

POLITEHNICA University of Bucharest (**UPB**)
 Faculty of Industrial Engineering and Robotics (**IIR**)
 Study Programme: Industrial Engineering (**IE**)
 Form of study: Licence (Bachelor)

COURSE SPECIFICATION

Course title:	COMPUTER AIDED DESIGN 1	Semester:	3
Course code:	UPB.06.D.03.O.004	Credits (ECTS):	6

Course structure	Lecture	Seminar	Laboratory	Project	Total hours
<i>Number of hours per week</i>	2		2	1	5
<i>Number of hours per semester</i>	28		28	28	84

Lecturer	Lecture	Laboratory and Project
<i>Name, academic degree</i>	Sl.dr.ing.ec. ULMEANU Mihaela-Elena	
<i>Contact (email, location)</i>	mihaela.lupeanu@yahoo.com Room CE 102	

Course description:

The course facilitates learning the fundamental concepts of AutoCAD, familiarity with AutoCAD technical drawing specific issues and develops the informational area in CAD software usage. The course encourages habit formation in using the orthogonal and axonometric projections, interpreting and executing a technical drawing.

The course is delivered using the multimedia projector, concept development being set by immediate practical examples. At the beginning of the class there is an interactive revision of the concepts taught in the previous class. Based on the revision, new concepts are introduced, with the appropriate theoretical explanation. Some specific examples are detailed using the blackboard for better understanding. Interactive CAD media sites are referenced, so the students make the connection between the theoretical and the practical applications. The class ends with questions from students that are explained in front of all the students using the multimedia projector.

Laboratory and Project description:

Applications will familiarize students with AutoCAD software. The laboratory and project activities lead to development of space vision and engineering expression through computerized drawings. Students will be able to execute simple 2D drawings using AutoCAD. At the end of the applications activities, students must be able to master elementary 3D modeling. During the laboratory sessions the explanation of the commands are always projected on the hall screen. Students are permanently provided with guidance all throughout the sessions. The laboratory facilities allows student to work on individually workstations, which are network connected. Original and personal examples of the taught commands are encouraged, as well as helping other student for better understanding. The project activity also has network connected individual stations, allowing each student to develop a personal approach on the theme. The stations are internet connected, offering students the possibility to undergo research concerning their specific theme. Each student is closely guided all throughout the individual project.

Intended learning outcomes:

Students will be able to make calculations, demonstrations and applications for solving industrial engineering specific tasks based on knowledge of fundamental sciences and apply them to the CAD environment. Students will also be able to use software and informational technology to solve specific tasks in the industrial engineering field.

<i>Assessment method:</i>	% of the final grade	Minimal requirements for award of credits
Written exam	40%	<ul style="list-style-type: none"> • Knowledge for grade 5: basic knowledge of the AutoCAD environment; Basic shape identification; beginners' level in taught editing and drawing commands; • Knowledge for grade 10: mastering AutoCAD software environment; mastering all taught editing and drawing commands; advanced knowledge of organization and plotting settings.
Project	30%	<ul style="list-style-type: none"> • Grade 5: completing 75% of the project, either by not finishing all the chapters, or by poor work on the chapters; low quality information; 60% of the mandatory drawings are done according to taught commands. • Grade 10: completing appropriately all the chapters; the two mandatory drawings (appendices) are 95% accurate (two insignificant mistakes).
Homework	10%	<p>□ The homework portfolio put together by each student must contain all assigned tasks. Students will be graded according to the accuracy of the drawings and the extent to which the assignment was fulfilled.</p>

Laboratory	20%	<p>The students will be graded according to: the involvement in each laboratory session; the extent to which they fulfill the scheduled task; the grade obtained on the two tests: first and second verification.</p> <ul style="list-style-type: none"> • Grade 5: minimal involvement in each class; fulfilling over two thirds of the scheduled task; meeting requirements for grade 5 mentioned in the “final examination”, for each of the two tests. • Grade 10: always answering good to professors’ questions; helping colleagues with their tasks; finishing the scheduled task entirely; meeting requirements for grade 10 mentioned in the “final examination”, for each of the two tests.
Other	-	

References:	
<p>Munir M. Hamad, AutoCAD 2010 - Essentials, Jones and Bartlett Publishers; Autocad 2011 , Wiley-2010-Ed1; M.B.Shah, B.c.Rana, Engineering Drawing, Pearson Education; K.L Narayana, P. Kannaiah, K. V. Reddy, Machine Drawing, New Age International Publishers - Ed3; http://usa.autodesk.com/autocad/ http://autocad.mufasu.com http://www.3deducators.com/AutoCADTrainings.asp</p>	
Prerequisites:	Co-requisites <i>(courses to be taken in parallel as a condition for enrolment):</i>
<p>Technical Mechanics Matematics 1, 2</p>	<p>Technical Drawing</p>
Additional relevant information:	
-	

Date: 15.07.2016

Sl.dr.ing.ec. ULMEANU Mihaela-Elena