2019-2020 Spring

MATH 118 Calculus II

Frequency: Fall/Spring Terms

METU Credit & ECTS Credit: (4-2)5 & 7.5

Catalog description: Indefinite Integral. Techniques of integration. Arc length. Volumes and surface areas of solids of revolution. Improper integrals. Sequences and infinite series. Power series. Taylor series. Vectors and analytic geometry in 3-space. Functions of several variables: Limits, continuity, partial derivatives, chain rule, directional derivatives, tangent plane and linear approximations. Extreme values. Lagrange multipliers. Double integrals.

Course instructors:
    Section 1 (recitations sections 11, 12 …): Emre Coşkun
    Section 2 (recitations sections 21, 22 …): Mustafa Korkmaz
    Section 3 (recitations sections 31, 32 …): Semra Öztürk

Course teaching assistants: TBA

Course Home Page: https:/ma118.math.metu.edu.tr/

Grading:

- Midterm 1:   30 Points
- Midterm 2:   30 Points
- Final: 40 Points
- Bonus (from recitations): 5 Points (There will be 6 pop quizzes in recitations, the highest 4 of them will be counted.)

Suggested textbook:

Robert A. Adams, Christopher Essex
CALCULUS
A Complete Course Calculus. Eight Edition.
ISBN 978 0-321-78107-9
QA303.2.A33 2013

Reference Books: Calculus, James Stewart, Eight Edition

Week	Dates	Syllabus(Math 118) 2019-2020 Spring	
1	**February 3-7**	Ch. 6: Techniques of Integration 6.1 Integration by Parts 6.2 Integrals of Rational Functions	6.1: 5, 7, 10, 11, 13, 15, 17, 19, 21, 23, 25, 27, 28, 29, 33, 37 6.2: 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31
2	**February 10-14**	6.3 Inverse Substitutions 6.5 Improper Integrals	6.3: 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 37, 39, 41, 43, 44, 45, 47, 49, 51 6.5: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 24, 25, 31, 33, 35, 37, 39, 41, 42
3	**February 17-21**	Ch. 7: Applications of Integration 7.1 Volumes by Slicing—Solids of Revolution 7.2 More Volumes by Slicing	7.1: 1, 3, 7, 11, 13, 15, 19 7.2: 3, 5, 7, 9, 11, 13, 16
4	**February 24-28**	7.3 Arc Length and Surface Area Ch. 9: Sequences, Series, and Power Series 9.1 Sequences and Convergence	7.3: 3, 5, 7, 9, 11, 13, 14, 21, 24, 25, 27, 28, 29 9.1: 6,8,10,17,18,19,24 ,26,29,31,35
5	**March 2-6**	9.2 Infinite Series 9.3 Convergence Tests for Positive Series	9.2: 4,6,8,10,12,14,26,27,28,29,30,31 9.3: 4,6,12,16,18,20,24,26,38,42
6	**March 9-13**	9.4 Absolute and Conditional Convergence 9.5 Power Series	9.4: 2,4,8,10,16,20,24,27 9.5: 4,8,10,13,14,17,18,22,26,28,30
7	**March 16-20** **Midterm 1 (March 21, 2020 Saturday at 09:30)**	9.6 Taylor and Maclaurin Series 9.7 Applications of Taylor and Maclaurin Series	9.6: 6,8,12,18,22,26,34,35,40 9.7: 6,7,12,16,18,24
8	**March 23-27**	Ch. 10: Vectors and Coordinate Geometry in 3-Space 10.1 Analytic Geometry in Three Dimensions 10.2 Vectors	10.1: 6,19,22,27,32,36,40 10.2: 4,13,16,18,22,26,31
9	**March 30- April 3**	10.3 The Cross Product in 3-Space 10.4 Planes and Lines 10.5 Quadric Surfaces	10.3: 3,5,14,15,17,20,23 10.4: 3,6,9,18,23,26,28,29 10.5: 3,5,8,10,12,15,17,20,21
10	**April 6-10**	Ch. 12: Partial Differentiation 12.1 Functions of Several Variables 12.2 Limits and Continuity	12.1: 4,5,8,12,13,14,20,24 12.2: 2,6,8,10,12,14,18
11	**April 13-17** **Midterm 2 (April 18, 2020 Saturday at 09:30)**	12.3 Partial Derivatives 12.5 The Chain Rule 12.6 Linear Approximations	12.3:4,5,6,11,12,16,17,21,24,28,31, 36,39 12.5: 4,8,16,18,29,30 12.6: 4,6,10,16
12	**April 20-24** **April 23, Thursday is a holiday**	12.7 Gradients and Directional Derivatives Ch. 13: Applications of Partial Derivatives 13.1 Extreme Values	12.7: 4,8,10,17,18,19,22,26,36 13.1: 1, 3, 6, 7, 9, 11, 17, 19, 24, 26
13	**April 27-May 1** **May 1, Friday is a holiday**	13.2 Extreme Values of Functions Defined on Restricted Domains 13.3 Lagrange Multipliers	13.2: 3, 5, 7, 8, 9, 11, 17 13.3: 1, 3, 5, 7, 9, 11, 19, 21, 22
14	**May 4-8**	Ch. 14: Multiple Integration 14.1 Double Integrals 14.2 Iteration of Double Integrals in Cartesian Coordinates	14.1: 5,13,15,18,19 14.2: 1-27 odd
		Final Exam (May 12, 2020 Tuesday at 09:30)	