



UNIVERSITI TEKNOLOGI MARA

IDE415: COMPUTER AIDED INDUSTRIAL DESIGN I

Course Name (English)	COMPUTER AIDED INDUSTRIAL DESIGN I APPROVED
Course Code	IDE415
MQF Credit	3
Course Description	This course intended to introduce students to basic concepts of Computer-Aided Design, as they will be implementing on the personal computer. It is particularly also intended to meet the needs of students with little or no computer or CAD experience. Students will be introduced or will become more skillful on applying manual CAD and also in the computer production such as lettering, notation, geometric constructions, editing tools, drawing organization, multi-view drawings, dimensioning techniques, plotting, auxiliary views, section views, assembly drawings, blocks and other standard drafting procedures also the introduction to solid modeling. Students learn conversion from isometric (a single-angle-view) to orthographic (two or more straight views) and from orthographic to isometric visualization and perspective rendering.
Transferable Skills	2D and 3D software ability, spacial awareness, engineering drawing
Teaching Methodologies	Lectures, Blended Learning, Demonstrations, Tutorial
CLO	CLO1 Demonstrate product design CAID solutions with correct method/techniques, applicable to studio projects CLO2 Perform design process simulation of a tangible product with the capability to assemble for manufacturing CLO3 Demonstrate interest in exploring production of 2D and 3D computer aided drawings
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction to Computer Aided Industrial Design (CAID) 1.1) Definition and understanding of CAID 1.2) The differentiate between CAD and CAID 1.3) Understanding the Important of Manual Technical Drawing knowledge and CAID 1.4) Class notes	
2. Introduction to Basic User Interface 2.1) CAID interface to Draw Tools 2.2) CAID Interface to Modify Tools 2.3) CAID Commands / Lip Commands	
3. Pictorial Projection (1) 3.1) Orthographic Projection 3.2) Isometric Projection 3.3) Assignments	
4. Pictorial Projection (2) 4.1) Oblique Projection 4.2) Isometric Projection 4.3) Assignment	
5. Generating 2D Drawing 5.1) 2D drawing 5.2) Draw and Editing Objects 5.3) Objects Detailing 5.4) Class Exercises	

6. Dimensions and Block 6.1) Draw and Editing Objects 6.2) Dimensioning, scaling and Using Title Block
7. Setting Layout and Plotting 7.1) Draw and Editing Objects 7.2) Layout setting to correct scale 7.3) Plotting/Printing to correct scale 7.4) Assigment(s) - (4) drawing of products
8. Generating Basic 3D Drawing 8.1) Introduction to 3D user Interface 8.2) Draw and Modity Tools
9. Planning on Objects Drawing 9.1) Project Simulation: 9.2) Identify design problem using CAID 9.3) Analyze design problem using CAID
10. Generate Computer Drawing 10.1) Project Simulation: 10.2) Solving the design problem using CAID 10.3) Comparing results 10.4) Assigment(s)

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Projections Drawing & Software Interface Introduction	20%	CLO1
	Assignment	Tangible - Real Life Drawing Project (Scaling)	20%	CLO2
	Assignment	Project Simulation / Competency Quiz	20%	CLO3
	Final Project	Final projects - Parts Drawing	10%	CLO1
	Final Project	Final Project - Assembly Drawing / Orthographic Drawing	15%	CLO2
	Final Project	Final Project - Cross-sectional Drawing	15%	CLO3

Reading List	Recommended Text	Sallehan Ismail, Md Anwar Md Yusof 2012, <i>Latihan Asas AutoCAD</i> , Penerbit Press UiTM Selangor, Malaysia [ISBN: 9789673631810]
	Reference Book Resources	<ul style="list-style-type: none"> • David A. Madsen, David P. Madsen 2016, <i>Engineering Drawing and Design</i>, Cengage Learning [ISBN: 9781305659728] • Isham Shah Hassan, Mohd. Arif Ismail, Ramlee Mustapha, <i>Model Digital Dengan Autocad</i> [ISBN: 9789674122614] • Gary Baker 2015, <i>New Insights into Industrial Design</i>, Ingram Publication Srvices (US) [ISBN: 9781632383471] • William J. Dally, R. Curtis Harting 2012, <i>Digital Design</i>, Cambridge University Press [ISBN: 9780521199506] • C.H. Flurscheim 2014, <i>Industrial Design in Engineering</i>, Springer [ISBN: 9783662120590] • 2014, <i>Engineering Drawing</i>, McGraw-Hill Education [ISBN: 9781259062889] • Kay Dora Abd Ghani, <i>BASIC ENGINEERING DRAWING HANDS-ON WORKBOOK</i> [ISBN: 9789673634576] • <i>Lukisan Kejuruteraan Teknik umum-ke-Spesifik (UKeS)</i> [ISBN: 9789670468303] • Arthur William Lewis, Robert Winckworth Millard, <i>Engineering drawing</i> [ISBN: 0340504110] • Syamsul Halim Wahab, <i>AutoCAD</i> [ISBN: 9789833526741] • Md. Nasir Haji Abd. Manan, <i>Lukisan Geometri</i> [ISBN: 9679501256] • John Bacus 2020, <i>Digital Sketching</i>, John Wiley & Sons [ISBN: 9781119640769] • Ashleigh Fuller, Antonio Ramirez, Douglas Smith 2020, <i>Technical Drawing 101 with AutoCAD 2021</i>, 2020/08 Ed., SDC Publications [ISBN: 9781630573423]
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	