

July 2006

Florida Department of Education
CURRICULUM FRAMEWORK

Program Title: Building Construction Specialist
Occupational Area: Industrial

PSVC

CIP Number 0615100103
Grade Level College Credits
Length Technical Certificate (18 credits)
Certification

- I. **MAJOR CONCEPTS/CONTENT:** The purpose of this program is to prepare students for employment as Construction Specialists, Construction Managers(SOC 11-9021), Construction and Building Inspectors (SOC 47-4011), Quality Control Assistant; Scheduler; Materials Tester in the areas of estimating, scheduling, and interpreting plans or to provide supplemental training for persons previously or currently employed in these occupations. It provides a foundation in pursuing a career in building inspection and quality control.

The content includes communication skills, math skills, human relations and employability skills, safe and efficient construction practices, building materials, interpreting plans, and estimating and planning of residential and commercial structures.

This program focuses on a general understanding of the construction industry including: planning, quality control, building materials, technology and estimating and scheduling on construction projects.

The typical length of this program for the average achieving student is a technical (college credit) certificate. The standard credit hour length for this program is 18 hours.

- IV. **INTENDED OUTCOMES:** After successfully completing this program, the student will be able to:

- 01.0 Communicate effectively
- 02.0 Identify and select the application of construction materials
- 03.0 Read and interpret drawings and specifications
- 04.0 Take off quantities and estimate costs
- 05.0 Plan, coordinate, schedule, and control projects
- 06.0 Perform inspections and verify tests
- 07.0 Demonstrate efficient office procedures
- 08.0 Demonstrate appropriate math skills
- 09.0 Demonstrate appropriate understanding of basic science
- 10.0 Demonstrate employability skills

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Title: Building Construction Specialist
Secondary Number:
Postsecondary Number: (new) PSVC

- 01.0 COMMUNICATE EFFECTIVELY--The student will be able to:
- 01.01 Maintain a job diary.
 - 01.02 Prepare inter-office memos.
 - 01.03 Prepare business correspondence.
 - 01.04 Prepare daily project report.
 - 01.05 Prepare requisitions for equipment and materials.
 - 01.06 Prepare minutes from job-site meetings.
 - 01.07 Write logical and understandable statements, or phrases, to accurately complete forms/invoices commonly used in business and industry.
 - 01.08 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
 - 01.09 Read and follow written and oral instructions.
 - 01.10 Answer and ask questions coherently and concisely.
- 02.0 IDENTIFY AND SELECT THE APPLICATION OF CONSTRUCTION MATERIALS--
The student will be able to:
- 02.01 Select soils.
 - 02.02 Identify soil types.
 - 02.03 Select wood framing.
 - 02.04 Select rough hardware.
 - 02.05 Select waterproofing and protective coatings.
 - 02.06 Select insulation and vapor barriers.
 - 02.07 Select ceiling finishes and wall finishes.
 - 02.08 Select form work materials.
 - 02.09 Select concrete.
 - 02.10 Select windows and doors.
 - 02.11 Select adhesives and sealants.
 - 02.12 Select roofing materials.
 - 02.13 Select sheet metal materials.
 - 02.14 Select mill work.
 - 02.15 Select painting and decorating materials.
 - 02.16 Select miscellaneous metals.
 - 02.17 Select asphaltic materials.
 - 02.18 Select masonry materials.
 - 02.19 Select manufactured specialties.
 - 02.20 Select reinforcing concrete materials.
 - 02.21 Select structural steel.
 - 02.22 Select finishing hardware.
 - 02.23 Select foundation piling and casing materials.
 - 02.24 Select precast concrete materials.
- 03.0 READ AND INTERPRET DRAWINGS AND SPECIFICATIONS - The student will be able to:
- 03.01 Take site notes and measurements.
 - 03.02 Interpret structural drawings and specifications.
 - 03.03 Interpret reinforcing steel drawings and bar lists.
 - 03.04 Interpret and apply A.S.T.M. standards.
 - 03.05 Interpret and apply C.S.A. standards.
 - 03.06 Evaluate shop drawings.
- 04.0 TAKE OFF QUANTITIES AND ESTIMATE COSTS--The student will be able to:
- 04.01 Make calculations.
 - 04.02 Estimate quantities of concrete.

- 04.03 Compile lists of sub-trades for projects.
- 04.04 Take off quantities of paving.
- 04.05 Estimate quantities of rough carpentry.
- 04.06 Obtain and build up materials cost.
- 04.07 Estimate quantities of framework.
- 04.08 Estimate quantities of excavation and fill.
- 04.09 Call sub trade tenders.
- 04.10 Take off quantities of miscellaneous metals.
- 04.11 Take off quantities of millwork.
- 04.12 Take off quantities of structural steel.
- 04.13 Take off quantities of manufactured specialties.
- 04.14 Analyze and project general conditions costs.
- 04.15 Analyze and project labor unit costs.
- 04.16 Estimate quantities of reinforcing steel.
- 04.17 Estimate quantities of masonry.
- 04.18 Analyze and project site overhead costs.
- 04.19 Evaluate sub trade bids.
- 04.20 Summarize project cost and complete tenders prices.
- 04.21 Interpret contract document.

- 05.0 PLAN, COORDINATE, SCHEDULE, AND CONTROL PROJECTS--The student will be able to:
 - 05.01 Prepare daily time sheets.
 - 05.02 Record and control materials received.
 - 05.03 Allocate efficient use of site space.
 - 05.04 Store materials and equipment.
 - 05.05 Describe units of work measurement.
 - 05.06 Coordinate and control use of construction tools and equipment.
 - 05.07 Prepare progress billing.
 - 05.08 Prepare work schedules.
 - 05.09 Prepare material delivery schedules.
 - 05.10 Expedite delivery of manufactured materials.
 - 05.11 Prepare sub-trade schedules.
 - 05.12 Prepare and code daily costs.
 - 05.13 Record deficiencies as a result of project inspections.
 - 05.14 Prepare coded cost break downs.
 - 05.15 Prepare cash flow schedules.
 - 05.16 Prepare schedules for computer input.
 - 05.17 Develop and maintain coded cost systems.
 - 05.18 Prepare critical path schedule.
 - 05.19 Monitor schedule to control project.

- 06.0 PERFORM INSPECTIONS AND VERIFY TESTS--The student will be able to:
 - 06.01 Verify data from tests conducted by independent testing companies.
 - 06.02 Check concrete placing and consolidation procedures.
 - 06.03 Check form work.
 - 06.04 Check reinforcing steel and placing.
 - 06.05 Inspect placing of fill and compaction procedures.

- 07.0 DEMONSTRATE EFFICIENT OFFICE PROCEDURES - The student will be able to:
 - 07.01 Organize work area.
 - 07.02 Select and use appropriate forms.
 - 07.03 Develop and maintain filing system.
 - 07.04 Maintain inventory of physical assets.
 - 07.05 Set up and maintain technical reference library.
 - 07.06 Maintain a system for field work authorizations.
 - 07.07 Maintain a system for control and processing contract changes.
 - 07.08 Maintain a system for back charges.
 - 07.09 Interpret basic company accounting procedures.

08.0 DEMONSTRATE APPROPRIATE MATH SKILLS--The student will be able to:

- 08.01 Solve problems for volume, weight, area, circumference, and perimeter measurements for rectangles, squares, and cylinders.
- 08.02 Measure tolerance(s) of horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
- 08.03 Add, subtract, multiply, and divide using fractions, decimals, and whole numbers.
- 08.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.

09.0 DEMONSTRATE APPROPRIATE UNDERSTANDING OF BASIC SCIENCE--The student will be able to:

- 09.01 Understand the basics of molecular action as a result of temperature extremes, chemical reaction, and moisture content.
- 09.02 Draw conclusions or make inferences from data.
- 09.03 Understand pressure measurement in terms of P.S.I.

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

- 10.01 Conduct a job search.
- 10.02 Secure information about job opportunities.
- 10.03 Complete a job application.
- 10.04 Demonstrate competency in job interview techniques.
- 10.05 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other person.
- 10.06 Identify acceptable work habits.
- 10.07 Demonstrate knowledge of how to make job transitions.
- 10.08 Demonstrate acceptable employee health habits.