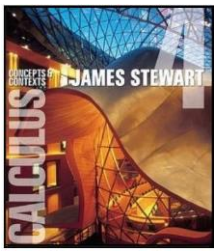
MATH 13 ***CALCULUS with ELEMENTARY FUNCTIONS I*** **Fall 2013**



PROFESSOR: Dr. Kathryn Porter

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OFFICE HOURS: Mon. 4 – 5 pm, Wed. & Fri. 10:30 – 11:30 am, or by appointment

TUTORIAL LEADERS: Elliott Battle, Math 013T-05 and 06, eeb4@stmarys-ca.edu
Blake Tormey, Math 013T-07 and 08, brt3@stmarys-ca.edu

TEXTBOOK: *Single Variable Calculus, Concepts and Contexts,* by James Stewart, 4th Ed. and *Precalculus Supplement* which will be available on the course Moodle site.

COURSE CONTENT: In this semester we will study concepts, methods, and applications relating to the properties of polynomial, rational, and radical functions, as well as the concepts, methods, and applications involving limits, continuity, differentiation and integration. Assessments will include Webwork & written homework, quizzes, three hour-long exams, and a comprehensive two hour final exam. Assignments and exams will emphasize the mastery of Precalculus and Calculus skills and introductory proof writing, as well as the student's ability to communicate mathematics. There will be a Moodle website for this course where assignments and all course related information will be posted; this site should be checked often by everyone. Regular class attendance and participation is essential for this course and is expected of all students.

LEARNING OUTCOMES/OBJECTIVES:

By the end of the semester, successful students will be able to:

- express abstract and concrete concepts of Calculus and Precalculus orally and in writing. Correct usage of mathematical symbols, language, and formulas will be expected in expressing clear communication of ideas and will be demonstrated in group peer work settings, in class at the blackboard, on exams, quizzes and homework. Other students should be able to understand the work as well as the reasons for its validity.
- apply abstract and concrete concepts of Precalculus and Calculus to an advantage in identifying patterns and in problem-solving and in usage in areas other than mathematics such as physics, engineering, biology, and economics. Students will demonstrate their progress in this goal in writing on homework, quizzes, and exams.
- demonstrate mathematical and logical reasoning. During class, statements, precise meanings, and validity of theorems will be discussed, and proofs of theorems will be presented. Students will demonstrate their understanding of mathematical reasoning and the validity of logical arguments during class discussions, group work, homework, quizzes, and exams.
- show their knowledge a specific group of mathematical facts and technical skills that can be used in future mathematics and science courses. It is expected that students will spend considerable time outside of class on this goal. Students will demonstrate their capability in this area on homework, group work, boardwork, quizzes, and exams.

ACADEMIC HONOR CODE

Saint Mary's College expects every member of its community to abide by the Academic Honor Code According to the Code, "Academic dishonesty is a serious violation of College policy because, among other things, it undermines the bonds of trust and honesty between members of the community." Violations of the Code include but are not limited to acts plagiarism. For more information, please consult the *Student Handbook* at www.stmarys-ca.edu/your-safety-resources/student-handbook.

STUDENT DISABILITY STATEMENT: Reasonable and appropriate accommodations, that take into account the context of the course and its essential elements, for individuals with qualifying disabilities, are extended through the office of Student Disability Services. Students with disabilities are encouraged to contact the Student Disability Services Coordinator at (925) 631-4358 to set up a confidential appointment to discuss accommodation guidelines and available services. Additional information regarding the services available may be found at the following address on the website: **www.stmarys-ca.edu/sds**

ATTENDANCE POLICY: Each student is allowed a maximum of four absences (**excused or unexcused**) from class during the semester (including **lecture and tutorial**.) Please save them for when you are ill. Each detected absence beyond four will lower your final course grade 2% percent. If you have an extended illness or emergency, please discuss it with me.

DETERMINATION OF COURSE GRADES:

1. **Homework & Quiz Grade**: Short quizzes will be given often in tutorial. There are no make-ups for missed quizzes. Written homework will be collected at the beginning of class on specified days (see the *Monday Morning Math 13 Messenger* each week on our course Moodle site.) The online portion of *Webwork* homework is due each Monday and Friday. Webwork notebooks of written Webwork will be collected on exam days. Late homework of any type will not be accepted.

   The homework & quiz grade will be worth 100 points of your final grade. This will be done proportionally. For example, if your Homework & Quiz total is 1468 out of 1885 possible points then your score in this category is $\frac{1468}{1885} \approx 0.778 \approx 78\%$

2. **Midterm Exams**: There will be three 100 point exams given in class. There will be no make-up exams unless you have an extreme emergency that can be documented. Exams will be given on September 25th, October 16th, and November 15th.

3. **Final Exam**: There will be a comprehensive final exam (200 points). Our final exam is a common exam which means that all the Math 13 sections will take the same final at the same time. The time and date will be announced once the Registrar's Office gives us that information. Usually we get this information at the beginning of November so do not plan on leaving early during finals week as our time could very well be the last time slot which is Thurs. December 12th at 4 – 6 pm.

4. The **lowest exam score** will be dropped (the final counts as two exam grades): So for example if your grades are as follows:

Example 1:
Midterm I: 84
Midterm II: 78
Midterm III: 95
Final Exam: 142 (=71, 71)
Homework/Quiz: 70

Example 2:
Midterm I: 84
Midterm II: 71
Midterm III: 95
Final Exam: 156 (=78. 78)
Homework/Quiz: 70

In both examples a score of 71 would be dropped (Homework/Quiz grade cannot be dropped) and the grade would be computed: $\frac{84+78+95+71+70}{5} = \frac{398}{5} = 79.6\%$ which is a B- (just barely!)

Course grades: 90 – 100% = A, 80-89% = B, 70-79% = C, 60-69% = D, below 60% = F.

plusses and minuses will be assigned for borderline cases

Gateway Exam: To earn a course grade of at least C- in this course you must show competency in computing derivatives. You will be **required to pass** a Gateway Exam to demonstrate this competency

SOME MORE INFORMATION TO HELP YOU SUCCEED:

- It is expected that you will conduct yourself appropriately, with respect for each other, for faculty and staff, and for college property. You should expect that **much of your learning will take place outside of the classroom** and that you will take **responsibility** for your education. This means that you must seek assistance when you need it, prepare for each class by completing all reading and writing assignments prior to coming to class, and realize that it is normal for you to leave the class period with questions and concepts that you will need to explore before your understanding is complete.

- **Study time**: Your grade is based on achievement, not effort! - The amount of time needed to master a subject varies by person. Nonetheless, it is rare to succeed in college mathematics unless one spends generally two or three solid hours outside of class for every hour in class. (-more during exam week.) We will cover in about 33 lecture class hours the same amount of material that a high school math class covers in about 90 classroom hours. And we will do it in more depth. This means **our class time is only for lecture/discussion**….not for going over homework problems.

- It is critical for your success that you **attempt all** of the homework problems... multiple times...until you can do the problems correctly without relying on examples in the book, your calculator, or someone's help. Getting into good homework habits early will pay off later in the semester when time is more precious. Be able to do all the homework problems perfectly without notes before the exams!

- When you **read your textbooks**, aim for comprehension. The textbook does not read like a novel as the reading needs to be slow-going and more careful. Read at your own pace with pencil and paper handy to work through the examples and fill in the omitted steps. This is a college-level class; **the lecture/discussion will make more sense if you have read the textbook beforehand.**

- **Show work** on quizzes, homework, and exams. I want to give you partial credit but if you have no work then you will earn no credit. I am not a Vulcan and cannot read your mind so *show me the work!* (Trekkie moment!)

- When writing up your homework pretend it is something that you have to attach to **your resume** when applying for a future job. In other words use your homework to demonstrate your best work to me. This is true whether the problems come from the textbook or are Webwork problems.

- **Webwork notebook**: Once you have completed a Webwork assignment you must print the assignment and attach your written work (beautifully and thoroughly written). Then you keep the assignment in your Webwork notebook (or folder). **This notebook will be collected when you have an exam**.

- **Written problems** will be collected usually once each week. Not all the problems may be graded. The assignment will have certain problems corrected and the entire assignment will be graded depending on neatness, completeness, and the correctness of the chosen graded problems. Solutions will be posted on our Moodle class site.

- You are allowed to discuss the Webwork and book homework/practice problems with other students in the class but the **write up of your problems must be your own**...do not copy! You may also get help during the tutorial sessions, my office hours, or the evening (Sunday – Thursday) SMC (Student Math Center) in GAL 110 at 7-9 pm. This is a great place to work problems and ask questions.

- The **tutorials** are not for going over homework although a few problems may be done here or there. This class period will be used for quizzes, group work, board work, lectures, etc. to enhance the lecture periods.

- Basic scientific calculators may be used during quizzes/exams only when indicated by me. **Programmable and algebraic/graphing calculators will not be allowed** during quizzes/exams, however you may use them during class but do not become dependent on them. Sharing of calculators is never allowed during quizzes/exams.

- **GATEWAY EXAM**: This exam is intended to confirm that you have learned some important techniques of differentiation. You will be allowed to take the Gateway Exam multiple times. Each time you take the exam you will be given a different (but comparable) version of the test. You will attempt the Gateway

Exam for the first time in class on approximately November 11th and further attempts during office hours. You must pass this test by December 5th in order to pass this class with a C- or better.

- All quizzes, exams, and extra credit problems must be done without assistance from any source or person, unless you are told otherwise. The **Academic Honor Code** will be upheld (see your Student handbook for complete information). However, I do encourage you to work on practice problems and to discuss the concepts of this course with other people in the class. There is a clear line between working with other students and exchanging work in an academically dishonest manner. It is fine to discuss homework with other students and to write while you do this, but it is not okay to copy what the other person is writing or saying. When I look at your homework write-ups I should not think that I have already graded one like it. It is not okay to exchange written solutions.

- Support: Saint Mary's offers numerous places for you to obtain academic support. For calculus, the best places are:

  (1) **Your professor (me!)**. Come by my office during office hours help; I also will reply to your emails from home at often odd times of the night.

  (2) **Your tutorial leader**. S/he has recently struggled exactly as you are now you, and may provide a perspective your instructor cannot.

  (3) **SMC** (Student Math Center). Galileo 110 every Sunday – Thursday 7-9 pm for drop-in sessions. Professors and advanced math students are there to help.

  (4) **TASC** (The Tutorial and Academic Skills Center), in Augustine Hall, offers free tutorial help.

  (5) **Your classmates**. Find or organize a study group: you roommate, hallmate, classmates, etc.. Make a habit of studying together several times per week.

- **Talk to me** if you think you are getting lost or behind. This is a college math course and we must move along at a certain pace. We will seldom have time for review and questions. When you need some review, or have questions, or need some more discussion on a topic, please come to my office hours. These are your hours!!

- SMC Athletes/Debate Team members: By September 10th I need a statement indicating your name, your sport, the class dates you will miss due to **team commitments**. This must be from your coach and signed by you.

- Classroom etiquette: **Cell phones** must be turned off and put away before you enter our classroom; they may not be used for any purpose during class. If I hear or see your phone during the class period (yes, this means you cannot have it out on the desk) I will politely tell you to leave and the class period will count as an absence. Gum and food are not allowed in the classroom; water, soda, coffee, tea, etc. may be brought to class as long as you are careful and dispose of the container. . **Laptop** computers are not to be used during class time; your focus should be on taking written notes and participating.

- Write the **names, phone numbers, and emails** of four students in this class: