



MASTER COURSE OUTLINE

Prepared By: Erik Borg

Date: February 2013

COURSE TITLE

Composite Assembly

GENERAL COURSE INFORMATION

Dept.: CPT

Course Num: 145

(Formerly:)

CIP Code: 47.0687

Intent Code: 21

Program Code: 718

Credits: 3

Total Contact Hrs Per Qtr.: 90

Lecture Hrs:

Lab Hrs:

Other Hrs: 90

Distribution Designation:

COURSE DESCRIPTION (as it will appear in the catalog)

Students will develop skills in print reading, project planning, layout, distortion control, fixturing, and other fabrication techniques. Students will have the opportunity to apply knowledge to projects of personal interest and/or as assigned. A culminating oral presentation helps students develop communication and research skills.

PREREQUISITES

Completion of AMT111, AMT 121, AMT 161, and AMT 201

TEXTBOOK GUIDELINES

Textbook as chosen by AMT/CPT Faculty (Example: *Essentials of Advanced Composite Fabrication & Repair* Dorworth, Gardiner, & Mellema)

COURSE LEARNING OUTCOMES

Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:

1. Create or interpret drawings/prints and plan fabrication requirements of all component models, parts, and assemblies for a student designed part/project
2. Create a manufacturing plan for prototype or production, demonstrating knowledge of scope work, balanced lay-ups and issues related to a given part
3. Fabricate tooling layup mandrel (mold). Also fabricate part using layup mandrel faithfully represent design
4. Indicate techniques used to prevent voids and other laminate draws
5. Demonstrate competency in vacuum bagging technique
6. Demonstrate safe work habits and the proper use of tools and equipment

INSTITUTIONAL OUTCOMES

COURSE CONTENT OUTLINE

1. Drawings/prints and plan fabrication requirements
2. Manufacturing plan for prototype or production
3. Fabrication
4. Void prevention
5. Vacuum bagging

- 6. Tools and equipment
- 7. Safety

DEPARTMENTAL GUIDELINES (optional)

Student grades are based on the following items:

- 1. Classroom/lecture assignments 50%
 - a. Written assignments/quizzes 30%
 - b Tests 40%
 - c. Final exam 30%

Examinations will be given to ensure the understanding and/or retention of the subject material. An appropriate exam will be given to each student who completes each subject area. A quarter final review exam will be given during the last three days of each quarter. Any other testing or quizzes may be given at the instructor’s discretion. Each student is given only 3 attempts at passing an exam. The first exam attempt must be passed with a 70% or better, 75% or better for the second and 80% on the third attempt. If the student fails to pass any exam with an acceptable score after three attempts the student will be required to surrender all credits, hours, lab projects, and classroom theory for the subject or subjects failed. The final recorded score will be that of the first attempted exam. Missed or failed exams will be given only with prior arrangements with the instructor.

- 2. Performance completing lab/shop assignments 50%
 - a. Quality of work 50%
 - b. Work habits 50%
 - Follows instructions.
 - Follow safety rules
 - Completes assignments in a timely manner.
 - Stays productive.

Laboratory performance will be graded at the completion of each practical assignment by observation, oral examination, or written examination. Practical projects must be completed in a timely manner.

| Letter Grade | Percentage | BBCC Numeric Grade |
|--------------|------------|--------------------|
| A | 97 - 100 | 3.8 - 4.0 |
| A- | 93 - 96 | 3.5 - 3.7 |
| B+ | 89 - 92 | 3.2 - 3.4 |
| B | 85 - 88 | 2.9 - 3.1 |
| B- | 81 - 84 | 2.5 - 2.8 |
| C+ | 77 - 80 | 2.2 - 2.4 |
| C | 73 - 76 | 1.9 - 2.1 |
| C- | 69 - 72 | 1.5 - 1.8 |
| D+ | 65 - 68 | 1.2 - 1.4 |
| D | 61 - 64 | 0.9 - 1.1 |
| D- | 58 - 60 | 0.7 - 0.8 |
| F | 0 - 57 | 0.0 |

A minimum passing grade of 80% must be obtained by each student in order to receive a final Letter of Completion from this course.

DIVISION CHAIR APPROVAL

DATE