

Math 323 Calculus III, Spring 2019

Sections

Section Number	Instructor	Meeting times
01*	Ulysses Alvarez	MWF 8:00-9:30 CW 307
02*	Yinsong Chen	MWF 8:00-9:30 CW 114
03	Jonathan Williams	MWF 9:40-11:10 LN G412
04	David Cervantes-Nava	MWF 11:20-12:50 LH 012
05	Changwei Zhou	MWF 1:10-2:40 CW 327
06	(cancelled)	
07	Amelia Mattern	MWF 2:50-4:20 CW 211
08	(tentative)	MWF 2:50-4:20 CW 206
09	Amelia Mattern	MWF 4:40-6:10 CW 102
10	Kunal Sharma	MWF 4:40-6:10 WH G002

*Restricted to BME students.

Note CW was previously SW. It is the building between AA and LH.

Course coordinator: Jonathan Williams

Textbook

Multivariable Calculus, Eighth Edition, James Stewart

You will need an online access code to WebAssign. More info on this below.

- Chapter 12: Vectors and the Geometry of Space
- Chapter 13: Vector Functions
- Chapter 14: Partial Derivatives
- Chapter 15: Multiple Integrals
- Chapter 16: Vector Calculus

Homework and WebAssign*

For each section of material covered there will be an assignment of problems on WebAssign. Your WebAssign homework counts towards your grade. Study groups are encouraged, but students should not become too dependent on others. Watching the instructor, or other students, do the problems will not be enough to learn the material. It will be necessary for you to do many exercises yourself in order to be successful on the exams. Attempts to solve homework problems provide the best way to learn the material and to prepare for exams.

WebAssign is an online homework system which includes an e-book version of our text. If you have a multi-term access code from when taking 226/227, then you do not need to purchase another one. (Exception: if you only purchased one-semester access, then you'll need to buy it again.) If you buy the book through the Binghamton University Bookstore then it comes with an access code. If you do not wish to buy the textbook package through the Bookstore, then you can purchase (\$119.99) "Cengage Unlimited", 1 term -4 months. This comes with the ebook

and can also be purchased through our Bookstore. “Cengage Unlimited” also comes with the option to rent a hard copy of the textbook by just paying for shipping and handling. You'll have temporary free access to WebAssign for two weeks into the semester without an access code. All information regarding how to login with Class Key and purchase an access code can be found here [WebAssign Student Quick Start Guide](#)

Your username is your Binghamton University username and the institution code is “binghamton”.

Prerequisite

Math 222, Math 227, or Math 230

Course Objectives

Develop theoretical and practical skills for multivariable calculus. Specifically, students are expected to be able to demonstrate the following:

1. Visualize geometry in three-dimensional space
2. Find and apply vector and scalar equations of lines and planes in three-dimensional space
3. Understand the calculus of vector-valued functions
4. Solve unconstrained and constrained optimization problems
5. Find and interpret partial derivatives, directional derivatives, and gradients
6. Set up and evaluate double and triple integrals in rectangular, cylindrical, and spherical coordinates
7. Set up and evaluate line and surface integrals in addition to applying Green's, Stokes', and Divergence Theorem

Evaluation

The final grade will be determined as follows:

- Test 1, 15% (Week 5)
- Test 2, 15% (Week 10)
- Test 3, 15% (Week 14)
- Quizzes, 15%
- Homework, 5%
- Final, 35% (TBD)*

Tentative Schedule

(subject to change and adjustment at your instructor's discretion)

Week	Dates	Sections	Topics
1	Jan 23–25	12.1	3-D Coordinates
		12.2	Vectors
2	Jan 28–Feb 1	12.3	Dot Products
		12.4	Cross Products
		12.5	Lines and Planes

3	Feb 4-8	12.6	Quadric Surfaces
		13.1	Vector Valued Functions
		13.2	Derivatives of Vector Valued Functions
4	Feb 11-15	13.3	Arc Length
		13.4	Motion in Space
			Exam 1 Review: Chapters 12 and 13
5	Feb 18-22	Exam 1	Chapters 12 and 13
		14.1	Functions of Several Variables
		14.1	Functions of Several Variables
6	Feb 25-Mar 1	14.2	Limits and Continuity
		14.3	Partial Derivatives
		14.4	Tangent Planes and Linear Approximation
7	Mar 4-8	14.5	The Chain Rule
		14.5	The Chain Rule
		14.6	Directional Derivatives and the Gradient
8	Mar 11-15	14.7	Maxima and Minima
		14.8	Lagrange Multipliers
		15.1	Double Integrals over Rectangles
	Mar 18-22		No class: Spring break
9	Mar 25-29	15.2	Double Integrals over General Regions
		15.3	Double Integrals in Polar Coordinates
			Exam 2 Review: Chapter 14 and Sections 15.1 - 15.3
10	Apr 1-5	Exam 2	Chapter 14 and Sections 15.1 - 15.3
		15.6	Triple Integrals
		15.7	Triple Integrals in Cylindrical Coordinates
11	Apr 8-12	15.8	Triple Integrals in Spherical Coordinates
		15.9	Change of Variables
		16.1	Vector Fields
12	Apr 15-19	16.2	Line Integrals
		16.3	The Fundamental Theorem of Line Integrals
			No class (Easter, Passover)
13	Apr 22-26	16.4	Green's Theorem
		16.5	Curl and Divergence
			No class (Passover)
14	Apr 29-May 3		Review for Exam 3: Sections 15.6 - 15.9 and 16.1 - 16.5
		Exam 3	Sections 15.6 - 15.9 and 16.1 - 16.5
		16.6, 16.7	Parametric Surfaces, Surface Integrals
15	May 6-10	16.8	Stokes' Theorem
		16.9	The Divergence Theorem
			Final exam review
	May 13-17		Cumulative Final Exam TBA

Sample Final Examinations

Sample examinations can be found at the following address:

http://people.math.binghamton.edu/borisov/documents/Calculus_3_Sample_Exam_Collection/MATH323_Sample_Exa

ms.html

Help Outside of Class

Your instructor will inform you of their office hours for your section.

Disability Services

If you need accommodations to a disability, please see your instructor with documentation from Services for Students with Disabilities. We will do our best to accommodate your needs.

Academic Honesty

Cheating is considered a very serious offense. According to the University Catalog, cheating consists of: "Giving or receiving unauthorized help before, during or after an examination". The full strength of Binghamton Academic Honesty Policy will be applied to anyone caught cheating. This may include failing the course, and further disciplinary action.

Other important information

The final is comprehensive and mandatory. There will be no make-up for the final exam except for extraordinary circumstances. Failure to take the final will result in a grade of F for the class. University photo ID is required to take the exam. Please note that no calculators are allowed during exams.

This course is a 4-credit course, which means that students are expected to do at least 12.5 hours of course-related work or activity each week during the semester. This includes scheduled class lecture/discussion meeting times as well as time spent completing assigned readings, studying for tests and examinations, participating in lab sessions, preparing written assignments, and other course-related tasks.

From:

<http://www2.math.binghamton.edu/> - **Binghamton University Department of Mathematical Sciences**

Permanent link:

http://www2.math.binghamton.edu/p/calculus/math_323/start

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