Computer Aided Design (CAD) 1

Basic Course Information

Course Number	01005135	**Subject Category**	Compulsory (M)
Class Format	Lecture / Practice	**Credit Type and Number of Credits**	1
Department	Mechatronics	**Student Category**	Year 4
Period of Study	Semester 1	**Classes per Week**	2
Required Materials			
Instructor	Hironori KIKUGAWA	Thanapol Luckanawat	

Course Objective

The course provides students with an introduction and basis of Computer-Aided Design (CAD). Students will be taught basic CAD commands, tools, multi-view drawing and dimensioning techniques, etc. Through this course, students can be achieved three main objectives as follows.
(1) To be able to draw correctly the basic figures according to industrial standards.
(2) To be able to fill in instructions for details correctly on drawings required for production drawings.

Evaluation(Rubric)	Ideal Level of Achievement (Very Good)	Standard Level of Achievement (Good)	Unacceptable Level of Achievement (Fail)
To be able to draw correctly the basic figures according to industrial standards.	To be able to draw correctly the applied figures according to industrial standards.	To be able to draw correctly the basic figures according to industrial standards.	Cannot be able to draw correctly the basic figures according to industrial standards.
To be able to fill in instructions for details on drawings required for production drawings.	To be able to fill in instructions for details correctly on drawings required for production drawings.	To be able to fill in instructions for details on drawings required for production drawings.	Cannot be able to fill in instructions for details on drawings required for production drawings.
To be able to understand the basic functions of CAD software operations and be able to make engineering drawings.	To be able to understand almost all functions of CAD software operations and be able to make complicated engineering drawings.	To be able to understand the basic functions of CAD software operations and be able to make engineering drawings.	Cannot be able to understand the basic functions of CAD software operations and be able to make engineering drawings.

Relationship with Learning Outcomes
M(3) Ability to design, propose and develop mechanical solutions/ systems for robotic/ mechatronic systems

Teaching Method

Outline:	The course provides students with an introduction and basis of Computer-Aided Design (CAD). Students will be taught basic CAD commands, tools, multi-view drawing and dimensioning techniques, etc. Students will acquire knowledge and skills to draw an engineering drawing based on ISO or JIS standards.
Class Format:	Lecture and Practice
Please Note :	If you have any questions, please ask me anytime during the lecture.

Course Plan

Semester 1	**Contents and Method of Course**	**Goals**	**Related MCC**
1st week	Introduction and Basics of Drawing	Understand the milestone of the drawing and its applications.	V-A 1 1 V-A 1 3
2nd week	No class (Holiday)		
3rd week	Projection method (1) CAD software operation training	Understand a projection method and draw correctly using by CAD software	V-A 1 4 V-A 1 5 V-A 1 8
4th week	Projection method (2) CAD software operation training	Draw correctly using a projection method using by CAD software	V-A 1 4 V-A 1 5 V-A 1 8
5th week	Production drawing (1)Dimensioning CAD software operation training	Understand a production drawing and draw correctly using by CAD software	V-A 1 5 V-A 1 8
6th week	Production drawing (2)Dimensioning CAD software operation training	Draw correctly using an appropriate dimensioning using by CAD software	V-A 1 5 V-A 1 8
7th week	Production drawing (3)Drawing layouts CAD software operation training	Understand a production drawing for appropriate layouts using by CAD software	V-A 1 5 V-A 1 8
8th week	Production drawing (4)Drawing layouts CAD software operation training	Draw correctly using an appropriate layouts using by CAD software	V-A 1 5 V-A 1 8
9th week	Midterm examination	Check your understanding	
10th week	Reflection and Feedback	Reflect midterm examination and feedback to foster understanding.	
11th week	Limits and fits CAD software operation training	Understand basic limits and fits for drawing using by CAD software	V-A 1 6 V-A 1 8
12th week	Geometrical tolerancing and datums (1) CAD software operation training	Understand basic geometrical tolerancing and datums using by CAD software	V-A 1 6 V-A 1 8
13th week	No class (Holiday)		
14th week	Geometrical tolerancing and datums (2) CAD software operation training	Draw correctly using an appropriate symbols for geometrical tolerancing and datums using by CAD software	V-A 1 6 V-A 1 8
15th week	Surface texture CAD software operation training	Understand surface texture and its drawing using by CAD software	V-A 1 6 V-A 1 8
16th week	No class (School event)		
17th week	Application of geometrical tolerances and surface texture CAD software operation training	Draw correctly using an appropriate symbols for geometrical tolerances and surface texture using by CAD software	V-A 1 6 V-A 1 8
18th week	Surface texture CAD software operation training	Understand surface texture and its drawing using by CAD software	V-A 1 6 V-A 1 8
19th week	Exercises for examination	Promote understanding by exercises.	
20th week	Final examination	Check your understanding	
21st week	Reflection and Feedback	Reflect midterm examination and feedback to foster understanding.	

Do not

	Examination	**Assignment**	**Total**			
Basic Ability	0	0	0			
Technical Ability	50	50	100			
Interdisciplinary Ability	0	0	0			