

	<b>Course name:</b> MATH212 Advanced Calculus II		<b>Department:</b> Mathematics				Semester
							4
	Methods of Education						Credit (ECTS)
Lecture	Recitation/ (Etud)	Lab	Exams	Homework/ Quiz	Other	Total	10
56	28	0	54	50	112	300	
Language	English						
Compulsory/Elective	Compulsory						
Prerequisites	MATH 211 Advanced Calculus I						
Weekly Detailed Course Contents	<b>Weeks</b>	<b>Subjects</b>					
	1	• Double Integrals					
	2	• Iteration of double integrals in Cartesian coordinates					
	3	• Improper integrals and a mean-value theorem					
	4	• Double integrals in polar coordinates					
	5	• Change of Variables in double integrals					
	6	• Triple integrals					
	7	• Change of variables in triple integrals					
	8	• Applications of multiple integrals					
	9	• Vector and scalar fields					
	10	• Conservative fields					
	11	• Line integrals, line integrals of vector fields					
	12	• Surfaces and surface integrals, oriented surfaces and flux integrals					
	13	• Gradient, divergence and curl, Green's theorem in the plane					
14	• Divergence theorem in 3-space, Stokes's Theorems						
Course Objectives	<p>The purpose of this course is to</p> <ul style="list-style-type: none"> <li>• teach the concept of multiple integration and surface integrals.</li> <li>• produce the applications of multiple integrals and surface integrals.</li> </ul>						
Learning Outcomes and Competences	<p>Upon completion of this course students will be able to</p> <ul style="list-style-type: none"> <li>• analyze the concept of multiple integration and surface integrals.</li> <li>• apply the technical tools to solve the problems related to applications of multiple integration and surface integrals.</li> </ul>						

Textbook and /or References	<p><b>Textbook :</b></p> <ul style="list-style-type: none"> <li>• R. A. Adams, C. Essex, Calculus A Complete Course, Ninth edition, Pearson.</li> </ul> <p><b>References:</b></p> <ul style="list-style-type: none"> <li>• R. Silverman, Calculus with Analytic Geometry, Prentice Hall.</li> <li>• J. E. Marsden, M.J. Hoffman, Elementary Classical Analysis, W. H. Freeman</li> </ul>		
Assessment Criteria		If any, mark as (X)	Percentage (%)
	Midterm Exams	X	30
	Quizzes	X	10
	Homeworks		
	Projects		
	Term Paper		
	Laboratory work		
	Other		
	Final Exam	X	60