Syllabus M119 - Section 9061

Instructor:	Tri Lai
Class time and location:	MWF 11:15-12:05 at BH 228.
Office:	SE 221
Email:	tmlai@indiana.edu
Office hours:	Monday and Friday 10:00 am- 11:00 am
A.I:	Shizhuo Zhang
Text:	Applied Calculus by Hughes-Hallett et al. 4th Edition

I. Learning Objectives:

1. Students should become proficient in modeling problems from a variety of applied areas using linear, exponential, and logarithmic functions. This includes identifying which problems can be solved using such models, creating variables, deducing relationships, solving the resulting mathematical problems, and drawing qualitative conclusions from the numerical solutions.

2. Students should become proficient in calculating, estimating, expressing, and interpreting average, relative, and instantaneous rates of change of one quantity with respect to another, using the language of differential calculus. This includes situations when the relationship between the quantities takes the form of a table, a graph, a textual description, or a symbolic formula.

3. Students should become proficient in modeling optimization problems in a variety of applied areas. This includes creating independent and dependent variables, translating constraint information into an interval of values for the independent variable, solving the resulting optimization problem using techniques from differential calculus, and drawing qualitative conclusions from the numerical solutions.

4. Students should become proficient in calculating, estimating, expressing, and interpreting the accumulated change of one variable given its rate of change with respect to another variable, using the language of integral calculus. This includes situations when the relationship takes the form of a table, a graph, a textual description, or a symbolic formula.

II. Examinations:

The midterm and final are departmental examinations. ALL STUDENTS MUST TAKE THESE EXAMS AT THE SAME TIME. The dates and times for these examinations were announced in the Schedule of Classes; by registering for this course you committed to take these examinations at the scheduled times:

Midterm Examination: Saturday, Oct 12, 10:30 am – noon.

Final Examination: Monday, December 16, 8:00 am – 10:00 am

If a student has a potential conflict with any examination, s/he must inform the instructor during the first two weeks of the semester and complete a departmental Request for Variance form.

Most students will not take the departmental exams in their regular classrooms; instructor will announce the location of exams prior to the test day.

Exams 1 and 3:

Exam 1: Wednesday, Sep 18, 11:15 am --12:05 pm in class.

Exam 3: Wednesday, Nov 13, 11:15 am --12:05 pm in class.

III. Grades.

Midterm Exam	22%
Final Exam	28%
Exam 1	15%
Exam 3	15%
WebWork + Quizzes, class participation, other…	20%

IV. Calculators

Each student is expected to have and to be able to use a graphing calculator equivalent to a Texas Instruments TI-83 or TI-84, the model that the department recommends and supports. The TI-82, TI-83 Plus, TI-84 Plus and TI-86, for example, are equivalent for the purposes of this class. A student may NOT use a TI-89 or TI-92 or, more generally, a calculator with a Computer Algebra System (CAS). Each individual student is required to have a calculator for exams. There are calculator tutorials located under the Oncourse 'M119 Student Resources' link.

IV. Academic Integrity

The Mathematics Department expects its students to comply fully with Indiana University policies on academic integrity. The usual penalty for a student caught cheating in M119 includes a final course grade of F. Additional penalties may include probation, suspension, or expulsion from the University. Cheating cases are always reported to the Office of Student Ethics.

VI. Help

Assistance will be available to all students in M119 as follows:

Departmental M119 Help Sessions: MTWR 6:00 – 8:00 p.m. Wylie Hall 115

Free tutorial help: Sunday through Thursday, 7:00 – 11:00 p.m., Academic Support Centers in Briscoe, Teter, and Forest. http://www.indiana.edu/~acadsupp/info2.shtml

Streaming videos on M119 topics and some particular problems are available from the Oncourse M119-Tube tab. https://resources.oncourse.iu.edu/access/content/group/8f7ba376-1242-4e8a-0048-acbde2ffaad8/StudentResources/

Departmental and ASC help sessions begin with the *second* week of class and will *not* be available over Labor Day, fall break, Thanksgiving break, or finals week.

VII. WeBWork.

Homework will consist of online assignments called WeBWorK. WeBWorK assignments will vary in length however each individual problem will carry the same weight toward your final grade. Access WeBWorK from Oncourse by clicking the link "WeBWorK". There will be many WeBWorK assignments by semester's end and some will be longer than others. Many WeBWorK problems will challenge you and require some deep thought. WeBWorK provides each student with similar types of math problems but using different numbers. Hence an answer that works for one student may not work for others. When working in tandem with another student, it will be important for you to understand how your study companion reasoned through their problem so that you can successfully reason through your own version of the problem. Note that the WeBWorK servers are occasionally offline on Sundays for maintenance and upgrades. They also go offline at other times due to a host of other reasons. It is wise to start your WeBWorK assignments as soon as they become available so that you won't be troubled by temporary network or server outages. WeBWorK is accessible from all of the public computing clusters. If you are experiencing trouble accessing WeBWorK from your personal computer, then go to an IU public computer and work from there.

One problem that crops up now and again with WeBWorK is that students will have accidentally worked the WeBWorK problems from someone else's account and then not get any credit for having solved the problem themselves. Please make sure that it is your username that is showing on the computer screen and not the username of the last person to have used that computer before you. If you have correctly worked a WeBWorK problem and have seen a "green bar" confirming that you've entered the correct answer, then your correct answer has been recorded.

One more important comment about WeBWorK is that the only browser that works well is Firefox (free download from IU ware: iuware.iu.edu). Don't waste your time attempting to use other browsers. Your instructor will not extend your assignment deadlines because you could not work the problems using Safari, Internet Explorer, Google Chrome, etc. You must use Firefox! Moreover Firefox will work best with WeBWorK if you remove any "add-ons" you may have installed.

IIX. Quizzes.

I will give pop quizzes. Each quiz consists of one quick problem, and you have 5 minutes to finish the quiz. There are NO make-up quizzes.

Tentative schedule

Week	Dates	Sections
1	Aug. 26 – Aug. 30	1.1, 1.2, 1.3, 1.4 (not supply and demand)
	No classes Monday, September 2 (Labor Day)	
2	Sept. 3 – Sept. 6	1.5, pp. 480 - 484, 1.6
3	Sept. 9 – Sept. 13	1.7, 1.8, 1.9
4	Sept. 16 – Sept. 20	Review, Exam 1, 2.1
	Exam 1: Wednesday, Sep 18, 11:15 am --12:05 pm in class.	
5	Sept. 23 – Sept. 27	2.2, 2.3, 2.4
6	Sept. 30 – Oct. 4	3.1, 3.2, 3.3
7	Oct. 7 – Oct. 11	3.4, Review
	Departmental Midterm Exam: Saturday, October 12, 10:30 am – noon	
8	Oct.14 – Oct. 17	1.4 supply and demand , 2.5
	Fall Break: October 18 - 20 **Last Day for Automatic Withdrawal**: Wednesday, October 23	
9	Oct. 21 – Oct. 25	4.1, 4.2, 4.3
10	Oct. 28 – Nov. 1	4.4, 4.7, 5.1
11	Nov. 4 – Nov. 8	5.2, 5.3, 5.4
12	Nov. 11 – Nov. 15	5.5, Review, Exam 3
	Exam 3: Wednesday, Nov 13, 11:15 am --12:05 pm in class.	
13	Nov. 18 – Nov. 22	6.1, 6.3, 7.1
	Thanksgiving Break: November 24 – December 1	
14	Dec. 2 – Dec. 6	7.2, 7.3, 7.4
15	Dec. 9 – Dec. 13	7.5, Review
	Departmental Final Exam: Monday, December 16, 8:00 am – 10:00 am	

Recommended Problems:

Section	Page	Problems
1.1	5	1 – 11 odd, 12, 14 – 16, 18, 19, 25
1.2	12	1 – 9 odd, 10, 11, 13, 17 – 19, 21, 23, 27, 28, 29, 31
1.3	22	1 – 9 odd, 10, 11, 13, 24, 27, 28, 30, 31, 36 – 38, 43, 47
1.4	35	1,3,9,11 – 13, 17, 19 – 21, 23 – 25, 27, 31, 35, 37-39
1.5	43	1-4, 7, 8, 15, 17, 20, 22, 25, 27, 29
1.6	50	3,11,13 – 21 odd, 22, 23, 27, 32, 35, 38, 39
1.7	56	2-4, 7, 9, 11, 17, 22, 23, 25, 28, 31, 33, 35, 39
1.8	62	1,3,9,11, 12, 19, 33, 34, 37, 39, 40, 43
1.9	67	1-7, 10, 11, 13 – 15, 17, 22, 24, 25
Review	77	3, 6, 7, 15, 19, 21, 22, 24 – 26, 29, 32, 33, 40, 43, 44, 46, 47, 49, 51 – 53, 55 – 60, 67
2.1	93	2, 4 – 7, 9, 11, 13, 16, 20, 21
2.2	99	1 – 9 odd, 10, 11 – 27 odd
2.3	106	1, 3, 5, 7, 13, 17, 25, 27, 29, 35, 43, 45
2.4	113	1 – 19 odd, 20, 23, 25, 28
2.5	119	1, 3, 4, 6, 7, 9, 11, 12
Review	121	4, 5, 9, 11, 13 – 15, 25, 27, 28, 31, 32, 34, 35, 39, 42
3.1	139	1 – 11 odd, 21 – 31 odd, 37, 39, 49, 50, 57
3.2	144	5, 7, 9, 15 – 27 odd, 31, 37, 38, 49
3.3	150	1 – 23 odd, 24, 25, 29, 31, 35, 37, 39, 43, 45, 47
3.4	154	3, 5, 11, 14, 15, 17, 18, 21, 23, 27, 31, 35
Review	159	1 – 17 odd, 21, 23, 27, 29, 31, 35 – 47 odd, 56, 66, 67, 71, 77
4.1	174	1, 3, 6, 9, 11, 13, 17, 20, 22, 27, 31
4.2	179	1, 3, 6, 7, 11, 13, 15, 17, 21, 23, 35
4.3	185	1, 5, 6, 9, 11, 13, 18, 19, 27, 33, 35 – 37
4.4	192	3, 5, 7, 11, 12, 19 – 21, 23, 25, 26, 27
4.7	213	1, 3, 7, 10, 13, 14, 16, 19
Review	222	1, 3, 5, 7, 8, 10 – 13, 19 – 21, 27, 29, 33, 35, 37, 42, 43
5.1	238	3, 5, 9, 11, 16, 17
5.2	246	3, 5, 7, 11, 13, 15, 17, 21 – 29 odd
5.3	251	2, 5, 7, 9, 13 – 19, 21, 29
5.4	256	1 – 11 odd, 12, 19, 21, 23, 33
5.5	262	1, 3, 7, 13
Review	264	1 – 31 odd, 36, 37, 40
6.1	278	1, 2, 7, 9, 16, 19, 21
6.3	288	1, 2, 3, 5, 7, 9, 10, 13
Review	294	1 – 7 odd, 14, 15, 17
7.1	303	1 – 23 odd, 27 – 51 odd, 55, 63, 66
7.2	307	1 – 13 odd, 17, 29 – 39 odd
7.3	311	1 – 15 odd, 23 – 29 odd
7.4	315	1 – 11 odd, 15 – 23 odd, 27
7.5	319	1, 2, 7, 9, 14, 17 – 23 odd
Review	322	1 – 19 odd, 23, 27 – 39 odd, 43, 44, 56