

INDUSTRY AND TECHNOLOGY
Institutional (ILO), Program (PLO), and Course (SLO) Alignment

Program: Computer Aided Design/Drafting	Number of Courses: 9	Date Updated: 09.18.2014	Submitted by: SueEllen Warren, ext. 4519 Renee Newell, ext. 3308
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ILOs	1. Critical Thinking <i>Students apply critical, creative and analytical skills to identify and solve problems, analyze information, synthesize and evaluate ideas, and transform existing ideas into new forms.</i>	2. Communication <i>Students effectively communicate with and respond to varied audiences in written, spoken or signed, and artistic forms.</i>	3. Community and Personal Development <i>Students are productive and engaged members of society, demonstrating personal responsibility, and community and social awareness through their engagement in campus programs and services.</i>	4. Information Literacy <i>Students determine an information need and use various media and formats to develop a research strategy and locate, evaluate, document, and use information to accomplish a specific purpose. Students demonstrate an understanding of the legal, social, and ethical aspects related to information use.</i>
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SLO-PLO-ILO ALIGNMENT NOTES:

Mark boxes with an 'X' if: SLO/PLO is a major focus or an important part of the course/program; direct instruction or some direct instruction is provided; students are evaluated multiple times (and possibly in various ways) throughout the course or are evaluated on the concepts once or twice within the course.

DO NOT mark with an 'X' if: SLO/PLO is a minor focus of the course/program and some instruction is given in the area but students are not formally evaluated on the concepts; or if the SLO/PLO is minimally or not at all part of the course/program.

PLOs	PLO to ILO Alignment <i>(Mark with an X)</i>			
	1	2	3	4
PLO #1 ASE Creating and Interpreting Engineering Drawings Upon completion of the Computer Aided/Design Drafting program, the student will be able to utilize CADD software to create and interpret engineering drawings at an industry entry skill level.	X			
PLO #2 Creating and Interpreting 3D CADD Models Upon completion of the Computer Aided/Design Drafting program, the student will be able to utilize CADD software to create 3D CADD models of detail parts and assemblies of various manufactured products and their components at an industry entry skill level.	X			
PLO #3 Product Development Upon Completion of the Computer Aided/Design Drafting program, the student will be able to function as a member of a product development team.	X			

SLOs	SLO to PLO Alignment <i>(Mark with an X)</i>			COURSE to ILO Alignment <i>*FOR OFFICE USE ONLY*</i>			
	P1	P2	P3	1	2	3	4
CADD 28 Parametric Solid Modeling and Assemblies: SLO #1 Multi-view Drawing - 3D Solid Model Given a fully dimensioned multi-view engineering drawing of a machined part, the student will be able to utilize the appropriate functions within the Inventor software to construct a 3D solid model of the part.		X		X			
CADD 28 Parametric Solid Modeling and Assemblies: SLO #2 3D Solid Model - Multi-view Drawing Given a 3D solid model of a simple machined part, the student will be able to utilize the appropriate functions within the Inventor software to create a fully-dimensioned multi-view engineering drawing of the part.		X					
CADD 28 Parametric Solid Modeling and Assemblies: SLO #3 Animating Assemblies Given a 3D solid model of a simple mechanism, the student will be able to utilize the appropriate functions within the Inventor software an animated simulation of the mechanism's function.		X					
CADD 31 Orientation to CATIA: SLO #1 Creating CATIA V5 Simple 3D Solid Models Given a fully dimensioned multi-view engineering drawing of a machined part, the student will be able to utilize the appropriate functions within the CATIA V5 software to construct a 3D solid model of the part.		X		X			
CADD 31 Orientation to CATIA: SLO #2 Creating CATIA V5 Simple Engineering Drawings Given a 3D solid model of a simple machined part, the student will be able to utilize the appropriate functions within the CATIA software to create a fully dimensioned multi-view engineering drawing of the part.		X					
CADD 31 Orientation to CATIA: SLO #3 Creating CATIA V5 Simple Assembly Models Given a set of 3D solid models of the component parts of a simple assembly, the student will be able to utilize the appropriate functions within the CATIA software to create a fully constrained assembly model.		X					
CADD 32 Product Modeling with CATIA: SLO #1 3D Model and Engineering Drawing Given a fully dimensioned multi-view engineering drawing of a complex machined part, utilize the appropriate functions within the CATIA V5 software to construct a 3D solid model of the part, and engineering drawing of the product containing this component.		X		X			
CADD 32 Product Modeling with CATIA: SLO #2 Creating CATIA V5 Complex Engineering Drawings Given a 3D solid model of a complex machined part, the student will be able to utilize the appropriate functions within the CATIA software to create a fully dimensioned multi-view engineering drawing of the part.		X					
CADD 32 Product Modeling with CATIA: SLO #3 Creating CATIA V5 Complex Assembly Models Given a set of 3D solid models of the component parts of a complex assembly, the student will be able to utilize the appropriate functions within the CATIA software to create a fully constrained assembly model.		X					

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	P1	P2	P3	1	2	3	4
CADD 33 Analyses and Simulations with CATIA: SLO #1 Knowledgware and Generative Sheet Metal Functions Given sufficient product definition information, the student will be able to create tabulated models and flat pattern models utilizing the Knowledgware and Generative Sheet Metal functions within the CATIA V5 software.			X	X			
CADD 33 Analyses and Simulations with CATIA: SLO #2 Kinematic Simulations Given a CATIA Product model of a simple mechanism, the student will be able to create kinematic simulations utilizing the Kinematics Simulation function within the CATIA V5 software.			X				
CADD 33 Analyses and Simulations with CATIA: SLO #3 Stress Analysis Given a CATIA Product model of a simple mechanism, the student will be able to perform stress analyses utilizing Stress Analysis functions within the CATIA V5 software.			X				
CADD 37 Advanced CATIA Functions: SLO #1 3D Wireframe Modeling Given a fully-dimensioned multi-view engineering drawing of a machined part, the student will be able to utilize the appropriate functions within the CATIA V5 software to construct a 3D wireframe model of the part.		X		X			
CADD 37 Advanced CATIA Functions: SLO #2 Utilizing Surfacing Functions Given a fully dimensioned multi-view engineering drawing of a complex molded part, the student will be able to utilize the appropriate functions within the CATIA V5 software to construct a 3D surface model of the part.		X					
CADD 37 Advanced CATIA Functions: SLO #3 Joining Surfaces Given a 3D surface model of two separate surfaces of a complex molded part, the student will be able to utilize the appropriate functions within the CATIA V5 software to construct a third surface blending the original two. The new surface will be tangent continuous with both of the original surfaces.		X					
CADD 43 Design Process and Concepts: SLO #1 Design Team Given sufficient design requirement definition, the student shall be able to plan, sketch and create complete engineering drawing packages of sample products work individually as well as functioning effectively as a member of a design team.			X	X			
CADD 43 Design Process and Concepts: SLO #2 Product Definition Packages Given sufficient design requirement definition, the student will be able to plan, sketch and create complete two dimensional engineering drawing packages of sample products.			X				
CADD 43 Design Process and Concepts: SLO #3 Design Team Given sufficient task definition, the student will be able to function as a member of a design team charged with planning and creating a complete two dimensional engineering drawing package of a simple product.			X				

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CADD 45 Geometric Dimensioning and Tolerancing: SLO #1 Detecting Errors and Omissions Given sample engineering drawing whose dimensioning and tolerancing is done with Geometric Dimensioning and Tolerancing, the student will be able to point out errors and omissions in the application of dimensions and tolerances.	X			X			
CADD 45 Geometric Dimensioning and Tolerancing: SLO #2 Revising Incomplete Drawings Given an incomplete sample engineering drawing, the student will be able to revise the drawing to completely specify desired geometry and permissible variation of geometric characteristics utilizing appropriate symbology per the ASME Y14.5 Standard.	X						
CADD 45 Geometric Dimensioning and Tolerancing: SLO #3 Applying Geometric Controls Given a sample engineering drawing of a machined part without dimensioning and tolerancing and a description of the part's function, the student will be able to correctly apply dimensions, tolerances and datum identifiers.	X						
CADD 5 Introduction to Mechanical Drafting: SLO #1 Creating Dimensioned Orthographic Drawings Given sufficient product definition information of a simple machined part, the student will be able to utilize the AutoCad software to produce a dimensioned orthographic drawing of the item.	X			X			
CADD 5 Introduction to Mechanical Drafting: SLO #2 Creating Missing Orthographic Views Given an incomplete engineering drawing of a simple machined part, the student will be able to utilize the AutoCAD software to produce the missing views in standard 3rd angle orthographic projection.	X						
CADD 5 Introduction to Mechanical Drafting: SLO #3 Working From Isometric Views Given an isometric drawing of a simple machined part, the student will be able to utilize the AutoCAD software to produce front, top and right side views in standard 3rd angle orthographic projection.	X						
CADD 7 Wireframe with Surfaces, Solid Modeling and Assemblies: SLO #1 Creating Simple Machined Part-3D Solid Model Given sufficient product definition information of a simple machined part, the student will be able to utilize the AutoCad software to produce a 3D solid model of the item.	X			X			
CADD 7 Wireframe with Surfaces, Solid Modeling and Assemblies: SLO #2 Modifying Simple Machined Part-3D Solid Model Given a 3D solid model of a simple machined part and a dimensioned drawing defining necessary changes, the student will be able to utilize the AutoCad software to modify the 3D solid model to conform to the new requirements.	X						
CADD 7 Wireframe with Surfaces, Solid Modeling and Assemblies: SLO #3 Creating Assembly Models Given sufficient product definition information of a mechanical assembly and its components, the student will be able to utilize the AutoCad software to create 3D solid models of the individual components and bring them together into an assembly model.	X						