

**NEW PROGRAM SUBMISSION FORM**  
**FLORIDA DEPARTMENT OF EDUCATION**  
**Division of Workforce Education**  
**Standards, Benchmarks, and Frameworks**

**PROGRAM INFORMATION**

Proposed Program Title: Composites Fabrication and Testing

Proposed Courses:

Check All That Apply:

<u>Title</u>	<u>Length</u> (Credits/Hours)	<input type="checkbox"/> Secondary
Industrial Safety	3	<input type="checkbox"/> PSAV
Non Destructive and Destructive Testing	3	<input type="checkbox"/> Job Preparatory
Composite Fundamentals	3	<input type="checkbox"/> ATD
Advanced Composites	3	<input checked="" type="checkbox"/> CCC
		<input type="checkbox"/> AS
		<input type="checkbox"/> AAS
		<input type="checkbox"/> Practical Arts
Total Length (Credits/Hours):		12

Submitted By: Mr. Meer Almeer

Date: March 3, 2009

Institution Name: Brevard Community College

Address: 1519 Clearlake Road

Contact Person: Ms. Sheryl Awtonomow

City, ST Zip: Cocoa, FL 32922

Contact Title: Dir, Career & Technical Pgms

Phone/Ext: 321-433-7474

**INSTITUTIONAL APPROVAL**

New AS/AAS/CCC program submissions must be signed and approved by the Community College's Occupational Dean **and** his/her supervisor. Secondary/PSAV/ATD program submissions must be signed and approved by the District Superintendent **and** either the District CTE Director or the Technical Center Director as appropriate.

<b><u>AS/AAS/CCC Programs</u></b> (Both must sign)	<b><u>Secondary/PSAV/ATD Programs</u></b> (Both must sign)
Occupational Dean: Ms. Mildred Coyne	District CTE Director/Supervisor/Tech Director: _____
Occupational Dean's Supervisor: Dr. Don Astrab	Supervisor: _____

**JUSTIFICATION**

Please attach a "Statement of Justification" that includes the following five (5) items:

1. Identified statewide business/industry need for the program/occupational training.
2. Occupations for which the program would train and the corresponding SOC Code(s).
3. The number of projected job openings or growth in the region for those occupations.
4. For new CCC or ATD programs, identify the parent AS/AAS degree program.
5. If the proposed program leads to an industry-recognized certification or license, specify the name of the certification(s), the certifying agency, and the web address that describes the certification.
6. Proposed articulation agreement **MUST** be included if there is an existing parallel program.

**SUBMISSION PACKAGE**

For a program to be considered, the following items must be included in the submission package.

1. The completed and signed New Program Request Form.
2. The Statement of Justification with attachments as appropriate.
3. The curriculum framework (in MS Word) for the proposed program that includes the following:
  - a. Outcomes and corresponding program standards.
  - b. Identified Occupational Completion Points (OCPs) with suggested lengths. NOTE: Not required for programs limited to secondary implementation or College Credit programs.
  - c. Proposed SOC occupational title(s) and codes.
  - d. Proposed grade levels if secondary or post-secondary PSAV.
  - e. Proposed Basic Skill Levels if program being proposed is more than 450 hours and if Basic Skills are applicable.
  - f. Facilities Code (<http://www.fldoe.org/edfacil/pdf/srefvol1.pdf>).
  - g. Proposed Career Cluster and Career Path.
  - h. Proposed equipment list (if applicable).
  - i. Proposed teacher/instructor certifications (Secondary or Post-Secondary PSAV).
  - j. Required teacher certification (District)
  - k. Proposed Career & Technical Student Organization (CTSO), as applicable.
  - l. If the proposed program leads to an industry-recognized certification, include the name of the certification, the certifying agency, and the web address for verification.
  - m. Pre-requisite courses, programs, or other enrollment qualifying criteria.
  - n. New AS/AAS programs should identify any CCC or ATD programs that are part of the program. New CCC/ATD programs should identify the parent AS/AAS degree program.

**NEW AS/AAS PROGRAMS**

If the proposed program is for an AS/AAS Degree and exceeds 72 hours in length, the following questions **must** be answered:

1. Will this program/course include any work experience (co-op) component?  Yes  No
2. Is this program apprenticesable?  Yes  No
3. Will it be used to provide instruction for a Registered Apprenticeship Program?  Yes  No

SUBMIT PACKAGE TO	QUESTIONS
Darl Walker, Program Director Division of Workforce Education Standards, Benchmarks, and Frameworks 325 W. Gaines Street, Room 701 Tallahassee, FL 32399-0400	Questions about new programs should be referred to Darl Walker, Program Director for Standards, Benchmarks, and Frameworks at 850-245-9020 or via email at <a href="mailto:darl.walker@fldoe.org">darl.walker@fldoe.org</a> .

**FOR OFFICE USE ONLY**

CIP Number: _____	External Review Completed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Program Number(s): _____	Program Length Review Needed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Course Number: _____	Industry Certification Verified?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Course Number: _____	Articulation Agreement Included?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Course Number: _____	CCD Updated?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Course Number: _____	Website Updated?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Career Cluster/Path: _____	Gold Seal Updated, if applicable?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

Once all the required information/justification is submitted, all the required documents completed and approved, the Classification of Instructional Program (CIP) number assigned, and the program/course numbers assigned (if applicable), the following steps will also be completed:

1. Insertion of the program into the Course Code Directory (CCD) if it is a secondary or PSAV program.
2. Certification documentation delivered to Division of Certification (if applicable).
3. Insertion of secondary and postsecondary program information into Appendices I and S for the Workforce Development Information Systems' Database Handbooks (if applicable).
4. Inclusion of the information or changes into the annual Summary of Major Changes document(s).
5. Inclusion of the new program or changes into the Program Length Document(s).
6. Uploading of frameworks and program documents to the Department of Education (DOE) Division of Workforce Education (DWE) website and/or the Division of Community Colleges (DCC) website.
7. Approval sought from the Council on Occupational Education (COE) to offer requested program.  
**IF proposed program is to be offered at an institution that is accredited by COE.**
8. Approval sought for program to be offered as an Applied Technology Diploma (ATD).  
**IF applicable and proper ATD guidelines are met with documentation included.**
9. Approval sought to offer "Registered Apprenticeship Program".  
**IF program is "APPRENTICEABLE" and the institution is seeking to offer the instructional portions of a "Registered Apprenticeship Program", and the necessary documentation of agreements with apprenticeship sponsor is included.**

*Statement of Justification*

*Proposed College Credit Certificate*

*Composite Fabrication and Testing*

1. Identified statewide business/industry need for the program/occupational training.

Composite materials, and fabricating and testing components made of composites, is an area that does not currently have any formalized training nor a standardized occupational title on the Targeted Occupation List (TOL) for the state of Florida. Brevard Community College has conducted several workshops for industry professionals, and most of the trainees work in the field of composites. Of the 19 workshop participants:

- 17 work with composites and learned new information pertaining to their work
- 6 indicated a need for longer training time and more detail

Employers who contract with NASA for the future space vehicles have responded favorably to a need for formalized training in the composites area. Brevard also has several boat manufacturers and aviation companies interested in the concept of having qualified composite fabricators who have attended formalized training.

In addition, the future wind energy generation turbine blades are going to be built out of composite material, and workforce trends in composite work should increase.

The O\*Net data on occupations follows for the State of Florida. :

United States	Employment		Percent Change	Job Openings 1
	2006	2016		
Fiberglass laminators and fabricators	33,300	35,300	+ 6 %	900
Florida	Employment		Percent Change	Job Openings 1
	2006	2016		
Fiberglass laminators and fabricators	3,670	3,710	+ 1 %	80

2. Occupations for which the program would train and the corresponding SOC Code(s).

Occupational titles that correlate to composites fabrication and testing are limited and not well defined within the occupational codes. Research in job openings nationwide indicate the following titles that do not have associated SOC codes: Composite Fabricator, Composite Production helper, Composite Manufacturing

According to O\*Net online, the following occupations/SOC codes and other job titles were suggested for composites:

51-2091.00 - Fiberglass Laminators and Fabricators

**Sample of reported job titles:** Laminator, Fiberglass Laminator, Chopper Gun Operator, Roller, Boat Builder, Boat Carpenter, Gel-Coater, Fiberglasser, Fiberglass Finisher, Hull Line Crew Member

In addition, there is 1 recognized apprenticeable specialty associated with this occupation- Composite Fitter Mechanic – although we do not anticipate offering this trade in our apprenticeship options.

3. The number of projected job openings or growth in the region for those occupations.

This college credit certificate is intended to serve those areas of Florida needing composite training, and the frameworks were built with input from three community colleges offering composites courses in their ET program/future ET program.

Occupation: **Fiberglass laminators and fabricators**

Industry: **Ship and boat building**

Division: **Manufacturing**

**Persons employed in this occupation within this industry**

Estimated 2006	Projected 2016	Percent Change
13,200	14,700	+11.9%

**Persons employed in this occupation across all industries**

Estimated 2006	Projected 2016	Percent Change
33,300	35,300	+6.2%

**Persons employed in this industry across all occupations**

Estimated 2006	Projected 2016	Percent Change
155,500	173,500	+11.6%

4. For new CCC or ATD programs, identify the parent AS/AAS degree program.

Engineering Technology AS/AAS

5. If the proposed program leads to an industry-recognized certification or license, specify the name of the certification(s), the certifying agency, and the web address that describes the certification.

At this time, no known certifications exist for composite fabrication and testing.

Proposed articulation agreement MUST be included if there is an existing parallel program.

NA

**Florida Department of Education  
Curriculum Framework**

**Program Title:** Composite Fabrication and Testing  
**Specialization Tract:** Advanced Technology  
**Occupational Area:** Manufacturing  
**Career Cluster:** Architecture and Construction

		<u>PSV</u>
Program Number:		0615.040303 - DOE needs to verify number
Grade Level		College Credit Certificate
Certification		Technical Certificate
Program Length		12 Credit Hours
SOC Code		17-3029; 51-2091
CTSO		SkillsUSA
Facility Code		234

- I. MAJOR CONCEPTS AND CONTENT:** The purpose of this program is to prepare students for initial employment with an occupational title as Composites, Composite Fabricator, Composites Production helper, or Fiberglass Laminators and Fabricators, or to provide supplemental training for persons previously or currently employed in this occupation.
- II. PROGRAM STRUCTURE:** This certificate program requires a minimum of 12 credit hours of specialized courses in Applied Technology areas for design, assembly, and fabrication using composite materials. It is part of the Advanced Technology Tract of the A.S./A.A.S. degree in Engineering Technology.
- III. LABORATORY ACTIVITIES:** Laboratory activities are an integral part of this program and include the proper use of test equipment, such as a Digital multimeter, measurement devices, some hand and small power tools, composite fabrication and design equipment, as well as various chemicals including resins, laminates and solvents. Special emphasis is placed on the safe handling of equipment and chemicals used in the composite industry.
- IV. SPECIAL NOTE:** SkillsUSA is the appropriate career student organization (CTSO) for providing leadership training and for reinforcing specific vocational skills. Career Student Organizations, when provided, shall be an integral part of the career instructional program, and the activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, FAC.

The cooperative method of instruction may be utilized for this program. Whenever the cooperative method 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.

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.

When a secondary student with a disability is enrolled in a vocational class for which modifications to the curriculum framework have been made, the particular outcomes and student performance standards that the student must master to earn credit must be specified in the student's Individual Educational Plan (IEP). Additional credits may be earned when outcomes and standards are mastered in accordance with the requirements indicated in subsequent IEPs. The job title for which the student is being trained must be designated in the IEP.

V. **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.

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

- 04.0 DEMONSTRATE AN UNDERSTANDING OF SAFETY, HEALTH, AND ENVIRONMENTAL REQUIREMENTS
- 06.0 DEMONSTRATE PROFICIENCY IN USING TOOLS, INSTRUMENTS AND TESTING DEVICES
- 07.0 DEMONSTRATE BASIC TROUBLESHOOTING SKILLS
- 17.0 DEMONSTRATE PROFICIENCY IN COMPOSITES FUNDAMENTALS

**Florida Department of Education**  
**STUDENT PERFORMANCE STANDARDS**

**Program Title:** Composite Fabrication and Testing  
**Specialization Tract:** Advanced Technology

- 04.0 DEMONSTRATE AN UNDERSTANDING OF SAFETY, HEALTH, AND ENVIRONMENTAL REQUIREMENTS - The student will be able to:
- 04.01 Communicate any new or revised safety procedures.
  - 04.02 Update personnel about current safety guidelines.
  - 04.03 Wear appropriate Personal Protective Equipment (PPE).
  - 04.04 Follow area-posted safety guidelines.
  - 04.05 Demonstrate knowledge of, and follow applicable safety laws and regulations and the environment (e.g., Occupational Safety and Health Administration (OSHA)).
  - 04.06 Maintain a clean and safe work environment.
  - 04.07 Maintain personal protection equipment.
  - 04.08 Report unsafe conditions/practices.
  - 04.09 Locate emergency exits and alarms.
  - 04.10 Comply with company-established safety practices.
  - 04.11 Use appropriate fire fighting procedures.
  - 04.12 Apply Occupational Safety Health Administration (OSHA) safety standards properly.
  - 04.13 Demonstrate knowledge of when a machine or a process should be stopped to investigate or correct a hazard.
  - 04.14 Demonstrate knowledge of regulatory agency fines and requirement for corrective actions.
  - 04.15 Demonstrate knowledge of government and company procedures, rules and regulations concerning incident investigations.
  - 04.16 Demonstrate knowledge of incident reporting procedures.
  - 04.17 Use and evaluate information resources such as MSDS (Material Safety Data Sheets).
  - 04.18 Demonstrate knowledge of National Institute of Occupational Safety and Health (NIOSH), Environmental Protection Agency (EPA) and other regulatory agencies recommendations, guidelines and best practices.
  - 04.19 Demonstrate knowledge of how to safely identify, handle, monitor and measure hazardous materials.

06.0 DEMONSTRATE PROFICIENCY IN USING TOOLS, INSTRUMENTS AND TESTING DEVICES - The student will be able to:

- 06.01 Identify and use hand tools properly.
- 06.02 Identify and use power tools properly.
- 06.03 Use inspection equipment appropriately.
- 06.04 Implement appropriate testing regimes.
- 06.05 Use appropriate measurement tools (e.g., micrometers, tapes. etc).
- 06.06 Use appropriate safety monitoring and testing equipment.
- 06.07 Communicate issues with hand sketches.
- 06.08 Use electronic measuring equipment and instruments.
- 06.09 Use multi-gauging to inspect, verify, and document whether product dimensions meet customer requirements.

07.0 DEMONSTRATE BASIC TROUBLESHOOTING SKILLS - The student will be able to:

- 07.01 Apply troubleshooting and critical thinking skills to define the problem.
- 07.02 Identify symptoms and changes in a system.
- 07.03 Isolate potential sources/causes of problems.
- 07.04 Consult reference materials.
- 07.05 Evaluate repair options.
- 07.06 Document properly all repairs and adjustments made.
- 07.07 Monitor and correct parameters during tests.
- 07.08 Estimate and forecast time and resources needed to perform task.
- 07.09 Read blueprints, schematics and technical drawings.
- 07.10 Modify or adjust equipment per engineering specifications.
- 07.11 Analyze process to identify and correct problems, such as bottlenecks.

17.0 DEMONSTRATE PROFICIENCY IN COMPOSITES FUNDAMENTALS --The student will be able to:

- 17.01 Identify and characterize composite materials and commodities.
- 17.02 Identify uses and hazards involved in handling common composite supplies.
- 17.03 Explain how properties of materials determine their classification and use.
- 17.04 Identify symptoms/causes of delaminating.
- 17.05 Identify symptoms and causes of faulty bonds.
- 17.06 Demonstrate knowledge of handling composite materials, adhesives, solvents, etc.
- 17.07 Identify tools used in composite fabrication and repair.