MATH 1823 - Calculus I (Summer 2016, Block D)
Syllabus

Course Instructor

Melody Molander email: mmolander@math.ou.edu

Office Hours: Mondays 1:30 PM - 2:30 PM at my Office (PHSC 1022)
Tuesdays 12:00 PM - 1:00 PM at the Math Center (PHSC **114**)
Thursdays 2:30 - 3:30 at my Office (PHSC 1022)
Also available by appointment.

Website for course: D2L and
http://www2.math.ou.edu/~mmolander/MATH1823Summer2016.html

Required Materials

1. Textbook: *Calculus (8th Edition)* by James Stewart; (Cengage Learning, 2016). If you do not wish to purchase this, there are reserved copies in the Bizzell Library on campus or the Math Center allows students to borrow their copies while studying there (for the exchange of a student ID to hold onto). Editions are different, so make sure that the copy you use is correct.
2. Computer and Internet Access: I will frequently assign online homework. There are several computer labs on campus with internet access. I also will send emails frequently. It is expected that all students check their email regularly.
3. (Optional) Calculator. If desired, you may use calculators or computers to assist in preparing your work on assignments for this course. However, class exams will be constructed so that calculators are not necessary.

Course Content

This course provides an introduction to the theory and applications of differential calculus for real functions of one variable. Topics covered include equations of straight lines, conic sections, functions, limits and continuity, differentiation, maximum-minimum theory, and curve sketching. MATH 1823 is the first course in the four semester calculus sequence consisting of MATH 1823, 2423, 2433, and 2443. The basic concepts that are introduced, and the skills that are developed in this course, underlie virtually every topic in the succeeding course, so having a very strong foundation in MATH 1823 will be essential for your success in subsequent courses.

Prerequisite

MATH 1523 at OU, or satisfactory score on the placement test, or, for incoming freshmen directly from high school, satisfactory score on the ACT/SAT.

Grading

Items	**Percentage**
Questionnaire	1%
Attendance	3%
Office Hours	3%
Quizzes	9% (each 3%)
WebWork	12% (each 2%)
Homework	12% (each 2%)
Exams	40% (each 20%)
Final Exam	20%

Semester Grading

Final course grades will be based on the scale:

A: 90% **B: 80%** **C: 70%** **D: 60%** **F: Below 60%**

Questionnaire

The first day of class I will pass out a questionnaire that should be turned in by the next day (Tuesday, May 17th). This questionnaire is aimed to showing me what material I should review and what material students are comfortable with.

Attendance

You are expected to attend every class period. Attendance will be taken daily. It is the student's responsibility to get missed lecture notes from their peers when absences do occur. This is summer session, so missing one class is equivalent to missing more than half a week in a normal semester.

Office Hours

You should come to the Math Center or to my office hours at least once a week for at least an hour. You should try to come prepared with a question or a topic covered in class you would like some help on. If you cannot make my scheduled office hours, you can email me for an appointment. Also, you can go to the Math Center when I am not scheduled there. Whenever you go to office hours (including my own), please bring your "Office Hours Form" and get it signed by whoever helps you in the Math Center. **This form is due every Monday, EXCEPT the last week of class it's due THURSDAY.** This means that finals week you should receive help before Thursday.

Quizzes

There are three quizzes. If you miss a quiz, you are expected to email me within 24 hours. I will allow make-up quizzes up to 3 school days late, but you are expected to email me first to schedule the make-up quiz.

WebWork

In addition to the written homework assignments turned in at class, there will also be weekly assignments using the open source online homework system WebWork. Instructions on the use of WebWork will be given in class, and posted at the course web site. Please email me if you have any issues with getting started with WebWork or submitting answers. **Please note that the first WebWork is due the first day of class.**

Homework

Homework will be on D2L and the class web page each week. You are expected to have homework turned in to me at the beginning of class the day it is due. If you are absent from class, you are still expected to turn in your assignment by the beginning of class time the day it is due by either emailing me a copy of your homework or sliding it under my office door (PHSC 1022). **NO LATE HOMEWORK IS ACCEPTED.** Before you do the exercises, read each lesson in your textbook and use the referenced examples when appropriate. For every class period you are expected to spend at least one to two hours on homework assignments and study time. Start your homework in plenty of time to get the help before the next class. Do not spend an

excessive amount of time trying to figure out one problem. Get help before you get frustrated, but not before you studied your book, especially the examples. The problems listed as homework are the minimum assignment. You are your best teacher. Individually, you may need to do additional problems for mastery and understanding. Always show your work and check odd problems in the back of the textbook, making appropriate corrections in your work.

Examinations

There will be two examinations during the course. The dates of the exam are on the website, D2L and on page 6 of this syllabus. In general, individual exams will not be curved. Exams take place in this room. All students are expected to adjust their schedules to accommodate these tests. The only absolutely acceptable reason for a makeup will be a university-sanctioned activity. All other requests will be considered on an individual basis. **All requests for makeups must be submitted through email by 5 p.m. Tuesday before the exam.**

Final Examination

The final examination for this class is comprehensive. The final will be given only at the scheduled time. No make-ups will be scheduled other than those allowed by university regulations. **Do not schedule any conflicts with the final exam, including elective surgery, work, travel, or classes at other institutions.** If you miss the final exam, email me immediately.

Academic Misconduct

Any cases of academic misconduct will be strictly dealt with according to the University of Oklahoma Student Code. All cases of academic misconduct will be reported to the Dean of the College of Arts and Sciences for adjudication. Students are encouraged to visit (and are expected to be aware of) the Provost's webpage on academic integrity, found at this website: http://integrity.ou.edu/ Please be aware of the information on calculators.

Electronics

Any electronics, other than the approved calculator, is not allowed during class. This includes cellphones, laptops, kindles, smart watches, headphones, and tablets. If you have unapproved electronic device out during exams or quizzes it will be assumed that you are cheating.

Special Accommodations

Any student in this course who has a disability that may prevent him/her from fully demonstrating her/his ability should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate her/his education opportunity. All accommodations will be made at the suggestion of, and with the approval of the Office of Disability Services, 620 Elm, Room 166.

Email and Desire2Learn

You are expected to check your email on a regular, frequent basis. Desire2Learn will be used to provide updates on the course and post grades. I will use the OU's email system to send messages and to distribute grades. You are responsible for all messages sent via email. All students are assigned an email by the university. If you have another address that you prefer to use, you can forward all emails to your OU address by going to http://webapps.ou.edu/pass If you do not have a computer to access your account, you can go to any of the computer labs on campus for help. If you forward your OU email, please make sure your account is up-to-date, your mailbox is not full, and that it is set to receive messages from the mathematics department. If your computer goes down, please check your account from another location!

Tutoring

The Department of Mathematics maintains a help lab in PHSC 114. It will be open Monday through Friday 9:00 AM - 1:00 PM. No appointments are required. University College offers Action Tutoring. Have specific questions ready for the tutors when you go. If you are unable to do two or more problems on the homework assignment, you should get help before the next class period.

Weekly Schedule for MATH 1823

05/16 - 05/20	Intro to Course, Review Material, Functions (1.1), Models (1.2), Transformations (1.3), Tangent and Velocity Problems (1.4)	WebWork 1 Due Monday (by 11:59 PM) Questionnaire Due Tuesday Homework 1 Due Wednesday Quiz 1 On Friday
05/23 - 05/27	Limits (1.5), Limit Laws (1.6), Definition of Limit (1.7), Continuity (1.8)	Office Hours Form 1 Due Monday WebWork 2 Due Monday Homework 2 Due Wednesday Exam 1 On Friday
05/30 - 06/03	Derivatives (2.1), Derivatives of Functions (2.2), Differentiation Formulas (2.3), Derivatives of Trig Functions (2.4), The Chain Rule (2.5)	Office Hours Form 2 Due Monday WebWork 3 Due Monday Homework 3 Due Wednesday Quiz 2 On Friday
06/06 - 06/10	Implicit Differentiation (2.6), Rates of Change (2.7), Related Rates (2.8), Linear Approximation (2.9)	Office Hours Form 3 Due Monday WebWork 4 Due Monday Homework 4 Due Wednesday Exam 2 On Friday
06/13 - 06/17	Maximum Values (3.1), Mean Value Theorem (3.2), Graphs of Derivatives (3.3), Limits at Infinity (3.4), Curve Sketching (3.5)	Office Hours Form 4 Due Monday WebWork 5 Due Monday Homework 5 Due Wednesday Quiz 3 On Friday
06/20 - 06/24	Graphing with Calculators (3.6), Optimization (3.7), Newton's Method (3.8), Antiderivatives (3.9)	Office Hours Form 5 Due Monday WebWork 6 Due Monday Homework 6 Due Wednesday Office Hours Form 6 Due Thursday Final Exam On Friday

In general, students who attend class, work problem on a frequent basis, and get help as needed are the students who succeed in this course. Do not assume that this material is all review.

Office Hours Form 1

Due: Monday, May 23

Name:

Week	Date(s) you were there:	Who helped you?:	Initials signed by person who helped you:	How long were you there?:
1				

Office Hours Form 2

Due: Monday, May 30

Name:

Week	Date(s) you were there:	Who helped you?:	Initials signed by person who helped you:	How long were you there?:
2				

Office Hours Form 3

Due: Monday, June 6

Name:

Week	Date(s) you were there:	Who helped you?:	Initials signed by person who helped you:	How long were you there?:
3				

Office Hours Form 4

Due: Monday, June 13

Name:

Week	Date(s) you were there:	Who helped you?:	Initials signed by person who helped you:	How long were you there?:
4				

Office Hours Form 5

Due: Monday, June 20

Name:

Week	Date(s) you were there:	Who helped you?:	Initials signed by person who helped you:	How long were you there?:
5				

Office Hours Form 6

Due: THURSDAY, June 23

Name:

Week	Date(s) you were there:	Who helped you?:	Initials signed by person who helped you:	How long were you there?:
6				

Questionnaire
Due: Tuesday, May 17th
PLEASE WRITE ANSWERS ON A SEPARATE PIECE OF PAPER, STAPLE IT TO THIS ONE AND TURN THEM BOTH IN. SHOW ALL WORK AND BOX FINAL ANSWERS TO MATH PROBLEMS.

The first part of this questionnaire helps you setup your WebWork account and complete your first WebWork assignment.

1. Go to https://webwork.math.ou.edu/webwork2/mmolander_math1823_160_summer2016/
2. Where it says "username" type your first initial of your first name and your whole last name, all in lowercase.
3. Where it says "password" type your ID number
   E.g. If my name were Barack Obama and my Id number were 12345 I would sign in by:
   Username: bobama
   Password: 12345
4. Click "Continue". If for some reason this username and password do not work, please email me ASAP. (My email is on the syllabus). It is a good idea to change your password once you get logged in.
5. Once properly logged in, you should see "WebWork_1". Click to open WebWork 1 and complete the problems assigned. If you have any questions doing these problems or entering the answers please email me ASAP (or go to the Math Center). This will complete your first WebWork assignment.

The second part of this questionnaire gives me some background on your previous math experience.

1. What year in school at OU will you be starting Fall 2017?
2. What's your major?
3. What was your last math course?
4. When did you take your last math course?
5. Describe your relationship with math. (Do you enjoy doing math? Do you hate math? Does it give you stress just thinking about it?)

The third part of this questionnaire asks some Algebra and Precalculus problems. Please try your best to answer the questions, but it IS acceptable for this questionnaire to write "I don't know" if you don't know how to solve it. This questionnaire is meant to show me what material to review. PLEASE SHOW ALL WORK AND BOX YOUR FINAL ANSWER.

1 . Evaluate the following expressions WITHOUT using a calculator.

(a) $(-3)^4$

(b) -3^4

(c) 3^{-4}

(d) $\frac{5^{23}}{5^{21}}$

(e) $(\frac{2}{3})^{-2}$

(f) $16^{-3/4}$

2. Simplify each expression. Write your answer without negative exponents.

(a) $\sqrt{200} - \sqrt{32}$

(b) $(3a^3b^3)(4ab^2)^2$

(c) $(\frac{3x^{3/2}y^3}{x^2y^{-1/2}})^{-2}$

3. Expand and simplify.

(a) 3(x+6)+4(2x-5)

(b) (x+3)(4x-5)

(c) $(\sqrt{a} + \sqrt{b})(\sqrt{a} - \sqrt{b})$

(d) $(2x+3)^2$

(e) $(x+2)^3$