Course Syllabus

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MATH 22 Lectures: Fall 2019

Section 01: Time & Location: MWF 10:30-11:20am, COB120

Instructor: Dr. Alexander Yatskar (office ACS 330A)

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Office Hours:

1. Yatskar, A, WF:9:15-10:15am in ACS 330A, W 1:00 to 2:00pm in SSM 100
2. Deepak Sapkota : 1:30 - 3:30 pm, Wednesday, AOA 166
3. Kevin Collins: 12:00-2:00pm, Friday, AOA 166

Text: Chapters 4,5,7,8,10,11 in *Calculus*, 8*th* ed., by James Stewart

Course Web Page: MATH 22 website is part of the CatCourses management system. It is available automatically to all students enrolled in this class. All important course materials will be posted under Files on this website which you can get to by going directly to Files or clicking on links provided on the Home Page. Course related announcements will be made through the email list maintained by the site as well.

Learning Objectives: This course is the second part of the calculus sequence. In Calculus I, you were introduced to the three fundamental notions upon which calculus is built: limits, derivatives and integrals. Our main objectives this semester are:

- To deepen the comprehension of these notions through conceptual discussions and the investigation of many problems and applications;
- To master more advanced methods and techniques, and apply them to the solution of a variety of problems.

In this course, we will discuss integration methods, application of integration and infinite sequences and series

Learning Outcomes: Upon the completion of the course students should be able to:

- Given an integral compute it using most efficient methods;
- Use integrals to formulate and solve certain word problems.
- Construct and plot parametric and polar equations;
- Identify different types of series.
- Determine whether a particular series converges and identify the interval and the radius of its convergence;
- Given a function construct its Taylor series approximation and explain how such approximation can be used;

Grade Determination: Your letter grade in the course will be based on homework assignments (15%, lowest one grade dropped), discussion participation (5%, lowest one grade dropped), quizzes (20%, lowest one grade dropped), four exams (15% each). If you obtain 90% of the total points, you will receive an A in the course. If you obtain less than 55% of the total points, you will receive an F. For everything in between, letter grades will be given in the **approximate** framework: A: 90-100%, B: 80–90%, C: 70–80%, D: 60–70%. Please be aware that you need a C– or better to proceed to Math 23 or Math 24

Grades are strictly based on the work submitted and standards are the same for all students. No "mercy passes" are given to students based on possible academic or personal hardships that might be incurred as a result of failing the class.

All grades are final, there are no "bump ups" based on individual requests.

Lectures: Lecture hours are devoted to discuss fundamental concepts and important techniques. Regular and active attendance in lectures provides foundation to success in the class. Lecture slides will be posted under Files.

Office Hours: During office hours you'll receive assistance with homework, worksheets, and any topic or concept that you didn't understand in class. You can also post questions on Discussions forum in your Math22 Discussions.

Discussion Sections: Discussion sections meet for two hours each week where you will develop and practice your problem-solving skills by working with your classmates to solve challenging problems. Your discussion section participation is graded on a ten point scale. You must complete the minimum number of problems assigned by the TA and present problems selected by the TA on the board. Points will be deducted for disruptive activities as coming late, leaving early, phone use, or not participating in group activities such as presenting problems on the board. **It is your responsibility to print a copy of the worksheet before coming to discussion section.**

Study Groups: You're encouraged to work in groups 3-5 people where each participant takes turn at doing a home- work or worksheet problem on a board and explaining it to others. Up to 5 pts extra credit that will be added each week to your participation score for submitting a signed group study activity report that lists day, time, participants and problems that were discussed. Each participant will receive the extra credit(1 pt for each presented problem) up to 5 pts. Submit only one group **activity report** per week. If you can't find a study group, you can receive the credit by attending office hours, STEM center, PALS or the Math Center and completing the report with your tutor.

Quizzes: A quiz will be given during each discussion section except for those during weeks marked with "no quiz". The quiz will be one problem taken from one of six problems listed in the class schedule. These problems come from the book on chapters covered during the previous weeks.

Homework: Each week you will see new homework assignment posted on WebAssign with the corresponding due date. There are usually two homeworks per week, including weeks with holidays. Always check for newly posted homeworks as Webassign will not notify you when theyare posted. **Extensions will not be given for missing homeworks.** For most problems you will have five chances to enter the answer correctly. For True/False problems only one chance is given. Please carefully follow webassign instructions

regarding the format of the answer. **Note that you will not receive credit if your answer was rejected for format issues. For example if the answer is cos(x) and you entered cosx or cos(X), it will be marked as incorrect and instructor will not regrade the problem.**

Webassign: Click on **Modules,** then **Webassign.** You have inclusive access to Webassign-meaning you're charged later for the access you get now and will keep through the semester unless you opt out by September 18th. Always access WebAssign through Modules.

. WebAssign Notes:

- For regular questions you have five chances of entering the correct answer.
- For multiple choice and T/F question only one chance is given.
- WebAssign is finicky about significant figures. Always enter answers in the exact form when possible or carry out numeric answer to at least 5 decimal places. For example if the answer is 4/3, WebAssign might not accept numerical answer 1.33, so you need to use the equation editor to enter the fraction 4/3 into the answer box.
- WebAssign is case sensitive so cos(x) is not the same as cos(X). Carefully follow webassign directions when entering constants and Typically variables x,y,z are lower case letters.
- WebAssign is font sensitive, so be careful with the use Greek and Roman. For example, Greek letter ”nu” *v* looks like Roman v. WebAssign will mark your answer as incorrect if you substitute one letter for another. Typically Greek letters are used to express angles, and Roman letters for everything else. Examine the font carefully!
- If you want to express function to a power, use For example sin2(*x*) should be entered as (sin(x))ˆ2, entry sinˆ2(x) would not be accepted.
- WebAssign customizes problems for each student, so your answer will not be the same as your friend’s.
- For technical problems you should contact WebAssign tech support . Note that your Instructor and Teaching Assistants will not be able to assist you with technical issues that may arise in the course of using the WebAssign.
- Always maintain a handwritten version of your homework.

Exams: The three exams will be given during class. There will be **no** make-up exams or early exams. If you are sick during an exam, please bring a note from your doctor verifying your illness. **Doctor’s excuse may not be used retroactively.** Family emergencies that require your absence on the day of exam are also excused, please provide a letter before exam explaining your situation. Your course grade will then be determined by the rest of your course work. Please bring your student ID to each exam. Calculators and crib sheets are not allowed on the exams. A special needs room for people with documented disabilities will be provided for each exam. Contact the **Disabilities Services (http://disabilityservices.ucmerced.edu/)** to set up test accomodations.

On **exam days**, students are **strongly encouraged** to be in their seats **5 minutes before** the beginning of class.

Study Groups: You're encouraged to work in groups 3-5 people where each participant takes turn at doing a homework or worksheet problem on a board and explaining it to others. Up to 5 pts extra credit that will be added each week to your participation score for submitting a signed group study activity report that lists day, time, participants and problems that were discussed. Each participant will receive the extra credit(1 pt for each presented problem) up to 5 pts. Submit only one group activity report per week. If you can't find a group, go to the instructor's or TA's office hours and present problems on the board to receive your credit.

Portable Electronic Devices: All portable electronic devices (*e.g.*, cell phones, pagers and laptops) must be turned off and put away during exams, lectures, and discussion sections. Calculators are the exception; they may be used in lectures and discussion sections, but **not** in exams.

Calculators & Computers: We recommend that you obtain a graphing calculator or other computational tool (*e.g.*, *Mathematica, Maple, Matlab, Octave*) to aid in your completion of homework assignments. Remember, however, that there will be no calculators or crib sheets allowed in the exams.

Dropping the Course: After Friday, June 22, dropping the course is possible only with a petition approved by the Dean's office. Please see the instructor if you wish to drop after Friday, June 22.

Course Web Page: https://my.ucmerced.edu/

Extra Help: You are encouraged to get extra help whenever you need it. The instructor and section leaders each have office hours, which are posted at the top of this document. You may go to the posted office hours of any Calculus 1 instructor or section leader, even if they are not your regular instructor or section leader. In addition, review sessions are scheduled just before each exam. Other helpful items are posted on CatCourses. You are welcome to send questions to your instructor via e-mail at any time.

Free Tutoring is available through PALS, Math Center, and Stem Center. Click on the links below to see

- STEM Center, ucmerced.edu/academic-services
- Math Center, ucmerced.edu/
- PALS Center, ucmerced.edu/Tutoring_Info_Students

Special Accommodations: If you qualify for accommodations because of a disability, please submit a letter from Disability Services to the instructor in a timely manner so that your needs may be addressed. Student Affairs determines accommodations based on documented disabilities.

The instructor will make every effort to accommodate all students who, because of religious obligations, have conflicts with scheduled exams, assignments, or required attendance. Please speak with the instructor during the first week of class regarding any potential academic adjustments or accommodations that may arise due to religious beliefs during this term.

Beyond Calculus II: You must receive a grade of C– or better in this course in order to advance to Math 23 or Math 24.

Academic Integrity: Academic integrity is the foundation of an academic community and without it none of the educational or research goals of the university can be achieved. All members of the university community are responsible for its academic integrity. Existing policies forbid cheating on examinations,

plagiarism and other forms of academic dishonesty. The current policies for UC Merced are described under *Student Judicial Affairs* at **http://studentlife.ucmerced.edu/ (http://studentlife.ucmerced.edu/)**

Examples of academic dishonesty include:

- Using Wolfram or similar programs/calculators during an examination
- receiving or providing unauthorized assistance on examinations
- using unauthorized materials during an examination
- plagiarism - using materials from sources without citations
- altering an exam and submitting it for re-grading
- fabricating data or references
- using false excuses to obtain extensions of time or to skip coursework

Use of calculator/wolfram during exam will result in an immediate F for the course with an option of academic dishonesty recorded on the trascript. We don't need to catch you in the act to initate a disciplinary action, calculator use can be easily ascertained during the grading of an exam.

The ultimate success of a code of academic conduct depends largely on the degree to which the students fulfill their responsibilities towards academic integrity. These responsibilities include:

- Be honest at all times
- Act fairly toward For example, do not disrupt or seek an unfair advantage over others by cheat- ing, or by talking or allowing eyes to wander during exams.
- Take group as well as individual responsibility for honorable behavior. Collectively, as well as individu- ally, make every effort to prevent and avoid academic misconduct, and report acts of misconduct which you
- Do not submit the same work in more than one Unless otherwise specified by the instructor, all work submitted to fulfill course requirements must be work done by the student specifically for that course. This means that work submitted for one course cannot be used to satisfy requirements of another course unless the student obtains permission from the instructor.
- Know what plagiarism is and take steps to avoid When using the words or ideas of another, even if paraphrased in your own words, you must cite your source. Students who are confused about whether a particular act constitutes plagiarism should consult the instructor who gave the assignment.
- Know the rules – ignorance is no Those who violate campus rules regarding academic miscon- duct are subject to disciplinary sanctions, including suspension and dismissal.

Tips for Success: Everything that we will do in this class is to help you learn mathematics, but you need to take control, ownership and responsibility of your academic career. At some point in college, most students dis- cover that their study habits from high school don't work well anymore. Don't be discouraged! This is an encouraging sign that you are growing intellectually. Try to figure out what does work for you.

Many students consider Math 22 to be a difficult course. Even those who have taken Calculus in high school are likely to be surprised by the amount of work that we require.

Problem solving. The goal of this course is to help you continue to learn calculus as well as you can. Learning calculus means *doing* calculus. Just as a violinist must practice scales and a basketball player

must practice free-throws, a calculus student needs to practice solving problems.

To succeed in this course, you need to learn (1) *how* to solve calculus problems and (2) *why* calculus works the way it does. To learn these two things, you need to gain experience by solving many problems. Along these lines, we suggest the following tips for success.

Manage your time wisely! Plan to spend *at least* two hours outside of *each* lecture and discussion section working with Math 22 material.

- *BeforeLecture:* Read (at least scan) the day's Work through the example problems in that section and identify in them what you know already and what is new and different.
- *After Lecture:* Review the day's textbook section *and* lecture Go over the example problems done in class to warm up. Ask yourself, "What is the big picture here?" Try to answer that question as best as you can. Then start the homework problems.

Be mindful of the time it takes to complete a problem. Speed is not the most important factor in your success in this course. However, there is a time limit to every homework assignment and exam. So, to some extent, you are graded based on your ability to solve problems in a timely manner. Practice through solving many problems is the key.

Be engaged in the class and discussion sections. Attend all lecture and discussion sections, and ask questions when you have them – don't wait until later.

As you practice solving problems, always try to understand the "why" behind the methods you use. Exams will be written to test your understanding of the methods, not your ability to follow a "recipe" for solving a particular problem.

Homework will consist of even-numbered problems for which there are no solutions in the book. If you are stuck on a problem, try the odd-numbered problems on either side, for which the solution is in the back of the book.

Use office hours to both aid in completion of homework **and** to understand topics that are not clear.

Course Summary:

Date	Details
	Part W2 (https://catcourses.ucmerced.edu/courses/14622/assignments/146694)
	Part W3 (https://catcourses.ucmerced.edu/courses/14622/assignments/146695)
	Quiz 1 (https://catcourses.ucmerced.edu/courses/14622/assignments/146696)
	Quiz 2 (https://catcourses.ucmerced.edu/courses/14622/assignments/146697)