

Course Syllabus

Where and When: *Fowler 316* MWF 10³⁰ am–11²⁵ am and
Fowler 316 MWF 2³⁰ pm–3²⁵ pm

Labs

Fowler 127 R 8³⁰ am- 9⁵⁵ am

Fowler 112 R 10⁰⁰ am - 11²⁵ am

Fowler 112 R 1³⁰ pm - 2⁵⁵ pm **Alan Knoerr**

Text: *Single Variable Calculus* by Smith and Minton

Instructor:

Ron Buckmire: Office: Fowler 320
Office Hours: MWRF 3³⁰ pm–5 pm
Phone: x2536
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Important Course Information:

Course Description: In this course we begin to look at integration and the Fundamental Theorem of Calculus. We will also discuss sequences, series and dynamical systems. The concepts of infinity and infinitesimals will be very important. There will be three units of approximately 4 weeks each.

Unit 1: Introduction to Integration

Unit 2: Methods of Integration

Unit 3: Sequences and Series and Limits

Homework: Homework is important. You should work on homework in groups of three (sometimes four) students. Homework will be assigned daily. You should try to complete the questions on your own and then compare your results with your teammates. You will hand in individual homework solutions. These solutions will be evaluated and returned. No late solutions will be accepted. Homework solutions will be placed on the Internet.

Weekly Quizzes: During the semester, there will be approximately 9 take-home, weekly quizzes. Work on quizzes are subject to the same rules as exams. You work by yourself, in the time allotted. To do well on quizzes you will need to do homework. Quiz questions will be similar to homework questions and/or past exam questions. Quiz solutions will be placed on the Internet.

Labs and Lab Write-ups: Labs are not optional. Labs are your opportunity to struggle with the difficult skill of successfully communicating your ideas and actively listening to the ideas of others as you work together to more deeply explore the course

material. There are three lab sections. You must be registered for a lab in addition to one of the “lecture” times. You should go to the lab section of your choice and I will sign your add/drop form.

In-Class Exams: There will be three (3) in-class exams on Fridays. Exams will be given on **Feb. 14th, March 14th and April 18th**. These dates are subject to change with at least one week’s notice.

Final Exam: Friday May 9 6:30pm-9:30pm. This will be the joint exam time for both sections of Math 120.

Gateway Exams: There will be three (3) Gateway Exams this semester. Again, failure to pass a Gateway Exam will result in lowering your final grade one third of a grade. See Page 4 on the Gateway exams for more details about the particular Gateway Exams you must pass. The schedule for Gateway Workshops this spring will be announced next week.

Calculator Use: We require that you use a graphing calculator in this class. If you already have one, it will suffice. If you do not own one, we recommend you buy a TI-83.

The use of calculators on exams is encouraged, BUT inappropriate use will not be tolerated. For instance, using the programming capabilities to record notes is dishonest work. If a question on an exam expressly forbids the use of the graphing capabilities of your calculator, it means just that. If you have any doubt about using any features on your calculator on exams, ask one of the instructors. Do not trust your classmates to know what is allowed and what is not allowed. If you are caught using your calculator in an unacceptable manner, your actions will be reported to the proper authorities.

Course Policies: You are expected to know and follow the policies below.

Honest Academic Work: It is expected that each student in this class will conduct herself or himself within the guidelines of the Student Handbook. All academic work should be done with the complete honesty and integrity that this college demands.

Classroom Conduct: Our primary goal in this classroom is to teach/learn/discuss/debate/enjoy/do calculus. This is best accomplished when we feel free to question and doubt, free to argue and exchange creative ideas. If one feels threatened or unwelcome, this becomes impossible. Therefore, the classroom should be a safe space. All are welcomed and encouraged to actively participate in the learning of calculus, regardless of gender, race, nationality, native language, sexuality, political ideology, and especially personal mathematical history. Any student who feels she or he is experiencing a hostile environment should immediately speak to me or contact me by electronic mail.

Special Note on Classroom Questions: There is no such thing as a stupid question. If you do not understand something said or written in class, do not hesitate to ask a question. If you do not understand the reply, ask another question. As a teacher, I make every effort to answer questions to the best of my ability, but both teacher and student should understand that they are viewing the same material from different sides of an experiential gulf. This can make it difficult for me to explain the answer to your question in words that you understand, and also makes it difficult for you to ask a question using words that I understand. Patience and individual attention can help in this communication process. Of course, you can (and should) come to office hours to have your questions answered, as well. In addition, I strongly encourage posting questions to Blackboard as another way in which students can interact with each other and the

instructor. It's important to me that everyone in the class performs to the best of their ability so to facilitate that I am available for extra help during my office hours or during scheduled appointments or via email or via Blackboard.

Make-Up Work: No late work will be accepted this semester. No make-up quizzes or exams will be given. If you must miss a quiz or exam, let me know as soon as possible **before** the quiz or exam. If we feel your excuse is reasonable, we will work something out.

Tardiness: There is no excuse for being late for lectures or labs. Entering late disrupts the flow of class and sends the message that you do not respect your fellow students or your professors. If you arrive late, enter quietly and deal with missed handouts after class. If you will be late on a regular basis, please come and share the reasons with us before we approach you.

Grading: The table below explains how your final average in this course will be determined.

	Score	percent	
Quiz	×	15%	=
Homework	×	15%	=
Exam # 1	×	10%	=
Exam # 2	×	10%	=
Exam # 3	×	10%	=
Lab Average	×	20%	=
Final Exam	×	20%	=
	Total:		

The grade scale below assumes that you have passed all of the gateway exams and not missed more than three homework assignments:

final average	< 60	60–68	68–70	70–72	72–78	78–80
letter grade	F	D	D+	C-	C	C+
final average	80–82	82–88	88–90	90–92	≥ 93	100
letter grade	B-	B	B+	A-	A	A(+)

Unfortunately, there is no official A+.

You are expected to keep track of your own quiz and lab averages. You should also keep all of your quizzes and labs. This way, discrepancies can be worked out easily.

Online Materials: The official website for the class will be found at <http://blackboard.oxy.edu>. There will also be some documents found at <http://faculty.oxy.edu/ron/math/120/03/>. The official course mailing list is at math120-L@oxy.edu.

Math 120 Spring 2003
Gateways Exams – Information Sheet

The gateways are short diagnostics which will measure your abilities in certain fundamental skills. There are four areas to be covered this semester, two review topics and two new topics. You must eventually show 90% proficiency in each. The topics are described below. We consider the skills in the gateways to be fundamental to your proficiency in mathematics and science. That is why we have separated these diagnostics out from the other evaluation tools in this class.

You will be given the first version of all the gateways in class. We will announce an upcoming gateway exam ahead of time, so you can prepare for it. If you achieve 90% proficiency on any gateway, you will pass that gateway. Those of you who don't achieve 90% proficiency will need to retake the exam at the Gateway Workshops until you achieve 90% proficiency. Your final semester grade will be adjusted for each gateway passed. The highest grade you can receive for classwork alone is a **B**. For every gateway passed, your grade will be raised by a third of a letter grade. Thus you can earn an **A** by passing all four gateways.

The Gateway Workshops will be offered at various times during the week. Students attending the workshop will be given a new version of the gateway exam. If you score 90 or better, you may leave. If you score below 90, you will remain and work with the gateway faculty coordinator or one of the student assistants on a worksheet designed to help you learn the skills you need to pass the exam. The schedule for the Gateway Workshops will be announced in the next two weeks.

You should also take advantage of the assistance of classmates, the Center for Teaching and Learning or your professors. We expect all students to progress through all four gateways this semester. It is imperative that you get started as soon as possible and keep up the pace throughout the semester.

Gateway 1 – Derivatives Review:

1. Know the derivatives of elementary functions, e.g. x^n , $\sin(x)$, $\cos(x)$, a^x and $\ln(x)$, etc.
2. Know the rules of differentiation (product, quotient and chain) and be able to use them individually and in combination.
3. Know the limit definition of the derivative

Gateway 2 – Functions Review:

1. Evaluate functions at real numbers and at algebraic expressions, i.e. given a formula for a function f , you should be able to find $f(-2)$ or $f(x + \Delta x)$.
2. Know how to compose and decompose functions.
3. Evaluate algebraic expressions involving functions.
4. Write expressions involving functions from a verbal description.
5. Find the domain of a function.
6. Given a function of two or more independent variables and a constraint equation, reduce the function to a function of one variable.

NOTE: You Must Pass The Review Gateways Before Spring Break.

Gateway 3 – Antidifferentiation:

1. Know the antiderivatives of elementary functions, e.g. x^n , $\sin(x)$, $\cos(x)$, a^x and $\ln(x)$, etc.
2. Know the methods of antidifferentiation (u-substitution and trigonometric substitutions, partial fractions and integration by parts) and be able to use them individually and in combination.

NOTE: You Must Pass The Exit Gateway #3 Before May 1 (Last Day of Classes)