

	Course name: MATH 115 Analytic Geometry		Department: Mathematics				Semester 1	
	Methods of Education							Credit (ECTS)
	Lecture	Recitation/ (Etud)	Lab	Exams	Homework / Quiz	Other	Total	5
	42	0	0	25	0	84	151	
Language	English							
Compulsory/Elective	Compulsory							
Prerequisites	No							
Course Contents	Weeks	Subjects						
	1	Orthogonal coordinate system in plane and space.						
	2	Line equation in plane, plane equation in space, relations of line-plane.						
	3	Vectors in space, linear dependence and independence of vectors. Inner product, cross product.						
	4	Linear equations systems. Line in plane, projection of a point to a line, distance between two lines.						
	5	Line in space, projection and distance of a point to a line.						
	6	Half-plane. Plane in space, projection and distance of a point on a plane.						
	7	Half-space, angle between two planes. General definition of conic curves, circle.						
	8	Exam Week (No classes). However, this is a tentative date. The official exam week will be announced by the Dean's office.						
	9	Circle tangent, the strength of a point according to a circle, three-point circle equation.						
	10	Tangent, ellipse, equation and parametric equation, tangent, direction of ellipse.						
	11	Parabola, equation, tangent of parabola.						
	12	Hyperbola, equation, tangent, asymptotes, direction of hyperbola.						
	13	Curve in space, some special curves.						
	14	Standard quadratic surfaces in space.						
Course Objectives	The purpose of this course is to <ul style="list-style-type: none"> • give the standard knowledge of line, plane, vectors, and surfaces. • apply the technical tools to solve the problems related to analytic geometry. 							
Learning Outcomes and Competences	1) It introduces relations, equations, conics, quadric surfaces related to straight lines in plane and space. 2) The ability of solving problems related to lines, planes, surfaces and recognising them.							
Textbook and /or References	Main textbooks : <ol style="list-style-type: none"> 1. Analytical Geometry: With the Properties of Conic Sections, and an Appendix, Constituting a Tract On Descriptive Geometry by John Narrien (2010 – Nabu Press). 							

	<p>2. Analytical Geometry: Two and Three Dimensions by D. Chatterjee (2009 – Alpha Science International Limited).</p> <p>3. Analytical Geometry (Series on University Mathematics) by Izu Vaisman (1997 – World Scientific Publishing Company).</p>		
Assessment Criteria		If any, mark as (X)	Percentage (%)
	Midterm Exams	X	40
	Quizzes		
	Homeworks		
	Projects		
	Laboratory work		
	Other		
	Final Exam	X	60

SAMPLE