MECHANICAL DESIGN 1 AND 2
COURSE CODE: 6172, 6173
STUDENT PROFILE

STUDENT'S NAME		TEACHER'S NAME	
School Year/Semester	**Date Began**	**Date Completed**	**Grade**

Directions: Document student's progress using the applicable rating scales below: Enter date of completion under the appropriate column.

0 - Has not received instruction in this area / **no experience or knowledge of this task (N/A)**
1 **–** Can apply and perform **independently (80-100)**
2 **–** Can perform the task completely with **limited supervision (70-79)**
3 – Requires additional instruction and or **close supervision (60-69)**

A. SAFETY		**0**	**1**	**2**	**3**
1	Review school safety policies and procedures.				
2	Review classroom safety rules and procedures.				
3	Review safety procedures for using equipment in the classroom.				
4	Identify major causes of work-related accidents in office environments.				
5	Demonstrate safety skills in an office/work environment.				
B. STUDENT ORGANIZATIONS		**0**	**1**	**2**	**3**
1	Identify the purpose and goals of a Career and Technology Student Organization (CTSO).				
2	Explain how CTSOs are integral parts of specific clusters, majors, and/or courses.				
3	Explain the benefits and responsibilities of being a member of a CTSO.				
4	List leadership opportunities that are available to students through participation in CTSO conferences, competitions, community service, philanthropy, and other activities.				
5	Explain how participation in CTSOs can promote lifelong benefits in other professional and civic organizations.				
C. TECHNOLOGY KNOWLEDGE		**0**	**1**	**2**	**3**
1	Demonstrate proficiency and skills associated with the use of technologies that are common to a specific occupation (e.g., keying speed).				
2	Identify proper netiquette when using e-mail, social media, and other technologies for communication purposes.				
3	Identify potential abuse and unethical uses of laptops, tablets, computers, and/or networks.				

4	Explain the consequences of social, illegal, and unethical uses of technology (e.g., cyber bullying; piracy; illegal downloading; licensing infringement; inappropriate uses of software, hardware, and mobile devices in the work environment).				
5	Discuss legal issues and the terms of use related to copyright laws, fair use laws, and ethics pertaining to downloading of images, photographs, documents, video, sounds, music, trademarks, and other elements for personal use.				
6	Describe ethical and legal practices of safeguarding the confidentiality of business-related information.				
7	Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.				
8	Evaluate various solutions to common hardware and software problems.				
D. PERSONAL QUALITIES AND EMPLOYABILITY SKILLS		**0**	**1**	**2**	**3**
1	Demonstrate punctuality.				
2	Demonstrate self-representation.				
3	Demonstrate work ethic.				
4	Demonstrate respect.				
5	Demonstrate time management.				
6	Demonstrate integrity.				
7	Demonstrate leadership.				
8	Demonstrate teamwork and collaboration.				
9	Demonstrate conflict resolution.				
10	Demonstrate perseverance.				
11	Demonstrate commitment.				
12	Demonstrate a healthy view of competition				
13	Demonstrate a global perspective.				
14	Demonstrate health and fitness.				
15	Demonstrate self-direction.				
16	Demonstrate lifelong learning.				
E. PROFESSIONAL KNOWLEDGE		**0**	**1**	**2**	**3**
1	Demonstrate effective speaking and listening skills.				
2	Demonstrate effective reading and writing skills.				
3	Demonstrate mathematical reasoning.				
4	Demonstrate job-specific mathematics skills.				
5	Demonstrate critical-thinking and problem-solving skills.				

6	Demonstrate creativity and resourcefulness.				
7	Demonstrate an understanding of business ethics.				
8	Demonstrate confidentiality.				
9	Demonstrate an understanding of workplace structures, organizations, systems, and climates.				
10	Demonstrate diversity awareness.				
11	Demonstrate job acquisition and advancement skills.				
12	Demonstrate task management skills.				
13	Demonstrate customer-service skills.				
F. INTRODUCTION TO DRAFTING TECHNIQUES		**0**	**1**	**2**	**3**
1	Identify alphabet of lines to include line weight (thickness).				
2	Create orthographic drawings.				
3	Utilize hand lettering techniques to neatly add notes and/or dimensions to sketches.				
4	Demonstrate measuring skills using various tools, including an engineering scale.				
G. DEMONSTRATE CAD-SPECIFIC SKILLS		**0**	**1**	**2**	**3**
1	Identify and utilize elements of the graphical user interface (e.g., ribbon, panels, command line, drop-down menus, and toolbars).				
2	Identify the use of various file formats (e.g., .dwg, .dxf, .dwt, and .bak).				
3	Import and export various data files between formats.				
4	Open and save various file types in a structured directory.				
5	Perform drawing setup to applicable standards (e.g., setting layers, line type, and line weight).				
6	Identify and use display commands (e.g., zoom and pan).				
7	Draw geometric components using straight and curved lines.				
8	Create and modify borderlines and title block.				
9	Modify geometric components (e.g., copy, trim, scale, and stretch).				
10	Modify geometric properties (e.g., layer, color, line weight, and type).				
11	Use inquiry commands to extract drawing data (e.g., list, distance, and area).				
12	Annotate drawings to include text and dimensions.				
13	Create, retrieve, edit, and use symbol libraries.				
14	Utilize paper space and create viewports.				
15	Plot/Print drawing to appropriate scale.				

16	Use software help features.				
H. DEMONSTRATE GEOMETRIC CONSTRUCTION SKILLS (STANDARD AND METRIC)		**0**	**1**	**2**	**3**
1	Draw straight and parallel lines.				
2	Draw tangent lines, arcs, circles, and curves.				
3	Draw regular polygons, circles, and ellipses.				
4	Bisect lines, arcs, and angles.				
5	Divide lines and circles equally.				
I. DEMONSTRATE DIMENSIONING SKILLS (STANDARD AND METRIC)		**0**	**1**	**2**	**3**
1	Set and control dimensioning styles.				
2	Dimension using aligned and unidirectional dimensioning systems.				
3	Dimension using leaders for notes, arcs, and circular features.				
4	Dimension using dual dimensioning skills (standard and metric).				
5	Dimension using tolerances.				
6	Identify and apply geometric dimensions and tolerances.				
J. DEMONSTRATE ORTHOGRAPHIC PROJECTIONS (STANDARD AND METRIC		**0**	**1**	**2**	**3**
1	Draw regular orthographic views.				
2	Draw regular, inclined, and oblique surfaces.				
3	Draw curved surfaces.				
4	Draw surface intersections.				
5	Draw detailed size description.				
6	Identify 1st- and 3rd-angle projection drawings.				
7	Draw a 3rd-angle projection drawing.				
K. DEMONSTRATE SKILLS AND KNOWLEDGE REQUIRED TO PRODUCE TECHNICAL ILLUSTRATIONS (STANDARD AND METRIC)		**0**	**1**	**2**	**3**
1	Draw an isometric projection.				
2	Draw an isometric section.				
3	Draw an oblique projection.				
L. DEMONSTRATE KNOWLEDGE AND SKILLS REQUIRED TO PRODUCE SECTIONAL VIEWS AND APPLYING STANDARD CONVENTIONAL DESIGN PRACTICES		**0**	**1**	**2**	**3**
1	Demonstrate section line and symbol techniques.				
2	Identify various types of sectional views.				

3	Draw half and full sections.				
4	Draw broken-out sections.				
M. DEMONSTRATE KNOWLEDGE AND SKILLS REQUIRED TO PRODUCE AUXILIARY VIEWS		**0**	**1**	**2**	**3**
1	Demonstrate the ability to rotate a point, a line, and a surface.				
2	Demonstrate the ability to determine the true length of a line.				
3	Draw a primary auxiliary view.				
N. DEMONSTRATE KNOWLEDGE AND SKILLS REQUIRED TO PRODUCE DETAILED MACHINE DRAWINGS		**0**	**1**	**2**	**3**
1	Devise proper order fulfillment and delivery methods.				
2	Describe the impact of branding on customer loyalty.				
3	Create and promote a program to maintain customer/client goodwill and loyalty.				
4	Create and conduct a customer survey.				
5	Create client file using appropriate software.				
6	Prepare sales reports.				
7	Create policies to handle customer complaints and concerns.				
8	Using a CTSO scoring rubric for Professional Sales, evaluate the overall sales process.				
9					
10					
O. BUSINESS ETHICS AND LAW		**0**	**1**	**2**	**3**
1	Identify the legal aspects of sales contracts and warranties.				
2	Analyze ethical responsibilities in relationships with sales personnel, customers/clients, competitors and vendors (e.g., conflict of interest, bait and switch).				
3	Research unethical or deceptive sales practices and their legal consequences.				
4	Describe methods used to protect intellectual property, such as copyrights, patents, and trademarks.				
5	Research government regulations related to sales communications, including do not call list, consumer rights laws, etc.				
P. TECHNOLOGY IN SALES		**0**	**1**	**2**	**3**
1	Research the impact of technology on the selling process.				
2	Explore search engine marketing tools (e.g., Bing, Ads, Google Analytics, and Brandwatch Analytics).				

3	Evaluate appropriate social media tools for different types of businesses and demographics: a. Service-related business b. Merchandising c. Retail d. Wholesale				
4	Based on a given scenario, develop a social media strategy to increase sales for a business.				