South Carolina CTE

Mechanical Design 1 (2018): Course Codes: 6172

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

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	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.** MD.C.5
	6	**Describe ethical and legal practices of safeguarding the confidentiality of business-and personal-related information.** MD.C.6
	7	**Describe possible threats to a laptop, tablet, computer, and/or network and methods of avoiding attacks.** MD.C.7
	8	**Evaluate various solutions to common hardware and software problems.** MD.C.8
PERSONAL QUALITIES AND EMPLOYABILITY SKILLS MD.D	1	**Demonstrate punctuality.** MD.D.1
	2	**Demonstrate self-representation.** MD.D.2
	3	**Demonstrate work ethic.** MD.D.3
	4	**Demonstrate respect.** MD.D.4
	5	**Demonstrate time management.** MD.D.5
	6	**Demonstrate integrity.** MD.D.6
	7	**Demonstrate leadership.** MD.D.7
	8	**Demonstrate teamwork and collaboration.** MD.D.8
	9	**Demonstrate conflict resolution.** MD.D.9
	10	**Demonstrate perseverance.** MD.D.10
	11	**Demonstrate commitment.** MD.D.11
	12	**Demonstrate a healthy view of competition.** MD.D.12
	13	**Demonstrate a global perspective.** MD.D.13
	14	**Demonstrate health and fitness.** MD.D.14
	15	**Demonstrate self-direction.** MD.D.15
	16	**Demonstrate lifelong learning.** MD.D.16
PROFESSIONAL KNOWLEDGE MD.E	1	**Demonstrate effective speaking and listening skills.** MD.E.1
	2	**Demonstrate effective reading and writing skills.** MD.E.2
		emonstrate mathematical reasoning. MD.E.3

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

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	10 Modify geometric properties (e.g., layer, color, line weight, and type). MD.G.10
	11 Use inquiry commands to extract drawing data (e.g., list, distance, and area). MD.G.11
	12 Annotate drawings to include text and dimensions. MD.G.12
	13 Create, retrieve, edit, and use symbol libraries. MD.G.13
	14 Utilize paper space and create viewports. MD.G.14
	15 Plot/Print drawing to appropriate scale. MD.G.15
	16 Use software help features. MD.G.16
DEMONSTRATE GEOMETRIC CONSTRUCTION SKILLS (STANDARD AND METRIC) MD.H	1 Draw straight and parallel lines. MD.H.1
	2 Draw tangent lines, arcs, circles, and curves. MD.H.2
	3 Draw regular polygons, circles, and ellipses. MD.H.3
	4 Bisect lines, arcs, and angles. MD.H.4
	5 Divide lines and circles equally. MD.H.5
DEMONSTRATE DIMENSIONING SKILLS (STANDARD ANDMETRIC) MD.I	1 Set and control dimensioning styles. MD.I.1
	2 Dimension using aligned and unidirectional dimensioning systems. MD.I.2
	3 Dimension using leaders for notes, arcs, and circular features. MD.I.3
	4 Dimension using dual dimensioning skills (standard and metric). MD.I.4
	5 Dimension using tolerances. MD.I.5
	6 Identify and apply geometric dimensions and tolerances. MD.I.6
DEMONSTRATE ORTHOGRAPHIC PROJECTIONS (STANDARD AND METRIC) MD.J	1 Draw regular orthographic views. MD.J.1
	2 Draw regular orthographic views. MD.J.2
	3 Draw curved surfaces. MD.J.3
	4 Draw surface intersections. MD.J.4
	5 Draw detailed size description. MD.J.5
	dentify 1st- and 3rd-angle projection drawings. MD.J.6

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7 **Draw a 3rd-angle projection drawing.** MD.J.7