



**SYLLABUS**  
**AFAB 1004, Fall 2016**  
**Aerospace Structures I**

**COURSE DESCRIPTION**

Aerospace Structures is designed to give students the necessary skills to perform journeyman aerospace structures assembly and repair. Classroom lecture and hands-on practice provide knowledge and experience with drilling holes in aluminum alloys, cold working of holes, installation of special fasteners, the importance of aircraft sealants, and proper preparation of surfaces for application of sealants. The course includes material fabrication experience using sheet metal equipment and the completion of a final project of moderate complexity. The project will include interpretation of engineering drawings, material selection, proper layout, sheet metal cutting and forming, drilling, riveting, and fastening.

**COURSE INFORMATION**

Class Time	MW: 2:00-5:30pm
Class Location	Aero Lab, TS-100
Credits	4 SCH
Requisites	There are no Prerequisites for this course.

**INSTRUCTOR**

Instructor	Mr. Greg Ferringer
Phone	501-622-4262
E-mail	gferringer@np.edu
Office	NPC
Office Hours	MW: 2:00 pm - 4:00 pm, T: 11:00 am-1:00 pm Other times by appointment only

**TEXT & MATERIALS**

- Aircraft Structural Technician (ISBN: 0-9708109-0-3, Publisher-Avotek) Edition 4
- Aircraft Structural Technician Student Workbook (ISBN 1-933189-11-8, Publisher-Avotek) Edition 4
- Pencil/pen, loose-leaf paper, and the textbook must be brought to every class period.
- Personal protective equipment (PPE) – safety glasses, steel toed shoes. Clothing should be worn that is appropriate for the production setting. No open toed shoes are allowed in the laboratory.

**ASSURANCE OF LEARNING**

*Instructional methods*

This course will incorporate a variety of teaching and learning methods - lectures, readings, lab exercises, lab work, video clips, group/field projects, peer teaching, etc

*General Educational Outcomes*

Upon successful completion of any degree at National Park Community College, the student will

- Communicate effectively by demonstrating proficiency in the English language, utilizing appropriate communication technology, and presenting ideas and information orally and in writing.
- Reason scientifically and quantitatively by demonstrating knowledge of mathematical and scientific principles, applying these principles to solve problems, interpreting information presented in graphic form, and by applying scientific methods to the inquiry process.
- Think critically as demonstrated by the ability to read, understand, analyze complex ideas, locate, evaluate, and apply research information, draw inferences from facts and evaluate and present well-reasoned arguments.
- Develop a global perspective which empowers the student to recognize commonalities and differences among cultures, examine the significance of diversity in social interaction, interpret events and values within a given context.

### *Course Specific Outcomes*

Upon completion of the course, the student will:

- Observe and comply with all shop safety procedures and environmental regulations.
- Recognize and safely use structure assembly hand and power tools.
- Read, interpret, and apply proper procedures for using correct drills and drill speeds through the use of appropriate technical manuals.
- Choose and select the correct drill bit and feed speeds to drill holes in aircraft materials.
- Fabricate simulated aircraft parts from blueprints using learned layout, cutting and drilling techniques.
- Demonstrate the use of sheet metal forming equipment.
- Prepare a surface for sealant and apply sealant correctly.
- Select and measure materials using precision measurement tools.
- Create and assemble a final project using skills acquired in class.
- Demonstrate effective teamwork skills through the successful completion of all group projects.
- Demonstrate good time management through the timely completion of all written and laboratory assignments.
- Interpret and follow production policies, procedures, and instructions during the fabrication of an aircraft subsystem in a laboratory simulated production environment.
- Observe the LEAN 5S philosophy of Housekeeping.

Progress on achieving these objectives will be measured through the completion of assignments inside and outside the classroom, participation in discussions and lab work, and periodic quizzes and examinations.

## **COURSE REQUIREMENTS**

### *Assignments*

Problems and textbook problems will be assigned to provide additional practice on the concepts. These assignments may be collected and graded to provide feedback.

### *Quizzes*

Announced or unannounced quizzes may be given. Makeup quizzes are at the discretion of the Instructor.

*Examinations*

There will be 3 to 5 examinations worth 100 points each. Students will be required to take the exams in class or in a proctored environment. Alternative testing sites are acceptable but **MUST BE APPROVED BY THE INSTRUCTOR PRIOR TO THE EXAM**. Exams will consist of problems, fill-in-the-blank, and short essay.

*Final Exam*

There will be a final comprehensive assessment of the course material worth approximately 200 points.

*Lab requirements (if appropriate)*

What has to be accomplished in lab? What sort of testing, participation, skills.

*Evaluation*

Your grade will be determined by your relative performance on the following:

Exams .....	55%
Homework/Quizzes.....	20%
Comprehensive Final.....	15%
Attendance.....	10%
Total .....	100%

Grading Scale:

A .....	90% - 100%
B .....	80% - 89%
C .....	70% - 79%
D.....	60% - 69%
F.....	59% or Below

*Topical Outline and schedule*

Week	Topic	Reading	Homework
1	Orientation/ Introduction		
2			
3			
4			
5			
6			
7	Midterm Exam		
8			
9			
10			
11			
12			
13			

14			
15	Final Exam		

*Daily Class Outline*

Turn in homework  
 Quiz/bellwork  
 Review  
 Lecture, New material  
 Break  
 Lab Demonstration,  
 Tool Inventory/ Project work  
 Break  
 Project work  
 Clean Up/Tool Inventory

**COURSE POLICIES**

*Student Responsibility*

Students are responsible for reading the textbook material and completing homework assignments on time, documenting their lab projects, and writing assigned technical reports. Points will be deducted for work that is turned in late!

*Attendance policy*

The College assumes that regular class attendance is essential to its academic operations. Students not attending regularly scheduled classes are considered absent. Faculty members have the responsibility to deal with absences, to decide makeup work required, if any, and to drop students for absences that exceed the instructor’s policy. Students are personally responsible for the academic consequences of a poor attendance record.

Students may be administratively dropped if they fail to do ALL of the following:

- 1) Attend at least 85% of class meetings to date
- 2) Satisfactorily complete at least 85% of all assignments, quizzes, exams, online discussions, etc.
- 3) Make satisfactory academic progress

*Cell Phone Policy/Classroom Etiquette*

- The use of pagers and cellular phones is prohibited during class time and site visits. The instructor must approve exceptions to this policy in advance. Follow **all** campus rules, policies, and expectations outlined in the *OTC Student Handbook/Calendar*.
- Students are expected to behave as adults, be attentive & participate in a *positive manner* in this class. Unacceptable behaviors which will warrant dismissal from class include, but are not limited to:
  - *Sleeping, talking or passing notes to neighbors, “Texting,” working on other assignments during lecture, gum popping/smacking, or any other disruptive or distracting behaviors.*
- Certain foods and drink are permitted during lecture as long as they are not disruptive to the class.
- As outlined by COTO policy, children are not allowed in classrooms or labs. Do not ask for exceptions to this rule.
- Please make it a habit to turn cell phones to silent before class begins each day
- Demonstrate respect and regard for the ideas of others.

- No horseplay

#### *Laboratory Policy*

At all times, students are expected to comply with all Shop Rules. Clothing should be worn that is appropriate for the electrical trades. No short pants or open toed shoes are allowed in the laboratory.

#### *Make-up Policy*

Make-ups on regular exams will be given at the instructor's discretion. It is the student's responsibility to work this out with the instructor. If an exam date is missed, the student must provide a written request for makeup work. Any supporting documentation may be attached. Any missed projects; quizzes, discussion board postings, papers, and any other class assignments may be made-up only at the discretion of the instructor.

#### *Academic Integrity*

Students are responsible for familiarizing themselves with the College policies on academic integrity. Any instance of academic dishonesty, especially cheating or plagiarism, will be dealt with harshly and may result in failure on the exam or assignment, failure in the course, or dismissal from the College.

#### *ADA statement*

Students with Disabilities: It is the policy of National Park Community College to create inclusive learning environments. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or to accurate assessment of achievement—such as time-limited exams, inaccessible web content, or the use of non-captioned videos—please notify the instructor as soon as possible, preferably during the first or second week of class. Then, it is the student's responsibility to contact the campus Disability Specialist, Audrey Annette Smelser, to verify disability and to request one or more accommodations. Students should contact the Disability Specialist by telephone at 501-760-4227 (v/tty) or via email at [asmelser@npcc.edu](mailto:asmelser@npcc.edu). For more information, visit the Disability Services website at [http://www.npcc.edu/Students/StudentServices/student\\_services\\_description.htm#Disability](http://www.npcc.edu/Students/StudentServices/student_services_description.htm#Disability)

#### *Legal Disclaimer*

The schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances or by mutual agreement between the instructor and the students. The instructor will always inform the students of any changes in a timely manner.