



Course Description

ETI2951C | Aerospace Technician Capstone | 3.00 credits

This course guides students through a capstone project, emphasizing project management, testing, troubleshooting, and documentation. Students evaluate requirements, conduct testing, resolve issues, and complete failure analysis. The course culminates with a comprehensive project presentation and a “lessons learned” review. Prerequisites: ETI1855C and ETI2832C; Pre/Corequisites: ETI1852C and ETI2856C

Course Competencies

Competency 1: The student will produce a capstone project by:

1. Evaluating job requirements and objectives
2. Identifying key personnel needed for project execution
3. Selecting suitable materials and supplies for the project
4. Choosing appropriate equipment for the assigned tasks
5. Developing a comprehensive project schedule
6. Conducting a Design Review to ensure task completion

Competency 2: The student will develop test and evaluation requirements by:

1. Assessing the functionality of project hardware
2. Defining specific test requirements for the project
3. Creating a test plan to ensure the project meets its stated objectives

Competency 3: The student will create operational documentation by:

1. Analyzing operational requirements for equipment usage
2. Evaluating potential safety risks during operations
3. Developing a risk statement outlining project hazards
4. Drafting detailed test procedures for equipment operation that is aligned with project goals

Competency 4: The student will analyze failures and failure review processes by:

1. Identifying failures in project hardware and components
2. Explaining the failure review process and its significance
3. Creating a failure analysis plan
4. Documenting failures impacts and the consequences of unresolved issues

Competency 5: The student will develop project documentation by:

1. Developing a Gantt chart to outline the project schedule
2. Creating a project plan, including objectives, organizational structure, and expected outcomes
3. Producing necessary drawings, schematics, and technical documentation
4. Drafting an engineering plan detailing the project development phases
5. Compiling a "lessons learned" document for future reference
6. Delivering an oral presentation summarizing project results

Competency 6: The student will troubleshoot issues and take corrective action, as necessary by:

1. Performing initial identification of a potential problem
2. Locating the root cause of the identified problem
3. Operating testing techniques using appropriate tools
4. Analyzing the problem for additional underlying concerns
5. Determining effective solutions to resolve the issue
6. Documenting corrective actions required to resolve project issues
7. Executing corrective measures according to the action plan

Learning Outcomes:

- Communicate effectively using listening, speaking, reading, and writing skills
- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning