

COURSE ID SHEET



Course No.	5002	NTUA							
Semester:	2	Core	X	Elective		Specialization			
Title:	MATHEMATICS III (Functions of several variables)								
Aim:	Understanding the basic concepts on differentiation and integration of functions of several real variables. Applications to calculating areas, volumes, arc-lengths, center of mass, moments of inertia. Introducing the basics of vector analysis.								
Content:	Limits and continuity. Vector-valued functions of several variables. Differentiability (Partial derivatives, directional derivatives, differential operators). Chain rule. Implicit function theorem. Taylor's theorem. Local extrema and Lagrange multipliers. Multiple integration. Fubini's theorem. Change of variables formula. Path integrals. Surface integrals. Green's theorem. Gauss divergence theorem. Stokes theorem.								
Hours per semester:	LECTURE	52	EXERCISES	-	LABORATORY	-	HOME-WORK	98	TOTAL HOURS: 150
Student performance /evaluation:	Comprehensive final exam.								