

**Course Objectives/Course Outline**  
**Spokane Community College**

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**Course Title: Composite Technology**

**Prefix and Course Number: ARCFT 123**

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**Course Learning Outcomes:**

**By the end of this course, a student should be able to:**

- Illustrate benefits and limitations of composite materials
- Demonstrate knowledge of fibers, matrices, and core composite materials
- Identify all composite materials needed to construct a laminate
- Demonstrate fundamental knowledge of composite inspection
- Demonstrate fundamental knowledge of composite repair procedures
- Justify safe and proper composite materials handling protocol

**Course Outline:**

- I. History of Composites
  - A. What is a composite
  - B. History
  - C. Benefits and Limitations of
  - D. Future of Composites
- II. Health and Safety
  - A. Material Safety Data Sheets
  - B. Personal Safety with Chemicals and Matrices
  - C. Solvents Usage and Safety
  - D. Solids Usage and Safety
- III. Composite Structure
  - A. Fibers
  - B. Matrices
  - C. Core Materials
- IV. Manufacturing
  - A. Heat and Pressure
  - B. Methods
    - 1. Preimpregnation
    - 2. Vacuum Bagging
    - 3. Wet Lay Up
    - 4. Vacuum Infusion Process
    - 5. Resin Transfer Molding
  - C. Mold Making
- V. Inspection
  - A. Visual
  - B. Coin Tap
  - C. Ultrasound
  - D. Thermography
  - E. Laser Holography
  - F. Radiography
  - G. Dye Penetrant

- VI. Repairs
  - A. Typical Repair Procedures
  - B. Delamination
  - C. Repair of Laminate Structures
  - D. Repairs to Sandwich Structures
  - E. Repairs to Honeycomb Structures