



MERCER
COUNTY COMMUNITY COLLEGE

COURSE OUTLINE

Course Number AVI 101	Course Title Aerospace Development	Credits 3
Hours: 3 Lecture	Co- or Pre-requisite: None	Implementation Fall 2023

Catalog description:

Historical approach to U.S. and international aviation development including man's first efforts to fly, the development of aircraft, modern growth of the aerospace industry and the impact of aviation and flight on mankind.

General Education Category:
Not GenEd

Course coordinator:
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Required texts & Other materials:

1. Aviation History by Anne Millbrooke (ISBN 0884874338)
2. Texts to supplement the course text include publications from Smithsonian Books as well as various other aviation publishers.
3. Numerous web-based resources which specialize in aviation history, individuals, specific aircraft or companies.
4. Videos and guest speakers to complement information presented in class.

Course Student Learning Outcomes (SLO):

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

1. Describe the events which impacted the development of the aviation industry. **(ILG 1,7,8) (PLO 3,4)**
2. Determine those individuals who made significant contributions to aviation/aerospace development. **(ILG 1,8,11) (PLO 3,4,5)**
3. Describe specific aircraft that evolved during each of the specific time periods of aviation's growth. **(ILG1,8,11) (PLO 3,4,5)**
4. Research a related topic which interests them and present the information to the class in a logical and well-organized manner. **(ILG 1,4,8,10,11) (PLO 3,4,5)**
5. Compare the various modes of flight and determine the relevance of each to the overall impact of aviation/aerospace on society. **(ILG 1,8,11) (PLO 3,4,5)**

Course-specific Institutional Learning Goals (ILG):

Institutional Learning Goal 1. Written and Oral Communication in English. Students will communicate effectively in both speech and writing.

Institutional Learning Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

Institutional Learning Goal 7. History. Students will understand historical events and movements in World, Western, non-Western or American societies and assess their subsequent significance.

Institutional Learning Goal 8. Diversity and Global Perspective: Students will understand the importance of a global perspective and culturally diverse peoples

Institutional Learning Goal 10. Information Literacy: Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

Institutional Learning Goal 11. Critical Thinking: Students will use critical thinking skills understand, analyze, or apply information or solve problems.

Program Learning Outcomes for Aviation Technology (PLO)

- 3 - Describe the events in the development of aviation to the present day and evaluate the impact of these events on today's society.
- 4 - Demonstrate effective and correct written and verbal communication.
- 5 - Research and present information pertinent to their aviation discipline individually and in teams.

Units of study in detail – Unit Student Learning Outcomes:

Unit I **ACHIEVING POWERED FLIGHT (Supports SLOs #1, 2, and 3)**

Learning Objectives

The student will be able to...

- Identify prominent persons who experimented with kites, balloons, gliders, and airships.
- Understand the ways in which early pioneers of flight contributed to aviation development.
- Describe the primitive types of airframes and powerplants utilized by early experimenters.
- Acquire an appreciation for the achievements of the Wright Brothers and their contemporaries.

Unit II **AVIATION GOES TO WAR and the GOLDEN AGE (Supports SLOs #1 and 3)**

Learning Objectives

The student will be able to...

- Trace the development of aviation as it was affected by the outbreak of World War I.
- Identify the aces of the wars.
- Explain the evolution of the types of aircraft utilized in battle and the aerial tactics employed by their pilots.
- Compare and contrast the two great air wars as well as Korea, Viet Nam, Gulf War, etc. from the aspects of aircraft type and capabilities, tactics, piloting skills and types of battles.
- Explain how the pace of aviation development increased between the various wars.
- Understand and appreciate the significance of the Golden Age and all of its facets.
- Describe various specialized aircraft developed during this time period.

Unit III CONTEMPORARY AVIATION (Supports SLOs #1, 3, 4, and 5)

Learning Objectives

The student will be able to...

- Explain the tremendous technological advances for both military and civilian aircraft that have taken place since the end of World War II.
- Trace the development of commercial aviation and its impact on the transportation industry.
- Identify and explain the importance of the various general aviation categories-business, sport, instructional, etc.
- Explain aviation career opportunities that are available to a qualified individual.
- Project, based on information learned in the course, the future direction of aviation/aerospace development.

Evaluation of student learning:

Tests, assignments, class attendance and participation will be considered for the final grading. The breakdown of grading is:

- 60%= Objective Tests
- 20%= Final Exam
- 20%= Paper with Presentation

The paper will be submitted on the date established at the beginning of the semester. It will be original, typed, and between 6-10 pages in length and of an appropriate college format. The topic must be approved by the instructor and the information will be shared with the class during an oral presentation on the assigned date.