

**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***

---

### **AVIA 455**

#### **TURBINE ENGINES AND JET TRANSPORTS**

#### **COURSE DESCRIPTION**

This course is an in-depth study of the turbine engine theory, design and operations. The student will also receive a broad knowledge of the design and operation of turbine engines and their related systems on transport category 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. PREREQUISITE**

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

#### **II. REQUIRED RESOURCE PURCHASE**

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. Blackboard [recommended browsers](#)
- D. Microsoft Word  
(Microsoft Office is available at a special discount to Liberty University students.)
- E. APA Formatting Guide:  
<http://ezproxy.liberty.edu/login?url=http://APAStyleCENTRAL.apa.org>

#### **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. Analyze the development of a turbine powered aircraft and evaluate areas of potential improvement.

**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 a current series of jet transports. At least 5 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

D. Disability Assistance

Students with a documented disability may contact Liberty University Online's Office of Disability Accommodation 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).

If you have a complaint related to disability discrimination or an accommodation that was not provided, you may contact ODAS or the Office of Equity and Compliance by phone at (434) 592-4999 or by email at [equityandcompliance@liberty.edu](mailto:equityandcompliance@liberty.edu). Click to see a full copy of Liberty's [Discrimination, Harassment, and Sexual Misconduct Policy](#) or the [Student Disability Grievance Policy and Procedures](#).

## ***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: pp. 359–379 1 presentation	Chapter Questions	75
<b>3</b>	Crane: pp. 380–428 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 (review) 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.