

NTID
Computer Aided Drafting Technology
Outcomes and Assessments

Program Goal: Students develop CAD job-entry skills in the Manufacturing or Architectural/Engineering/Construction (A/E/C) area. Graduates have a broad knowledge of and skills in computer aided drafting technology, applications, and procedures. Technical jobs may include CAD operator, CAD technician, drafter, detailer, or designer.

Critical Outcomes for all Students (Ss)		Assessment of Outcomes		Timelines		Use of Results
Domain or Task or Capability	Performance Elements with Benchmarks	Instrument or Opportunity	Assessment of performance(s) for the instrument or opportunity proposed	Development of Assessment Tool	Collection of Data	
Students create two-dimensional drawings.	<ol style="list-style-type: none"> 1. Select appropriate units of measurement and identify drawing limits. 2. Select and use commands from 2-D drawing and editing toolbars. 3. Include all dimensions. 4. Produce output to industry standards. 	At the end of <i>CAD II</i>	Given an engineering related sketch, (85% of) the students will produce a two-dimensional technical drawing scoring “acceptable/meets entry level professional standards” for all performance elements.	Winter/Spring 20022/20023	Winter 2003(2)	
Students create a 3-D model(s) and derive from the model(s) the orthographic views with dimensions.	<ol style="list-style-type: none"> 1. Select and use commands from 3-D drawing and editing toolbars. 2. Draw a 3-D model. 3. Extract from a 3-D model the following drawings: elevation, sections, floor plan [A/E/C]; orthographic projection views and sections (Manufacturing). 4. Create/add dimensions and tolerances. 	At the end of Construction <i>CAD III</i> [A/E/C] & Manufacturing <i>CAD II</i> [Manufacturing]	Given an object or sketch of an object of at least 10 parts [Manufacturing] or a series of sketches of a building on site [A/E/C], (85% of) students produce a complete set of CAD drawings and related supporting technical information scoring “acceptable/meets entry level	Fall/Winter 20021/20022	Winter 2003 [A/E/C] & Fall 2003 [Manufacturing]	

			professional standards” for all performance elements.			
<p>MANUFACTURING OPTION ONLY: Students create a schematic diagram and produce a printed circuit board from the schematic.</p>	<ol style="list-style-type: none"> 1. Produce a schematic with components represented & placed appropriately with labels that are correctly positioned. 2. Produce a schematic w/ components referenced and numbered correctly. 3. Produce a printed circuit board that conforms to design requirements including, position of inputs & outputs & overall dimensions. 4. Design a printed circuit board that minimizes the number of plated through holes 	<p>At the end of <i>Electrical CAD</i></p>	<p>Given a sketch of a functional circuit that contains approximately 25 components, (85% of) students will design a two-sided printed circuit board scoring “acceptable/meets entry level professional standards” for all performance elements.</p>	<p>Winter/Spring 20022/20023</p>	<p>Winter 2003</p>	
<p>MANUFACTURING CADT: Students create a 3-D solid model, incorporating Web technology, to produce a 3-D solid assembly.</p>	<ol style="list-style-type: none"> 1. Find technical information and other source material, e.g., additional parts, on the Internet and incorporate into drawings and documentation. 2. Create a 3-D solid model. 3. Create 2-D detail drawings with all dimensions and tolerances. 4. Create a 3-D 	<p>At the end of <i>3D Solid Modeling</i></p>	<p>Given a project and design specifications, (85% of) Manufacturing CADT students generate 3-D solid model parts, a 2-D detail and 3-D assembly drawings to “acceptable/meets entry level professional standards” for all performance elements</p>	<p>Fall/ Winter 20021/ 20022</p>	<p>Fall 20031</p>	

	solid assembly drawing.					
<i>A/E/C CADT:</i> Students produce a 3-D model w/ technical documentation for a small office or commercial building and create presentation graphics.	1. Find and incorporate construction regulations into CAD documentation. 2. Find technical information and other source material on the Internet and incorporate into drawings and documentation. 3. Generate renderings and animations. 4. Demonstrate presentation skills.	At the end of <i>Presentation Graphics</i>	Given a project and design specifications, (85% of) A/E/C CADT students produce construction documents and presentation graphics scoring “acceptable/meets entry level professional standards” for all performance elements	Fall/ Winter 20021/ 20022	Fall 20031	
Indirect Student Measures						
Having conducted a job search process, a student will complete a 10-week co-op work experience.	Prior to graduation by Co-op supervisor.	100% of the students will successfully complete a 10-week program-related work experience.	NA	NA		
Students will gain entry-level employment in CADT field.	NCE Data	_____% of graduates will be employed in the field.	NA	NA		
Graduating students will indicate satisfaction with program.	Prior to graduation using a Satisfaction Survey	Students will rate all aspects of the program as satisfactory or above.	Fall/Winter 20021/20022	Fall 20031		
/ssl Rev: 5/20/02						