

IYRS | ACMA Composites Certification

3-Day Seminar

IYRS Bristol Facility

June 27-29, 2012



Overview

The IYRS – ACMA Composites Certification Seminar combines the CCT classroom training with hands on lab experience preparing participants for the CCT certification exams. The 3-day seminar will focus on the following CCT Certifications:

- Open Molding
- Vacuum Infusion (VIP)
- Light Resin Transfer Molding
- Wind Blade Repair

Tuition: \$800

Day One

Participants will have combined lecture and lab exercises covering elements common to all four processes.

Topics covered include:

1. Fundamentals of composites - General overview
 2. Overview of composites manufacturing processes
 3. Overview of composites materials
 4. Principles of composites engineering
 1. Solid laminates and sandwich construction

2. General material properties
3. Effects of process on properties
5. General composites safety

Lab Exercises Include:

1. Introduction to a range of composites materials
 1. Polyester & epoxy resins
 2. Fiber reinforcements – Glass, carbon, aramid, ect.
 3. Core materials – Balsa, foam, honeycomb, ect.
 2. Demonstration of section modulus – Sandwich vs. non-sandwich
3. Overview of composites tooling
4. Creating patterns – CNC demo

Day Two

Participants will separate into groups focused on one of the four CCT processes. Combined lecture and lab exercises will focus on the particular process.

Open Molding

Topics covered Include:

1. Gel Coat Application
 2. Laminating Techniques
 3. Controlled spraying methodology

Lab exercises include:

1. Gel coat application
 1. Equipment set-up and handling
 2. Spraying techniques
 3. Gel coat quality control
2. Laminating techniques
 0. Demo of laminating objectives
 1. Hand lay-up techniques
 2. Spray-up techniques

3. Controlled spraying
0. Equipment set-up
1. Spray gun control techniques

Vacuum Infusion (VIP)

Topics covered include:

1. Overview of vacuum infusion procession
 2. Equipment and materials for VIP
 3. Vacuum infusion theory
 1. Physics of the VIP process
 4. Principles of bagging and resin distribution

Lab exercises include:

1. Mold configurations for VIP
 2. Reinforcement placement in tool
 3. Creating vacuum bags and resin distribution systems
 4. Infusion exercises

Light Resin Transfer Molding

Topics covered include:

1. Overview of the L-RTM process
 2. Tooling and equipment for L-RTM
 3. L-RTM theory
 4. Physics of the L-RTM process
 5. The resin injection process

Lab exercises include:

1. Mold configurations for L-RTM
 2. Reinforcement placement in tool

3. Creating a perimeter seal and resin flow
4. Resin injection exercises

Wind Blade Repair

Topics covered include:

1. Overview of wind energy composites applications
 2. Identifying composites materials
 3. Identifying and characterizing damage
 4. Techniques for damage removal
 5. Repair techniques
 6. Repair to lightening protection systems
 7. Wind blade repair safety considerations

Lab exercises include:

1. Identification of damage
 2. Repair of damaged samples
 3. Repair of lightening protection system
 4. Repair quality benchmarks

Day Three

Participants will review and analyze results of their lab exercises. Tutorial lectures will review CCT material relevant to individual certifications exams. Participants will sit for the CCT exams in the afternoon.

Please [click here](#) to register online. For additional information please contact Clark Poston, by [email](#) or phone, (401) 848-5777 (401) 848-5777 , ext 210.