

**Note:**

**Course content may be changed, term to term, without notice. The information below is provided as a guide for course selection and is not binding in any form, and should not be used to purchase course materials.**

## ***COURSE SYLLABUS***

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### **AVIA 455**

#### **TURBINE ENGINE AND JET TRANSPORTS**

#### **COURSE DESCRIPTION**

This course will be an intensive study of the turbine engine theory, design and operations. The student will also receive a broad knowledge of commercial airline types and will acquire a more in-depth understanding of the Boeing 737 Aircraft.

#### **RATIONALE**

The purpose of this training is to provide basic information on the operation of the various aircraft turbine engine systems and their components. It is essential that a pilot has an in-depth understanding of aircraft systems for the safe completion of a flight.

#### **I. PREREQUISITES**

For information regarding prerequisites for this course, please refer to the [Academic Course Catalog](#).

#### **II. REQUIRED RESOURCE PURCHASES**

Click on the following link to view the required resource(s) for the term in which you are registered: <http://bookstore.mbsdirect.net/liberty.htm>

#### **III. ADDITIONAL MATERIALS FOR LEARNING**

- A. Computer with basic audio/video output equipment
- B. Internet access (broadband recommended)
- C. Microsoft Word  
(Microsoft Office is available at a special discount to Liberty University students.)

#### **IV. MEASURABLE LEARNING OUTCOMES**

Upon successful completion of this course, the student will be able to:

- A. Demonstrate a working knowledge of turbine engine theory, design and operations.
- B. Demonstrate a working knowledge of reciprocating engine theory, design and operations.
- C. Develop an understanding of aircraft system failures that can adversely affect the safe completion of a flight.
- D. Explain the development of all models of Boeing 737 and their differences.

## V. COURSE REQUIREMENTS AND ASSIGNMENTS

A. Textbook readings

B. Course Requirements Checklist

After reading the Syllabus and [Student Expectations](#), the student will complete the related checklist found in Module/Week 1.

C. Discussion Board Forums (3)

The student is required to provide a thread in response to the provided prompt for each forum. Each thread must be 300–400 words in length and demonstrate course-related knowledge. In addition to the thread, the student is required to reply to 2 other classmates' threads. Each reply must be 150–200 words in length.

D. Chapter Questions

After completing the required reading, each student must answer a set of questions and submit them in a Microsoft Word document.

E. Afterburner Report

The student will write a 3-page report on Afterburner Theory and operations. This assignment must be completed in APA format.

F. Research Paper

The student will submit a 7–8-page paper, in current APA format, on the history and development of the Boeing 737 series of jet transports. At least 3 academic resources, including but not limited to scholarly books, websites, or articles must be used.

G. Quizzes (3)

Each quiz will cover the Reading & Study material for the modules/weeks in which it is assigned. Each quiz will be open-book/open-notes, contain multiple-choice, true/false, and short answer questions, and have a 60-minute time limit.

## VI. COURSE GRADING AND POLICIES

A. Points

Course Requirement Checklist	10
Discussion Board Forums (3 at 100 pts ea)	300
Chapter Questions	75
Afterburner Report	150
Research Paper	250
Quizzes (3 at 75 pts ea)	225
<b>Total</b>	<b>1010</b>

B. Scale

A = 900–1010 B = 800–899 C = 700–799 D = 600–699 F = 0–599

C. Late Assignment Policy

If the student is unable to complete an assignment on time, then he or she must contact the instructor immediately by email.

Assignments that are submitted after the due date without prior approval from the instructor will receive the following deductions:

1. Late assignments submitted within one week of the due date will receive a 10% deduction.
2. Assignments submitted more than one week late will receive a 20% deduction.
3. Assignments submitted two weeks late or after the final date of the class will not be accepted.
4. Late Discussion Board threads or replies will not be accepted.

Special circumstances (e.g. death in the family, personal health issues) will be reviewed by the instructor on a case-by-case basis.

D. Disability Assistance

Students with a documented disability may contact Liberty University Online's Office of Disability Academic Support (ODAS) at [LUOODAS@liberty.edu](mailto:LUOODAS@liberty.edu) to make arrangements for academic accommodations. Further information can be found at [www.liberty.edu/disabilitysupport](http://www.liberty.edu/disabilitysupport).

## ***COURSE SCHEDULE***

### **AVIA 455**

Textbooks: Crane, Dale, *Powerplant* (2011).

<b>MODULE/ WEEK</b>	<b>READING &amp; STUDY</b>	<b>ASSIGNMENTS</b>	<b>POINTS</b>
<b>1</b>	Crane: ch. 1 1 presentation	Course Requirements Checklist Class Introductions DB Forum 1	10 0 100
<b>2</b>	Crane: ch. 10 1 presentation	Chapter Questions	75
<b>3</b>	Crane: ch. 10 1 presentation	DB Forum 2 Quiz 1	100 75
<b>4</b>	Crane: ch. 11 1 presentation	Afterburner Report	150
<b>5</b>	Crane: ch. 11 1 presentation	Quiz 2	75
<b>6</b>	Crane: ch. 12 1 presentation	Research Paper	250
<b>7</b>	Crane: ch. 17 1 presentation	DB Forum 3	100
<b>8</b>	Crane: ch. 18 1 presentation	Quiz 3	75
<b>TOTAL</b>			<b>1010</b>

DB= Discussion Board

**NOTE:** Each course week (except Module/Week 1) begins on Tuesday morning at 12:00 a.m. (ET) and ends on Monday night at 11:59 p.m. (ET). The final week ends at 11:59 p.m. (ET) on Friday.