

**Marshall University**  
**MTH 140H: Applied Calculus Honors**

<b>Semester and Year</b>	Fall 2017
<b>Course Title</b>	Applied Calculus Honors
<b>Course Number</b>	MTH 140H
<b>Section Number</b>	101
<b>CRN</b>	3165
<b>Days and Time</b>	Monday, Wednesday, Friday: 12:00pm – 12:50pm
<b>Location</b>	Smith Hall 509
<b>Credit Hours</b>	3
<b>Prerequisites</b>	ACT Math 25

<b>Professor</b>	Dr. Anna Mummert
<b>Office</b>	Smith Hall 719
<b>Phone</b>	304 696 3041
<b>E-mail</b>	mummerta@marshall.edu
<b>Office Hours</b>	Monday, Wednesday 2:00 - 4:00pm; other hours by appointment

**University Policies**

By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to

<http://www.marshall.edu/academic-affairs/policies/>

Academic Dishonesty, Excused Absence Policy for Undergraduates, Computing Services Acceptable Use, Inclement Weather, Dead Week, Students with Disabilities, Academic Dismissal, Academic Forgiveness, Academic Probation and Suspension, Affirmative Action, and Sexual Harassment.

**Course Description**

MTH 140H - Applied Calculus Honors. 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.

## 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	Exams
Students will describe the main ideas of Calculus: derivative and integral.	In class activities, Homework	Exams, Projects
Students will compute derivatives and integrals given a table, graph, or equation.	In class activities, Homework	Exams, Projects
Students will use derivatives and integrals to solve real world problems and interpret the results.	In class activities, Homework	Exams, Projects

## Recommended Text

Greenwell, Ritchey, and Lial. 2015. *Calculus for the Life Sciences*, second edition. Pearson.

The topics covered in this class correspond to Chapters 1 –8, 11. Trigonometry will not be covered in this class.

A copy of the textbook is available for short-term borrowing at the front desk of Drinko Library.

## Homework

Homework will be due once each week. Homework problems will be done using the on-line program WebWork.

Go to <http://webwork.marshall.edu/webwork2>. Select F17-Math-140H-Mummert. Use your Marshall username and password to login.

You can work with other students on homework, though each person must enter their own solutions. Every class day will begin with time to discuss problems you are having with the homework questions.

## Projects

Three 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 Wednesday	Due Wednesday
September 13	September 20
October 11	October 18
November 8	November 15

## Exams

Three in-class exams will be given during the semester. Exam questions will be similar to in-class and homework questions.

1. Friday, September 15
2. Friday, October 13
3. Friday, November 10

## Final Exam

There will be a comprehensive final exam in Smith Hall 509 on

- Friday, December 15, 10:15am - 12:15pm

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

## 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. Students must provide evidence to justify a University Excused Absence on the first day you return to class.

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

## **Grading Policy**

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

Homework: 15%

Exams: 40% total, equally weighted

Projects: 30% total, equally weighted

Final Exam: 15%

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 is mandatory. 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 provide evidence to justify a University Excused Absence on the first day you return to class.

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.

All projects will require a spreadsheet program, such as Excel or Numbers. Students may bring in and use their own laptops during project days.

No other technology may be used in class without permission.

## **Course Webpage**

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

## Tutoring

There are several opportunities for you to get help with any material in this class.

1. Dr. Mummert's office hours.
  - Smith Hall 719: Monday, Wednesday 2:00 - 4:00pm; other hours by appointment
2. Math department tutoring lab.
  - Smith Hall 625: Monday - Thursday 10am - 4pm; Friday 10am - 12noon; Monday - Thursday 5:00pm - 6:30pm
3. University College Tutoring Center (<http://www.marshall.edu/uc/tutoring-services/>).

## Tentative Course Schedule

Date	Material / Topic Covered
Week 1	Linear
Week 2	Exponential, logarithm
Week 3	Inverse, composition
Week 4	Project 1, Exam 1
Week 5	Limits graphically, secant and tangent lines, difference quotient
Week 6	Basic and advanced differentiation rules
Week 7	Derivatives from graphs, derivatives from tables
Week 8	Project 2, Exam 2
Week 9	Increasing, decreasing
Week 10	Concave up, concave down
Week 11	Tangent lines, linear approximations, word problems
Week 12	Project 3, Exam 3
Week 13	Antiderivatives, indefinite integrals, definite integrals
Week 14	Integration from graphs, integration from tables
Week 15	Differential equations
Finals Week	Friday, December 15, 10:15am - 12:15pm

## University Schedule

The complete university schedule can be found at

[www.marshall.edu/calendar/academic/fall2017.asp](http://www.marshall.edu/calendar/academic/fall2017.asp)