

**Marshall University**  
**MTH 140H: Applied Calculus Honors (WI)**

<b>Semester and Year</b>	Spring 2015
<b>Course Title</b>	Applied Calculus Honors
<b>Course Number</b>	MTH 140H
<b>Section Number</b>	201
<b>CRN</b>	4142
<b>Days and Time</b>	Tuesday, Thursday: 9:30 - 10:45am
<b>Location</b>	Corbly Hall 436
<b>Credit Hours</b>	3
<b>Prerequisites</b>	ACT Math 25; SAT Math 580; C or better in MTH 127; MTH 130E; MTH 130; MTH 130H; or MTH 132
<b>Professor</b>	Dr. Anna Mummert
<b>Office</b>	Smith Hall 721
<b>Phone</b>	304 696 3041
<b>E-mail</b>	mummerta@marshall.edu
<b>Office Hours</b>	Tuesday and Thursday 1:30pm – 3:30pm
<b>University Policies</b>	<p>By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to</p> <p style="text-align: center;"><a href="http://www.marshall.edu/academic-affairs/policies/">http://www.marshall.edu/academic-affairs/policies/</a></p> <p>Academic Dishonesty, Excused Absence Policy for Undergraduates, Computing Services Acceptable Use, Inclement Weather, Dead Week, Students with Disabilities, Academic Forgiveness, Academic Probation and Suspension, Academic Rights and Responsibilities of Students, Affirmative Action, and Sexual Harassment.</p>

### Course Description

MTH 140H - Applied Calculus Honors (WI). A brief survey of calculus including both differentiation and integration with applications. This honors course will also introduce topics from differential equations with applications. 3 hours.

### Honors (H)

This course has an honors designator (H) and is limited to students in the Honors College. This course differs from MTH 140 by having an explicit focus on population dynamics and population modeling. To the extent possible, all the concepts in this course will be explored through the lens of changing population size.

## Writing Intensive (WI)

This course has a writing intensive designator (WI) and by taking this course you will earn 3 WI credits. During this course you will use graded, ungraded, revised, and unrevised writing during class, and on in-class work, homework, quizzes, exams, and projects to explore and enhance your understanding of calculus.

## Course Learning Outcomes

Student Learning Outcomes for this course	How students will practice each outcome in this course	How student achievement of each outcome will be assessed in this course
Students will identify and use functions appropriately.	In class activities, Homework	Quizzes
Students will describe the main ideas of Calculus: derivative and integral.	In class activities, Homework	Quizzes, Projects
Students will compute derivatives and integrals given a table, graph, or equation.	In class activities, Homework	Quizzes, Projects
Students will use derivatives and integrals to solve real world problems and interpret the results .	In class activities, Homework	Quizzes, Projects
Students will explain how exponential and logarithmic functions are used in growth and decay models.	In class activities, Homework	Quizzes
Students will explain how differential equations can be used to describe population dynamics.	In class activities, Homework	Quizzes
Students will engage actively with the subject matter through various forms of writing, low, medium, and high stakes.	In class activities, Homework, Quizzes	Projects, Final Exam
Students will enhance their writing skills and strategies.	In class activities, Homework, Quizzes	Projects, Final Exam

## Required Texts

Larson. 2009. *Applied Calculus for the Life and Social Sciences*. Houghton Mifflin.

The topics covered in this class correspond to Chapters 1, 2, 3, 4, 6, and 10 from the textbook.

## Homework

Homework will be done on-line using WebWork:

<http://webwork.marshall.edu/webwork2>

Your user name and password are the same as your Marshall user name (email) and password. Homework will be due at midnight every Tuesday and Thursday (starting Thu, Aug 28).

Please bring any questions that you have about the homework problems to class. We will begin every class with your questions. Additional computational practice problems from the textbook will be listed on our course MUOnline page.

## Projects

Five projects will be done throughout the semester. We will start each project during class and students will complete the project outside of class. Late projects will only be accepted with an Excused Absence. The start and due dates of each project are as follows.

Start Tuesday	Due Tuesday
January 27	February 3
February 17	February 24
March 10	March 24
April 7	April 14
April 28	May 5

## Quizzes

Five in-class quizzes will be given during the semester. Quiz questions will be similar to in-class and homework questions.

1. Thursday, January 29
2. Thursday, February 19
3. Thursday, March 12
4. Thursday, April 9
5. Thursday, April 30

## Late Assignments

Late assignments will only be accepted with an Excused Absence – university-sponsored activity, student illness, immediate family emergency, short-term military obligation, jury duty or court appearance, religious holiday. Please read the university policy on how to secure an Excused Absence. Most excused absences are obtained from the Dean of Student Affairs.

Late assignment must be turned in within 1 week after you return to class.

## Final Exam

There will be a comprehensive final exam in Corbly Hall 436 on

- Tuesday, May 5, 8:00 - 10:00am

Final exam questions will be similar to in-class, homework, and quiz questions.

## Grading Policy

Any student caught cheating will receive a 0 on the assignment and Academic Affairs will be notified.

Homework: 200 points

Quizzes: 50 points each

Projects: 50 points each

Final Exam: 200 points

Percentage ranges for final grades are as follows:

A = 90-100%    B = 80-89%    C = 70-79%    D = 60-69%    F = 0-59%

## Attendance Policy

Attendance will be taken every day. Students who arrive late will be considered absent and will not be given extra time on exams.

If you are absent with an Excused Absence, then please secure an Excused Absence immediately.

If you are absent for any reason, then it is your responsibility to make up any missed material.

## Calculators and Other Technology

You may use a calculator on all work and assignments in this class. A graphing calculator (e.g. TI-84) is not required. You may not use your phone, iPad, laptop, etc. as a calculator on any quiz or exam.

No other technology may be used in class without permission.

## Course Webpage

All important course information will be posted on our class MUOnline page.

## Tentative Course Schedule

Date	Material / Topic Covered
Week 1	Linear, exponential
Week 2	Inverse, composition, logarithm, logistic growth
Week 3	Project 1, Quiz 1
Week 4	Secant and tangent lines, derivatives from graphs, differentiation rules
Week 5	Advanced rules, derivatives from tables
Week 6	Project 2, Quiz 2
Week 7	Increasing, decreasing, concave up, concave down
Week 8	Tangent lines, linear approximations, word problems
Week 9	Project 3, Quiz 3
Week 10	Antiderivatives, indefinite integrals, definite integrals
Week 11	Integration from graphs, integration from tables, word problems
Week 12	Project 4, Quiz 4
Week 13	Word problems
Week 14	Word problems
Week 15	Project 5, Quiz 5
Finals Week	Tuesday, May 5, 8:00 - 10:00am

## University Schedule

The complete university schedule can be found at

[www.marshall.edu/calendar/academic/spring2015.asp](http://www.marshall.edu/calendar/academic/spring2015.asp)

## Getting started

Log in to WebWork with your Marshall user name and password, begin working on HW1. Due: Tuesday, January 20, 2015, 11:59pm.