Course Title	**Computer Aided Drafting**				
Course Code	**MME 145**				
Course Type	Compulsory				
Level	Undergraduate				
Year / Semester	1st Year / 1st Semester				
Teacher's Name	Loucas Louca				
ECTS	5	Lectures / week	3 hours	Laboratories / week	1 hour
Course Purpose and Objectives	To teach the fundamental capability to document mechanical engineering ideas using graphical communication techniques. This is achieved by teaching the necessary skills and familiarity for drawing two-dimensional geometries using AutoCAD Mechanical and building three-dimensional component models and mechanical system assemblies using SolidWorks. By the end of the course the students will be able to represent mechanical systems using three-dimensional models and two-dimensional drawings.				
Learning Outcomes	- Know and recognize items related to drafting from the ISO standard. - Generate drawings with the correct title block and the correct scale and positioning of the objects. - Draw projections (Multiview, isometric, oblique) with the correct scale, line type/thickness and dimensions. - Draw two-dimensional geometries with the correct title block using drawing tools from AutoCAD Mechanical. - Build three-dimensional models of components by adding and removing material and other modification features using SolidWorks. - Create standardized holes and threaded holes in custom parts using SolidWorks. - Create assemblies of mechanical systems using custom and standardized parts (bold, nuts, washers, gears, etc.) using SolidWorks and its toolbox. - Generate annotated drawings, with the correct title block, in isometric projections, multiview projections and sections, of components and assemblies using SolidWorks.				
Prerequisites	None		Required		None
Course Content	Engineers must be able to create and interpret detailed and assembled drawings in order to communicate their ideas. The course emphasizes on the connection between the drawings and three-dimensional geometric models of a product and its design and manufacturing processes. Topics taught include: international conventions and standards; drawing scales; drawing line types; projection planes; views and view layout; isometric views; auxiliary views; sections; three-dimensional geometric modeling. All topics are implemented through a team project that develops an integrated three-dimensional model of a mechanical device. Autodesk Mechanical and SolidWorks are the software used to create drawings and geometric models.				

Teaching Methodology	- Lectures using PowerPoint and software demos of Autodesk Mechanical and SolidWorks - Recitation for solving sample problems - Homework - Hands-on experience and demonstrations of simple mechanical components - Office hours - Team project for the three-dimensional modeling of a mechanical system - During the first week of the semester, the course syllabus is given to students, which includes information on the course content, expected learning outcomes, assessment and office hours.
Bibliography	- Hardcopies of lecture PowerPoint slides and other assistive material. - Bertoline, G.R. and E.N. Wiebe, *Technical Graphics Communication* (third edition), ISBN 0-07-365598-8. - Gladfelter, D., *AutoCAD 2014 and AutoCAD LT 2014: no experience required*, ISBN 9781118757710. - Lombard, M.J., *SolidWorks 2013 Bible*, ISBN 9781118508398.
Assessment	- Team Project 15% - Quiz 15% - Midterm Exam 30% - Final Exam 40%
Language	Greek