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# MTH 132 Micro Course Syllabus

This course syllabus is not complete and does not claim to be.

The full course syllabus is available at: [www.math.msu.edu/Classes/mth\\_132](http://www.math.msu.edu/Classes/mth_132)

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**Fall Semester 2015**

Last updated on: August 4, 2015

## Who/What/Where/When

### People to Know

This information can be found at:

<http://math.msu.edu/classpages/Default.aspx?course=132>

for your section during the current semester.

ITEM	INSTRUCTOR
Name	Wenbin Li
Office Location	C325, Wells Hall
Email	wenbinli@math.msu.edu
Office Hours	4pm-5pm MWF

### Places to Be

This information can be found at: <http://schedule.msu.edu> for your section during the current semester.

ITEM	WEEKDAYS	LOCATION	TIME
MTH132	MWF	Section 007: 0910 - 1000 am Section 009: 1020 - 1110 am	Section 007: G032 HUB Section 009: G031 HUB

### Important Dates

WEEKDAY	DATE	EVENT
Wednesday	9/2/15	Classes Begin.
Monday	9/7/15	Labor Day - University closed.
Wednesday	9/9/15	Online open add period for spring semester ends at 8pm.
Thursday-Wednesday	09/10/2015- 09/16/2015	Students go to Undergraduate office, C212 Wells Hall for Mathematics enrollment changes. (Late adds, drop to lower course, section changes)
Monday	9/28/15	End of 100% Tuition Refund
Wednesday	10/21/15	Middle of Semester. Last day to drop a course without a grade being reported.
Thursday-Friday	11/26/2015- 11/27/2015	Thanksgiving Break
Friday	12/11/15	Last day of classes.

## Grades

### Overall

Your course grade will be based on:

WeBWorK	Quizzes	Exam 1	Exam 2	Final	TOTAL
10%	20%	20%	20%	30%	100%

In addition, you must take the final examination in order to pass the course.

Final grades will be determined by:

4.0 GRADE	0.0	1.0	1.5	2.0	2.5	3.0	3.5	4.0
% Grade	[0,55)	[55,60)	[60,65)	[65,73)	[73,80)	[80,85)	[85,90)	[90,100]

### Assessment - WeBWorK Homework

WeBWorK Homework will be done online at [www.math.msu.edu/webwork](http://www.math.msu.edu/webwork). There is a \$39.95 WeBWorK fee that must be paid. Instructions for payment and payment due date are available on the WeBWorK website.

See each assignment on the WeBWorK website for its actual due date. Homework assignments submitted up to 48 hours after the 100% deadline will be worth 75%. View the WeBWorK tutorial. Start working on WeBWorK homework for each section immediately after that section is covered.

In addition to the WeBWorK homework there are two special WeBWorK assignments: The Gateway and the Prior to Drop Date Student Assessment. These two assignments are counted towards the 10% WeBWorK homework grade, similar to any other WeBWorK homework. However, these assignments are designed to help you determine if you should stay in MTH 132. The Gateway is open the first few weeks of class. Those scoring poorly on it should meet with an adviser and consider dropping down to a lower math class. The Prior to Drop Date Student Assessment is due just before the drop date with 100% refund. Those doing poorly on it may want to consider dropping the course.

## Assessment - Quizzes and Exams

There will be up to 14 weekly in-class quizzes throughout the semester. Your instructor will announce your sections quiz dates/schedule in class. The two lowest quiz scores will be dropped and the remaining will be scaled to 20% of your final grade. Exams are scheduled for **Monday October 12th** and **Monday November 23rd** during **7:45 PM - 9:15 PM**. The location of the exams will be posted on the course website.

**Grading:** If you suspect a quiz or exam has been incorrectly graded please return it to your instructor within one week of receiving it back. After this no grade changes can be made.

## Assessment - Final

The Final Exam is scheduled for: **Monday, December 14th, 10:00 AM - 12:00 PM**.

The location of the final exam will be announced in class at a later date. All students are required to take the Common Final Exam. The university has strict requirements for exceptions. The dates for the exams are fixed. The final exam is cumulative. The exam will be closed book and closed note. Note that travel is not a sufficient excuse to have an exam scheduled on a different day.

## Supplies

### Course Materials:

CATEGORY	ITEM	DESCRIPTION
Textbook	Custom MSU MTH 132 Calculus I, ISBN-13: 978-1-305-51387-7	For reading and learning (optional but recommended)

## Attendance Policies

### Late Assignment Policy

For a list of what happens if you have to miss a class or class event please see:  
[www.math.msu.edu/Classes/mth\\_132/syllabus/attendance\\_policies.aspx](http://www.math.msu.edu/Classes/mth_132/syllabus/attendance_policies.aspx)

## Topics List

### Limits

- Have an intuitive idea of the definition of a limit.
- Evaluate limits (two-sided, left, and right) of the piecewise defined function given algebraically or graphically.
- Calculate infinite limits and detect vertical asymptotes.
- Recognize the precise definition of a limit and demonstrate using it to formally calculate two-sided limits.
- Detect when a function is continuous and when it is discontinuous.
- Apply the Intermediate Value Theorem to mathematically prove two functions intersect on a set interval.

### Derivatives

- Apply limits to calculate slopes of tangent lines or instantaneous velocity.
- Given a function, sketch the graph of its derivative and calculate the formula for the derivative.
- Compare the different differentiation formulas and recognize when to use each for given functions.
- Recognize the need for implicit differentiation and apply it to find the slopes of various curves.
- Use differentiation to solve real world problems related to physics.
- Apply implicit differentiation and the chain rule to solve many types of related rates problems.
- Utilize the tangent line or differentials to estimate how a function is changing around a specific point.
- Use the Closed Interval Method to identify absolute maxima and minima of a function.
- State the Mean Value Theorem and identify points on the correct interval that satisfy it.
- Utilize the derivative to determine when a function is increasing or decreasing.

- Use the second derivative to determine when a function is concave up or down.
- Investigate horizontal asymptotes of a function given algebraically by using limits at infinity.
- Summarize all of our current algebra and calculus knowledge to sketch an accurate graph of a function.
- Apply our maxima/minima knowledge to solve optimization problems.
- Recognize how and why Newtons Method finds intersections between functions.

### Integrals

- Compute general antiderivatives for many types of functions.
- Solve initial value problems for particular antiderivative functions.
- Use antiderivatives to calculate velocity or position from acceleration.
- Estimate the area under a curve using rectangles with heights given by left endpoints or right endpoints.
- Use the limit of finite sums to calculate the definite integral of a function.
- Identify how the definite integral relates with area under the curve.
- Relate slopes and areas through the two parts of the Fundamental Theorem of Calculus.
- Use the antiderivative to calculate definite integrals.
- Calculate the average value of a function over an interval.
- Develop a substitution rule to find antiderivatives of more complicated functions.
- Express the area bounded by two curves as a definite integral and evaluate. Identify when it is advantageous to integrate with respect to  $y$  instead of  $x$ .

## Other Policies

### Academic Honesty

Article 2.3.3 of the Academic Freedom Report states that The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards. In addition, the (insert name of unit offering course) adheres to the policies on academic honesty as specified in General Student Regulations 1.0, Protection of Scholarship and Grades; the all University Policy on Integrity of Scholarship and Grades; and Ordinance 17.00, Examinations. (See Spartan Life: Student Handbook and Resource Guide and/or the MSU Web site: [www.msu.edu](http://www.msu.edu).) Therefore, unless authorized by your instructor, you are expected to complete all course assignments, including homework, lab work, quizzes, tests and exams, without assistance from any source. You are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Also, you are not authorized to use the [www.allmsu.com](http://www.allmsu.com) Web site to complete any course work in this course. Students who violate MSU academic integrity rules may receive a penalty grade, including a failing grade on the assignment or in the course. Contact your instructor if you are unsure about the appropriateness of your course work. (See also the Academic Integrity webpage.)

### Limits to confidentiality

Essays, journals, and other materials submitted for this class are generally considered confidential pursuant to the University's student record policies. However, students should be aware that University employees, including instructors, may not be able to maintain confidentiality when it conflicts with their responsibility to report certain issues to protect the health and safety of MSU community members and others. As the instructor, I must report the following information to the Department of Police and Public Safety if you share it with me: Suspected child abuse/neglect, even if this maltreatment happened when you were a child, Allegations of sexual assault or sexual harassment when they involve MSU students, faculty, or staff, and Credible threats of harm to oneself or to others. These reports will trigger contact from the Department of Police and Public Safety who will want to talk with you about the incident that you have shared. In almost all cases, it will be your decision whether you wish to speak with that individual. If you would like to talk about these events in a more confidential setting you are encouraged to make an appointment with the MSU Counseling Center.

### Accommodations for Students with Disabilities (from RCPD)

Michigan State University is committed to providing equal opportunity for participation in all programs, services and activities. Requests for accommodations by persons with disabilities may be made by contacting the Resource Center for Persons with Disabilities at 517-884-RCPD or on the web at [rcpd.msu.edu](http://rcpd.msu.edu). Once your eligibility for an accommodation has been determined, you will be issued a Verified Individual Services Accommodation (VISA) form. Please present this form to me at the start of the term and/or two weeks prior to the accommodation date (test, project, etc.). Requests received after this date may not be honored.

### Disruptive Behavior

Article 2.III.B.4 of the Academic Freedom Report (AFR) for students at Michigan State University states: The student's behavior in the classroom shall be conducive to the teaching and learning process for all concerned. Article 2.III.B.10 of the AFR states that The student has a right to scholarly relationships with faculty based on mutual trust and civility. General Student Regulation 5.02 states: No student shall . . . interfere with the functions and services of the University (for example, but not limited to, classes . . .) such that the function or service is obstructed or disrupted. Students whose conduct adversely affects the learning environment in this classroom may be subject to disciplinary action through the Student Judicial Affairs office.