

Mathematics 10350 - Calculus A for Life Science
Fall Semester 2011

Text: SINGLE VARIABLE CALCULUS 2ND EDITION - EARLY TRANSCENDENTALS by Jon Rogawski
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Section	Instructor	Class Schedule	Office	email@nd.edu
1	Arthur Lim	MWF 8:30 - 9:20 DBRT 140	HAYE 250	arthurlim
2	Stephan Stolz	MWF 9:35 - 10:25 HAYE 129	HURLEY 166A	stolz.1
3	Damir Dzhafarov	MWF 10:40 - 11:30 HAYE 229	HAYE 214	ddzhafar
4	Vincent Guingona	MWF 1:55 - 2:45 DBRT 129	HAYE 118	guingona.1
5	Victor Ocasio Gonzalez	MWF 3:00 - 3:50 FITZ 356	HURLEY 283	vocasiog

Section	Teaching Assistant	Class Schedule	Office	email@nd.edu
11	Gang Li	R 12:55 - 1:45 HAYE 229	HURLEY 289	gli3
12	Gang Li	R 3:30 - 4:20 HAYE 229	HURLEY 289	gli3
21	Doug Smith	R 11:00 - 11:50 HAYE 229	HAYE 219	dsmith35
22	Doug Smith	R 2:00 - 2:50 HAYE 231	HAYE 219	dsmith35
31	Jeff Madsen	R 9:30 - 10:20 HAYE 229	HAYE 219	jmadsen
32	Jeff Madsen	R 11:00 - 11:50 HAYE 231	HAYE 219	jmadsen
41	Xiaoyang Chen	R 12:55 - 1:45 Brownson 300	HAYE 221	xchen3
42	Xiaoyang Chen	R 3:30 - 4:20 HAYE 231	HAYE 221	xchen3
51	Peter Ulrickson	R 9:30 - 10:20 HAYE 231	HAYE 295	pulricks

Course Website: <http://www.nd.edu/~m10350>

Most information for this course are posted on its website. These include instructors and TAs office hours and contact information, daily homework information, exam dates and venue, practice exams, and etc.

Calculator Policy: Calculators are **NOT** allowed on any of the exams. You may use your calculators for homework and assignment, but it is strongly recommended that you do not rely on any of the graphing functions on the calculator.

Course Grade & Breakdown:

	Date	Day	Time	Room	Points
Midterm 1	Sep. 20	Tuesday	8:00 - 9:15 AM	On course website	100
Midterm 2	Oct. 13	Thursday	8:00 - 9:15 AM	On course website	100
Midterm 3	Nov. 15	Tuesday	8:00 - 9:15 AM	On course website	100
Final	Dec. 12	Monday	1:45 - 3:45 PM	TBA	150
Online Hwk & Assignment	Submit online or collected in class as scheduled on website				75
Participation	participation, attendance, activities & quizzes				25
Total points:					550

Cutoffs for major grades (A, B, C, D, F) for each exam will be assigned and announced in class so you have some indication of your level of performance. Your final grade will be based on your total score out of 550.

Missed exams: Note that there will be three Midterm Exams and a Final Exam. A student who misses an examination will receive **zero points** for that exam unless he or she has written permission from the Dean of the First Year of Studies. Please be aware that travel plans, sleeping in, defective alarm clocks, etc. are **not** considered to be a valid excuse by the Dean of the First year of Studies! If you have a valid excuse (illness, excused athletic absence, etc.) for missing an exam, please see me ASAP (preferably before the exam) to schedule a makeup exam.

Exam conflicts are governed by Academic code. According to Section 14.2, students with 3 or more finals in one day, or 4 or more finals in a 24 hour period, may negotiate to change the time of one of these finals. If you intend to change the time of your Math 10350 final, you must talk to your instructor by **November 21**.

Honor Code: Examinations, homework, assignment and quizzes are conducted under the honor code. While collaboration in small groups in doing homework is permitted (and strongly encouraged) in this course, copying is not. In particular, **copying from the Student Solutions Manual is a violation** of the Honor Code. Exams are closed book and are to be done completely by yourself with no help from others.

Homework & Assignment: Online Homework and assignment problems are assigned daily. Their schedule are listed on the course website. Absolutely no late homework or assignment will be accepted. You are encouraged to work on these problems in groups, but all online homework and assignments must be turned in individually. Remember that you **will not learn anything by simply copying another student's work or the Student Solutions Manual**. The main purpose of homework and assignment is to help you learn the material and assess yourself. Experience shows that students who take their homework seriously do very well in the course because they have a better understanding of the material. For detailed homework and assignment instruction, please see attached information.

Class Attendance: A student who accumulates more than 3 unexcused absences may be given an F grade.

Classroom Policies: Please do your best to show up on time and quietly enter the room if you are late. Please remember to respect your peers who are here to learn. Indeed, class disruptions will **not** be tolerated and offending parties will be asked to leave. During lectures you are encouraged to actively participate by answering and asking questions.

Study Tips are posted on the on the course website (<http://www.nd.edu/~m10350>). Please print out a copy and review it. The key point is to start early and be consistent.

Getting Help: You can get help for mastering the course material from the following three avenues below. More information can be obtained from the 10350 course website; click on "TUTORING & HELP".

- **Instructor & TA's Office Hours:** The schedule will be posted on Math 10350 website or make an appointment to meet your instructor or TA. It is important that you see them soon when you have difficulty with the course. The earlier you meet with your instructor and TA, the more we can do to help and advise.

- **Mathematics Department Calculus Help Room:** These are free walk-in help sessions offered by math graduate students. They are available Mondays through Thursdays 7:00pm to 9:00pm in HAYES 231.

Please note that instructors and tutors are **NOT** there to do your homework. In fact, tutors are instructed to guide you to the answer and not do your homework. Please do not ask the tutors to grade your homework, and be specific about what you like to discuss.

- **Learning Resources Center (LRC) Help:** You may also obtain valuable assistance from the **LRC** in the First Year of Studies:

- Math 10350 Tutoring Program,*
- Math 10350 Collaborative Learning Program,*
- Math 10350 Workshops/Review Sessions.*

If you wish to participate in the Tutoring Program or Collaborative Learning Program, you must sign up with Ms Nahid Erfan, Director of **LRC**. Regular attendance is required for these programs. Sign-up and regular attendance are **not** required for the Math 10350 Workshops/Review Sessions.

MATH 10350 Course Work Policy

There are both online homework and paper-pencil assignments for this course.

Weekly Assignments are due in class according to the schedule posted on the Math 10350 website. The questions and problems to be turned in are posted on the course website. You are expected to submit your written assignment in the following manner:

- Your work has to be clearly and logically written; showing method of solution not just a final answer.
- Group your work for each problem in an assignment according to their assigned sets. For example, in Assignment 01, you should have three sets Asgn01A, Asgn01B, and Asgn01C.
- Please staple your work together. Please purchase a stapler. It is your responsibility that your work stays stapled together securely.
- Any work falling short of the above expectations may not be graded.

The lowest assignment score will be dropped. Absolutely no late assignments will be accepted. If you need to attend a school related event, you may turn in your assignment early or arrange to have your peer turn it in on the day it is due. Exceptions are handled case by case.

Although written assignments are due weekly in class, you should still start working on them early. The problems of an assignment you could work on at the end of each lesson are posted at the 10350 website. This helps to pace your progress in completing the assignment. Usually, you are expected to **complete or at least serious attempt** all problems of your written assignment assigned at the end of each class day.

Online Homework is assigned daily and is due at the end of the next class day. Their schedule posted on the Math 10350 homework website. The online system we are using is CalcPortal. Please follow registration instructions on the next page carefully.

- Be sure to register your login name as your ND email address (netID@nd.edu).
- The ND e-mail address will be used to make all course related announcements. You must check your e-mail regularly daily.

All online homework should be done using paper and pencil, and be treated the same manner as written assignments. We encourage you to keep a record of your work for material submitted online; these are helpful when you review for an exam. Usually, you are expected to **complete about 5 to 8** problems of your online homework assigned at the end of each class day. If you have difficulty solving the homework questions please see your TA/professor or visit the Calc Help Room at HAYE 231.

Two lowest online homework scores will be dropped. Absolutely no late homework will be accepted. Register and access the online homework on the CalcPortal web address:

<http://courses.bfwpub.com/calculuset.php>

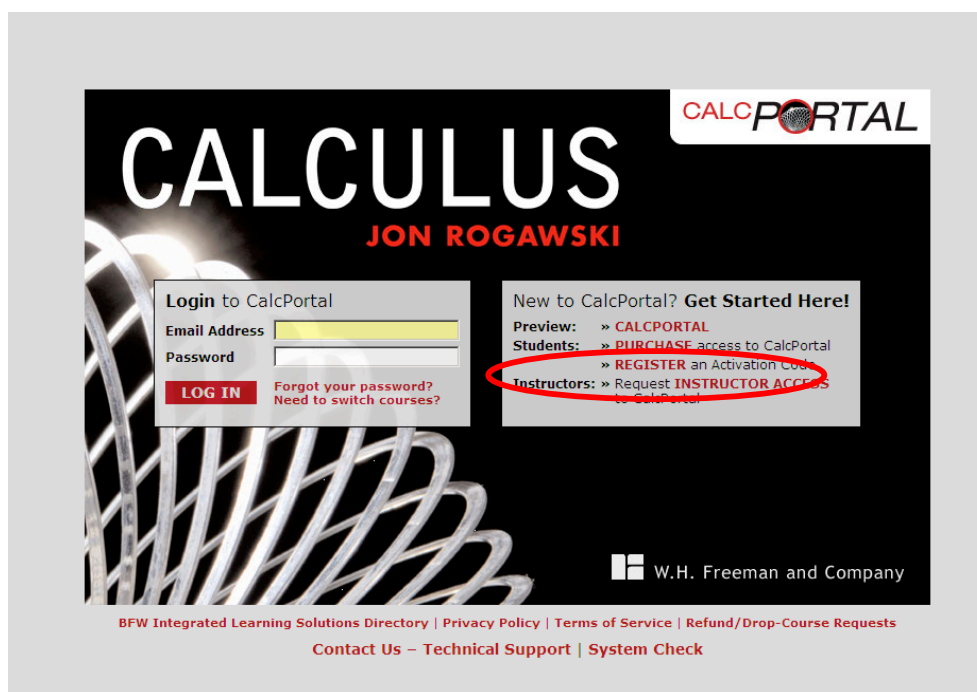
Online Homework Submission Policies. All submission deadlines for online homework on CalcPortal are fixed. You are highly encouraged to SUBMIT your homework well ahead of deadlines. We DO NOT accept excuses like: My computer/Webservers shut down just before I could submit my work on time. Save your answers as you enter them online. This ensures that no work is lost BEFORE the submission deadline. Enough buffer time is given to ensure timely submission of your work. In addition, after the deadline of a homework, you have 48 hours to complete a late homework to obtain up to 80% of the full score.

Accessing Your CalcPortal Course


Accompanying *Calculus* by Jon Rogawski

W.H. Freeman and Company

To register: Go to <http://courses.bfwpub.com/calculuset2e.php>



TO REGISTER YOUR ACCESS CODE:

1. Click on **"REGISTER an Activation Code"** and Click 
2. Enter your Activation Code, your name, and ND e-mail address. Your **netID@nd.edu** e-mail address will serve as your username for CalcPortal.
3. Create a password. Your password must be at least 4 characters long and should be something you will easily remember, since you will need it to access student materials in the future
4. Select the state (Indiana) where your institution is located from the drop-down menu. Then, select "University of Notre Dame" and then your course/section (from the drop down menus). Please select the section you are in:

MATH10350-01 (Lim)

MATH10350-02 (Stolz)

MATH10350-03 (Dzhafarov)

MATH10350-04 (Guingona)

MATH10350-05 (Gonzalez)

5. Click  and confirm your account information.

6. Click  You are now registered and can begin using CalcPortal!

Need help? Contact technical support at 1-800-936-6899 or email them at techsupport@bfwpub.com.

Math 10350 (Calculus A) Syllabus

Text: Calculus (Early Transcendentals) 2nd Edition – J. Rogawski

1.6 Exponential and Logarithmic Functions

- 2.1 Limits, Rates of Change, and Tangent Lines
 - 2.2 Limits: A Numerical and Graphical Approach
 - 2.3 Basic Limit Laws
 - 2.4 Limits and Continuity
 - 2.5 Evaluating Limits Algebraically
 - 2.6 Trigonometric Limits
 - 2.7 Limits at Infinity
 - 2.8 Intermediate Value Theorem
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- 3.1 Definition of the Derivative
 - 3.2 The Derivative as a Function
 - 3.3 Product and Quotient Rules
 - 3.4 Rates of Change
 - 3.5 Higher Derivatives
 - 3.6 Trigonometric Functions
 - 3.7 The Chain Rule
 - 3.9 Derivatives of General Exponential and Logarithmic Functions
 - 3.10 Implicit Differentiation
 - 3.11 Related Rates
-

- 4.1 Linear Approximation and Applications
 - 4.2 Extreme Values
 - 4.3 The Mean Value Theorem and Monotonicity
 - 4.4 The Shape of a Graph
 - 4.5 L'Hopital's Rule
 - 4.6 Graph Sketching and Asymptotes
 - 4.7 Applied Optimization
 - 4.8 Newton's method
 - 4.9 Antiderivatives
-

- 5.1 Approximating and Computing Area
 - 5.2 The Definite Integral
 - 5.3 The Fundamental Theorem of Calculus, Part I
 - 5.4 The Fundamental Theorem of Calculus, Part II
 - 5.5 Net or Total Change as the Integral of a Rate
 - 5.6 Substitution Method
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- 11.1 Parametric Equations
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Basic Algebra Rules

Exponential Rules:

$$a^m \cdot a^n = a^{m+n}$$

$$(ab)^m = a^m b^m$$

$$\frac{a^m}{a^n} = a^{m-n}; \quad a \neq 0$$

$$a^0 = 1; \quad a \neq 0$$

$$a^{1/m} = \sqrt[m]{a}$$

$$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}; \quad b \neq 0$$

$$(a^m)^n = a^{mn}$$

Distribution Law:

$$a(b + c) = ab + ac$$

$$\frac{a + b}{c} = \frac{a}{c} + \frac{b}{c}$$

$$\frac{a - b}{c} = \frac{a}{c} - \frac{b}{c}$$

Quadratic Factoring:

$$(a + b)^2 = a^2 + 2ab + b^2$$

$$(a - b)^2 = a^2 - 2ab + b^2$$

$$a^2 - b^2 = (a - b)(a + b)$$

Properties of Logarithm:

$$\log_a(MN) = \log_a M + \log_a N$$

$$\log_a\left(\frac{M}{N}\right) = \log_a M - \log_a N$$

$$\log_a(M)^t = t \log_a M$$

$$\log_a a = 1$$

$$\log_a 1 = 0$$

$$\log_a a^x = x$$

$$a^{\log_a x} = x$$

Change of Base: $\log_a M = \frac{\log_b M}{\log_b a}$

$$\ln(MN) = \ln M + \ln N$$

$$\ln\left(\frac{M}{N}\right) = \ln M - \ln N$$

$$\ln(M)^t = t \ln M$$

$$\ln e = 1$$

$$\ln 1 = 0$$

$$\ln e^x = x$$

$$e^{\ln x} = x$$