

SYLLABUS FOR MATH 126 – CALCULUS II

Spring 2017

Lectures

Milena Stanislavova
Lecture: Wescoe 3140
Office: Snow 525
stanis@ku.edu
MWF 11:00 – 11:50am
<http://www.math.ku.edu/~stanis/>

Joseph Brennan
Lecture: Budig 110
Office: Snow 631
brennanj@ku.edu
MWF 3:00-3:50pm
<http://www.math.ku.edu/~j548b125/>

Laboratory Sections

63985	Jeremy Ims ibjeremy@ku.edu	TR 9:00 – 9:50am http://www.people.ku.edu/~ibjeremy/	Strong 356
63990	Nicholas Ma njma@ku.edu	TR 10:00 – 10:50am http://www.math.ku.edu/~n277m092/	Strong 356
63991	Bhargob Saikia bhargob@ku.edu	TR 11:00 – 11:50am http://www.math.ku.edu/u/bhargobjs/	Mallott 3092
66362	Satbir Malhi smalhi@ku.edu	TR 11:00 – 11:50am http://www.math.ku.edu/~s334m797/	MS 106
68530	Yiyang Cheng y562c151@ku.edu	TR 12:00 – 12:50pm http://www.math.ku.edu/~y562c151/	MS 106
63993	Fazel Hadadifard f.hadadi@ku.edu	TR 1:00 – 1:50pm http://www.math.ku.edu/~f554h686/	Strong 356
63994	Wen Feng w262f820@ku.edu	TR 2:00 – 2:50pm http://www.math.ku.edu/~w262f820/	Strong 356
63995	Lurii Posukhovskiy i507p680@ku.edu	TR 3:00 – 3:50pm http://www.math.ku.edu/~i507p680/	Strong 356
63997	Bibekananda Mishra b546m258@ku.edu	TR 4:00 – 4:50pm http://people.ku.edu/~b546m258/	Strong 356
66361	Hamid Mofidi h.mofidi@ku.edu	WF 8:00 – 8:50am http://www.math.ku.edu/~s890m022/	Snow 156
63986	Joseph Brennan	WF 9:00 – 9:50am	Strong 356
63987	Brent Holmes b101h187@ku.edu	WF 9:00 – 9:50am http://www.math.ku.edu/~b101h187/	JRP 245
63988	Amanda Wilkens awilkens@ku.edu	WF 10:00 – 10:50am http://www.math.ku.edu/~a548w850/	JRP 245

Required Items

Textbook: Calculus Early Transcendentals, 3E, by Rogawski & Adams
Access Code for WebAssign (typically obtained with the text)
iClicker Classroom Response System

Lectures are scheduled 3 times per week MWF and are led by either Dr. Stanislavova or Dr. Brennan. Laboratory sections are scheduled 2 times per week TR or WF and are led by graduate teaching assistants or Dr. Brennan.

This syllabus contains all of the basic information about the course you will need to know. Further details are given on Blackboard, and can be found by clicking on the links in the left navigation. For example, clicking on "Course Schedule" accesses the Weekly Schedule and clicking on "Week 1" accesses all information important to the first week of class.

Prerequisite MATH 116, MATH 121, MATH 125, MATH 141 or MATH 145, with a grade of C- or higher.

Objectives and Course Contents

The course covers integral calculus, sequences and series, and the basics of vectors, covering most of Chapters 6, 7, 8, 10, 11, and 12 of the text. The precise sections to be covered are listed in the schedule given on Blackboard. The objective of the course is to acquire mastery of the material covered in the course in the following senses:

1. Mathematical understanding, as demonstrated by the ability to solve appropriate mathematical problems.
2. Practical understanding, as demonstrated by the ability to solve appropriate word problems in the sciences, in engineering and in the social sciences.

Grading System

The exact cut-off for each letter grade will not be determined until the end of the semester. The following represent the initial cut-offs for each letter grade.

A	B	C	D
>89.5%	>79.5%	>69.5%	>59.5%

Note that there are no plus/minus grades in the calculus sequence. Following each midterm exam and the final exam, the course grade cut-offs **may** be curved downward; once lowered, the letter grade cut-offs will **not** increase.

The following is a breakdown for Math 126 showing the components of the course and how much each component is worth.

Written Homework	9%
WebAssign Assignments	7%
iClicker Lecture Participation	4%
Laboratory Section Grade	10%
Midterm Exam I	20%
Midterm Exam II	20%
Final Exam	30%

Exams

MATH 126 will have two types of exam:

1. Midterm Exams: Paper exams that are hand graded by MATH 126 instructors and GTAs.

Midterm Exam 1	T	2/28	5:50 – 7:50pm	Chapters 6, 7, 8.1-8.3, 11.1, 11.2
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Midterm Exam 2	T	4/11	5:50 – 7:50pm	Chapter 10
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2. Final Exam: Cumulative - administered Tuesday, May 9, 4:30-7:00pm.

Calculators and Midterm/Final Exams: Only basic or scientific calculators will be permitted while taking exams. Calculators must **not** be able to perform calculus calculations (limits, derivatives, integrals, series) and must have **no** graphing capabilities.

WebAssign

WebAssign is an online homework system that will be used for class warm-ups and online homework. The version of the textbook available through the University Bookstore (in both hard copy and e-book formats) comes equipped with a WebAssign Key. It is important that you buy the version of the textbook with a WebAssign Key; otherwise your WebAssign score will be null.

It is recommended that students intending to continue to Calculus 2 purchase a WebAssign Key valid for the life of the textbook. Besides being required for warm-ups and homework, WebAssign includes additional guidance through study guides, video tutorials, and step-by-step tutorials for many problems.

LearningCurve Assignments: Accessible through Blackboard through the LaunchPad Content menu are LearningCurve assignments. These assignments are adaptive, multiple choice questions focused on concepts, not calculations. These assignments are available as **extra** credit towards the WebAssign Homework grade.

Lecture Participation

The lectures held in Wescoe and Budig will be using the iClicker system for nearly every meeting beginning the second week of the semester. Students earn 1 point per lecture for responding to at least one question and earn 0.5 point per correct answer. Lecture Participation will be graded on a 65 point scale; students who earn above 65 points keep the overage as bonus credit towards lecture participation.

There will be **no** make-ups for lecture participation, the only way to accrue points is to attend lecture with a functioning iClicker; be sure to keep a spare set of batteries in your backpack!

Laboratory Sections

Laboratory sections meet twice per week with a graduate teaching assistant or Dr. Brennan. In laboratory, students will review the most recent material, work through problems that supplement lecture material, and have an opportunity to ask questions and receive feedback in a small classroom environment. 10% of the final grade is earned through laboratory sections; the quiz average is 9 of the 10 while laboratory attendance and participation make up 1 of the 10.

Written homework will be collected and quizzes will be administered in laboratory sections. All graded material will be returned during laboratory sections; for all grade disputes, initially contact your GTA before contacting your lecturer.

Make-ups

There will be no make-ups for lecture participation; the only way to accrue points is to attend lecture with a functioning iClicker.

WebAssign Homework can be completed after the deadline for 50% credit; assignments can be extended automatically through WebAssign. All WebAssign Homework assignments close permanently at 8am of Stop Day.

Exams and Laboratory Sections: Students with a conflict with another course or verifiable excuse (temporary orders necessitating the absence of those in the US Armed Forces, sanctioned university activities, or a medical crisis of themselves, a relative, or friend) may be excused from being present. It is the responsibility of the student to initiate discussion with their instructor or graduate teaching assistant prior to the absence examination/test if possible. Students can formally request their exam to be rescheduled due to a conflict by completing an Exam Conflict form which will be forwarded two weeks before the exam is scheduled.

Religious Holidays: Any student in this course who plans to observe a religious holiday which conflicts in any way with the course schedule or requirements should contact your instructor before the end of the third week of classes to discuss alternative accommodations.

Math Help

Every instructor and graduate teaching assistant is available for help outside the classroom, see individual webpages to find times and locations. The Calculus Help Room can be found in 431 Anschutz Library and is staffed by helpful and competent mathematics graduate teaching assistants. Before searching for a private tutor, be sure to visit either your instructor or the Calculus Help Room as they are free for KU students.

Group Work and Tutors: Students may discuss homework problem in groups, but each student is responsible for doing their own work and for turning in individual solutions. When a student works with a tutor, it is the responsibility of both the student and the tutor to ensure that it is the student who works to arrive at the solution of the problems. Tutors should not do student homework or provide solutions for assignments. No late homework assignment will be accepted. Members of the class are encouraged to study together, but **EACH** must write out their own solutions to the assigned problems. Copying of another person's homework is not allowed. **HOMEWORK IS A MAJOR PART OF THE LEARNING PROCESS IN MATHEMATICS**, and it is essential that students work their own problems, and do the homework on a regular basis

Withdrawal Dates

2/6	Monday	Last day to drop and not have it appear on your transcript.
4/17	Wednesday	Last day to drop and your transcript will show a "W."

By the end of MATH 126, students should have begun to build fundamental knowledge and skills so they can apply calculus to future STEM academic training and professional practice. Fundamental calculus knowledge and skills will be learned and evaluated based on specific objectives related to:

Integrals and Applications

- Calculate the average value of a function over an interval.
- Express the area bounded by two curves as a definite integral and evaluate.
- Calculate volumes of solids; in particular, calculate volumes of solids of revolution.
- Apply integration to force functions to calculate work.
- Recognize when to apply integration techniques such as:
 - Substitution,
 - Integration by Parts,
 - Trigonometric Substitution,
 - Partial Fractions.
- Compute arc length of a function given:
 - in Cartesian coordinates,
 - in polar coordinates,
 - parametrically.
- Solve for the area between polar curves.

Sequences and Series

- Determine the limit of a sequence by applying previous calculus knowledge.
- Calculate the limit of a geometric series.
- Apply tests to determine convergence/divergence of series including: Test for Divergence, Integral Test, Comparison Test, Limit Comparison Test, Alternating Series Test, Ratio Test, and Root Test.
- Apply the Ratio Test to determine the interval of convergence for a power series.
- Memorize common power series representations of functions.
- Determine power series representations of more complicated functions by manipulating known power series representations.
- Apply the Taylor series formula to calculate even more power series representations of elementary functions.

Vector Basics

- Become familiar with vectors in 2-space and 3-space. Become familiar with calculating using vector addition, scalar multiplication, the dot product, and the cross product.
- Use vectors for geometry, in particular
 - Use the dot product to calculate the angle between vectors,
 - Use the cross product to calculate the area of a parallelogram formed by two vectors,
 - Use the cross product to find a vector orthogonal to two non-parallel vectors.

- Express lines and planes in 3-space using scalar equations.
- Determine the distance between points, lines, and planes.
- Determine the angle and line of intersection between two non-parallel planes.

Keys to Success in MATH 126

- Come to lecture and your laboratory section prepared to learn and engage with the material!
- After each class, review the material and do the assigned and suggested homework on WebAssign and in the textbook.
- Prepare for the next class meeting:
 - Visit Blackboard to check the schedule and announcements.
 - Read the upcoming section in the textbook.
 - Do warm-up exercises on WebAssign.
- Find help! Take advantage of both your lecturer and your laboratory leader's office hours. Visit the Calculus Help Room in Anschutz 431! The help room schedule can be found in the course Blackboard.
- Study! Gather a group of friends and regularly work and study together.
- You will need a good background in algebra, trigonometry, and Calculus 1, Chapters 1-4 and Appendices A, B, and C serves an excellent reference for reviewing prerequisite material and a list of practice problems.

Policy on Students with Special Needs

The KU Office of Student Access Services - AAAC coordinates accommodations and services for all eligible students with disabilities. If you have a disability and wish to request accommodations and have not contacted the AAAC should do so as soon as possible. Their office is located in 22 Strong Hall; their phone number is 785-864-4064 (V/TTY). Information about their services can be found at <http://access.ku.edu/>. Please also contact your instructor and graduate teaching assistant privately in regard to your needs in this course.

Policy on Academic Misconduct

You are required to abide by all KU policies on academic integrity. Cheating, plagiarism or other academic misconduct will result in a failing grade on the assignment in question, notification of the student's dean, and usually further disciplinary sanctions, possibly including a failing grade in the course.

You are encouraged to collaborate with other students on the homework assignments. However, each student must write up his or her own solutions and acknowledge all collaborators. Copying someone else's homework, or allowing someone else to copy yours, is considered to be a form of cheating. For more information, see KU's official policies on academic misconduct at <http://policy.ku.edu/governance/USRR#art2sect6>.

General Comments

Regular class attendance is important for success in this course. Even if you've taken a previous Calculus course, this course is likely to be taught from a more sophisticated perspective, and if you think this class will be review, you are probably mistaken.

You should expect to spend at least two hours studying outside of class for every hour spent in class. In contrast to most high school math classes, if you don't understand the material being covered, you should **NOT** assume that your instructor will repeat material until you understand or master it. Ideally, you should ask questions at the time in class. Of course, you'll also probably need to spend time thinking things through on your own, but if you've tried that and are still confused, make use of the Calculus Help Room and instructor office hours. **Don't wait!** The material in this course is cumulative, so anything you don't understand now is likely to keep giving you trouble as the semester goes on.

Intellectual Property

- Course materials prepared by the instructor, together with the content of all lectures and review sessions presented by the instructor are the property of the instructor.
- Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited.
- Permission to make such recordings may be granted by the instructor on a case-by-case basis, on the condition that the individual making the recording uses these recordings only as a study aid.
- Unless explicit permission is obtained from the instructor, recordings of lectures and review sessions and course content may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.