

Florida Department of Education
CURRICULUM FRAMEWORK

Program Title: Boat and Yacht Repair/Refinishing Technology
Occupational Area: Industrial Education

	<u>Secondary</u>	<u>Postsecondary</u>
Program Numbers	8751300	I490316
CIP Number	0649.030601	0649.030601
Grade Level	9-12, 30, 31	30, 31
Length	9 Credits	1350 Hours
Certification	SEAMANSHIP @7 G CARPENTRY @7 G	SEAMANSHIP @7 G CARPENTRY @7 G
Basic Skills:		
Math		9
Language		9
Reading		9

- I. **MAJOR CONCEPTS/CONTENT:** The purpose of this program is to prepare students for employment as boat repairers (DOT 807.361-014).

The content includes, but is not limited to, communication skills, leadership skills, human relations and employability skills, safe and efficient work practices as marine painter/refinisher, marine carpenter, marine mechanical systems technician or marine welder/fabricator. A program may be structured to emphasize one of the course areas but does not have to cover all areas comprehensively.

Occupational Completion Points may be reached before the end of a secondary course. All outcomes and student performance standards must be completed to receive credit for an Occupational Completion Point (OCP). Listed below are the courses that comprise this program when offered at the secondary level.

- 8751310 - Boat and Yacht Repair/Refin. Tech. 1 (150)
- 8751320 - Boat and Yacht Repair/Refin. Tech. 2 (150) [300] OCP A
- 8751330 - Boat and Yacht Repair/Refin. Tech. 3 (150)
- 8751340 - Boat and Yacht Repair/Refin. Tech. 4 (150)
- 8751350 - Boat and Yacht Repair/Refin. Tech. 5 (150) [450] OCP B
- 8751360 - Boat and Yacht Repair/Refin. Tech. 6 (150)
- 8751370 - Boat and Yacht Repair/Refin. Tech. 7 (150)
- 8751380 - Boat and Yacht Repair/Refin. Tech. 8 (150)
- 8751390 - Boat and Yacht Repair/Refin. Tech. 9 (150) [600] OCP C

This program focuses on broad, transferable skills and stresses understanding and demonstration of the following elements of the Boat and Yacht Repair industry; planning, management, finance, technical and product skills, underlying principles of technology, labor issues, community issues and health, safety, and environmental issues.

- II. **LABORATORY ACTIVITIES:** Shop or laboratory activities are an integral part of this program and provide instruction in manufacturing, fabrication, repair, painting and refinishing in a boatyard manufacturing or refurbishing environment.

- III. **SPECIAL NOTE:** SkillsUSA-VICA, 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.

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 9.0, 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.

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).

SCANS Competencies: To accomplish the Secretary's Commission on Achieving Necessary Skills (SCANS) competencies, instructional strategies for this cluster 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 methods to improve students' personal qualities and higher-order thinking skills.

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 standard length of this program is 1350 hours.

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

OCCUPATIONAL COMPLETION POINT - DATA CODE - A (300 Hours)

HELPER, BOAT REPAIR/REFINISHING - INDUSTRY TITLE

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY 1

- 01.0 Describe different types of marine manufacturing industries.
- 02.0 Demonstrate basic skills in the different types of marine trades and occupations.

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY 2

- 03.0 Demonstrate proficiency in preparing surfaces and applying marine paint finishes.
- 04.0 Demonstrate appropriate understanding of basic science
- 05.0 Demonstrate employability skills.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B (450 Hours)

BOAT REFINISHING TECHNICIAN - INDUSTRY TITLE

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY 3

- 06.0 Demonstrate proficiency in preparing surfaces and refinishing fiberglass.

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY 4

- 07.0 Demonstrate proficiency in marine terminology.
- 08.0 Demonstrate proficiency in safety practices in marine occupations.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C (600 Hours)

BOAT REPAIRER 807.361-014

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY 5

- 09.0 Demonstrate the ability to properly handle lines and related operations in securing a vessel.

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY 6

- 10.0 Demonstrate proficiency in coordinating the manufacturing, repair and refinishing operations in the marine industry.

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY 7

- 11.0 Demonstrate appropriate communication skills.

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY 8

- 12.0 Demonstrate appropriate math skills.

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY 9

- 13.0 Demonstrate an understanding of entrepreneurship.

The following diagram illustrates the program structure:

BOAT AND YACHT REPAIR/REFINISHING TECHNOLOGY

OCP - C
BOAT REPAIRER
807.361-014

(600 Hours)

OCP - B
REFINISHING TECHNICIAN

(450 Hours)

OCP - A
HELPER

(300 Hours)

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Program Title: Boat And Yacht Repair/Refinishing Technology
Secondary Number: 8751300
Postsecondary Number: I490316

OCCUPATIONAL COMPLETION POINT - DATA CODE - A - (300 Hours)
HELPER BOAT AND YACHT

- 01.0 DEMONSTRATE PROFICIENCY IN DESCRIBING DIFFERENT TYPES OF MARINE MANUFACTURING INDUSTRIES--The student will be able to:
- 01.01 Explain the process of manufacturing motor yachts.
 - 01.02 Explain the process of manufacturing sailboats.
 - 01.03 Explain the process of manufacturing small powerboats.
 - 01.04 Explain the process of manufacturing center console boats.
 - 01.05 Explain the process of manufacturing of commercial workboats.
- 02.0 DEMONSTRATE BASIC PROFICIENCY IN THE DIFFERENT TYPES OF MARINE TRADES AND OCCUPATIONS--The student will be able to:
- 02.01 Describe the occupational requirements of a boat finisher/painter.
 - 02.02 Perform basic occupational requirements of a marine carpenter.
 - 02.03 Perform basic occupational requirements of a marine mechanical installer.
 - 02.04 Perform basic occupational requirements of a marine welder fabricator.
- 03.0 DEMONSTRATE PROFICIENCY IN PREPARING SURFACES AND APPLYING MARINE PAINT FINISHES--The student will be able to:
- 03.01 Prepare wood surfaces for painting.
 - 03.02 Prepare aluminum surfaces for painting.
 - 03.03 Prepare steel surfaces for painting.
 - 03.04 Apply paint to surfaces by brush.
 - 03.05 Apply paint to surfaces by spray gun.
- 04.0 DEMONSTRATE APPROPRIATE UNDERSTANDING OF BASIC SCIENCE --The student will be able to:
- 04.01 Understand molecular action as a result of temperature extremes, chemical reaction, and moisture content.
 - 04.02 Draw conclusions or make inferences from data.
 - 04.03 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.
 - 04.04 Understand pressure measurement in terms of P.S.I., inches of mercury, and K.P.A.
- 05.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:
- 05.01 Conduct a job search.
 - 05.02 Secure information about a job.

- 05.03 Identify documents, which may be required when applying for a job interview.
- 05.04 Complete a job application form correctly.
- 05.05 Demonstrate competence in job interview techniques.
- 05.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other employees.
- 05.07 Identify acceptable work habits.
- 05.08 Demonstrate knowledge of how to make job changes appropriately.
- 05.09 Demonstrate acceptable employee health habits.
- 05.10 Demonstrate knowledge of the "Florida Right-To-Know Law" as recorded in Florida Statutes Chapter 442.

OCCUPATIONAL COMPLETION POINT - DATA CODE - B - (450 Hours)
REFINISHING TECHNICIAN

- 06.0 DEMONSTRATE PROFICIENCY IN PREPARING SURFACES AND REFINISHING FIBERGLASS--The student will be able to:
 - 06.01 Prepare raw fiberglass surfaces for painting.
 - 06.02 Repair and refinish fiberglass surfaces.
- 07.0 DEMONSTRATE PROFICIENCY IN MARINE TERMINOLOGY--The student will be able to:
 - 07.01 Use correct marine terminology.
 - 07.02 Use correct marine technical terminology.
- 08.0 DEMONSTRATE PROFICIENCY IN SAFETY PRACTICES IN MARINE OCCUPATIONS--The student will be able to:
 - 08.01 Demonstrate the safe use of hand tools in marine occupations.
 - 08.02 Demonstrate the safe use of power tools in marine occupations.
 - 08.03 Demonstrate the safe use of paints, chemicals, fiberglass and compounds.
 - 08.04 Demonstrate the safe use of electrical connectors, cords and tools.
 - 08.05 Apply shop safety rules.

OCCUPATIONAL COMPLETION POINT - DATA CODE - C - (600 Hours)
BOAT REPAIRER

- 09.0 DEMONSTRATE THE ABILITY TO PROPERLY HANDLE LINES AND RELATED OPERATIONS IN SECURING A VESSEL--The student will be able to:
 - 09.01 Demonstrate the use of, a minimum of eight (8), correct nautical knots used in securing a vessel.
 - 09.02 Identify the current terminology of lines.
 - 09.03 Demonstrate slowing a vessel in dock.
 - 09.04 Place fenderboards to protect a vessel
 - 09.05 Connect ancillary services to a moored vessel.
 - 09.06 Demonstrate blocking and supporting a vessel for repair in a work yard.
 - 09.07 Demonstrate two common methods of splicing.

- 10.0 DEMONSTRATE PROFICIENCY IN COORDINATING THE MANUFACTURING, REPAIR AND REFINISHING OPERATIONS IN THE MARINE INDUSTRY--The student will be able to:
- 10.01 Perform different basic types of work processes.
 - 10.02 Identify the sequential order of work processes.
 - 10.03 Demonstrate the ability to coordinate the work processes in the boatyard-manufacturing environment.
 - 10.04 Demonstrate the ability to coordinate the work processes in the boatyard-refurbishing environment.
- 11.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:
- 11.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
 - 11.02 Read and demonstrate the use of graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
 - 11.03 Read and follow written and oral instructions to complete work assignments.
 - 11.04 Answer and ask questions coherently and concisely.
 - 11.05 Read critically by recognizing assumptions and implications and by evaluating ideas.
 - 11.06 Demonstrate appropriate telephone/communication skills.
 - 11.07 Use communication skills to facilitate, repair/refinishing, activities common to boat and yacht repair/refinishing business.
- 12.0 DEMONSTRATE APPROPRIATE MATH SKILLS--The student will be able to:
- 12.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
 - 12.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
 - 12.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
 - 12.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
 - 12.05 Perform operation for federal, state and local taxes and their computation.
 - 12.06 Perform ratio and proportional problems related to boat and repair operators, (paints, fillers, and chemicals).
 - 12.07 Use math skills on boat and yacht repair refinishing projects.
- 13.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:
- 13.01 Define entrepreneurship.
 - 13.02 Describe the importance of entrepreneurship to the American economy.
 - 13.03 List the advantages and disadvantages of business ownership.
 - 13.04 Identify the risks involved in ownership of a business.
 - 13.05 Identify the necessary personal characteristics of a successful entrepreneur.
 - 13.06 Identify the business skills needed to operate a small business efficiently and effectively.

13.07 Prepare a small business plan for a boat and yacht repair for presentation to a financing source.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Boat and Yacht Repair/Refinishing Technology 1
Course Number: 8751310
Course Credit: 1

01.0 DEMONSTRATE PROFICIENCY IN DESCRIBING DIFFERENT TYPES OF MARINE MANUFACTURING INDUSTRIES--The student will be able to:

- 01.01 Explain the process of manufacturing motor yachts.
- 01.02 Explain the process of manufacturing sailboats.
- 01.03 Explain the process of manufacturing small powerboats.
- 01.04 Explain the process of manufacturing center console boats.
- 01.05 Explain the process of manufacturing of commercial workboats.

02.0 DEMONSTRATE BASIC PROFICIENCY IN THE DIFFERENT TYPES OF MARINE TRADES AND OCCUPATIONS--The student will be able to:

- 02.01 Describe the occupational requirements of a boat finisher/painter.
- 02.02 Perform basic occupational requirements of a marine carpenter.
- 02.03 Perform basic occupational requirements of a marine mechanical installer.
- 02.04 Perform basic occupational requirements of a marine welder fabricator.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Boat and Yacht Repair/Refinishing Technology 2
Course Number: 8751320
Course Credit: 1

03.0 DEMONSTRATE PROFICIENCY IN PREPARING SURFACES AND APPLYING MARINE PAINT FINISHES--The student will be able to:

- 03.01 Prepare wood surfaces for painting.
- 03.02 Prepare aluminum surfaces for painting.
- 03.03 Prepare steel surfaces for painting.
- 03.04 Apply paint to surfaces by brush.
- 03.05 Apply paint to surfaces by spray gun.

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

- 04.01 Understand molecular action as a result of temperature extremes, chemical reaction, and moisture content.
- 04.02 Draw conclusions or make inferences from data.
- 04.03 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.
- 04.04 Understand pressure measurement in terms of P.S.I., inches of mercury, and K.P.A.

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

- 05.01 Conduct a job search.
- 05.02 Secure information about a job.
- 05.03 Identify documents, which may be required when applying for a job interview.
- 05.04 Complete a job application form correctly.
- 05.05 Demonstrate competence in job interview techniques.
- 05.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor, or other employees.
- 05.07 Identify acceptable work habits.
- 05.08 Demonstrate knowledge of how to make job changes appropriately.
- 05.09 Demonstrate acceptable employee health habits.
- 05.10 Demonstrate knowledge of the "Florida Right-To-Know Law" as recorded in Florida Statutes Chapter 442.

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STUDENT PERFORMANCE STANDARDS

Course Title: Boat and Yacht Repair/Refinishing Technology 3
Course Number: 8751330
Course Credit: 1

06.0 DEMONSTRATE PROFICIENCY IN PREPARING SURFACES AND REFINISHING FIBERGLASS--The student will be able to:

- 06.01 Prepare raw fiberglass surfaces for painting.
- 06.02 Repair and refinish fiberglass surfaces.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Boat and Yacht Repair/Refinishing Technology 4
Course Number: 8751340
Course: 1

07.0 DEMONSTRATE PROFICIENCY IN MARINE TERMINOLOGY--The student will be able to:

- 07.01 Use correct marine terminology.
- 07.02 Use correct marine technical terminology.

08.0 DEMONSTRATE PROFICIENCY IN SAFETY PRACTICES IN MARINE OCCUPATIONS--The student will be able to:

- 08.01 Demonstrate the safe use of hand tools in marine occupations.
- 08.02 Demonstrate the safe use of power tools in marine occupations.
- 08.03 Demonstrate the safe use of paints, chemicals, fiberglass and compounds.
- 08.04 Demonstrate the safe use of electrical connectors, cords and tools.
- 08.05 Apply shop safety rules.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Boat and Yacht Repair/Refinishing Technology 5
Course Number: 8751350
Course: 1

09.0 DEMONSTRATE THE ABILITY TO PROPERLY HANDLE LINES AND RELATED OPERATIONS IN SECURING A VESSEL--The student will be able to:

- 09.01 Demonstrate the use of, a minimum of eight (8), correct nautical knots used in securing a vessel.
- 09.02 Identify the current terminology of lines.
- 09.03 Demonstrate slowing a vessel in dock.
- 09.04 Place fenderboards to protect a vessel
- 09.05 Connect ancillary services to a moored vessel.
- 09.06 Demonstrate blocking and supporting a vessel for repair in a work yard.
- 09.07 Demonstrate two common methods of splicing.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Boat and Yacht Repair/Refinishing Technology 6
Course Number: 8751360
Course: 1

10.0 DEMONSTRATE PROFICIENCY IN COORDINATING THE MANUFACTURING, REPAIR AND REFINISHING OPERATIONS IN THE MARINE INDUSTRY--The student will be able to:

- 10.01 Perform different basic types of work processes.
- 10.02 Identify the sequential order of work processes.
- 10.03 Demonstrate the ability to coordinate the work processes in the boatyard manufacturing or refurbishing environment.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Boat and Yacht Repair/Refinishing Technology 7
Course Number: 8751370
Course: 1

11.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS--The student will be able to:

- 11.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
- 11.02 Read and demonstrate the use of graphs, charts, diagrams, and tables commonly used in this industry/occupation area.
- 11.03 Read and follow written and oral instructions to complete work assignments.
- 11.04 Answer and ask questions coherently and concisely.
- 11.05 Read critically by recognizing assumptions and implications and by evaluating ideas.
- 11.06 Demonstrate appropriate telephone/communication skills.
- 11.07 Use communication skills to facilitate, repair refinishing, activities common to boat and yacht repair/ refinishing business.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Boat and Yacht Repair/Refinishing Technology 8
Course Number: 8751380
Course: 1

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

- 12.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
- 12.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
- 12.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
- 12.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
- 12.05 Perform operation for federal, state and local taxes and their computation.
- 12.06 Perform ratio and proportional problems related to boat and repair operators, (paints, fillers, and chemicals).
- 12.07 Use math skills on boat and yacht repair refinishing projects.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Title: Boat and Yacht Repair/Refinishing Technology 9
Course Number: 8751390
Course: 1

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

- 13.01 Define entrepreneurship.
- 13.02 Describe the importance of entrepreneurship to the American economy.
- 13.03 List the advantages and disadvantages of business ownership.
- 13.04 Identify the risks involved in ownership of a business.
- 13.05 Identify the necessary personal characteristics of a successful entrepreneur.
- 13.06 Identify the business skills needed to operate a small business efficiently and effectively.
- 13.07 Prepare a small business plan for a boat and yacht repair for presentation to a financing source.