25, 32, 39, 41, 47, 64
4	M, Sept 10	2.6	2.6: P. 146: # 3, 7, 11 – 34 & 39 – 44 (ODDS); 48, 53 (a, b), 57
5	W, Sept 12	2.6 (Contd.) & 2.7	2.7: P. 150: # 5 – 8 (ODDS); 9, 13, 17, 19, 23, 25 – 30 (ODDS); 31, 35, 37, 43, 45, 47, 49, 51
6	M, Sept 17	2.8	2.8: P. 162: # 3, 5, 11, 19 – 29 (ODDS); 33, 35, 41, 45, 47, 51, 54, 55
7	W, Sept 19	Catch-up of Sections 2.2 – 2.8, as discussed above	Ch. 2 – Review: P. 165 – 169 (Some selected problems)
<b>8</b>	<b>M, Sept 24</b>	<b>Review for Test # 1</b>	<b>Review for Test # 1 (Sections: 2.2 – 2.8, as above)</b>
<b>9</b>	<b>W, Sept 26</b>	<b>TEST # 1</b>	<b>TEST # 1 (Problems Based on Sections: 2.2 – 2.8, as above)</b>
10	M, Oct 01	3.1, 3.2 & 3.3	3.1: P. 180: # 3 – 32 (ODDS); 35, 39, 45, 49, 51, 59, 63, 65, 67, 69, 73, 75, 77 3.2: P. 187: # 1, 3 – 45 (ODDS); 50, 51, 55, 58 3.3: P. 195: # 1 – 24 (ODDS); 25 (a) – 28 (a), 29, 30, 31, 33, 37, 39 – 49 (ODDS)
11	W, Oct 03	3.4 & 3.5	3.4: P. 203: # 1 – 55 (ODDS); 59, 61, 63, 74, 77, 91, 93, 95 3.5: P. 213: # 1 – 30, 33 – 36, 45 – 54, & 59 – 62



			(ODDS)
12	M, Oct 08	3.6 & 3.7	3.6: P. 220: # 2 – 54 (ODDS) 3.7: P. 230: # 15, 19, 21, 25, 28, 31; Also see Ex. # 1 / P. 221, & Ex. # 8 / P. 228
13	W, Oct 10	3.9 & 3.11	3.9: P. 245: # 12, 15; WOE # 1 – 3 / PP. 241 - 243 3.11: P. 259: # 1 – 23, & 30 - 47 (ODDS)
14	M, Oct 15	3.10	3.10: P. 252: # 1 – 33 (ODDS)
15	W, Oct 17	Catch-up of Sections 3.1 – 3.11, as discussed above	Ch. 3 – Review: P. 261 – 264 (Some selected problems)
<b>16</b>	<b>M, Oct 22</b>	<b>Review for Test # 2</b>	<b>Review for Test # 2 (Sections: 3.1 – 3.11, as above)</b>
<b>17</b>	<b>W, Oct 24</b>	<b>TEST # 2</b>	<b>TEST # 2 (Problems Based on Sections: 3.1 – 3.11, as above)</b>
18	M, Oct 29	4.1 & 4.2	4.1: P. 277: # 15 – 62 (ODDS) 4.2: P. 285: # 5, 11 – 19 (ODDS); 29
19	W, Oct 31	4.4	4.4: P. 304: # 1 – 64 (ODDS); 69
20	M, Nov 05	4.3 & 4.5	4.3: P. 295: # 9 – 22, 33 – 44 & 45 - 52 (ODDS) 4.5: P. 314: # 1 – 52 (ODDS)
<b>21</b>	<b>W, Nov 07</b>	4.7 & 4.8	4.7: P. 328: # 2 – 6 (ODDS); 9, 13, 16, 17, 33, 53, 54 4.8: P. 338: # 5 – 22 (ODDS); 31
<b>22</b>	<b>M, Nov 12</b>	4.9	4.9: P. 345: # 1– 46 (ODDS); 49, 53, 57, 59, 60 Ch. 4 – Review: P. 347 – 350 (Some selected problems)
23	W, Nov 14	<b>Catch-up of Sections 4.1 – 4.5, 4.7 - 4.9, as above; &amp; Review for Test # 3</b>	<b>Review for Test # 3 (Sections: 4.1 – 4.5, 4.7 - 4.9, as above)</b>
<b>24</b>	<b>M, Nov 19</b>	<b>TEST # 3</b>	<b>TEST # 3 (Problems Based on Sections: 4.1 – 4.5, 4.7 - 4.9, as above)</b>
25	W, Nov 21	5.4 & 5.5	5.4: P. 397: # 1 – 44 (ODDS); 57, 59, 63 5.5: P. 406: # 1 – 70 (ODDS); 75, 81 – 87 (ODDS)
26	M, Nov 26	5.1 & 5.2; & 5.5 (Contd.) Probs. on Definite Integrals by the Substitution Rule)	5.1: P. 364: # 1, 2, 5, 15, 17, 19, 21 5.2: P. 376: # 1, 9, 17, 19, 21 – 25 (ODDS); 33, 35, 41, 47, 49, 53, 54, 55, 61, 65, 66, 69, 70
27	W, Nov 28	5.3	5.3: P. 387: # 7 – 52 (ODDS)
28	M, Dec 03	6.1 & 6.2	6.1: P. 420: # 1 – 28 (ODDS) 6.2: P. 430: # 1 – 18 (ODDS); 45, 46, 49, 51, 63
29	W, Dec 05	6.3, 6.4 & 6.5	6.3: P. 436: # 3 – 7 (ODDS); 15, 17, 41, 45 6.4: P. 441: # 3, 6 – 13 (ODDS) 6.5: P. 445: # 1 – 17 (ODDS); 23, 24
30	<b>M, Dec 10</b>	<b>Catch-up of Chapter 5 &amp; 6, as discussed above</b>	<b>Some Review For Final Exam ((Problems Based on Sections: 5.1 – 5.5 &amp; 6.1 - 6.5, as above); Chaps. 5 &amp; 6 – Review: P. 408 – 411 &amp; P. 446 – 447, respectively, (Some selected problems)</b>
<b>31</b>	<b>W, Dec 12</b>	<b>Review For Final Exam</b>	<b>Review For Final Exam: Emphasis on Chapters 5 and 6, as above.</b>
<b>32</b>	<b>FINAL EXAM Monday, Dec 17 (5:40 PM – 7:10 PM)</b>	<b>Final Exam (5:40 PM – 7:10 PM)</b>	<b>Emphasis on problems from Chapters 5 (Integration) and 6 (Applications of Integration), as discussed above The students are supposed to know all the materials covered for TEST # 1 – 3, as some of these may be implied in FINAL EXAM. Minor adjustments may be made at the discretion of the instructor.</b>

**APPENDIX I****MAC 2311 Calculus and Analytic Geometry 1****Course Competencies:****Competency 1: The Student will demonstrate knowledge of limits by:**

- a. computing limits at a point and at infinity algebraically,
- b. finding limits using L'Hopital's Rule,
- c. applying the definition of continuity,
- d. determining where a function is continuous or discontinuous.

**Competency 2: The Student will demonstrate knowledge of differentiation by:**

- a. defining the derivative of a function as a limit,
- b. finding the derivative of a function using the definition,
- c. finding the equation of the line tangent to a curve at a point using a derivative,
- d. finding the rate of change of a function using a derivative,
- e. finding derivatives of polynomial, trigonometric, exponential, logarithmic, and hyperbolic functions using differentiation rules,
- f. finding derivatives using the chain rule,
- g. implicitly differentiating equations,
- h. computing higher order derivatives,
- i. determining maximum and minimum points of a function and intervals where it increases or decreases,
- j. determining points of inflection of a function and intervals where it is concave upward or concave downward,
- k. using the first and second derivative tests to find local extrema,
- l. applying Rolle's theorem and the mean value theorem,
- m. solving optimization problems,
- n. solving problems involving related rates.

**Competency 3: The Student will demonstrate knowledge of integration by:**

- a. finding antiderivatives involving polynomial, trigonometric, inverse trigonometric, exponential, logarithmic, and hyperbolic functions,
- b. evaluating a definite integral as a limit of a Riemann sum,
- c. computing the average value of a function over an interval,
- d. computing definite integrals using the fundamental theorem of calculus,
- e. solving applied problems using definite integrals,
- f. finding indefinite integrals with a change of variables,
- g. finding the area or regions under and between curves,

**APPENDIX II****MAC 2311 Calculus and Analytic Geometry 1****Learning Outcomes:**

- 1) Determine the existence or non-existence of limits by inspection of a graph.
- 2) Work with infinite limits and understand their significance with respect to the vertical asymptotes of a graph.
- 3) Use properties of limits and theorems regarding limits to evaluate limits of polynomial, rational, radical and trigonometric functions.
- 4) Define the statement, ' $\lim_{x \rightarrow a} f(x) = L$ '.
- 5) Define the statement, ' $f$  is continuous at  $c$ '.
- 6) Determine continuity or discontinuity by inspection of a graph.
- 7) Use properties of continuous functions and theorems regarding continuity to test a function for continuity at a point or on an interval.
- 8) Understand and be able to work with one-sided limits.
- 9) Work with limits at infinity and understand their significance with respect to the horizontal asymptotes of a graph.
- 10) Define the statement, ' $f$  is differentiable at  $c$ '.
- 11) Use the definition of derivative to evaluate the derivative of a function at a point.
- 12) Understand the significance of derivatives with respect to both rates of change and slopes of tangent lines.
- 13) Apply derivatives to problems involving position, velocity and acceleration of a moving object.
- 14) Use properties of derivatives and theorems regarding derivatives to calculate derivatives of all types of elementary function, including constant multiples, sums, products and quotients of polynomial, rational, radical and trigonometric functions.
- 15) Apply the Chain Rule to differentiate compositions of all of the above-referenced types of function, as well as to carry out implicit differentiation.
- 16) Solve problems involving related rates.
- 17) Understand and apply Newton's Method to approximate the zeros of a differentiable function.
- 18) Understand and apply differentials to approximate the error in a calculated value.
- 19) Differentiate exponential and logarithmic functions.

- 20) Differentiate inverse trigonometric and hyperbolic functions.
- 21) Use the derivative to find the critical numbers and relative extrema of a function, as well as find absolute extrema on a specified interval.
- 22) Understand and apply Rolle's Theorem and the Mean Value Theorem.
- 23) Use the second derivative to find the inflection points of a graph.
- 24) Use the first and second derivatives of a function to analyze its variation and the concavity of its graph.
- 25) Recognize the indeterminate forms  $\frac{0}{0}$ ,  $\frac{\infty}{\infty}$ ,  $(\infty - \infty)$ ,  $(0 \times \infty)$ ,  $1^\infty$ ,  $0^0$ ,  $\infty^0$ , and know how to evaluate limits involving these forms, using L'Hôpital's Rule when, and only when, appropriate.
- 26) Use the above-referenced information to sketch the graph of a differentiable function.
- 27) Solve optimization problems.
- 28) Find antiderivatives of algebraic and transcendental functions, with special emphasis on the technique of change of variable.
- 29) Evaluate a definite integral by taking the limit of a Riemann Sum.
- 30) Understand and apply the Fundamental Theorem of Calculus to evaluate definite integrals.
- 31) Use an integral to find the area of a plane region.
- 32) Use an integral to find the volume of a solid of revolution, using either the washer method or the method of cylindrical shells.
- 33) Find the average value of a continuous function over a specified interval.

## MIAMI-DADE COLLEGE - Academic Year 2007-2008

MIAMI-DADE COLLEGE Academic Year 2007-2008		FALL 2007-1
1.	<b>Registration Begins:</b>	M Jun 11
2.	Late Registration Begins (\$50 fee)	W Aug 29
3.	<b>Classes Begin:</b> Weekday and Evening Weekend (Saturday, Sunday)	W Aug 29 S Sept 08
4.	<b>Last Day to Change Courses</b> without Penalty; Withdraw from classes with 100% refund; Register, add, drop, or change sections of credit courses without signature of instructor	W Sept 05
5.	CLAST: Deadline to Register Date of Test	F Sept 07 S Oct 06
6.	<b>Last Day to Withdraw</b> with Grade of W	T Nov 06
7.	<b>Last Day of Classes</b>	F Dec 14
8.	<b>Last Day of Final Exams</b>	F Dec 21
9.	<b>Last Day to Apply for Degree &amp; Name Appear in Commencement Program</b>	M Mar 31, 2008
10.	<b>Commencement Ceremony</b>	S May 03, 2008
10.	Holidays	S Sep 1 U Sep 2 M Sep 3 R Nov 22 F Nov 23 S Nov 24 U Nov 25

**MIAMI-DADE COLLEGE, Hialeah Campus**  
**Department of Mathematics**  
**1776 West 49th Street, Hialeah, Florida 33012**  
**Fall Term, 2007 (Wednesday, August 29 – Friday, December 21, 2007)**  
**MAC 2311 (CAL & ANAL GEO 1): Ref # 423960; Sect. # 001**  
**M / W 5:40 PM - 7:45 PM**  
**INSTRUCTOR: Dr. Mohammad Shakil**

I, \_\_\_\_\_, Student ID # \_\_\_\_\_,

have read and understood the terms and conditions as stipulated in the syllabus for the course MAC 2311 (CAL & ANAL GEO 1), M / W, 5:40 PM – 7:45 PM, Ref # 423960, Sec # 001, Fall Term, 2007 (Wednesday, August 29 – Friday, December 21, 2007), by the course instructor, Dr. Mohammad Shakil, and provided to me by him on this first day of the class at Miami-Dade College, Hialeah Campus. By signing the contract, I agree with full responsibility to abide by the terms and conditions as mentioned in the said syllabus till the completion of the term.

\_\_\_\_\_

Student's Signature

\_\_\_\_\_

Date

**The mission of Miami-Dade College is to provide accessible, affordable, high quality education by keeping the learners' needs at the center of decision making and working in partnership with its dynamic, multi-cultural community.**