



CORRELATION COURSE REQUIREMENTS

COURSE TITLE: Drafting/Illustrative Design Systems

COURSE NUMBER: 8600020

SUBMISSION TITLE: Mechanical Drawing © 2003

PUBLISHER: Glencoe/McGraw-Hill

INTENDED OUTCOMES & SSS/BENCHMARKS (Number and outcome)	PAGE(S) OR LOCATION(S) WHERE TAUGHT	I/M*
01.0 DEMONSTRATE THE ABILITY TO WORK SAFELY WITH A VARIETY OF TECHNOLOGIES--The student will be able to:		
01.01 Select appropriate tools, procedures, and/or equipment needed to produce a product.	This objective is addressed throughout. See, for example: SE: 51–53, 62–63, 74, 87–103, 118, 130, 176, 204, 296, 403, 510, 647, 703 IRG: 105, 107, 109, 111, 113, 117, 123, 129, 137, 141	I
01.02 Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment needed to produce a product.	SE: 102, 104, 106–108, 112, 389, 621 IRG: 42, 43, 44, 47–48, 51, 107, 124	I
01.03 Demonstrate knowledge required to maintain and troubleshoot.	SE: 95, 107 IRG: 42, 43, 107	I

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01.04 Follow laboratory safety rules and procedures.	SE: 39, 40, 104, 106–108, 112 IRG: 42, 43, 49, 53, 109	I
01.05 Demonstrate good housekeeping at work state and within total laboratory.	SE: 104, 112, 690 IRG: 42, 43, 47, 93–94, 109	I
01.06 Identify color-coding safety standards.	IRG: 52	I
01.07 Explain fire prevention and safety precautions and practices for extinguishing fires.	SE: 104 IRG: 43, 45, 46	I
01.08 Identify harmful effects/potential dangers of familiar hazardous substances/devices to people and the environment.	SE: 104 IRG: 47, 54, 107	I
02.0 DEMONSTRATE INTERPERSONAL SKILLS AS THEY RELATE TO THE WORKPLACE--The student will be able to:		
02.01 Perform roles in a student personnel system or in the Florida Technology Student Association (FL-TSA).	SE: 36 IRG: 64–70	I
02.02 Participate as a member of a team.	This objective is addressed throughout. See, for example: SE: 37, 47, 52, 83, 110, 149, 194, 275, 345, 416, 505, 564, 667, 764, 799 IRG: 84, 85–87, 105	I
02.03 Teach others new skills.	SE: 194, 466 IRG: 73, 85–86	I

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02.04 Identify skills needed to serve clients/customers.	This objective is addressed throughout. See, for example: SE: 19, 25–27, 33–38, 53–54, 71, 317, 426, 719, 766–769 IRG: 103, 105, 119, 125, 139, 147	I
02.05 Demonstrate leadership skills.	SE: 36, 39, 47, 83, 84 IRG: 86–87	I
02.06 Describe strategies necessary for negotiating agreements.	SE: 33 IRG: 95–98, 99–100	I
02.07 Demonstrate the application of skills necessary to work with people of diverse backgrounds.	SE: 34, 317, 347, 469, 531 IRG: 19, 33–39, 93	I
02.08 Form an understanding and appreciation for work after listening to or observing technology workers.	SE: 47 IRG: 107, 137, 141, 149	I
02.09 Form an understanding and appreciation for work after participating in a simulated technology group project in the laboratory.	SE: 149, 194, 667, 690, 712 IRG: 29, 76, 104	I
02.10 Form an understanding and appreciation for the roles and work of co-workers.	SE: 36, 37, 52–53 IRG: 76–79, 104	I

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03.0 IDENTIFY AND APPLY METHODS OF INFORMATION ACQUISITION AND UTILIZATIONS --The student will be able to:		
03.01 Define terms related to computers.	This objective is addressed throughout. See, for example: SE: 42, 74–77, 101–103, 130, 138, 211, 265, 407, 531, 616, 733 IRG: 57–58, 103–109, 115–119, 133–141, 160, 166, 234	I
03.02 Identify and describe methods of information acquisition and evaluation.	SE: 42, 44–45, 301, 651, 765–781 IRG: 61, 62, 81–82, 103, 147, 235	I
03.03 Discuss advantages and disadvantages in the application of technologies.	SE: 22, 42, 43–46, 74 IRG: 103	I
03.04 Produce a plan to organize and maintain information relevant to emerging technologies.	SE: 105, 775–776, 777–779 IRG: 107, 147	I
03.05 Comprehend and communicate information relevant to emerging technologies.	SE: 23, 47, 108 IRG: 91, 107	I
03.06 Demonstrate the use of computers to process information.	SE: 47, 101–102, 103, 104–105, 789–793 IRG: 56–61, 103, 107, 147	I

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04.0 APPLY BASIC SKILLS IN COMMUNICATIONS, MATHEMATICS, AND SCIENCE APPROPRIATE TO TECHNOLOGICAL CONTENT AND LEARNING ACTIVITIES--The student will be able to:		
04.01 Identify and explain the main and subordinate ideas in a written work.	SE: 28–31, 35, 71–73, 586, 785–788 IRG: 96–98, 153	I
04.02 Distinguish different purposes and methods of writing, identify a writer’s point of view and tone, and interpret a writer’s meaning.	SE: 28–30, 31, 766–769 IRG: 103, 147	I
04.03 Define unfamiliar words by use of structural analysis, decoding, contextual clues, or by using a dictionary.	This objective is addressed throughout. See, for example: SE: 46, 78, 108, 189, 337, 410, 535,617, 785, 786, 787 IRG: 104, 106, 112, 120, 124, 130, 136, 150	I
04.04 Distinguish fact from opinion.	SE: 47 IRG: 27	I
04.05 Read critically by asking pertinent questions, by recognizing assumptions and implications, and by evaluating ideas.	SE: 47, 788 IRG: 26, 103, 109	I
04.06 Select, relate, and organize, ideas using outlining and/or graphic organizers and develop the ideas in coherent paragraphs.	SE: 47, 788 IRG: 103, 162	I
04.07 Improve one’s own writing by restructuring, correcting errors, and rewriting.	SE: 791, 793 IRG: 149–150	I

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04.08 Gather and organize information from primary and secondary sources; write a report using this research; quote, paraphrase, and summarize accurately; and cite sources properly.	SE: 47, 767	I
04.09 Vary one's writing style, including vocabulary and sentence structure, for different readers and purposes.	SE: 28–30, 31, 47 IRG: 96, 103	I
04.10 Write logical and understandable statements, or phrases, to accurately fill out commonly used forms.	SE: 31, 72, 651, 477 IRG: 97, 103	I
04.11 Compose unified and coherent correspondence, directions, descriptions, explanations and reports.	SE: 47, 83, 84, 586, 767–769, 799–800 IRG: 103, 107, 147	I
04.12 Participate critically and constructively in the exchange of ideas, particularly during class discussions and conferences with instructors.	SE: 47, 667, 781 IRG: 125, 147	I
04.13 Conceive and develop ideas about a topic for the purpose of speaking to a group; choose and organize related ideas; present them clearly in Standard English; and evaluate similar presentations by others.	SE: 110, 667, 781 IRG: 24, 125, 147	I
04.14 Use the mathematics of: - integers, fractions, and decimals; - ratios, proportions, and percentages; - roots and powers; - algebra; - geometry.	This objective is addressed throughout. See, for example: SE: 59,90, 123, 153, 179, 212, 243, 336, 347–378, 396, 404, 420, 479, 604, 717, 768 IRG: 103–114, 115–124, 125–134, 135–149	I

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04.15 Make estimates and approximations, and judge the reasonableness of a result.	SE: 25, 58, 79, 175, 675, 691 IRG: 103, 105	I
04.16 Use elementary concepts of probability and statistics.	This objective falls outside the scope of Glencoe/McGraw-Hill Mechanical Drawing	
04.17 Draw, read, and analyze graphs, charts, and tables.	SE: 739–750, 751–754, 755–764, 767–769, 779 IRG: 145, 147	I
04.18 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions through familiarity with laboratory and fieldwork.	SE: 690–691 IRG: 107, 139, 149	I
04.19 Organize and communicate the results obtained by observation and experimentation.	SE: 51–53, 690 IRG: 107, 113, 119, 121, 125, 129, 133	I
04.20 Apply the basic principles of biology, physics, and chemistry: (properties of matter; structure of compounds; concepts of motion; temperature, pressure and volume; work, power, force and energy; machines; human cell structure).	SE: 235, 324–325, 511, 547, 671, 690, 717–718 IRG: 115, 119, 129, 131, 135, 139	I
04.21 Identify problems rooted in basic biology, physics, or chemistry (effects of hazardous materials on health and safety, effects of drugs on health, trouble shooting problems on a machine.	SE: 104, 106, 108, 687, 690 IRG: 54, 139	I

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05.0 <u>DEMONSTRATE AND APPLY DESIGN/PROBLEM-SOLVING PROCESSES</u> --The student will be able to:		
05.01 Describe and explain steps in the design/problem-solving process.	SE: 51–53, 78 IRG: 105	I
05.02 Propose solutions to given problems.	This objective is addressed throughout. See, for example: SE: 51, 83, 84, 110, 466, 505, 621, 665, 690 IRG: 297, 302, 335, 353, 361, 363	I
05.03 Design and implement the optimal solution to a given problem.	This objective is addressed throughout. See, for example: SE: 83, 84, 110, 194, 466, 505, 542, 667, 691 IRG: 297, 302, 335, 353, 361, 363	I
05.04 Document each step of the design/problem-solving process.	SE: 83, 84, 499–505, 667, 690–691 IRG: 162–164	I
05.05 Demonstrate “brainstorming” as a process to solve problems.	SE: 799 IRG: 105, 113, 123	I
05.06 Define “critical thinking” and its value in the problem-solving process.	IRG: 27	I

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06.0 <u>EXPRESS AN UNDERSTANDING OF TECHNOLOGICAL SYSTEMS AND THEIR COMPLEX INTERRELATIONSHIPS</u> --The student will be able to:		
06.01 Demonstrate knowledge of how social, organizational, and technological systems work.	IRG: 88–94, 149	I
06.02 Explore methods used to monitor and correct performance of technological systems.	SE: 51–53 IRG: 105	I
06.03 Design and implement an optimal solution to a given problem.	This objective is addressed throughout. See, for example: SE: 83, 84, 110, 194, 466, 505, 542, 667, 691 IRG: 302, 335, 353, 361, 363	I
06.04 Outline major historical technological developments or events.	SE: 43, 49, 86, 112, 151	I
06.05 Identify recent advances in technology.	SE: 23, 42–43, 86, 102–104, 112, 714	I
06.06 Explain problem-solving roles of technology.	SE: 24, 154 IRG: 23, 25, 27, 29	I
06.07 Forecast a technological development or event.	The opportunity to address this objective is available. See the following: IRG: 91, 103	M
06.08 Define technology.	IRG: 91	I

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07.0 <u>DEMONSTRATE THE ABILITY TO PROPERLY IDENTIFY, ORGANIZE, PLAN, AND ALLOCATE RESOURCES</u> --The student will be able to:		
07.01 Demonstrate the ability to select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.	The opportunity to address this objective is available. See the following: SE: 27, 40–41, 606, 670 IRG: 103, 153, 159	M
07.02 Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.	SE: 505, 767–769 IRG: 88–91, 127, 147	I
07.03 Demonstrate the ability to acquire, store, allocate, and use materials or space efficiently.	SE: 88, 89, 91, 98–100, 101–104, 105 IRG: 58, 107	I
07.04 Display knowledge of the efficient use of human resources.	This objective falls outside the scope of Glencoe/McGraw-Hill Mechanical Drawing.	
16.0 <u>DEMONSTRATE PROPER AND SAFE PROCEDURES AND TECHNICAL KNOWLEDGE AND SKILLS IN THE USE AND CARE OF DRAFTING INSTRUMENTS, MATERIALS AND EQUIPMENT</u> --The student will be able to:		
16.01 Identify the basic tools and instruments for drafting.	SE: 87–91, 92, 93–94, 95–97, 97–101, 101–105 IRG: 107–108	I
16.02 Interpret a blueprint, working drawing or other type of dimensional technical illustration.	SE: 54–57, 773, 798 IRG: 147–148	I

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16.03 Produce a working drawing or technical illustration using drafting tools, instruments, and skills.	SE: 149, 194, 270–275, 303–315, 334–345, 480–481, 483–489, 490–505 IRG: 109, 111, 115, 117, 119, 121, 127	I
17.0 DEMONSTRATE TECHNICAL KNOWLEDGE, SKILLS AND APPLICATIONS COMMON TO ALL TYPES OF DRAFTING INCLUDING COMPUTER-AIDED DRAFTING (CAD)--The student will be able to:		
17.01 Outline major technological developments in the history of drafting and design tools and equipment.	SE: 49, 86 IRG: 105–106	I
17.02 Make freehand sketches.	SE: 54–58, 63–70, 71, 79–84 IRG: 105–106, 297–301	I
17.03 Produce a drawing using drafting instruments.	This objective is addressed throughout. See, for example: SE: 141–149, 190–194, 217–228, 455, 493, 555, 655, 732 IRG: 109, 111, 113, 125, 127, 131, 137, 143, 302, 304, 335, 340, 361, 364	I
17.04 Set up a computer to produce a drawing.	The opportunity to address this objective is available. See the following: SE: 74, 83, 105–107 IRG: 107–108	M

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18.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING DRAFTING SKETCHES --The student will be able to:		
1.01 Illustrate a technical idea by means of a sketch.	SE: 68, 83–84 IRG: 105, 297–301	I
19.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING ORTHOGRAPHIC DRAWINGS --The student will be able to:		
19.01 Explain the theory of orthographic projections.	SE: 54, 198, 842 IRG: 113	I
19.02 Identify the six principle views of an object.	SE: 197, 216 IRG: 111–112, 304–309	I
19.03 Produce a three-view orthographic drawing.	SE: 54, 81–82, 134, 185, 198, 211, 220–222, 579, 581, 592 IRG: 304–309	I
20.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING OBLIQUE PICTORIAL DRAWINGS --The student will be able to:		
20.01 Define types of pictorial drawings.	SE: 56, 78, 418–419, 575 IRG: 125–126	I
20.02 Produce an oblique pictorial drawing.	SE: 67, 422–423, 461–466, 659, 660 IRG: 125, 195	I

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21.0 <u>DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING ISOMETRIC PICTORIAL DRAWINGS</u> --The student will be able to:		
19.01 Discuss the isometric drawing procedures.	SE: 68–70, 78, 419–421, 450, 578, 580, 582, 587 IRG: 125–126, 194	I
19.02 Produce an isometric pictorial drawing.	SE: 83, 458–461, 578, 580–582, 590, 592, 659, 660 IRG: 105, 125	I
22.0 <u>DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING AERODYNAMIC DRAWINGS</u> --The student will be able to:		
22.01 Discuss the aerodynamic designs of aircraft and automobiles.	The opportunity to address this objective is available. See the following: SE: 215	M
22.02 Produce an aerodynamic scale drawing.	The opportunity to address this objective is available. See the following: SE: 214, 243, 275, 541 IRG: 115	M

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23.0 <u>DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR MAKING A COMPUTER-AIDED DRAWING (CAD)</u> --The student will be able to:		
23.01 List the major components of a computer-aided drafting system and their functions.	SE: 101–105, 108 IRG: 107	I
23.02 Demonstrate technical knowledge and skills in setting up a CAD system.	SE: 44–45 74, 83, 105, 215, 299, 365, 371, 557 IRG: 103–114, 115–124, 125– 134, 135–149	I
24.0 <u>DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS FOR REPRODUCING A COMPUTER-AIDED DRAWING ON A PLOTTER</u> --The student will be able to:		
24.01 Produce a computer-aided drawing, which can be displayed by means of a computer.	SE: 777–778, 795, 797 IRG: 147–148	I

I = Taught Indepth

M = Mentioned only