

Marshall University – Course Syllabus

Course Title/Number	MTH 230 – Calculus and Analytic Geometry II – Section 102 - CRN: 3177
Semester/Year	Fall 2017
Days/Time	MTWR: 2:00 – 2:50 PM
Location	Smith Hall 516
Instructor	Dr. Ari Aluthge (Pronounced: A-luth-gay)
Prerequisites	MTH 229 (a grade of C or better) or AP Calculus credit for MTH229
Office	Smith Hall 714
Phone	(304) 696 3050
E-Mail	aluthge@marshall.edu
Office/Hours	MW: 10:00 AM – 12:00 PM, TR: 10:00 – 11:00 AM or 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 www.marshall.edu/academic-affairs and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to http://www.marshall.edu/academic-affairs/?page_id=802 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/ Sexual Harassment.

Course Description: Applications of the integral, techniques of integration, and infinite series. A study of conic sections, polar coordinates, and parametric equations. 4 hours.

Course Topics: Chapters 6, 7, 8, 10, and 11 in the textbook

- Applications of the Integral
- Techniques of Integration
- Further Applications of Integration and Taylor Polynomials
- Infinite Series
- Parametric Equations, Polar Coordinates, and Conic Sections

Course Learning Outcomes:

Course Student Learning Outcomes: Upon the completion of this course, students will	Students will practice each outcome in this Course	Student achievement of each outcome will be assessed by
evaluate integrals using various exact techniques including integration by parts, trigonometric substitution, and partial fractions, along with integral tables	Class lectures and discussion, and exercises or worksheets.	Homework on WeBWork, Worksheets, and tests.
set up integrals to calculate quantities such as the arc length of a curve, the area of a region bounded by curves, the area of a surface, and to calculate the volume of a solid using various methods and also use integrals to calculate quantities such as the work done by a variable force, the force on a surface due to fluid pressure	Class lectures and discussion, and exercises or worksheets.	Homework on WeBWork, Worksheets, and tests.
determine the convergence of a sequence (and series) and find the limit of a converging sequence (and series).	Class lectures and discussion, and exercises or worksheets.	Homework on WeBWork, Worksheets, and tests.
explain the meaning of limits, derivatives, integrals, and series in their own words, both in general terms and in the context of specific problems.	Class lectures and discussion, and exercises or worksheets.	Homework on WeBWork, Worksheets, and tests.
interpret symbolic and numerical results in real-world terms, and analyze the validity of their results in a real-world setting.	Class lectures and discussion, and exercises or worksheets.	Homework on WeBWork, Worksheets, and tests.
explain the definition of the integral and its motivation. Explain why integration is the appropriate method to solve a particular problem.	Class lectures and discussion, and exercises or worksheets.	Homework on WeBWork, Worksheets, and tests.

MUonline: Information about the course such as syllabus, assignment schedules, and your grades will be posted on Blackboard. Students should log in to MUonline on a regular basis to check their assignments schedule and grades.

Required Texts, Additional Reading, and Other Materials:

1. Calculus, 3rd Edition, by Rogawski (and Adams), W.H. Freeman, 2015, ISBN: 9781464114885
2. A graphing Calculator (TI-83 plus is recommended). Calculators will not be allowed on some exams.
3. Computer access

Course Requirements / Due Dates

1. Weekly WebWork (online) homework assignments due by each Sunday midnight, starting September 2.
(Go to <http://webwork.marshall.edu/webwork2> and click on “F17 –Math-230-Aluthge” and log on with your usual Marshall username and password.)
2. (Test 1 on Sep 19, Test 2 on Oct 19, Test 3 on Nov 28, and the Final Exam on December 11 (12:45 – 2:45).
3. Worksheets collected on most Thursdays starting August 31.
4. Daily attendance and class participation.

Grading Policy

Grade will be based on:

- Ten Weekly worksheets to be collected on most Thursdays, starting August 31 = (145 points – Mostly 15 points each)
- Ten WebWork assignments – 150 points (each assignment has 16 questions – it is possible to earn 160 points)
- Four written exams – 450 points (Each test -100 points, Comprehensive Final Exam - 150 points)
- Daily attendance - 55 points (1 point per each day – so it is possible to earn 59 points)
- Total Possible Points = 800
- Latter Grades Scale: A = [720, 800], B = [640, 720), C = [560, 640), D = [480, 560), F = [0, 480).

Attendance Policy

Daily attendance will be taken (1 point for each day). When a student is absent from class, he/she is responsible for any and all material covered or assigned. Make-up exams will be given only if the student has an excused absence. Excused absences must be approved by the office of the dean of students.

Class Assignments:

1. Ten Weekly WebWork homework assignments due by 11:59 PM on most Sundays.
2. Worksheets collected on Thursdays.
3. Three tests during the semester (on Sep 19, Oct 19, Nov 28)
4. Final Exam (comprehensive) on December 11 (12:45 – 2:45)

About WebWork: WebWork is a learning management system (LMS) similar to Blackboard. Students can log onto WebWork by going to <http://webwork.marshall.edu/webwork2> and the clicking on M17-Math-230-Aluthge. Students will use their Marshall username /password. Students will find their homework assignments there. They should start with the assignment “Orientation” to learn basics of the program, especially how to type mathematical expressions.

Cell Phone Policy: Please turn off your cell phone or at least put it in silent mode before entering the class.

Free Tutoring:

Free tutoring will be available in Smith 625 starting next week. No appointment is necessary.

The schedule is as follows:

Monday – Thursday: 10 AM – 4 PM and 5:00 PM – 6:30 PM

Friday: 10:00 AM - Noon

Tentative Class Schedule:

Week of	Coverage (book sections)	Topics
Week #1 (8/21 – 8/25)	6.1 – 6.2	Area between two curves, Setting up integrals for volume, density, average value
Week #2 (8/28 – 9/1)	6.3 – 6.4	Volumes of revolution (disk, washer, and shell methods)
Week #3 (9/4 – 9/8)	6.4 – 6.5	Finish shell method, Work and energy
Week #4 (9/11 – 9/15)	7.1 – 7.3	Integration by parts, Trigonometric integrals, Trigonometric substitution
Week #5 (9/18 – 9/22)	Review, Test 1 , 7.3 – 7.4	Review, Test 1 on Tuesday , Trig substitution, Hyperbolic integrals
Week #6 (9/25 – 9/29)	7.5 – 7.7	Partial fractions, Strategies for integration, Improper integral
Week #7 (10/2 – 10/6)	7.7 – 8.1	Improper integrals, Probability and integration, Numerical integration, Arc Length and Surface area
Week #8 (10/9 – 10/13)	8.2 – 8.3	Fluid pressure and force
Week #9 (10/16 – 10/20)	8.4, Review	Taylor polynomials, Review, Test 2 on Thursday
Week #10 (10/23 – 10/27)	10.1 – 10.2,	Sequences and series
Week #11 (10/30 – 11/3)	10.3 – 10.4	Convergence of positive series, Absolute and conditional convergence
Week #12 (11/6 – 11/10)	10.5 – 10.6	The ratio and root tests, Power Series
Week #13 (11/13 – 11/17)	10.7 – 11.1	Taylor series, Parametric equations
Week #14 (11/20 – 11/24)	Thanksgiving break	No classes
	11.2 – 11.4	Arc length and speed, Polar coordinates,
Week #15 (11/27 – 12/1)	Review, Test 3 , 11.4	Review, Test 3 , Arc length and area in polar coordinates
Week #16 (12/4 – 12/8)	11.5, Review	Conic Sections, Review for the final
Week #17 (12/11 – 12/15)	Final Exam (Comprehensive)	Final exam on Monday, December 11, 12:45 – 2:45

Tentative WeBWork assignments schedule Schedule:

Each assignment contains 16 questions from the material indicated sections. Each question is 1 point worth. So students have a chance to an extra point on each WW assignment. For most questions, students have up to

WW #	Sections covered	Opens at 12 AM on	Closes at 11:59 PM on
00	Orientation	August 19	September 03
01	6.1 - 6.2	August 19	September 03
02	6.3 - 6.4	August 26	September 10
03	6.5 - 7.1	September 02	September 17
04	7.2 - 7.3	September 09	September 24
05	7.4, 7.5,	September 16	October 01
06	7.6 – 7.9	September 30	October 15
07	8.1 - 8.2	October 06	October 22
08	8.3 – 8.4	October 13	October 29
09	10.1 – 10.3	October 27	November 12
10	10.4 – 10.6	November 17	December 10