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81, Oedae-ro, Mohyeon-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, 17035, Korea

Hankuk University of Foreign Studies

2026 Winter Session

MATH 300 Multivariable Calculus

Course Outline

Course Code: MATH 300

Instructor: Professor Vadim Olshevsky

Home Institution: University of Connecticut

Office Hours: By Appointment

Email: olshevsky@gmail.com

Credit: 4

Class Hours:

This course will have 60 class hours, including 32 lecture hours, professor 8 office hours, 8-hour TA discussion sessions, 4-hour review sessions, 8-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.

Course Objectives: The goal of the course is to provide a strong foundation and mastery of calculus in two and three variables and the geometry of vectors, lines, planes, curves, and surfaces for students who intend to continue in mathematics, physics, engineering, computer science, and other quantitative disciplines such as economics and finance.

Required Textbooks:

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

A+ : 96 - 100	A : 91 - 95
B+ : 86 - 90	B : 81 - 85
C+ : 76 - 80	C : 71 - 75
D+ : 66 - 70	D : 60 - 65
F : 0 - 59	
Pa : Pass	Fa : Fail

Course Schedule

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Week1: Introduction, vectors in three-dimension, dot and cross products, lines and planes in three dimension, implicit/parametric surfaces, cylinders and quadratic surfaces, vector functions, derivatives and integrals of vector functions.

Week2: Arc length and curvature, functions of several variables, limits and continuity, partial derivatives, tangent planes and linear approximation, differentiability, the chain rule, gradient and directional derivatives.

Week3: Maxima and minima, Lagrange multipliers, double integrals, double integrals in polar coordinates, area of a surface of revolution.

Week4: Surface area, triple integrals, Vector fields, Line integrals, The fundamental theorem of lineintegrals, 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.