

**Florida Department of Education
CLUSTER CURRICULUM FRAMEWORK**

Cluster Title: Drafting
Cluster Type: Job Preparatory
Occupational Area: Industrial Education
Components: One Core, Six Programs.

	<u>SECONDARY</u>	<u>PSAV</u>
Grade Level	9-12, 30, 31	30,31
Facility Code	245	245
CTSO	SkillsUSA American Drafting and Design Assoc.	SkillsUSA American Drafting and Design Assoc.
Coop Method	Yes	Yes
Apprenticeship	Yes	Yes

Basic Skills

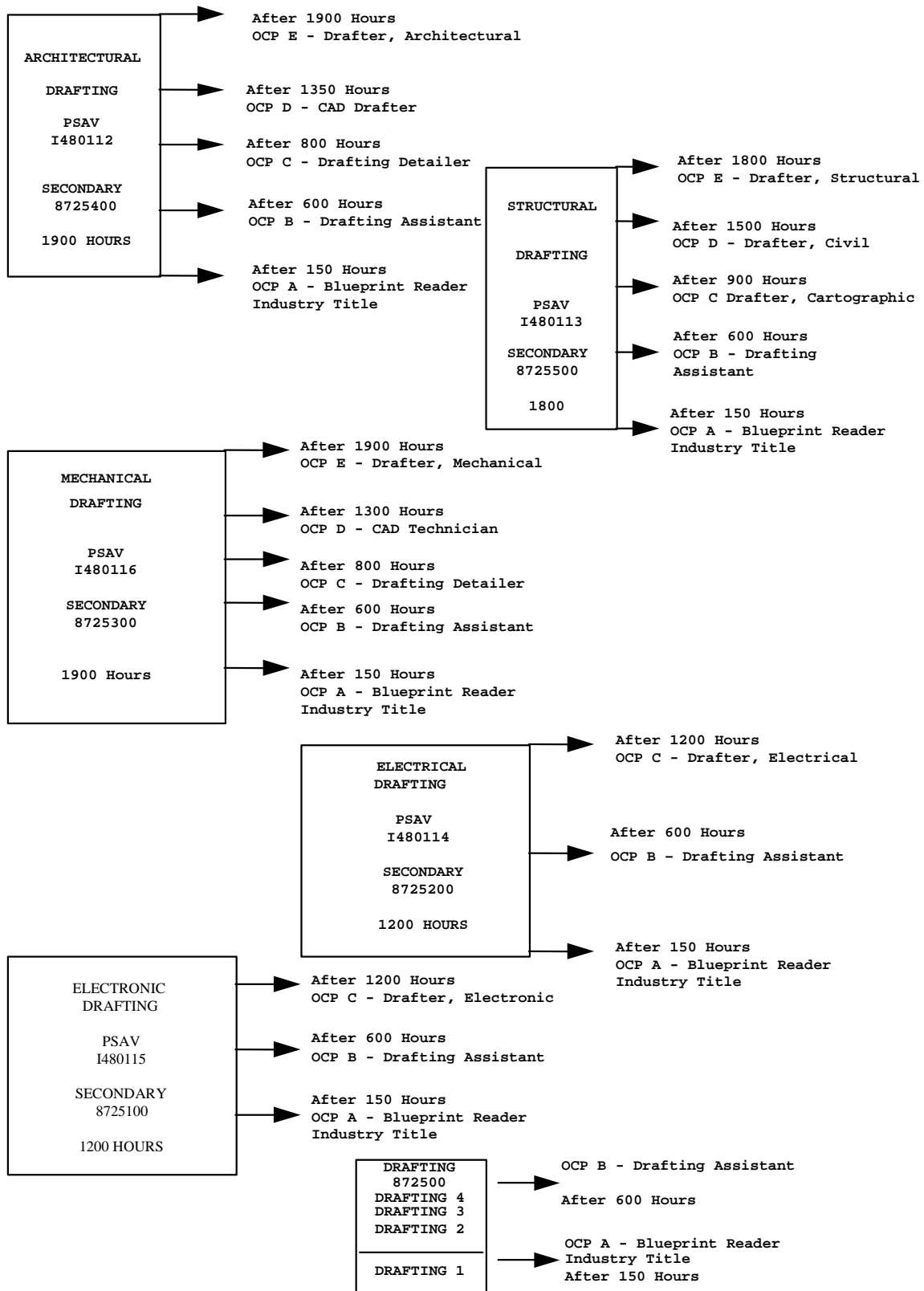
Math	10
Language	9
Reading	9

I. **PURPOSE:** The purpose of the programs in this cluster is to prepare students for employment in the drafting industries.

This program focuses on broad, transferable skills and stresses the understanding of all aspects of the drafting industry and demonstrates such elements of the drafting industry as planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community issues, and health, safety, and environmental issues.

II. **CLUSTER STRUCTURE:** This cluster is a planned sequence of instruction consisting of six programs that include: Drafting (secondary), Architectural Drafting, Structural Drafting, Mechanical Drafting, Electrical Drafting and Electronic Drafting. When the recommended sequence is followed, the structure will allow students to complete specified portions of the program for employment or to remain for advanced training. A student who completes the applicable competencies at any occupational completion point may either continue with the training program or become an occupational completer.

The following diagram illustrate the cluster structure:



Occupational completion points may be reached before the end of a secondary course. All outcomes must be completed to receive credit for an occupational completion point (OCP).

Listed below are the courses that comprise the program when offered at the secondary level.

8725000	Drafting			
8725010	Drafting 1	(150)	[150]	OCP A
8725020	Drafting 2	(150)		
8725030	Drafting 3	(150)		
8725040	Drafting 4	(150)	[450]	OCP B
8725100	Electronic Drafting			
8725010	Drafting 1	(150)	[150]	OCP A
8725020	Drafting 2	(150)		
8725030	Drafting 3	(150)		
8725040	Drafting 4	(150)	[450]	OCP B
8725110	Electronic Drafting 5	(150)		
8725120	Electronic Drafting 6	(150)		
8725130	Electronic Drafting 7	(150)		
8725140	Electronic Drafting 8	(150)	[600]	OCP C
8725200	Electrical Drafting			
8725010	Drafting 1	(150)	[150]	OCP A
8725020	Drafting 2	(150)		
8725030	Drafting 3	(150)		
8725040	Drafting 4	(150)	[450]	OCP B
8725210	Electrical Drafting 5	(150)		
8725220	Electrical Drafting 6	(150)		
8725230	Electrical Drafting 7	(150)		
8725240	Electrical Drafting 8	(150)	[600]	OCP C
8725300	Mechanical Drafting			
8725010	Drafting 1	(150)	[150]	OCP A
8725020	Drafting 2	(150)		
8725030	Drafting 3	(150)		
8725040	Drafting 4	(150)	[450]	OCP B
8725310	Mechanical Drafting 5	(150)		
8725320	Mechanical Drafting 6	(150)	[200]	OCP C
8725330	Mechanical Drafting 7	(150)		
8725340	Mechanical Drafting 8	(150)		
8725350	Mechanical Drafting 9	(150)	[500]	OCP D
8725360	Mechanical Drafting 10	(150)		
8725370	Mechanical Drafting 11	(150)		
8725380	Mechanical Drafting 12	(150)		
8725390	Mechanical Drafting 13	(150)	[600]	OCP E
8725400	Architectural Drafting			
8725010	Drafting 1	(150)	[150]	OCP A
8725020	Drafting 2	(150)		
8725030	Drafting 3	(150)		
8725040	Drafting 4	(150)	[450]	OCP B
8725450	Architectural Drafting 5	(150)		
8725460	Architectural Drafting 6	(150)	[200]	OCP C
8725470	Architectural Drafting 7	(150)		
8725480	Architectural Drafting 8	(150)		
8725490	Architectural Drafting 9	(150)	[550]	OCP D
8725491	Architectural Drafting 10	(150)		
8725492	Architectural Drafting 11	(150)		

8725493	Architectural Drafting 12	(150)	
8725494	Architectural Drafting 13	(150) [550]	OCP E
8725500	Structural Drafting		
8725010	Drafting 1	(150) [150]	OCP A
8725020	Drafting 2	(150)	
8725030	Drafting 3	(150)	
8725040	Drafting 4	(150) [450]	OCP B
8725550	Structural Drafting 5	(150)	
8725560	Structural Drafting 6	(150) [300]	OCP C
8725570	Structural Drafting 7	(150)	
8725580	Structural Drafting 8	(150)	
8725590	Structural Drafting 9	(150)	
8725591	Structural Drafting 10	(150) [600]	OCP D
8725592	Structural Drafting 11	(150)	
8725593	Structural Drafting 12	(150) [300]	OCP E

III. **LABORATORY ACTIVITIES:** Classroom, shop and land laboratory activities are an integral part of this program. These activities provide instruction in the use and care of tools, equipment, materials, and processes found in the industry.

IV. **SPECIAL NOTE:** SkillsUSA, Inc. is the appropriate Career and Technical Student Organization (CTSO) for providing leadership training and for reinforcing specific career and technical skills. Career and Technical Student Organizations, when provided, shall be an integral part of the career and technical instructional program, and the activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, FAC.

To be transferable statewide between institutions, this program/course must have been reviewed, and a "transfer value" assigned the curriculum content by the appropriate Statewide Course Numbering System discipline committee. This does not preclude institutions from developing specific program or course articulation agreements with each other.

The programs in this cluster may be offered in PSAV courses. Vocational credit shall be awarded to the student on a transcript in accordance with section 1001.44 (3) (b) F.S.

Cooperative training - OJT is appropriate for this program. Whenever cooperative training - OJT is offered, the following are required for each student: a training plan, signed by the student, teacher, and employer, which includes instructional objectives and a list of on-the-job and in-school learning experiences; a workstation that reflects equipment, skills and tasks that are relevant to the occupation which the student has chosen as a career goal. The student must receive compensation for work performed.

In accordance with Rule 6A-10.040, FAC, the minimum basic-skills grade levels required for adult vocational students to complete this program are: Mathematics 10.0, Language 9.0, Reading 9.0. These grade-level numbers correspond to grade-equivalent scores obtained on one of the state-designated basic-skills examinations. If a student does not meet the basic-skills level required for completion of the program, remediation should be provided concurrently through Vocational Preparatory Instruction (VPI). Please refer to the Rule for exemptions.

Federal and state legislation requires the provision of accommodations for students with disabilities to meet individual needs and ensure equal access. Adult students with disabilities must self-identify and request such services. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

When a secondary student with a disability is enrolled in a vocational class with modifications to the curriculum framework, the particular outcomes and student performance standards, which the student must master to earn credit, must be specified on an individual basis. The job or jobs for which the student is being trained should be reflected in the student's desired postschool outcome statement on the Transition Individual Educational Plan (Transition IEP).

To accomplish the Secretary's Commission on Achieving Necessary Skills (SCANS) Competencies, instructional strategies for this program must include methods that require students to identify, organize, and use resources appropriately; to work with each other cooperatively and productively; to acquire and use information; to understand social, organizational, and technological systems; and to work with a variety of tools and equipment. Instructional strategies must also incorporate the methods to improve student's personal qualities and higher-order thinking skills.

July 2007

Florida Department of Education
INTENDED OUTCOMES

Program Number: 8725000
CIP Number: 0648.010102
Grade Level: 9-12, 30, 31
Length: 4 credits]

Certification:

DRAFTING @7 G
TEC CONTR @7 G
BLDG CONST @7 G
TEC DRAFT @7 G

INTENDED OUTCOMES: After successfully completing this program, the student will be able to:

OCCUPATIONAL COMPLETION POINT - DATA CODE - A

BLUEPRINT READER - INDUSTRY TITLE (SOC 17-3011, 17-3012, 17-3013, 17-3019)

- 01.0 Apply basic drafting skills.
- 02.0 Apply fundamental computer skills.
- 03.0 Prepare multi-view drawings.
- 04.0 Prepare sectional views.
- 05.0 Prepare auxiliary drawings.
- 06.0 Apply basic dimensioning.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B

DRAFTING ASSISTANT - (SOC 17-3011, 17-3012, 17-3013, 17-3019)

- 07.0 Prepare pictorial drawings.
- 08.0 Prepare surface developments.
- 09.0 Prepare basic architectural drawings.
- 10.0 Demonstrate an understanding of basic civil drawings.
- 11.0 Demonstrate basic electrical/electronic literacy.
- 12.0 Prepare basic computer aided drawings.
- 13.0 Demonstrate appropriate communication skills.
- 14.0 Demonstrate applied math skills.
- 15.0 Demonstrate basic science as applied to drafting.
- 16.0 Demonstrate employability skills.
- 17.0 Demonstrate an understanding of entrepreneurship.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725000
Course Number: 8725010
Course Title: Drafting 1
Course Credit: 1

COURSE DESCRIPTION:

01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:

- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment. (LA.A.1.4), (LA.A.2.4), (MA.B.1.4), (MA.B.2.4)
- 01.02 Identify and use the various drafting media and techniques. (LA.A.1.4), (LA.A.2.4.1), (LA.A.2.4.6)
- 01.03 Demonstrate the use of the alphabet of lines. (LA.A.1.4), (LA.B.2.4)
- 01.04 Prepare title blocks and other drafting formats. (LA.A.1.4), (LA.B.2.4)
- 01.05 Use various freehand and other lettering techniques. (LA.A.1.4), (LA.B.2.4), (MA.B.3.4)
- 01.06 Prepare axonometric, oblique and perspective freehand sketches. (LA.A.1.4), (LA.B.2.4)
- 01.07 Prepare charts, graphs, and diagrams. (LA.B.1.4), (LA.B.2.4), (MA.D.1.4), (SC.A.1.4)
- 01.08 Apply geometric construction techniques. (MA.C.1.4), (MA.C.2.4), (MA.C.3.4)

02.0 SOLVE TECHNICAL MATHEMATICAL PROBLEMS--The student will be able to:

- 02.01 Solve arithmetic problems. (MA.C.1.4)
- 02.02 Solve algebra problems. (MA.C.1.4), (MA.C.2.4)
- 02.03 Solve right-angle trigonometric problems. (MA.C.3.4)
- 02.04 Solve geometry problems. (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4)
- 02.05 Apply multiple discipline calculations. (MA.D.2.4)

03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:

- 03.01 Prepare multi-view freehand sketches. (MA.B.3.4)
- 03.02 Select proper drawing scale, views and layout. (MA.B.1.4.), (MA.B.2.4), (MA.B.4.4)
- 03.03 Prepare drawings containing horizontal and vertical surfaces. (MA.C.3.4)
- 03.04 Prepare drawings containing circles and/or arcs. (MA.C.1.4.), (MA.B.3.4.)
- 03.05 Prepare drawings incorporating removed details and conventional breaks. (MA.C.2.4.)

04.0 PREPARE SECTIONAL VIEWS--The student will be able to:

- 04.01 Prepare drawings containing full sections and half sections. (MA.C.2.4)
- 04.02 Prepare drawings containing offset sections. (MA.C.2.4)
- 04.03 Prepare drawings containing revolved sections. (MA.C.2.4)

- 04.04 Prepare drawings containing removed sections and broken-out sections. (MA.C.2.4)
- 04.05 Prepare a sectional assembly drawing applying material symbols. (MA.C.2.4)

- 05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:
 - 05.01 Prepare drawings containing primary auxiliary views. (MA.C.2.4)
 - 05.02 Prepare drawings containing auxiliary views that include curved lines.

- 06.0 APPLY BASIC DIMENSIONING--The student will be able to:
 - 06.01 Prepare drawings containing linear, angular, and circular standard dimensions. (MA.B.1.4), (MA.B.2.4)
 - 06.02 Prepare drawings using metric dimensions. (MA.B.1.4), (MA.B.2.4.), (SC.A.1.4)
 - 06.03 Prepare drawings using general and local notes.
 - 06.04 Apply basic tolerancing techniques. (MA.B.4.4)

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725000
Course Number: 8725020
Course Title: Drafting 2
Course Credit: 1

COURSE DESCRIPTION:

- 07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:
- 07.01 Prepare isometric, oblique and other pictorial drawings. (MA.C.1.4), (MA.B.2.4.)
 - 07.02 Prepare one- and two-point perspectives. (MA.C.1.4.), (MA.B.2.4)
- 08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:
- 08.01 Prepare developments of prisms, cylinders, cones and pyramids. (MA.C.1.4), (MA.B.2.4)
 - 08.02 Prepare developments of a transition piece. (MA.C.1.4), (MA.C.2.4), (MA.C.3.4)
 - 08.03 Prepare drawings involving intersecting pieces. (MA.C.1.4), (MA.B.2.4)
- 09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:
- 09.01 Prepare site plan. (LA.A.1.4), (LA.A.2.4), (LA.B.1.4), (LA.B.2.4), (LA.C.1.4), (LA.C.1.4), (LA.C.3.4), (LA.D.2.4), (MA.C.1.4), (MA.B.2.4), (MA.B.3.4)
 - 09.02 Prepare floor plan. (LA.A.1.4), (LA.A.2.4), (LA.B.1.4), (LA.B.2.4), (LA.C.1.4), (LA.C.3.4), (LA.D.2.4)
 - 09.03 Prepare exterior elevations. (LA.A.1.4), (LA.A.2.4), (LA.B.1.4), (LA.B.2.4), (LA.C.1.4), (LA.C.3.4), (LA.D.2.4)
 - 09.04 Prepare roof plan. (LA.A.1.4), (LA.A.2.4), (LA.B.1.4), (LA.B.2.4), (LA.C.1.4), (LA.C.1.4), (LA.C.3.4), (LA.D.2.4)
- 10.0 DEMONSTRATE UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:
- 10.01 Understand civil terminology.
 - 10.02 Read and interpret civil drawings.
 - 10.03 Prepare plan and profile drawings. (MA.C.1.4), (MA.B.2.4), (MA.B.3.4)
 - 10.04 Develop topographic drawings. (MA.C.1.4), (MA.B.3.4), (SC.D.1.4)
- 11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:
- 11.01 Identify electrical/electronic symbols. (SC.B.1.4)
 - 11.02 Prepare schematic/block diagrams. (MA.C.1.4), (SC.B.1.4), (SC.H.3.4)

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725000
Course Number: 8725030
Course Title: Drafting 3
Course Credit: 1

COURSE DESCRIPTION:

12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:

- 12.01 Perform drawing set up. (LA.A.1.4), (SC.H.3.4)
- 12.02 Construct geometric figures of lines, splines, circles, and arcs.
- 12.03 Create and edit text using appropriate style and size to annotate drawings. ((LA.A.1.4)
- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
- 12.05 Identify, create, store and use standard part symbols and libraries. (LA.A.1.4), (LA.A.2.4)
- 12.06 Utilize editing commands. (LA.A.1.4)
- 12.07 Control entity properties by layer, color and line type.
- 12.08 Use viewing commands to perform zooming and panning.
- 12.09 Plot drawings on media using layout and scale. (MA.C.3.4)
- 12.10 Minimize file size.
- 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
- 12.12 Apply standard dimensioning rules. (MA.B.2.4)

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725000
Course Number: 8725040
Course Title: Drafting 4
Course Credit: 1

COURSE DESCRIPTION:

- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry. (LA.B.1.4.3), (LA.B.2.4.1), (LA.B.2.4.2)
 - 13.02 Read written and follow oral instructions. (LA.C.1.4.1), (LA.C.1.4.3)
 - 13.03 Answer and ask questions coherently and concisely. (LA.C.3.4.2)
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas. (LA.A.2.4.1), (LA.A.2.4.4), (LA.A.2.4.6), (LA.A.2.4.8)
 - 13.05 Demonstrate appropriate telephone/communication skills. (LA.C.3.4.2), (LA.C.3.4.4)
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area. (MA.E.1.4), (SC.A.1.4)
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders. (MA.C.3.4), (MA.B.3.4), (MA.B.4.4), (SC.A.1.4)
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches. (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4)
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers. (MA.A.3.4)
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items. (MA.A.3.4), (MA.B.2.4), (MA.B.3.4)
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation. (MA.B.3.4)
 - 14.06 Solve arithmetic problems. (MA.A.3.4)
 - 14.07 Solve algebra problems. (MA.D.1.4), (MA.D.2.4)
 - 14.08 Solve right-angle trigonometric problems. (MA.C.3.4)
 - 14.09 Solve geometry problems. (MA.C.2.4), (MA.B.3.4)
 - 14.10 Employ multiple discipline calculations and conversion tables using fractions, decimals and metric measurements. (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.C.2.4), (MA.A.1.4), (SC.A.1.4)
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data. (SC.H.1.4), (SC.H.3.4), (SC.C.1.4)

15.02 Identify health-related problems, which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.

16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

- 16.01 Conduct a job search.
- 16.02 Secure information about a job. (LA.A.1.4), (LA.A.2.4), (LA.B.1.4.3), (LA.B.2.4.1), (LA.B.2.4.2), (LA.B.2.4.4)
- 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
- 16.04 Demonstrate competence in job interview techniques. (LA.C.3.4.2), (LA.D.1.4.2)
- 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
- 16.06 Identify acceptable work habits.
- 16.07 Demonstrate knowledge of how to make job changes appropriately.
- 16.08 Demonstrate acceptable employee health habits.
- 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
- 16.10 Identify or demonstrate acceptable personal grooming habits.

17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:

- 17.01 Define entrepreneurship.
- 17.02 Describe the importance of entrepreneurship to the American economy.
- 17.03 List the advantages and disadvantages of business ownership.
- 17.04 Identify the risks involved in ownership of a business.
- 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
- 17.06 Identify the business skills needed to operate a small business efficiently and effectively. (MA.E.1.4), (MA.E.2.4), (MA.E.3.4)
- 17.07 Identify basic occupational licensing and insurance.

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Florida Department of Education
INTENDED OUTCOMES

Program Title: Architectural Drafting

	<u>Secondary</u>	<u>PSAV</u>
Program Numbers	8725400	I480112
CIP Number	0648.010201	0648.010201
Grade Level	9-12, 30, 31	30, 31
Length	13 credits	1900 hours
SOC	17-3011	17-3011
Certification	DRAFTING @7 G	DRAFTING @7 G

Basic Skills

Math	10
Language	9
Reading	9

INTENDED OUTCOMES: After successfully completing this program, the student will be able to:

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (150 Hours)
BLUEPRINT READER - INDUSTRY TITLE (SOC 17-3011)

- 01.0 Apply basic drafting skills.
- 02.0 Apply fundamental computer skills.
- 03.0 Prepare multi-view drawings.
- 04.0 Prepare sectional views.
- 05.0 Prepare auxiliary drawings.
- 06.0 Apply basic dimensioning.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B (450 Hours)
DRAFTING ASSISTANT - (SOC 17-3011)

- 07.0 Prepare pictorial drawings.
- 08.0 Prepare surface developments.
- 09.0 Prepare basic architectural drawings.
- 10.0 Demonstrate an understanding of basic civil drawings.
- 11.0 Demonstrate basic electrical/electronic literacy.
- 12.0 Prepare basic computer aided drawings.
- 13.0 Demonstrate appropriate communication skills.
- 14.0 Demonstrate applied math skills.
- 15.0 Demonstrate basic science as applied to drafting.
- 16.0 Demonstrate employability skills.
- 17.0 Demonstrate an understanding of entrepreneurship.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (200 Hours)
ARCHITECTURAL DETAILER-INDUSTRY TITLE (SOC 17-3019)

18.0 Prepare pictorial drawings.

OCCUPATIONAL COMPLETION POINT - DATA CODE - D (550 Hours)
CAD DRAFTER-INDUSTRY TITLE (SOC 17-3019)

19.0 Prepare architectural drawings.
(19.01 to 19.06)

20.0 Prepare advanced computer aided drawings.

OCCUPATIONAL COMPLETION POINT - DATA CODE - E (550 Hours)
DRAFTER ARCHITECTURAL - (SOC 17-3011)

19.0 Prepare architectural drawings.
(19.07 to 19.08)

21.0 Prepare basic building utility drawings.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Title: Architectural Drafting
Program Number: 8725400
Postsecondary Number: I480112

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (150 Hours)
BLUEPRINT READER - INDUSTRY TITLE

01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:

- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
- 01.02 Identify and use the various drafting media and techniques.
- 01.03 Demonstrate the use of the alphabet of lines.
- 01.04 Prepare title blocks and other drafting formats.
- 01.05 Use various freehand and other lettering techniques.
- 01.06 Prepare axonometric, oblique and perspective freehand sketches.
- 01.07 Prepare charts, graphs, and diagrams.
- 01.08 Apply geometric construction techniques.

02.0 APPLY FUNDAMENTAL COMPUTER SKILLS--The student will be able to:

- 02.01 Demonstrate care of equipment.
- 02.02 Operate a mouse, keyboard and digitizer as input devices.
- 02.03 Operate printers and plotters as output devices.
- 02.04 Demonstrate handling and operation of storage media.
- 02.05 Start and shut down a work station.
- 02.06 Adjust monitor controls for maximum comfort and usability.
- 02.07 Perform basic operating system functions.
- 02.08 Start and exit a software program as required.
- 02.09 Demonstrate file management techniques of copying and deleting.
- 02.10 Format a floppy disk.
- 02.11 Identify, create, and use directory structure and change directory paths.
- 02.12 Demonstrate file maintenance and backup procedures.
- 02.13 Save drawings to storage devices.

03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:

- 03.01 Prepare multi-view freehand sketches.
- 03.02 Select drawing scale, views and layout.
- 03.03 Prepare drawings containing horizontal, vertical and inclined surfaces.
- 03.04 Prepare drawings containing circles and/or arcs.
- 03.05 Prepare drawings incorporating removed details and conventional breaks.

04.0 PREPARE SECTIONAL VIEWS--The student will be able to:

- 04.01 Prepare drawings containing full sections and half sections.
- 04.02 Prepare drawings containing offset sections.
- 04.03 Prepare drawings containing revolved sections.
- 04.04 Prepare drawings containing removed sections and broken-out sections.
- 04.05 Prepare an assembly drawing applying material symbols.

05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:

- 05.01 Prepare drawings containing primary auxiliary views.
- 05.02 Prepare drawings containing auxiliary views that include curved lines.

06.0 APPLY BASIC DIMENSIONING--The student will be able to:

- 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
- 06.02 Prepare drawings using metric dimensions.
- 06.03 Prepare drawings using general and local notes.
- 06.04 Employ basic tolerancing techniques.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B (450 Hours)
DRAFTING ASSISTANT - (SOC 17-3011)

07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:

- 07.01 Prepare isometric, oblique and other pictorial drawings.
- 07.02 Prepare one- and two-point perspectives.

08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:

- 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
- 08.02 Prepare developments of a transition piece.
- 08.03 Prepare drawings involving intersecting pieces.

09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:

- 09.01 Prepare site plan.
- 09.02 Prepare floor plan.
- 09.03 Prepare exterior elevations.
- 09.04 Prepare roof plan.

10.0 DEMONSTRATE AN UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:

- 10.01 Understand civil terminology.
- 10.02 Read and interpret civil drawings.
- 10.03 Prepare plan and profile drawings.
- 10.04 Develop topographic drawings.

11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:

- 11.01 Identify electrical/electronic symbols.
- 11.02 Read and interpret basic schematic diagrams.

12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:

- 12.01 Perform drawing set up.
- 12.02 Construct geometric figures of lines, splines, circles, and arcs.
- 12.03 Create and edit text using appropriate style and size to annotate drawings.

- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
 - 12.05 Identify, create, store and use standard part symbols and libraries.
 - 12.06 Utilize editing commands.
 - 12.07 Control entity properties by layer, color and line type.
 - 12.08 Use viewing commands to perform zooming and panning.
 - 12.09 Plot drawings on media using layout and scale.
 - 12.10 Minimize file size.
 - 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
 - 12.12 Apply standard dimensioning rules.
- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fraction, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data.
 - 15.02 Identify health-related problems, which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
- 16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 16.01 Conduct a job search.
 - 16.02 Secure information about a job.

- 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
 - 16.04 Demonstrate competence in job interview techniques.
 - 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 16.06 Identify acceptable work habits.
 - 16.07 Demonstrate knowledge of how to make job changes appropriately.
 - 16.08 Demonstrate acceptable employee health habits.
 - 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
 - 16.10 Identify or demonstrate acceptable personal grooming habits.
- 17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 17.01 Define entrepreneurship.
 - 17.02 Describe the importance of entrepreneurship to the American economy.
 - 17.03 List the advantages and disadvantages of business ownership.
 - 17.04 Identify the risks involved in ownership of a business.
 - 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
 - 17.07 Identify basic occupational licensing and insurance.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (200 Hours)
 ARCHITECTURAL DETAILER INDUSTRY TITLE

18.0 PREPARE PICTORIAL DRAWINGS--The student will be able to.

- 18.01 Prepare isometric drawings
- 18.02 Prepare oblique drawings
- 18.03 Prepare perspectives

OCCUPATIONAL COMPLETION POINT - DATA CODE - D (550 Hours)
 CAD DRAFTER INDUSTRY TITLE - (SOC 17-3019)

19.0 PREPARE ARCHITECTURAL DRAWINGS--The student will be able to.

- 19.01 Interpret catalogs, specifications, technical tables, codes and ordinances
- 19.02 Prepare floor plan drawings, with dimensions
- 19.03 Prepare foundation plan and detail drawings, with dimensions
- 19.04 Prepare roof plans
- 19.05 Prepare elevation drawings
- 19.06 Prepare sections and details

20.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS--The student will be able to:

- 21.01 Produce architectural drawings
- 21.02 Produce structural plans and detail drawings
- 21.03 Produce civil drawings

OCCUPATIONAL COMPLETION POINT - DATA CODE - E (550 Hours)
DRAFTER ARCHITECTURAL - (SOC 17-3011)

19.0 PREPARE ARCHITECTURAL DRAWINGS--The student will be able to.

- 19.07 Prepare schedules and cost estimates
- 19.08 Prepare a landscape layout

21.0 PREPARE BASIC BUILDING UTILITY DRAWINGS--The student will be able to:

- 20.01 Prepare electrical plans and schedules
- 20.02 Prepare HVAC plans and schedules
- 20.03 Prepare plumbing plans, riser diagram, and schedules

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725400
Course Number: 8725010
Course Title: Drafting 1
Course Credit: 1

COURSE DESCRIPTION:

- 01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:
- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
 - 01.02 Identify and use the various drafting media and techniques.
 - 01.03 Demonstrate the use of the alphabet of lines.
 - 01.04 Prepare title blocks and other drafting formats.
 - 01.05 Use various freehand and other lettering techniques.
 - 01.06 Prepare axonometric, oblique and perspective freehand sketches.
 - 01.07 Prepare charts, graphs, and diagrams.
 - 01.08 Apply geometric construction techniques.
- 02.0 SOLVE TECHNICAL MATHEMATICAL PROBLEMS--The student will be able to:
- 02.01 Solve arithmetic problems.
 - 02.02 Solve algebra problems.
 - 02.03 Solve right-angle trigonometric problems.
 - 02.04 Solve geometry problems.
 - 02.05 Apply multiple discipline calculations.
- 03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:
- 03.01 Prepare multi-view freehand sketches.
 - 03.02 Select proper drawing scale, views and layout.
 - 03.03 Prepare drawings containing horizontal and vertical surfaces.
 - 03.04 Prepare drawings containing circles and/or arcs.
 - 03.05 Prepare drawings incorporating removed details and conventional breaks.
- 04.0 PREPARE SECTIONAL VIEWS--The student will be able to:
- 04.01 Prepare drawings containing full sections and half sections.
 - 04.02 Prepare drawings containing offset sections.
 - 04.03 Prepare drawings containing revolved sections.
 - 04.04 Prepare drawings containing removed sections and broken-out sections.
 - 04.05 Prepare a sectional assembly drawing applying material symbols.
- 05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:
- 05.01 Prepare drawings containing primary auxiliary views.
 - 05.02 Prepare drawings containing auxiliary views that include curved lines.

06.0 APPLY BASIC DIMENSIONING--The student will be able to:

- 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
- 06.02 Prepare drawings using metric dimensions.
- 06.03 Prepare drawings using general and local notes.
- 06.04 Apply basic tolerancing techniques.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725020
Course Title: Drafting 2
Course Credit: 1

COURSE DESCRIPTION:

- 07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:
- 07.01 Prepare isometric, oblique and other pictorial drawings.
 - 07.02 Prepare one- and two-point perspectives.
- 08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:
- 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
 - 08.02 Prepare developments of a transition piece.
 - 08.03 Prepare drawings involving intersecting pieces.
- 09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:
- 09.01 Prepare site plan.
 - 09.02 Prepare floor plan.
 - 09.03 Prepare exterior elevations.
 - 09.04 Prepare roof plan.
- 10.0 DEMONSTRATE AN UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:
- 10.01 Understand civil terminology.
 - 10.02 Read and interpret civil drawings.
 - 10.03 Prepare plan and profile drawings.
 - 10.04 Develop topographic drawings.
- 11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:
- 11.01 Identify electrical/electronic symbols.
 - 11.02 Prepare schematic/block diagrams.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725030
Course Title: Drafting 3
Course Credit: 1

COURSE DESCRIPTION:

12.0PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:

- 12.01 Perform drawing set up.
- 12.02 Construct geometric figures of lines, splines, circles, and arcs.
- 12.03 Create and edit text using appropriate style and size to annotate drawings.
- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
- 12.05 Identify, create, store and use standard part symbols and libraries.
- 12.06 Utilize editing commands.
- 12.07 Control entity properties by layer, color and line type.
- 12.08 Use viewing commands to perform zooming and panning.
- 12.09 Plot drawings on media using layout and scale.
- 12.10 Minimize file size.
- 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
- 12.12 Apply standard dimensioning rules.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725040
Course Title: Drafting 4
Course Credit: 1

COURSE DESCRIPTION:

- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fractions, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data.
 - 15.02 Identify health related problems which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
- 16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 16.01 Conduct a job search.
 - 16.02 Secure information about a job.

- 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
 - 16.04 Demonstrate competence in job interview techniques.
 - 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 16.06 Identify acceptable work habits.
 - 16.07 Demonstrate knowledge of how to make job changes appropriately.
 - 16.08 Demonstrate acceptable employee health habits.
 - 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
 - 16.10 Identify or demonstrate acceptable personal grooming habits.
- 17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 17.01 Define entrepreneurship.
 - 17.02 Describe the importance of entrepreneurship to the American economy.
 - 17.03 List the advantages and disadvantages of business ownership.
 - 17.04 Identify the risks involved in ownership of a business.
 - 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
 - 17.07 Identify basic occupational licensing and insurance.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725450
Course Title: Architectural Drafting 5
Course Credit: 1

COURSE DESCRIPTION:

18.0 PREPARE PICTORIAL DRAWINGS--The student will be able to.

- 18.01 Prepare isometric drawings
- 18.02 Prepare oblique drawings

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725460
Course Title: Architectural Drafting 6
Course Credit: 1

COURSE DESCRIPTION:

18.0 PREPARE PICTORIAL DRAWINGS--The student will be able to.

18.03 Prepare perspectives

19.0 PREPARE ARCHITECTURAL DRAWINGS--The student will be able to.

19.01 Interpret catalogs, specifications, technical tables, codes
and ordinances

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725470
Course Title: Architectural Drafting 7
Course Credit: 1

COURSE DESCRIPTION:

19.0 PREPARE ARCHITECTURAL DRAWINGS--The student will be able to.

19.02 Prepare floor plan drawings, with dimensions

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725480
Course Title: Architectural Drafting 8
Course Credit: 1

COURSE DESCRIPTION:

19.0 PREPARE ARCHITECTURAL DRAWINGS--The student will be able to.

- 19.03 Prepare foundation plan and detail drawings, with dimensions
- 19.04 Prepare roof plans

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725490
Course Title: Architectural Drafting 9
Course Credit: 1

COURSE DESCRIPTION:

- 19.0 PREPARE ARCHITECTURAL DRAWINGS--The student will be able to.
- 19.05 Prepare elevation drawings
 - 19.06 Prepare sections and details
- 20.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS--The student will be able to:
- 20.01 Produce architectural drawings
 - 20.02 Produce structural plans and detail drawings
 - 20.03 Produce civil drawings

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725491
Course Title: Architectural Drafting 10
Course Credit: 1

COURSE DESCRIPTION:

19.0 PREPARE ARCHITECTURAL DRAWINGS--The student will be able to.

- 19.07 Prepare schedules and cost estimates
- 19.08 Prepare a landscape layout

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725492
Course Title: Architectural Drafting 11
Course Credit: 1

COURSE DESCRIPTION:

21.0 PREPARE BASIC BUILDING UTILITY DRAWINGS--The student will be able to:

21.01 Prepare electrical plans and schedules.

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725493
Course Title: Architectural Drafting 12
Course Credit: 1

COURSE DESCRIPTION:

21.0 PREPARE BASIC BUILDING UTILITY DRAWINGS--The student will be able to:

21.02 Prepare HVAC plans and schedules

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725400
Course Number: 8725494
Course Title: Architectural Drafting 13
Course Credit: 1

COURSE DESCRIPTION:

21.0 PREPARE BASIC BUILDING UTILITY DRAWINGS--The student will be able to:

21.03 Prepare plumbing plans, riser diagram, and schedules

Florida Department of Education
INTENDED OUTCOMES

Program Title: **Structural Drafting**

	<u>Secondary</u>	<u>PSAV</u>
Program Numbers	8725500	I480113
CIP Number	0648.010301	0648.010301
Grade Level	9-12 30, 31	30, 31
Length	12 credits	1800 hours
SOC	17-3019	17-3019
Certification	DRAFTING @7 G	DRAFTING @7 G

Basic Skills

Math	10
Language	9
Reading	9

INTENDED OUTCOMES: After successfully completing this program, the student will be able to:

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (150 Hours)
 BLUEPRINT READER - INDUSTRY TITLE (SOC 17-3019)

- 01.0 Apply basic drafting skills.
- 02.0 Apply fundamental computer skills.
- 03.0 Prepare multi-view drawings.
- 04.0 Prepare sectional views.
- 05.0 Prepare auxiliary drawings.
- 06.0 Apply basic dimensioning.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B (450 Hours)
 DRAFTING ASSISTANT - (SOC 17-3019)

- 07.0 Prepare pictorial drawings.
- 08.0 Prepare surface developments.
- 09.0 Prepare basic architectural drawings.
- 10.0 Demonstrate an understanding of basic civil drawings.
- 11.0 Demonstrate basic electrical/electronic literacy.
- 12.0 Prepare basic computer aided drawings.
- 13.0 Demonstrate appropriate communication skills.
- 14.0 Demonstrate applied math skills.
- 15.0 Demonstrate basic science as applied to drafting.
- 16.0 Demonstrate employability skills.
- 17.0 Demonstrate an understanding of entrepreneurship.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (300 Hours)
 DRAFTER, CARTOGRAPHIC - (SOC 17-3019)

- 22.0 Prepare map drawings.
- 23.0 Prepare computer aided map details.
- 24.0 Understand surveying and mapping procedures.
- 25.0 Prepare basic civil drawings.

OCCUPATIONAL COMPLETION POINT - DATA CODE - D (600 Hours)
DRAFTER, CIVIL - (SOC 17-3019)

- 26.0 Prepare advanced architectural drawings.
- 27.0 Prepare structural details.
- 28.0 Prepare advanced map drawings.
- 29.0 Prepare advanced civil drawings.

OCCUPATIONAL COMPLETION POINT - DATA CODE - E (300 Hours)
DRAFTER, STRUCTURAL - (SOC 17-3019)

- 30.0 Prepare structural steel drawings.
- 31.0 Prepare reinforced concrete drawings.
- 32.0 Prepare structural wood drawings.
- 33.0 Prepare advanced computer aided drawings, two-dimensional and three-dimensional.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Title: Structural Drafting
Secondary Number: 8725500
Postsecondary Number: I480113

OCCUPATIONAL COMPLETION POINT - DATA CODE - A
BLUEPRINT READER - INDUSTRY TITLE

01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:

- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
- 01.02 Identify and use the various drafting media and techniques.
- 01.03 Demonstrate the use of the alphabet of lines.
- 01.04 Prepare title blocks and other drafting formats.
- 01.05 Use various freehand and other lettering techniques.
- 01.06 Prepare axonometric, oblique and perspective freehand sketches.
- 01.07 Prepare charts, graphs, and diagrams.
- 01.08 Apply geometric construction techniques.

02.0 APPLY FUNDAMENTAL COMPUTER SKILLS--The student will be able to:

- 02.01 Demonstrate care of equipment.
- 02.02 Operate a mouse, keyboard and digitizer as input devices.
- 02.03 Operate printers and plotters as output devices.
- 02.04 Demonstrate handling and operation of storage media.
- 02.05 Start and shut down a work station.
- 02.06 Adjust monitor controls for maximum comfort and usability.
- 02.07 Perform basic operating system functions.
- 02.08 Start and exit a software program as required.
- 02.09 Demonstrate file management techniques of copying and deleting.
- 02.10 Format a floppy disk.
- 02.11 Identify, create, and use directory structure and change directory paths.
- 02.12 Demonstrate file maintenance and backup procedures.
- 02.13 Save drawings to storage devices.

03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:

- 03.01 Prepare multi-view freehand sketches.
- 03.02 Select drawing scale, views and layout.
- 03.03 Prepare drawings containing horizontal, vertical and inclined surfaces.
- 03.04 Prepare drawings containing circles and/or arcs.
- 03.05 Prepare drawings incorporating removed details and conventional breaks.

04.0 PREPARE SECTIONAL VIEWS--The student will be able to:

- 04.01 Prepare drawings containing full sections and half sections.
- 05.02 Prepare drawings containing offset sections.
- 04.03 Prepare drawings containing revolved sections.

- 04.04 Prepare drawings containing removed sections and broken-out sections.
- 04.05 Prepare an assembly drawing applying material symbols.

05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:

- 05.01 Prepare drawings containing primary auxiliary views.
- 05.02 Prepare drawings containing auxiliary views that include curved lines.

06.0 APPLY BASIC DIMENSIONING--The student will be able to:

- 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
- 06.02 Prepare drawings using metric dimensions.
- 06.03 Prepare drawings using general and local notes.
- 06.04 Employ basic tolerancing techniques.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B

DRAFTING ASSISTANT - (SOC 17-3019)

07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:

- 07.01 Prepare isometric, oblique and other pictorial drawings.
- 07.02 Prepare one- and two-point perspectives.

08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:

- 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
- 08.02 Prepare developments of a transition piece.
- 08.03 Prepare drawings involving intersecting pieces.

09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:

- 09.01 Prepare site plan.
- 09.02 Prepare floor plan.
- 09.03 Prepare exterior elevations.
- 09.04 Prepare roof plan.

10.0 DEMONSTRATE AN UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:

- 10.01 Understand civil terminology.
- 10.02 Read and interpret civil drawings.
- 10.03 Prepare plan and profile drawings.
- 10.04 Develop topographic drawings.

11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:

- 11.01 Identify electrical/electronic symbols.
- 11.02 Read and interpret basic schematic diagrams.

- 12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:
- 12.01 Perform drawing set up.
 - 12.02 Construct geometric figures of lines, splines, circles, and arcs.
 - 12.03 Create and edit text using appropriate style and size to annotate drawings.
 - 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
 - 12.05 Identify, create, store and use standard part symbols and libraries.
 - 12.06 Utilize editing commands.
 - 12.07 Control entity properties by layer, color and line type.
 - 12.08 Use viewing commands to perform zooming and panning.
 - 12.09 Plot drawings on media using layout and scale.
 - 12.10 Minimize file size.
 - 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
 - 12.12 Apply standard dimensioning rules.
- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fraction, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:

- 15.01 Draw conclusions or make inferences from data.
- 15.02 Identify health-related problems, which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.

16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

- 16.01 Conduct a job search.
- 16.02 Secure information about a job.
- 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
- 16.04 Demonstrate competence in job interview techniques.
- 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
- 16.06 Identify acceptable work habits.
- 16.07 Demonstrate knowledge of how to make job changes appropriately.
- 16.08 Demonstrate acceptable employee health habits.
- 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
- 16.10 Identify or demonstrate acceptable personal grooming habits.

17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:

- 17.01 Define entrepreneurship.
- 17.02 Describe the importance of entrepreneurship to the American economy.
- 17.03 List the advantages and disadvantages of business ownership.
- 17.04 Identify the risks involved in ownership of a business.
- 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
- 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
- 17.07 Identify basic occupational licensing and insurance.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C

DRAFTER, CARTOGRAPHIC - (SOC 17-3019)

22.0 PREPARE MAP DRAWINGS--The student will be able to:

- 22.01 Prepare traverse drawings.
- 22.02 Prepare plat drawings.
- 22.03 Prepare street layout drawings.
- 22.04 Prepare map drawings.

23.0 PREPARE COMPUTER AIDED MAP DETAILS--The student will be able to:

- 23.01 Draft range, section and township map.
- 23.02 Prepare a map using bearings.
- 23.03 Prepare a map using coordinates.
- 23.04 Convert map into metric dimensions.

24.0 UNDERSTAND SURVEYING AND MAPPING PROCEDURES--The student will be able to:

- 24.01 Employ basic mapping specifications.
- 24.02 Interpret aerial photogrammetry.

- 24.03 Employ horizontal measures.
- 24.04 Employ leveling procedures.
- 24.05 Obtain angular measurements.
- 24.06 Interpret legal descriptions.

25.0 PREPARE BASIC CIVIL DRAWINGS--The student will be able to:

- 25.01 Prepare topographic drawings.
- 25.02 Prepare drainage drawings.
- 25.03 Prepare highway drawings.

OCCUPATIONAL COMPLETION POINT - DATA CODE - D

DRAFTER, CIVIL - (SOC 17-3019)

26.0 PREPARE ADVANCED ARCHITECTURAL DRAWINGS--The student will be able to:

- 26.01 Prepare floor plan drawings.
- 26.02 Prepare foundation plan drawings.
- 26.03 Prepare detailed drawings.

27.0 PREPARE STRUCTURAL DETAILS--The student will be able to:

- 27.01 Interpret structural manuals and technical tables.
- 27.02 Draw structural connections.

28.0 PREPARE ADVANCED MAP DRAWINGS--The student will be able to:

- 28.01 Prepare traverse drawings.
- 28.02 Prepare street layout drawings.
- 28.03 Prepare advanced map drawings.
- 28.04 Prepare highway drawings.
- 28.05 Prepare topographic drawings.

29.0 PREPARE ADVANCED CIVIL DRAWINGS--The student will be able to:

- 29.01 Prepare drainage drawings.
- 29.02 Prepare plat drawings.
- 29.03 Prepare advanced plan and profile drawings.
- 29.04 Prepare utility drawings.
- 29.05 Prepare a commercial site plan.

OCCUPATIONAL COMPLETION POINT - DATA CODE - E

DRAFTER, STRUCTURAL - (SOC 17-3019)

30.0 PREPARE STRUCTURAL STEEL DRAWINGS--The student will be able to:

- 30.01 Use the "Manual of Steel Construction" and other technical data.
- 30.02 Interpret codes and specifications.
- 30.03 Calculate reactions and stresses.
- 30.04 Prepare shear and moment diagrams.
- 30.05 Detail bolted connections.
- 30.06 Detail welded connections.
- 30.07 Prepare erection plans and schedules.
- 30.08 Assist in the preparation of bids.
- 30.09 Prepare advance bill for ordering materials.

31.0 PREPARE REINFORCED CONCRETE DRAWINGS--The student will be able to:

- 31.01 Use the "Manual of Standard Practice for Detailing Reinforced Concrete Structures" and other technical data.
- 31.02 Interpret codes and specifications.
- 31.03 Interpret engineering drawings.
- 31.04 Prepare column detail drawings.
- 31.05 Prepare footing and foundation drawings.
- 31.06 Prepare floor and roof detail drawings.
- 31.07 Prepare special structure detail drawings.
- 31.08 Prepare bar lists and schedules.

32.0 PREPARE STRUCTURAL WOOD DRAWINGS--The student will be able to:

- 32.01 Use the "Timber Construction Manual".
- 32.02 Interpret codes and specifications.
- 32.03 Prepare fastening and connection details.
- 32.04 Prepare framing plans.
- 32.05 Assist in the preparation of bids.
- 32.06 Prepare advance bill for ordering materials.

33.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS, TWO-DIMENSIONAL AND THREE DIMENSIONAL--The student will be able to:

- 33.01 Produce architectural drawings.
- 33.02 Produce structural (steel, wood, and reinforced concrete) drawings.
- 33.03 Produce map drawings.
- 33.04 Produce civil drawings.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725010
Course Title: Drafting 1
Course Credit: 1

COURSE DESCRIPTION:

- 01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:
- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
 - 01.02 Identify and use the various drafting media and techniques.
 - 01.03 Demonstrate the use of the alphabet of lines.
 - 01.04 Prepare title blocks and other drafting formats.
 - 01.05 Use various freehand and other lettering techniques.
 - 01.06 Prepare axonometric, oblique and perspective freehand sketches.
 - 01.07 Prepare charts, graphs, and diagrams.
 - 01.08 Apply geometric construction techniques.
- 02.0 SOLVE TECHNICAL MATHEMATICAL PROBLEMS--The student will be able to:
- 02.01 Solve arithmetic problems.
 - 02.02 Solve algebra problems.
 - 02.03 Solve right-angle trigonometric problems.
 - 02.04 Solve geometry problems.
 - 02.05 Apply multiple discipline calculations.
- 03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:
- 03.01 Prepare multi-view freehand sketches.
 - 03.02 Select proper drawing scale, views and layout.
 - 03.03 Prepare drawings containing horizontal and vertical surfaces.
 - 03.04 Prepare drawings containing circles and/or arcs.
 - 03.05 Prepare drawings incorporating removed details and conventional breaks.
- 04.0 PREPARE SECTIONAL VIEWS--The student will be able to:
- 04.01 Prepare drawings containing full sections and half sections.
 - 04.02 Prepare drawings containing offset sections.
 - 04.03 Prepare drawings containing revolved sections.
 - 04.04 Prepare drawings containing removed sections and broken-out sections.
 - 04.05 Prepare a sectional assembly drawing applying material symbols.
- 05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:
- 05.01 Prepare drawings containing primary auxiliary views.
 - 05.02 Prepare drawings containing auxiliary views that include curved lines.

06.0 APPLY BASIC DIMENSIONING--The student will be able to:

- 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
- 06.02 Prepare drawings using metric dimensions.
- 06.03 Prepare drawings using general and local notes.
- 06.04 Apply basic tolerancing techniques.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725020
Course Title: Drafting 2
Course Credit: 1

COURSE DESCRIPTION:

- 07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:
- 07.01 Prepare isometric, oblique and other pictorial drawings.
 - 07.02 Prepare one- and two-point perspectives.
- 08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:
- 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
 - 08.02 Prepare developments of a transition piece.
 - 08.03 Prepare drawings involving intersecting pieces.
- 09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:
- 09.01 Prepare site plan.
 - 09.02 Prepare floor plan.
 - 09.03 Prepare exterior elevations.
 - 09.04 Prepare roof plan.
- 10.0 DEMONSTRATE UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:
- 10.01 Understand civil terminology.
 - 10.02 Read and interpret civil drawings.
 - 10.03 Prepare plan and profile drawings.
 - 10.04 Develop topographic drawings.
- 11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:
- 11.01 Identify electrical/electronic symbols.
 - 11.02 Prepare schematic/block diagrams.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725030
Course Title: Drafting 3
Course Credit: 1

COURSE DESCRIPTION:

12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:

- 12.01 Perform drawing set up.
- 12.02 Construct geometric figures of lines, splines, circles, and arcs.
- 12.03 Create and edit text using appropriate style and size to annotate drawings.
- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
- 12.05 Identify, create, store and use standard part symbols and libraries.
- 12.06 Utilize editing commands.
- 12.07 Control entity properties by layer, color and line type.
- 12.08 Use viewing commands to perform zooming and panning.
- 12.09 Plot drawings on media using layout and scale.
- 12.10 Minimize file size.
- 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
- 12.12 Apply standard dimensioning rules.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725040
Course Title: Drafting 4
Course Credit: 1

COURSE DESCRIPTION:

- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fractions, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data.
 - 15.02 Identify health-related problems, which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
- 16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 16.01 Conduct a job search.
 - 16.02 Secure information about a job.

- 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
 - 16.04 Demonstrate competence in job interview techniques.
 - 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 16.06 Identify acceptable work habits.
 - 16.07 Demonstrate knowledge of how to make job changes appropriately.
 - 16.08 Demonstrate acceptable employee health habits.
 - 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
 - 16.10 Identify or demonstrate acceptable personal grooming habits.
- 17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 17.01 Define entrepreneurship.
 - 17.02 Describe the importance of entrepreneurship to the American economy.
 - 17.03 List the advantages and disadvantages of business ownership.
 - 17.04 Identify the risks involved in ownership of a business.
 - 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
 - 17.07 Identify basic occupational licensing and insurance.

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725550
Course Title: Structural Drafting 5
Course Credit: 1

COURSE DESCRIPTION:

22.0 PREPARE MAP DRAWINGS--The student will be able to:

- 22.01 Prepare traverse drawings.
- 22.02 Prepare plat drawings.
- 22.03 Prepare street layout drawings.
- 22.04 Prepare map drawings.

23.0 PREPARE COMPUTER AIDED MAP DETAILS--The student will be able to:

- 23.01 Draft range, section and township map.
- 23.02 Prepare a map using bearings.
- 23.03 Prepare a map using coordinates.
- 23.04 Convert map into metric dimensions.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725560
Course Title: Structural Drafting 6
Course Credit: 1

COURSE DESCRIPTION:

24.0 UNDERSTAND SURVEYING AND MAPPING PROCEDURES--The student will be able to:

- 24.01 Employ basic mapping specifications.
- 24.02 Interpret aerial photogrammetry.
- 24.03 Employ horizontal measures.
- 24.04 Employ leveling procedures.
- 24.05 Obtain angular measurements.
- 24.06 Interpret legal descriptions.

25.0 PREPARE BASIC CIVIL DRAWINGS--The student will be able to:

- 25.01 Prepare topographic drawings.
- 25.02 Prepare drainage drawings.
- 25.03 Prepare highway drawings.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725570
Course Title: Structural Drafting 7
Course Credit: 1

COURSE DESCRIPTION:

26.0 PREPARE ADVANCED ARCHITECTURAL DRAWINGS--The student will be able to:

- 26.01 Prepare floor plan drawings.
- 26.02 Prepare foundation plan drawings.
- 26.03 Prepare detailed drawings.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725580
Course Title: Structural Drafting 8
Course Credit: 1

COURSE DESCRIPTION:

27.0 PREPARE STRUCTURAL DETAILS--The student will be able to:

- 27.01 Interpret structural manuals and technical tables.
- 27.02 Draw structural connections.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725590
Course Title: Structural Drafting 9
Course Credit: 1

COURSE DESCRIPTION:

28.0 PREPARE ADVANCED MAP DRAWINGS--The student will be able to:

- 28.01 Prepare traverse drawings.
- 28.02 Prepare street layout drawings.
- 28.03 Prepare advanced map drawings.
- 28.04 Prepare highway drawings.
- 28.05 Prepare topographic drawings.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725591
Course Title: Structural Drafting 10
Course Credit: 1

COURSE DESCRIPTION:

29.0 PREPARE ADVANCED CIVIL DRAWINGS--The student will be able to:

- 29.01 Prepare drainage drawings.
- 29.02 Prepare plat drawings.
- 29.03 Prepare advanced plan and profile drawings.
- 29.04 Prepare utility drawings.
- 29.05 Prepare a commercial site plan.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725592
Course Title: Structural Drafting 11
Course Credit: 1

COURSE DESCRIPTION:

30.0 PREPARE STRUCTURAL STEEL DRAWINGS--The student will be able to:

- 30.01 Use the "Manual of Steel Construction" and other technical data.
- 30.02 Interpret codes and specifications.
- 30.03 Calculate reactions and stresses.
- 30.04 Prepare shear and moment diagrams.
- 30.05 Detail bolted connections.
- 30.06 Detail welded connections.
- 30.07 Prepare erection plans and schedules.
- 30.08 Assist in the preparation of bids.
- 30.09 Prepare advance bill for ordering materials.

31.0 PREPARE REINFORCED CONCRETE DRAWINGS--The student will be able to:

- 31.01 Use the "Manual of Standard Practice for Detailing Reinforced Concrete Structures" and other technical data.
- 31.02 Interpret codes and specifications.
- 31.03 Interpret engineering drawings.
- 31.04 Prepare column detail drawings.
- 31.05 Prepare footing and foundation drawings.
- 31.06 Prepare floor and roof detail drawings.
- 31.07 Prepare special structure detail drawings.
- 31.08 Prepare bar lists and schedules.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number: 8725500
Course Number: 8725593
Course Title: Structural Drafting 12
Course Credit: 1

COURSE DESCRIPTION:

32.0 PREPARE STRUCTURAL WOOD DRAWINGS--The student will be able to:

- 32.01 Use the "Timber Construction Manual".
- 32.02 Interpret codes and specifications.
- 32.03 Prepare fastening and connection details.
- 32.04 Prepare framing plans.
- 32.05 Assist in the preparation of bids.
- 32.06 Prepare advance bill for ordering materials.

33.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS, TWO-DIMENSIONAL AND THREE DIMENSIONAL--The student will be able to:

- 33.01 Produce architectural drawings.
- 33.02 Produce structural (steel, wood, and reinforced concrete) drawings.
- 33.03 Produce map drawings.
- 33.04 Produce civil drawings.

Florida Department of Education
INTENDED OUTCOMES

Program Title: Electrical Drafting

	<u>SECONDARY</u>	<u>PSAV</u>
Program Numbers	8725200	I480114
CIP Number	0648.010401	0648.010401
Grade Level	9-12 30, 31	30, 31
Length	8 Credits	1200 Hours
SOC	17-3012	17-3012
Certification	DRAFTING @7 G	DRAFTING @7 G

Basic Skills

Math	10
Language	9
Reading	9

INTENDED OUTCOMES: After successfully completing this program, the student will be able to:

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (150 Hours)
 BLUEPRINT READER - INDUSTRY TITLE (SOC 17-3012)

- 01.0 Apply basic drafting skills.
- 02.0 Apply fundamental computer skills.
- 03.0 Prepare multi-view drawings.
- 04.0 Prepare sectional views.
- 05.0 Prepare auxiliary drawings.
- 06.0 Apply basic dimensioning.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B (450 Hours)
 DRAFTING ASSISTANT - DOT 017.281-018 (SOC 17-3012)

- 07.0 Prepare pictorial drawings.
- 08.0 Prepare surface developments.
- 09.0 Prepare basic architectural drawings.
- 10.0 Demonstrate an understanding of basic civil drawings.
- 11.0 Demonstrate basic electrical/electronic literacy.
- 12.0 Prepare basic computer aided drawings.
- 13.0 Demonstrate appropriate communication skills.
- 14.0 Demonstrate applied math skills.
- 15.0 Demonstrate basic science as applied to drafting.
- 16.0 Demonstrate employability skills.
- 17.0 Demonstrate an understanding of entrepreneurship.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (600 Hours)
 DRAFTER, ELECTRICAL - DOT 003.281-010 (SOC 17-3012)

- 34.0 Demonstrate knowledge of electrical codes and specifications.
- 35.0 Prepare advanced electrical drawings.
- 36.0 Prepare advanced computer aided drawings

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Title: Electrical Drafting
Secondary Number: 8725200
Postsecondary Number: I480114

OCCUPATIONAL COMPLETION POINT - DATA CODE - A
BLUEPRINT READER - INDUSTRY TITLE

01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:

- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
- 01.02 Identify and use the various drafting media and techniques.
- 01.03 Demonstrate the use of the alphabet of lines.
- 01.04 Prepare title blocks and other drafting formats.
- 01.05 Use various freehand and other lettering techniques.
- 01.06 Prepare axonometric, oblique and perspective freehand sketches.
- 01.07 Prepare charts, graphs, and diagrams.
- 01.08 Apply geometric construction techniques.

02.0 APPLY FUNDAMENTAL COMPUTER SKILLS--The student will be able to:

- 02.01 Demonstrate care of equipment.
- 02.02 Operate a mouse, keyboard and digitizer as input devices.
- 02.03 Operate printers and plotters as output devices.
- 02.04 Demonstrate handling and operation of storage media.
- 02.05 Start and shut down a work station.
- 02.06 Adjust monitor controls for maximum comfort and usability.
- 02.07 Perform basic operating system functions.
- 02.08 Start and exit a software program as required.
- 02.09 Demonstrate file management techniques of copying and deleting.
- 02.10 Format a floppy disk.
- 02.11 Identify, create, and use directory structure and change directory paths.
- 02.12 Demonstrate file maintenance and backup procedures.
- 02.13 Save drawings to storage devices.

03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:

- 03.01 Prepare multi-view freehand sketches.
- 03.02 Select drawing scale, views and layout.
- 03.03 Prepare drawings containing horizontal, vertical and inclined surfaces.
- 03.04 Prepare drawings containing circles and/or arcs.
- 03.05 Prepare drawings incorporating removed details and conventional breaks.

04.0 PREPARE SECTIONAL VIEWS--The student will be able to:

- 04.01 Prepare drawings containing full sections and half sections.
- 04.02 Prepare drawings containing offset sections.
- 04.03 Prepare drawings containing revolved sections.
- 04.04 Prepare drawings containing removed sections and broken-out sections.

- 04.05 Prepare an assembly drawing applying material symbols.
- 05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:
 - 05.01 Prepare drawings containing primary auxiliary views.
 - 05.02 Prepare drawings containing auxiliary views that include curved lines.
- 06.0 APPLY BASIC DIMENSIONING--The student will be able to:
 - 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
 - 06.02 Prepare drawings using metric dimensions.
 - 06.03 Prepare drawings using general and local notes.
 - 06.04 Employ basic tolerancing techniques.
- OCCUPATIONAL COMPLETION POINT - DATA CODE - B**
DRAFTING ASSISTANT - (SOC 17-3019)
- 07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:
 - 07.01 Prepare isometric, oblique and other pictorial drawings.
 - 07.02 Prepare one- and two-point perspectives.
- 08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:
 - 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
 - 08.02 Prepare developments of a transition piece.
 - 08.03 Prepare drawings involving intersecting pieces.
- 09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:
 - 09.01 Prepare site plan.
 - 09.02 Prepare floor plan.
 - 09.03 Prepare exterior elevations.
 - 09.04 Prepare roof plan.
- 10.0 DEMONSTRATE AN UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:
 - 10.01 Understand civil terminology.
 - 10.02 Read and interpret civil drawings.
 - 10.03 Prepare plan and profile drawings.
 - 10.04 Develop topographic drawings.
- 11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:
 - 11.01 Identify electrical/electronic symbols.
 - 11.02 Read and interpret basic schematic diagrams.
- 12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:
 - 12.01 Perform drawing set up.
 - 12.02 Construct geometric figures of lines, splines, circles, and arcs.
 - 12.03 Create and edit text using appropriate style and size to annotate drawings.

- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
 - 12.05 Identify, create, store and use standard part symbols and libraries.
 - 12.06 Utilize editing commands.
 - 12.07 Control entity properties by layer, color and line type.
 - 12.08 Use viewing commands to perform zooming and panning.
 - 12.09 Plot drawings on media using layout and scale.
 - 12.10 Minimize file size.
 - 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
 - 12.12 Apply standard dimensioning rules.
- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fraction, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data.
 - 15.02 Identify health-related problems, which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
- 16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 16.01 Conduct a job search.
 - 16.02 Secure information about a job.

- 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
 - 16.04 Demonstrate competence in job interview techniques.
 - 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 16.06 Identify acceptable work habits.
 - 16.07 Demonstrate knowledge of how to make job changes appropriately.
 - 16.08 Demonstrate acceptable employee health habits.
 - 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
 - 16.10 Identify or demonstrate acceptable personal grooming habits.
- 17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 17.01 Define entrepreneurship.
 - 17.02 Describe the importance of entrepreneurship to the American economy.
 - 17.03 List the advantages and disadvantages of business ownership.
 - 17.04 Identify the risks involved in ownership of a business.
 - 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
 - 17.07 Identify basic occupational licensing and insurance.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C

DRAFTER, ELECTRICAL -(SOC 17-3019)

- 34.0 DEMONSTRATE KNOWLEDGE OF ELECTRIC CODES AND SPECIFICATIONS--The student will be able to:
- 34.01 Use National Electric Code Standards in preparing drawings.
 - 34.02 Apply state electric codes to drawing specifications.
 - 34.03 Apply local electric codes to drawing specifications.
- 35.0 PREPARE ELECTRICAL DRAWINGS--The student will be able to:
- 35.01 Apply the basic theory of electricity.
 - 35.02 Apply the basic theory of circuitry.
 - 35.03 Use electrical symbols.
 - 35.04 Prepare single-line block diagrams.
 - 35.05 Prepare a panel board schedule.
- 36.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS--The student will be able to:
- 36.01 Prepare schematic drawings.
 - 36.02 Prepare electrical drawings.
 - 36.03 Prepare electrical drawings.
 - 36.04 Prepare electromechanical drawings.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725200
Course Number: 8725010
Course Title: Drafting 1
Course Credit: 1

COURSE DESCRIPTION:

- 01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:
- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
 - 01.02 Identify and use the various drafting media and techniques.
 - 01.03 Demonstrate the use of the alphabet of lines.
 - 01.04 Prepare title blocks and other drafting formats.
 - 01.05 Use various freehand and other lettering techniques.
 - 01.06 Prepare axonometric, oblique and perspective freehand sketches.
 - 01.07 Prepare charts, graphs, and diagrams.
 - 01.08 Apply geometric construction techniques.
- 02.0 SOLVE TECHNICAL MATHEMATICAL PROBLEMS--The student will be able to:
- 02.01 Solve arithmetic problems.
 - 02.02 Solve algebra problems.
 - 02.03 Solve right-angle trigonometric problems.
 - 02.04 Solve geometry problems.
 - 02.05 Apply multiple discipline calculations.
- 03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:
- 03.01 Prepare multi-view freehand sketches.
 - 03.02 Select proper drawing scale, views and layout.
 - 03.03 Prepare drawings containing horizontal and vertical surfaces.
 - 03.04 Prepare drawings containing circles and/or arcs.
 - 03.05 Prepare drawings incorporating removed details and conventional breaks.
- 04.0 PREPARE SECTIONAL VIEWS--The student will be able to:
- 04.01 Prepare drawings containing full sections and half sections.
 - 04.02 Prepare drawings containing offset sections.
 - 04.03 Prepare drawings containing revolved sections.
 - 04.04 Prepare drawings containing removed sections and broken-out sections.
 - 04.05 Prepare a sectional assembly drawing applying material symbols.
- 05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:
- 05.01 Prepare drawings containing primary auxiliary views.
 - 05.02 Prepare drawings containing auxiliary views that include curved lines.

06.0 APPLY BASIC DIMENSIONING--The student will be able to:

- 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
- 06.02 Prepare drawings using metric dimensions.
- 06.03 Prepare drawings using general and local notes.
- 06.04 Apply basic tolerancing techniques.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725200
Course Number: 8725020
Course Title: Drafting 2
Course Credit: 1

COURSE DESCRIPTION:

- 07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:
 - 07.01 Prepare isometric, oblique and other pictorial drawings.
 - 07.02 Prepare one- and two-point perspectives.

- 08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:
 - 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
 - 08.02 Prepare developments of a transition piece.
 - 08.03 Prepare drawings involving intersecting pieces.

- 09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:
 - 09.01 Prepare site plan.
 - 09.02 Prepare floor plan.
 - 09.03 Prepare exterior elevations.
 - 09.04 Prepare roof plan.

- 10.0 DEMONSTRATE UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:
 - 10.01 Understand civil terminology.
 - 10.02 Read and interpret civil drawings.
 - 10.03 Prepare plan and profile drawings.
 - 10.04 Develop topographic drawings.

- 11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:
 - 11.01 Identify electrical/electronic symbols.
 - 11.02 Prepare schematic/block diagrams.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725200
Course Number: 8725030
Course Title: Drafting 3
Course Credit: 1

COURSE DESCRIPTION:

12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:

- 12.01 Perform drawing set up.
- 12.02 Construct geometric figures of lines, splines, circles, and arcs.
- 12.03 Create and edit text using appropriate style and size to annotate drawings.
- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
- 12.05 Identify, create, store and use standard part symbols and libraries.
- 12.06 Utilize editing commands.
- 12.07 Control entity properties by layer, color and line type.
- 12.08 Use viewing commands to perform zooming and panning.
- 12.09 Plot drawings on media using layout and scale.
- 12.10 Minimize file size.
- 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
- 12.12 Apply standard dimensioning rules.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725200
Course Number: 8725040
Course Title: Drafting 4
Course Credit: 1

COURSE DESCRIPTION:

- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fractions, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data.
 - 15.02 Identify health-related problems which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
- 16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 16.01 Conduct a job search.
 - 16.02 Secure information about a job.

- 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
 - 16.04 Demonstrate competence in job interview techniques.
 - 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 16.06 Identify acceptable work habits.
 - 16.07 Demonstrate knowledge of how to make job changes appropriately.
 - 16.08 Demonstrate acceptable employee health habits.
 - 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
 - 16.10 Identify or demonstrate acceptable personal grooming habits.
- 17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 17.01 Define entrepreneurship.
 - 17.02 Describe the importance of entrepreneurship to the American economy.
 - 17.03 List the advantages and disadvantages of business ownership.
 - 17.04 Identify the risks involved in ownership of a business.
 - 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
 - 17.07 Identify basic occupational licensing and insurance.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725200
Course Number: 8725210
Course Title: Electrical Drafting 5
Course Credit: 1

COURSE DESCRIPTION:

34.0 DEMONSTRATE KNOWLEDGE OF ELECTRONIC CODES AND SPECIFICATIONS--The student will be able to:

- 34.01 Use National Electric Code Standards in preparing drawings.
- 34.02 Apply state electric codes to drawing specifications.
- 34.03 Apply local electric codes to drawing specifications.

July 2007

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725200
Course Number: 8725220
Course Title: Electrical Drafting 6
Course Credit: 1

COURSE DESCRIPTION:

35.0 PREPARE ELECTRICAL DRAWINGS--The student will be able to:

- 35.01 Apply the basic theory of electricity.
- 35.02 Apply the basic theory of circuitry.
- 35.03 Use electrical symbols.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725200
Course Number: 8725230
Course Title: Electrical Drafting 7
Course Credit: 1

COURSE DESCRIPTION:

35.0 PREPARE ELECTRICAL DRAWINGS--The student will be able to:

- 35.04 Prepare single-line block diagrams.
- 35.05 Prepare a panel board schedule.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725200
Course Number: 8725240
Course Title: Electrical Drafting 8
Course Credit: 1

COURSE DESCRIPTION:

36.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS--The student will be able to:

- 36.01 Prepare schematic drawings.
- 36.02 Prepare electrical drawings.
- 36.03 Prepare electrical drawings.
- 36.04 Prepare electromechanical drawings.

Florida Department of Education
INTENDED OUTCOMES

Program Title: Electronic Drafting

	<u>SECONDARY</u>	<u>PSAV</u>
Program Numbers	8725100	I480115
CIP Number	0648.010402	0648.010402
Grade Level	9-12 30, 31	30, 31
Length	8 Credits	1200 Hours
SOC	17-3012	17-3012
Certification	DRAFTING @7 G	DRAFTING @7 G
Basic Skills		
Math	10	
Language	9	
Reading	9	

INTENDED OUTCOMES: After successfully completing this program, the student will be able to:

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (150 Hours)
 BLUEPRINT READER - INDUSTRY TITLE (SOC 17-3012)

- 01.0 Apply basic drafting skills.
- 02.0 Apply fundamental computer skills.
- 03.0 Prepare multi-view drawings.
- 04.0 Prepare sectional views.
- 05.0 Prepare auxiliary drawings.
- 06.0 Apply basic dimensioning.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B (450 Hours)
 DRAFTING ASSISTANT - (SOC 17-3012)

- 07.0 Prepare pictorial drawings.
- 08.0 Prepare surface developments.
- 09.0 Prepare basic architectural drawings.
- 10.0 Demonstrate an understanding of basic civil drawings.
- 11.0 Demonstrate basic electrical/electronic literacy.
- 12.0 Prepare basic computer aided drawings.
- 13.0 Demonstrate appropriate communication skills.
- 14.0 Demonstrate applied math skills.
- 15.0 Demonstrate basic science as applied to drafting.
- 16.0 Demonstrate employability skills.
- 17.0 Demonstrate an understanding of entrepreneurship.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (600 Hours)
 DRAFTER, ELECTRONIC - SOC 17-3012)

- 37.0 Demonstrate knowledge of electronic codes and specifications.
- 38.0 Prepare advanced electronic drawings.
- 39.0 Prepare advanced computer aided drawings.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Title: Electronic Drafting
Secondary Number: 8725100
Postsecondary Number: I480115

OCCUPATIONAL COMPLETION POINT - DATA CODE - A
BLUEPRINT READER - INDUSTRY TITLE

01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:

- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
- 01.02 Identify and use the various drafting media and techniques.
- 01.03 Demonstrate the use of the alphabet of lines.
- 01.04 Prepare title blocks and other drafting formats.
- 01.05 Use various freehand and other lettering techniques.
- 01.06 Prepare axonometric, oblique and perspective freehand sketches.
- 01.07 Prepare charts, graphs, and diagrams.
- 01.08 Apply geometric construction techniques.

02.0 APPLY FUNDAMENTAL COMPUTER SKILLS--The student will be able to:

- 02.01 Demonstrate care of equipment.
- 02.02 Operate a mouse, keyboard and digitizer as input devices.
- 02.03 Operate printers and plotters as output devices.
- 02.04 Demonstrate handling and operation of storage media.
- 02.05 Start and shut down a work station.
- 02.06 Adjust monitor controls for maximum comfort and usability.
- 02.07 Perform basic operating system functions.
- 02.08 Start and exit a software program as required.
- 02.09 Demonstrate file management techniques of copying and deleting.
- 02.10 Format a floppy disk.
- 02.11 Identify, create, and use directory structure and change directory paths.
- 02.12 Demonstrate file maintenance and backup procedures.
- 02.13 Save drawings to storage devices.

03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:

- 03.01 Prepare multi-view freehand sketches.
- 03.02 Select drawing scale, views and layout.
- 03.03 Prepare drawings containing horizontal, vertical and inclined surfaces.
- 03.04 Prepare drawings containing circles and/or arcs.
- 03.05 Prepare drawings incorporating removed details and conventional breaks.

04.0 PREPARE SECTIONAL VIEWS--The student will be able to:

- 04.01 Prepare drawings containing full sections and half sections.
- 04.02 Prepare drawings containing offset sections.
- 04.03 Prepare drawings containing revolved sections.

- 04.04 Prepare drawings containing removed sections and broken-out sections.
- 04.05 Prepare an assembly drawing applying material symbols.
- 05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:
 - 05.01 Prepare drawings containing primary auxiliary views.
 - 05.02 Prepare drawings containing auxiliary views that include curved lines.
- 06.0 APPLY BASIC DIMENSIONING--The student will be able to:
 - 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
 - 06.02 Prepare drawings using metric dimensions.
 - 06.03 Prepare drawings using general and local notes.
 - 06.04 Employ basic tolerancing techniques.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B
DRAFTING ASSISTANT - (SOC 17-3012)

- 07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:
 - 07.01 Prepare isometric, oblique and other pictorial drawings.
 - 07.02 Prepare one- and two-point perspectives.
- 08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:
 - 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
 - 08.02 Prepare developments of a transition piece.
 - 08.03 Prepare drawings involving intersecting pieces.
- 09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:
 - 09.01 Prepare site plan.
 - 09.02 Prepare floor plan.
 - 09.03 Prepare exterior elevations.
 - 09.04 Prepare roof plan.
- 10.0 DEMONSTRATE AN UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:
 - 10.01 Understand civil terminology.
 - 10.02 Read and interpret civil drawings.
 - 10.03 Prepare plan and profile drawings.
 - 10.04 Develop topographic drawings.
- 11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:
 - 11.01 Identify electrical/electronic symbols.
 - 11.02 Read and interpret basic schematic diagrams.
- 12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:
 - 12.01 Perform drawing set up.
 - 12.02 Construct geometric figures of lines, splines, circles, and arcs.

- 12.03 Create and edit text using appropriate style and size to annotate drawings.
 - 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
 - 12.05 Identify, create, store and use standard part symbols and libraries.
 - 12.06 Utilize editing commands.
 - 12.07 Control entity properties by layer, color and line type.
 - 12.08 Use viewing commands to perform zooming and panning.
 - 12.09 Plot drawings on media using layout and scale.
 - 12.10 Minimize file size.
 - 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
 - 12.12 Apply standard dimensioning rules.
- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fraction, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data.
 - 15.02 Identify health-related problems, which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
- 16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

- 16.01 Conduct a job search.
 - 16.02 Secure information about a job.
 - 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
 - 16.04 Demonstrate competence in job interview techniques.
 - 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 16.06 Identify acceptable work habits.
 - 16.07 Demonstrate knowledge of how to make job changes appropriately.
 - 16.08 Demonstrate acceptable employee health habits.
 - 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
 - 16.10 Identify or demonstrate acceptable personal grooming habits.
- 17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 17.01 Define entrepreneurship.
 - 17.02 Describe the importance of entrepreneurship to the American economy.
 - 17.03 List the advantages and disadvantages of business ownership.
 - 17.04 Identify the risks involved in ownership of a business.
 - 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
 - 17.07 Identify basic occupational licensing and insurance.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C
DRAFTER, ELECTRONIC -(SOC 17-3012)

- 37.0 DEMONSTRATE KNOWLEDGE OF ELECTRONIC CODES AND SPECIFICATIONS--The student will be able to:
- 37.01 Use National Electronic Code Standards in preparing drawings.
 - 37.02 Apply state electric codes to drawing specifications.
 - 37.03 Apply local electric codes to drawing specifications.
- 38.0 PREPARE ADVANCED ELECTRONIC DRAWINGS--The student will be able to:
- 38.01 Identify electronic device symbols.
 - 38.02 Prepare schematic drawings.
 - 38.03 Prepare printed circuit board drawings.
 - 38.04 Prepare package drawings.
 - 38.05 Prepare connection drawings.
 - 38.06 Prepare interconnection drawings.
 - 38.07 Prepare wiring lists.
 - 38.08 Prepare cable drawings.
 - 38.09 Prepare harness drawings.
 - 38.10 Prepare component drawings.
 - 38.11 Prepare logic diagrams.
 - 38.12 Design an electromechanical unit.
- 39.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS--The student will be able to:
- 39.01 Prepare schematic drawings.

- 39.02 Prepare electrical drawings.
- 39.03 Prepare electrical drawings.
- 39.04 Prepare electromechanical drawings.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725100
Course Number: 8725010
Course Title: Drafting 1
Course Credit: 1

COURSE DESCRIPTION:

- 01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:
 - 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
 - 01.02 Identify and use the various drafting media and techniques.
 - 01.03 Demonstrate the use of the alphabet of lines.
 - 01.04 Prepare title blocks and other drafting formats.
 - 01.05 Use various freehand and other lettering techniques.
 - 01.06 Prepare axonometric, oblique and perspective freehand sketches.
 - 01.07 Prepare charts, graphs, and diagrams.
 - 01.08 Apply geometric construction techniques.

- 02.0 SOLVE TECHNICAL MATHEMATICAL PROBLEMS--The student will be able to:
 - 02.01 Solve arithmetic problems.
 - 02.02 Solve algebra problems.
 - 02.03 Solve right-angle trigonometric problems.
 - 02.04 Solve geometry problems.
 - 02.05 Apply multiple discipline calculations.

- 03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:
 - 03.01 Prepare multi-view freehand sketches.
 - 03.02 Select proper drawing scale, views and layout.
 - 03.03 Prepare drawings containing horizontal and vertical surfaces.
 - 03.04 Prepare drawings containing circles and/or arcs.
 - 03.05 Prepare drawings incorporating removed details and conventional breaks.

- 04.0 PREPARE SECTIONAL VIEWS--The student will be able to:
 - 04.01 Prepare drawings containing full sections and half sections.
 - 04.02 Prepare drawings containing offset sections.
 - 04.03 Prepare drawings containing revolved sections.
 - 04.04 Prepare drawings containing removed sections and broken-out sections.
 - 04.05 Prepare a sectional assembly drawing applying material symbols.

- 05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:
 - 05.01 Prepare drawings containing primary auxiliary views.
 - 05.02 Prepare drawings containing auxiliary views that include curved lines.

06.0 APPLY BASIC DIMENSIONING--The student will be able to:

- 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
- 06.02 Prepare drawings using metric dimensions.
- 06.03 Prepare drawings using general and local notes.
- 06.04 Apply basic tolerancing techniques.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725100
Course Number: 8725020
Course Title: Drafting 2
Course Credit: 1

COURSE DESCRIPTION:

- 07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:
- 07.01 Prepare isometric, oblique and other pictorial drawings.
 - 07.02 Prepare one- and two-point perspectives.
- 08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:
- 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
 - 08.02 Prepare developments of a transition piece.
 - 08.03 Prepare drawings involving intersecting pieces.
- 09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:
- 09.01 Prepare site plan.
 - 09.02 Prepare floor plan.
 - 09.03 Prepare exterior elevations.
 - 09.04 Prepare roof plan.
- 10.0 DEMONSTRATE UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:
- 10.01 Understand civil terminology.
 - 10.02 Read and interpret civil drawings.
 - 10.03 Prepare plan and profile drawings.
 - 10.04 Develop topographic drawings.
- 11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:
- 11.01 Identify electrical/electronic symbols.
 - 11.02 Prepare schematic/block diagrams.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725100
Course Number: 8725030
Course Title: Drafting 3
Course Credit: 1

COURSE DESCRIPTION:

12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:

- 12.01 Perform drawing set up.
- 12.02 Construct geometric figures of lines, splines, circles, and arcs.
- 12.03 Create and edit text using appropriate style and size to annotate drawings.
- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
- 12.05 Identify, create, store and use standard part symbols and libraries.
- 12.06 Utilize editing commands.
- 12.07 Control entity properties by layer, color and line type.
- 12.08 Use viewing commands to perform zooming and panning.
- 12.09 Plot drawings on media using layout and scale.
- 12.10 Minimize file size.
- 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
- 12.12 Apply standard dimensioning rules.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725100
Course Number: 8725040
Course Title: Drafting 4
Course Credit: 1

COURSE DESCRIPTION:

- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fractions, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data.
 - 15.02 Identify health-related problems, which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
- 16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 16.01 Conduct a job search.
 - 16.02 Secure information about a job.

- 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
 - 16.04 Demonstrate competence in job interview techniques.
 - 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 16.06 Identify acceptable work habits.
 - 16.07 Demonstrate knowledge of how to make job changes appropriately.
 - 16.08 Demonstrate acceptable employee health habits.
 - 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
 - 16.10 Identify or demonstrate acceptable personal grooming habits.
- 17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 17.01 Define entrepreneurship.
 - 17.02 Describe the importance of entrepreneurship to the American economy.
 - 17.03 List the advantages and disadvantages of business ownership.
 - 17.04 Identify the risks involved in ownership of a business.
 - 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
 - 17.07 Identify basic occupational licensing and insurance.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725100
Course Number: 8725110
Course Title: Electronic Drafting 5
Course Credit: 1

37.0 DEMONSTRATE KNOWLEDGE OF ELECTRONIC CODES AND SPECIFICATIONS--The student will be able to:

- 37.01 Use National Electric Code Standards in preparing drawings.
- 37.02 Apply state electric codes to drawing specifications.
- 37.03 Apply local electric codes to drawing specifications.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725100
Course Number: 8725120
Course Title: Electronic Drafting 6
Course Credit: 1

38.0 PREPARE ADVANCED ELECTRONIC DRAWINGS--The student will be able to:

- 38.01 Identify electronic device symbols.
- 38.02 Prepare schematic drawings.
- 38.03 Prepare printed circuit board drawings.
- 38.04 Prepare package drawings.
- 38.05 Prepare connection drawings.
- 38.06 Prepare interconnection drawings.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725100
Course Number: 8725130
Course Title: Electronic Drafting 7
Course Credit: 1

38.0 PREPARE ADVANCED ELECTRONIC DRAWINGS--The student will be able to:

- 38.07 Prepare wiring lists.
- 38.08 Prepare cable drawings.
- 38.09 Prepare harness drawings.
- 38.10 Prepare component drawings.
- 38.11 Prepare logic diagrams.
- 38.12 Design an electromechanical unit.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725100
Course Number: 8725140
Course Title: Electronic Drafting 8
Course Credit: 1

39.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS--The student will be able to:

- 39.01 Prepare schematic drawings.
- 39.02 Prepare electrical drawings.
- 39.03 Prepare electrical drawings.
- 39.04 Prepare electromechanical drawings

Florida Department of Education
INTENDED OUTCOMES

Program Title: Mechanical Drafting

	<u>SECONDARY</u>	<u>PSAV</u>
Program Numbers	8725300	I480116
CIP Number	0648.010501	0648.010501
Grade Level	9-12 30, 31	30, 31
Length	13 Credits	1900 Hours
SOC	17-3013	17-3013
Certification	DRAFTING @7 G	DRAFTING @7 G

Basic Skills

Math	10
Language	9
Reading	9

INTENDED OUTCOMES:

After successfully completing this program, the student will be able to:

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (150 Hours)
 BLUEPRINT READER - INDUSTRY TITLE (SOC 17-3013)

- 01.0 Apply basic drafting skills.
- 02.0 Apply fundamental computer skills.
- 03.0 Prepare multi-view drawings.
- 04.0 Prepare sectional views.
- 05.0 Prepare auxiliary drawings.
- 06.0 Apply basic dimensioning.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B (450 Hours)
 DRAFTING ASSISTANT - (SOC 17-3013)

- 07.0 Prepare pictorial drawings.
- 08.0 Prepare surface developments.
- 09.0 Prepare basic architectural drawings.
- 10.0 Demonstrate an understanding of basic civil drawings.
- 11.0 Demonstrate basic electrical/electronic literacy.
- 12.0 Prepare basic computer aided drawings.
- 13.0 Demonstrate appropriate communication skills.
- 14.0 Demonstrate applied math skills.
- 15.0 Demonstrate basic science as applied to drafting.
- 16.0 Demonstrate employability skills.
- 17.0 Demonstrate an understanding of entrepreneurship.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (200 Hours)
 DRAFTING DETAILER (SOC 17-3013)

- 42.0 Prepare basic pneumatic/hydraulic drawings.

OCCUPATIONAL COMPLETION POINT - DATA CODE - D (500 Hours)
 CAD TECHNICIAN DRAFTING (SOC 17-3013)

- 44.0 Employ advanced computer aided drafting functions.

OCCUPATIONAL COMPLETION POINT - DATA CODE - E (600 Hours)
MECHANICAL DRAFTING (SOC 17-3013)

- 40.0 Prepare advanced mechanical drawings.
- 41.0 Prepare production drawings.
- 43.0 Prepare tool drawings.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Title: Mechanical Drafting
Secondary Number: 8725300
Postsecondary Number: I480116

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (150 Hours)
BLUEPRINT READER - INDUSTRY TITLE

01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:

- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
- 01.02 Identify and use the various drafting media and techniques.
- 01.03 Demonstrate the use of the alphabet of lines.
- 01.04 Prepare title blocks and other drafting formats.
- 01.05 Use various freehand and other lettering techniques.
- 01.06 Prepare axonometric, oblique and perspective freehand sketches.
- 01.07 Prepare charts, graphs, and diagrams.
- 01.08 Apply geometric construction techniques.

02.0 APPLY FUNDAMENTAL COMPUTER SKILLS--The student will be able to:

- 02.01 Demonstrate care of equipment.
- 02.02 Operate a mouse, keyboard and digitizer as input devices.
- 02.03 Operate printers and plotters as output devices.
- 02.04 Demonstrate handling and operation of storage media.
- 02.05 Start and shut down a work station.
- 02.06 Adjust monitor controls for maximum comfort and usability.
- 02.07 Perform basic operating system functions.
- 02.08 Start and exit a software program as required.
- 02.09 Demonstrate file management techniques of copying and deleting.
- 02.10 Format a floppy disk.
- 02.11 Identify, create, and use directory structure and change directory paths.
- 02.12 Demonstrate file maintenance and backup procedures.
- 02.13 Save drawings to storage devices.

03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:

- 03.01 Prepare multi-view freehand sketches.
- 03.02 Select drawing scale, views and layout.
- 03.03 Prepare drawings containing horizontal, vertical and inclined surfaces.
- 03.04 Prepare drawings containing circles and/or arcs.
- 03.05 Prepare drawings incorporating removed details and conventional breaks.

04.0 PREPARE SECTIONAL VIEWS--The student will be able to:

- 04.01 Prepare drawings containing full sections and half sections.
- 04.02 Prepare drawings containing offset sections.
- 04.03 Prepare drawings containing revolved sections.
- 04.04 Prepare drawings containing removed sections and broken-out sections.

- 04.05 Prepare an assembly drawing applying material symbols.
- 05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:
 - 05.01 Prepare drawings containing primary auxiliary views.
 - 05.02 Prepare drawings containing auxiliary views that include curved lines.
- 06.0 APPLY BASIC DIMENSIONING--The student will be able to:
 - 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
 - 06.02 Prepare drawings using metric dimensions.
 - 06.03 Prepare drawings using general and local notes.
 - 06.04 Employ basic tolerancing techniques.
- OCCUPATIONAL COMPLETION POINT - DATA CODE - B (450 Hours)**
DRAFTING ASSISTANT - (SOC 17-3013)
- 07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:
 - 07.01 Prepare isometric, oblique and other pictorial drawings.
 - 07.02 Prepare one- and two-point perspectives.
- 08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:
 - 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
 - 08.02 Prepare developments of a transition piece.
 - 08.03 Prepare drawings involving intersecting pieces.
- 09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:
 - 09.01 Prepare site plan.
 - 09.02 Prepare floor plan.
 - 09.03 Prepare exterior elevations.
 - 09.04 Prepare roof plan.
- 10.0 DEMONSTRATE AN UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:
 - 10.01 Understand civil terminology.
 - 10.02 Read and interpret civil drawings.
 - 10.03 Prepare plan and profile drawings.
 - 10.04 Develop topographic drawings.
- 11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:
 - 11.01 Identify electrical/electronic symbols.
 - 11.02 Read and interpret basic schematic diagrams.
- 12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:
 - 12.01 Perform drawing set up.
 - 12.02 Construct geometric figures of lines, splines, circles, and arcs.
 - 12.03 Create and edit text using appropriate style and size to annotate drawings.

- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
 - 12.05 Identify, create, store and use standard part symbols and libraries.
 - 12.06 Utilize editing commands.
 - 12.07 Control entity properties by layer, color and line type.
 - 12.08 Use viewing commands to perform zooming and panning.
 - 12.09 Plot drawings on media using layout and scale.
 - 12.10 Minimize file size.
 - 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
 - 12.12 Apply standard dimensioning rules.
- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fraction, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data.
 - 15.02 Identify health-related problems, which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
- 16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 16.01 Conduct a job search.

- 16.02 Secure information about a job.
 - 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
 - 16.04 Demonstrate competence in job interview techniques.
 - 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 16.06 Identify acceptable work habits.
 - 16.07 Demonstrate knowledge of how to make job changes appropriately.
 - 16.08 Demonstrate acceptable employee health habits.
 - 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
 - 16.10 Identify or demonstrate acceptable personal grooming habits.
- 17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 17.01 Define entrepreneurship.
 - 17.02 Describe the importance of entrepreneurship to the American economy.
 - 17.03 List the advantages and disadvantages of business ownership.
 - 17.04 Identify the risks involved in ownership of a business.
 - 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
 - 17.07 Identify basic occupational licensing and insurance.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (200 Hours)
DRAFTING DETAILER

- 42.0 PREPARE PNEUMATIC/HYDRAULIC DRAWINGS--The student will be able to.
- 42.01 Prepare piping drawings.
 - 42.02 Prepare pictorial drawings.
 - 42.03 Prepare sectional drawings.
 - 42.04 Prepare diagrams.

OCCUPATIONAL COMPLETION POINT - DATA CODE - D (500 Hours)
CAD TECHNICIAN DRAFTING - (SOC 17-3013)

- 44.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS--The student will be able to.
- 44.01 Prepare advanced mechanical drawings.
 - 44.02 Prepare production drawings.
 - 44.03 Prepare tool drawings.
 - 44.04 Prepare pneumatic/hydraulic drawings.

OCCUPATIONAL COMPLETION POINT - DATA CODE - E (600 Hours)
MECHANICAL DRAFTING - SOC 17-3013)

- 40.0 PREPARE ADVANCED MECHANICAL DRAWINGS--The student will be able to.
- 40.01 Resolve problems by descriptive geometry and revolutions.
 - 40.02 Prepare advance surface drawings.
 - 40.03 Identify the various manufacturing methods.
 - 40.04 Use precision dimensioning to include geometric characters.
 - 40.05 Make engineering changes on drawings.

- 40.06 Prepare fastener drawings.
- 40.07 Prepare cam calculations and drawings.
- 40.08 Prepare gear calculations.
- 40.09 Prepare spring calculations and drawings.

41.0 PREPARE PRODUCTION DRAWINGS--The student will be able to.

- 41.01 Make a design layout drawing.
- 41.02 Make detail drawings.
- 41.03 Make pattern shop detail drawings.
- 41.04 Make casting drawings.
- 41.05 Make forging detail drawings.
- 41.06 Make machining detail drawings.
- 41.07 Make stamping drawings.
- 41.08 Make welding drawings.
- 41.09 Make assembly drawings.
- 41.10 Prepare installation drawings.

43.0 PREPARE TOOL DRAWINGS--The student will be able to.

- 43.01 Design jigs and fixtures.
- 43.02 Design cutting dies.
- 43.03 Design forming dies.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725010
Course Title: Drafting 1
Course Credit: 1

COURSE DESCRIPTION:

01.0 APPLY BASIC DRAFTING SKILLS--The student will be able to:

- 01.01 Use drafting equipment, measuring scales, drafting instruments and reproduction equipment.
- 01.02 Identify and use the various drafting media and techniques.
- 01.03 Demonstrate the use of the alphabet of lines.
- 01.04 Prepare title blocks and other drafting formats.
- 01.05 Use various freehand and other lettering techniques.
- 01.06 Prepare axonometric, oblique and perspective freehand sketches.
- 01.07 Prepare charts, graphs, and diagrams.
- 01.08 Apply geometric construction techniques.

02.0 SOLVE TECHNICAL MATHEMATICAL PROBLEMS--The student will be able to:

- 02.01 Solve arithmetic problems.
- 02.02 Solve algebra problems.
- 02.03 Solve right-angle trigonometric problems.
- 02.04 Solve geometry problems.
- 02.05 Apply multiple discipline calculations.

03.0 PREPARE MULTI-VIEW DRAWINGS--The student will be able to:

- 03.01 Prepare multi-view freehand sketches.
- 03.02 Select proper drawing scale, views and layout.
- 03.03 Prepare drawings containing horizontal and vertical surfaces.
- 03.04 Prepare drawings containing circles and/or arcs.
- 03.05 Prepare drawings incorporating removed details and conventional breaks.

04.0 PREPARE SECTIONAL VIEWS--The student will be able to:

- 04.01 Prepare drawings containing full sections and half sections.
- 04.02 Prepare drawings containing offset sections.
- 04.03 Prepare drawings containing revolved sections.
- 04.04 Prepare drawings containing removed sections and broken-out sections.
- 04.05 Prepare a sectional assembly drawing applying material symbols.

05.0 PREPARE AUXILIARY DRAWINGS--The student will be able to:

- 05.01 Prepare drawings containing primary auxiliary views.
- 05.02 Prepare drawings containing auxiliary views that include curved lines.

06.0 APPLY BASIC DIMENSIONING--The student will be able to:

- 06.01 Prepare drawings containing linear, angular, and circular standard dimensions.
- 06.02 Prepare drawings using metric dimensions.
- 06.03 Prepare drawings using general and local notes.
- 06.04 Apply basic tolerancing techniques.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725020
Course Title: Drafting 2
Course Credit: 1

COURSE DESCRIPTION:

- 07.0 PREPARE PICTORIAL DRAWINGS--The student will be able to:
- 07.01 Prepare isometric, oblique and other pictorial drawings.
 - 07.02 Prepare one- and two-point perspectives.
- 08.0 PREPARE SURFACE DEVELOPMENTS--The student will be able to:
- 08.01 Prepare developments of prisms, cylinders, cones and pyramids.
 - 08.02 Prepare developments of a transition piece.
 - 08.03 Prepare drawings involving intersecting pieces.
- 09.0 PREPARE BASIC ARCHITECTURAL DRAWINGS--The student will be able to:
- 09.01 Prepare site plan.
 - 09.02 Prepare floor plan.
 - 09.03 Prepare exterior elevations.
 - 09.04 Prepare roof plan.
- 10.0 DEMONSTRATE AN UNDERSTANDING OF BASIC CIVIL DRAWINGS--The student will be able to:
- 10.01 Understand civil terminology.
 - 10.02 Read and interpret civil drawings.
 - 10.03 Prepare plan and profile drawings.
 - 10.04 Develop topographic drawings.
- 11.0 DEMONSTRATE ELECTRICAL/ELECTRONIC LITERACY--The student will be able to:
- 11.01 Identify electrical/electronic symbols.
 - 11.02 Prepare schematic/block diagrams.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725030
Course Title: Drafting 3
Course Credit: 1

COURSE DESCRIPTION:

12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:

- 12.01 Perform drawing set up.
- 12.02 Construct geometric figures of lines, splines, circles, and arcs.
- 12.03 Create and edit text using appropriate style and size to annotate drawings.
- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
- 12.05 Identify, create, store and use standard part symbols and libraries.
- 12.06 Utilize editing commands.
- 12.07 Control entity properties by layer, color and line type.
- 12.08 Use viewing commands to perform zooming and panning.
- 12.09 Plot drawings on media using layout and scale.
- 12.10 Minimize file size.
- 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
- 12.12 Apply standard dimensioning rules.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725040
Course Title: Drafting 4
Course Credit: 1

COURSE DESCRIPTION:

- 13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 13.02 Read written and follow oral instructions.
 - 13.03 Answer and ask questions coherently and concisely.
 - 13.04 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 13.05 Demonstrate appropriate telephone/communication skills.
 - 13.06 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 14.0 DEMONSTRATE APPLIED MATH SKILLS--The student will be able to:
- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.
 - 14.06 Solve arithmetic problems.
 - 14.07 Solve algebra problems.
 - 14.08 Solve right-angle trigonometric problems.
 - 14.09 Solve geometry problems.
 - 14.10 Employ multiple discipline calculations and conversion tables using fractions, decimals and metric measurements.
- 15.0 DEMONSTRATE BASIC SCIENCE AS APPLIED TO DRAFTING--The student will be able to:
- 15.01 Draw conclusions or make inferences from data.
 - 15.02 Identify health-related problems, which may result from exposure to work related chemicals and hazardous materials, and know the proper precautions required for handling such materials.
- 16.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 16.01 Conduct a job search.
 - 16.02 Secure information about a job.

- 16.03 Prepare documents, which may be required when applying for a job interview including a resume, portfolio and job application form.
 - 16.04 Demonstrate competence in job interview techniques.
 - 16.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
 - 16.06 Identify acceptable work habits.
 - 16.07 Demonstrate knowledge of how to make job changes appropriately.
 - 16.08 Demonstrate acceptable employee health habits.
 - 16.09 Demonstrate knowledge of the "Right-To-Know Law" as recorded in (29 CFR-1910.1200).
 - 16.10 Identify or demonstrate acceptable personal grooming habits.
- 17.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 17.01 Define entrepreneurship.
 - 17.02 Describe the importance of entrepreneurship to the American economy.
 - 17.03 List the advantages and disadvantages of business ownership.
 - 17.04 Identify the risks involved in ownership of a business.
 - 17.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 17.06 Identify the business skills needed to operate a small business efficiently and effectively.
 - 17.07 Identify basic occupational licensing and insurance.

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725310
Course Title: Mechanical Drafting 5
Course Credit: 1

42.0 PREPARE PNEUMATIC/HYDRAULIC DRAWINGS--The student will be able to.

- 42.01 Prepare piping drawings. (LA.B.2.4.1), (LA.B.2.4),
(MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.A.5.4),
(MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.ALL),
(MA.E.ALL), (MA.D.2.4),
- 42.02 Prepare pictorial drawings. (MA.C.2.4), (MA.C.3.4),
(MA.B.2.4), (MA.C.1.4)

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725320
Course Title: Mechanical Drafting 6
Course Credit: 1

12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:

- 12.01 Perform drawing set up. (MA.B.4.4), (SC.H.3.4)
- 12.02 Construct geometric figures of lines, splines, circles, and arcs. (MA.C.1.4)
- 12.03 Create and edit text using appropriate style and size to annotate drawings. (LA.A.1.4), (LA.A.2.4), (LA.B.1.4.3)
- 12.04 Use and control accuracy enhancement tools for entity positioning methods such as snap and XYZ.
- 12.05 Identify, create, store and use standard part symbols and libraries.
- 12.06 Utilize editing commands.

42.0 PREPARE PNEUMATIC/HYDRAULIC DRAWINGS--The student will be able to.

- 42.03 Prepare sectional drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.B.4.4), (MA.C.2.4), (MA.C.3.4), (MA.D.1.4), (MA.D.2.4.)
- 42.04 Prepare diagrams. (MA.A.1.4), (MA.A.2.4), (MA.B.4.4), (MA.C.2.4), (MA.C.3.4), (MA.D.1.4), (MA.D.2.4.)

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725330
Course Title: Mechanical Drafting 7
Course Credit: 1

12.0 PERFORM BASIC COMPUTER AIDED DRAFTING FUNCTIONS--The student will be able to:

- 12.07 Control entity properties by layer, color and line type.
- 12.08 Use viewing commands to perform zooming and panning.
- 12.09 Plot drawings on media using layout and scale.
- 12.10 Minimize file size.
- 12.11 Use query commands to interrogate database for entity characteristics, distance, area and status.
- 12.12 Apply standard dimensioning rules. (LA.A.1.4.3), (MA.A.5.4)

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725340
Course Title: Mechanical Drafting 8
Course Credit: 1

44.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS--The student will be able to:

- 44.01 Prepare advanced mechanical drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.5.4), (MA.A.4.4), (MA.B.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4), (MA.E.2.4)
- 44.02 Prepare production drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.5.4), (MA.A.4.4), (MA.B.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4), (MA.E.2.4)

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725350
Course Title: Mechanical Drafting 9
Course Credit: 1

44.0 PREPARE ADVANCED COMPUTER AIDED DRAWINGS--The student will be able to:

- 44.03 Prepare tool drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.5.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4), (MA.E.2.4)
- 44.04 Prepare pneumatic/hydraulic drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.5.4), (MA.A.4.4), (MA.B.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4), (MA.E.2.4)

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725360
Course Title: Mechanical Drafting 10
Course Credit: 1

40.0 PREPARE ADVANCED MECHANICAL DRAWINGS--The student will be able to.

- 40.01 Resolve problems by descriptive geometry and revolutions.
(MA.C.1.4), (MA.C.3.4)
- 40.02 Prepare advance surface drawings. (LA.B.1.4.3), (MA.A.1.4),
(MA.A.2.4), (MA.A.3.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4),
(MA.E.1.4)
- 40.03 Identify the various manufacturing methods. (LA.A.2.4.1),
(LA.B.1.4.3)
- 40.04 Use precision dimensioning to include geometric characters.
(LA.B.1.4.3), (MA.B.4.4)
- 40.05 Make engineering changes on drawings. (LA.B.1.4.3),
(MA.B.1.4), (MA.A.3.4)
- 40.06 Prepare fastener drawings. (LA.B.1.4.3), (MA.A.1.4),
(MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.A.5.4), (MA.B.2.4),
(MA.B.3.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4),
(MA.C.3.4), (MA.D.1.4), (MA.D.2.4), (MA.E.1.4.1)

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725370
Course Title: Mechanical Drafting 11
Course Credit: 1

40.0 PREPARE ADVANCED MECHANICAL DRAWINGS--The student will be able to.

- 40.07 Prepare cam calculations and drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)
- 40.08 Prepare gear calculations. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)
- 40.09 Prepare spring calculations and drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)

41.0 PREPARE PRODUCTION DRAWINGS--The student will be able to.

- 41.01 Make a design layout drawing. (LA.AB.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)
- 41.02 Make detail drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)
- 41.03 Make pattern shop detail drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)
- 41.04 Make casting drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)
- 41.05 Make forging detail drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)

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41.0 PREPARE PRODUCTION DRAWINGS--The student will be able to.

- 41.06 Make machining detail drawings. (LA.A.1.4.6), (LA.A.1.4.8), (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)
- 41.07 Make stamping drawings. (LA.A.1.4.6), (LA.A.1.4.8), (LA.B.1.4.3)
- 41.08 Make welding drawings. (LA.B.1.4.3)
- 41.09 Make assembly drawings. (LA.B.1.4.3)
- 41.10 Prepare installation drawings. (LA.B.1.4.3), (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)

43.0 PREPARE TOOL DRAWINGS--The student will be able to.

- 43.01 Design jigs and fixtures. (MA.A.1.4), (MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4), (MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4), (MA.D.2.4), (MA.E.1.4)

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Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Number 8725300
Course Number: 8725390
Course Title: Mechanical Drafting 13
Course Credit: 1

43.0 PREPARE TOOL DRAWINGS--The student will be able to.

43.02 Design cutting dies. (LA.A.1.4.6), (LA.A.2.4), (MA.A.1.4),
(MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4),
(MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4),
(MA.D.2.4), (MA.E.1.4)

43.03 Design forming dies. (LA.A.1.4.6), (LA.A.2.4), (MA.A.1.4),
(MA.A.2.4), (MA.A.3.4), (MA.A.4.4), (MA.B.1.4), (MA.B.2.4),
(MA.B.3.4), (MA.B.4.4), (MA.C.1.4), (MA.C.2.4), (MA.C.3.4),
(MA.D.2.4), (MA.E.1.4)