



Shih Chien University
STP Program (July 01-Aug 02)
MATH 230 Calculus III
Course Outline

Course Code: MATH 230

Instructor: Vadim Olshevsky

Home Institution: University of Connecticut

Office Hours: TBA

Email: olshevsky@gmail.com

Credits: 4

Class Hours:

This course will have 144 class hours, including 50 lecture hours, professor 30 office hours, 20-hour TA discussion sessions, 10-hour review sessions, 34-hour extra classes.

Course Description:

This is a third course in the calculus sequence that provides a thorough introduction to multivariable calculus. It focuses on functions of several variables, differential and integral calculus of two and three variables, and their applications, and vectors and the geometry of curves and surfaces in three-dimensional space.

Modality: Online asynchronous. All lectures are pre-recorded and are made available on day one. Homework assignments are online (via WebAssign). The two exams (midterm and final, 1 hour 15 minutes each) will be proctored via zoom. You are supposed to have a webcam with a wide view capturing you and the entire desk.

Required Course Materials:

Calculus: Early Transcendentals, 8th Edition, by James Stewart with the

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WebAssign Access Code. Can be purchased directly at

<https://www.cengage.com/c/calculus-early-transcendentals-8e-stewart/9781337771498#compare-buying-options>

It is important that you purchase both the textbook and the WebAssign code, the latter is necessary for the homework assignments.

Homework: There will be online WebAssign homework assignments for each section of the text. Each assignment will be made available on several days before the section is covered in class. The due date for each assignment will be set by your instructor and will generally be two or three days after the material is covered in class. You will get five attempts for each question.

Grading & Evaluation:

Attendance and participation: 10%
Homework: 30%
Midterm: 30%
Final: 30%

Grading System (1 ~ 100):

Quality Points	Grade	Percentage %
4	A	80-100
3	B	70-79
2	C	60-69
1	D	50-59
0	E	0-49

Course Schedule

Week1: Introduction, vectors in three dimensions, dot and cross products, lines and planes in three dimension, implicit/parametric surfaces, cylinders

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and quadratic surfaces,

Week2: Vector functions, derivatives and integrals of vector functions. Arc length and curvature, functions of several variables, limits and continuity, partial derivatives, tangent planes and linear approximation,

Week3: Differentiability, the chain rule, gradient and directional derivatives. Maxima and minima, Lagrange multipliers, double integrals, double integrals in polar coordinates,

Week4: Area of a surface of revolution. Surface area, triple integrals, Vector fields, Line integrals, The fundamental theorem of line integrals,

Week 5: Green's theorem, Curl and divergence, Surface integrals, Stokes' theorem, divergence theorem.

Student responsibilities/expectations: The main course material will be presented through lectures. Students are advised to keep pace with the course material as it is being presented. Consequently, students should endeavor to attend class and discussion sessions, and spend sufficient time working on assigned homework problems. If for any reason a student misses a class, he/she should endeavor to obtain the notes and learn the missed material. Students should not hesitate to ask questions or seek additional assistance to ensure that they are staying on pace with the class.

Examinations: There will be two midterm exams plus one cumulative final exam. The exams will contain problems to solve and definitions, brief explanations of concepts, and simple proof.

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