

Industrial Drawing Assessment Plan Rev. 4/21/2020

Industrial Drawing	16-17	17-18	18-19	19-20	20-21	21-22
INDRB12 - Introduction to Drafting and CAD						
• 1. Upon successful completion of the course the student will use CAD software to create entry-level technical drawing.			C			
• 3. Upon successful completion of the course the student will use manual drafting equipment to produce precision mechanical drawings to industry standards.			C			
• 2. Upon successful completion of the course the student will solve visualization exercises and projection problems.			C			
INDRB20A - Computer Aided Drafting & Design (CAD) - Intermediate						
• Upon completion of the course the student will be able to demonstrate skills needed to navigate the AutoCAD interface.		C				
• Apply correct drawing settings in a variety of situations including architectural, engineering, and mechanical drawings.			C			
• Create, modify, and apply dimensions and dimension styles appropriate for architectural, engineering, and mechanical drawings.		C				
• Employ the Design Center to reuse information and increase productivity.		C				
• Demonstrate understanding of the differences between model space and layout space by composing drawings that display objects in various scales.			C			
• Employ solid modeling techniques to create three-dimensional objects and translate them into two-dimensional drawings according to industry standards.			C			
• Create animations and renderings that will aid in conveying spatial relationships and mechanical concepts.					P	
• Cooperate with peers to design and produce drawings and physical models of complex objects with multiple parts.				P		
• Understand and assume responsibility for project deadlines as they affect mechanical design and practice.				P		
• 1. Upon successful completion of the course the student will create accurate technical drawings and virtual models typical of the mechanical and architectural drafting disciplines using CAD software.					P	
• 2. Upon successful completion of the course the student will apply the Engineering Design Process to create an original prototype of their own design.					P	
INDRB20B - Computer Aided Drafting and Design (CAD)						
• Upon completion the student will be able to: Extract data from previously created drawings.		C		P		
• Upon completion the student will be able to: Design and place dynamic blocks in a drawing.		C		P		
• Upon completion the student will be able to: Modify and customize the software interface for ease of use.	C	C				
• Upon completion the student will be able to: Use Autolisp to create custom software commands.		C				
INDRB40 - Parametric Modeling Fundamentals						
• 1. Upon completion the student will be able to: Use sketch tools to create, constrain, and dimension two-dimensional sketches.		C				
• 2. Upon completion the student will be able to: Convert two-dimensional sketches into three-dimensional parts using extrusion, revolution, and sweep techniques.		C				
• 3. Upon completion the student will be able to: Create work planes, work axes, and work points to be used as the base for sketch planes or placed features such as holes, threads, and patterns.		C				
• 4. Upon completion the student will be able to: Translate completed three-dimensional objects into two-dimensional drawings and add dimensions according to industry standards.		C				
• 5. Upon completion the student will be able to: Digitally design and assemble a multi-part object using design principles and assembly techniques (digital prototyping).		C				

Industrial Drawing Assessment Plan Rev. 4/21/2020

Industrial Drawing	16-17	17-18	18-19	19-20	20-21	21-22
--------------------	-------	-------	-------	-------	-------	-------

INDRB42 - Introduction to Solidworks

• 1. Upon completion the student will be able to create two dimensional sketches using dimensional and geometric constraints.				P		
• 2. Upon completion the student will be able to create three dimensional parametric solid models.					P	
• 3. Upon completion the student will be able to perform modifications to solid models, changing parametric dimensions to drive part geometry.		C	C			
• 4. Upon completion the student will be able to assemble separate parametric parts together using assembly constraints		C	C			
• 5. Upon completion the student will be able to create two dimensional orthographic views for plotting.					P	

INDRB48WE - Occupational Work Experience Education/Internship

• 1. Upon successful completion of the course the student will be able to identify progressive work objectives with employer and obtain approval of objectives from instructor/coordinator.					P	
• 2. Upon successful completion of the course the student will be able to compose work objectives that demonstrate applications of theory and practice relevant to the student's occupational goal.					P	
• 3. Upon successful completion of the course the student will be able to demonstrate skills, knowledge, and attitudes needed to maintain employment				P		
• 4. Upon successful completion of the course the student will be able to demonstrate job retention skills including responsibility, dependability, effective use of time, appropriate dress and behavior for the job, and effective working relationships.				P		

INDRB50 - Process Piping

• 1. Upon successful completion of the course the student will create accurate technical drawings specific to the Process Piping field using CAD software.			C			
• 2. Upon successful completion of the course the student will perform critical calculations (e.g.: fitting make-up, mater runs, running offsets, etc.) related to the creation of process piping facility drawings.			C			
• 3. Upon successful completion of the course the student will understand the role of specifications and codes, and how the application of such constrains design decisions in the planning of process piping facilities.			C			

INDRB51 - Electrical Design

• Upon completion of the course, the student will be able to create and modify CAD drawings of electrical control systems.		C				
• Upon completion the student will be able to:Create and modify CAD drawings of panel layouts.		C				
• Upon completion the student will be able to:Generate schematic and panel reports common to industry.		C		P		

INDRB52 - Civil Drafting and Geographic Information Systems

• 1. Upon successful completion of the course the student will use CAD software to create accurate technical drawings and maps specific to the civil engineering, surveying, and land development fields.			C			
• 2. Upon successful completion of the course the student will acquire geographical data suitable for GIS analysis and use basic GIS tools to create maps with correct cartographic elements.			C			
• 3. Upon successful completion of the course the student will be able to perform complex calculations (e.g. slope, excavation volumes, cut & fill, etc.) related to the creation of land development and water system management drawings			C			