

Aviation Science (AVSC)

COURSES

AVSC 3301. INTRODUCTION TO THE AVIATION INDUSTRY. 3 Hours.

This course provides an introduction to the modern civil aviation industry in the United States, focusing on the roles and responsibilities of key government agencies as well as major industry segments. Emphasis will be placed on understanding how these elements work together to ensure the safe and efficient movement of people and goods. Students will explore the historical development, primary components, and operational functions of the complex aviation ecosystem and discuss contemporary challenges and future trends shaping the industry.

AVSC 3310. AIRLINE MANAGEMENT. 3 Hours.

A comprehensive overview of the airline industry, focusing on the management principles and operational complexities of modern air carriers. Students will explore the structure of the U.S. airline industry, analyze various airline business models, and examine the strategic decisions that drive airline profitability and sustainability. Key topics include network planning, revenue management, customer service, fleet management, safety and security protocols, and the extensive regulatory framework governing airline operations. Prerequisite: AVSC 3301.

AVSC 3320. AIRPORT MANAGEMENT. 3 Hours.

A comprehensive study of airport operations and management, focusing on the role of the airport manager in operations, maintenance, certification, administration, financial management, and public and government relations. The course is designed for the student interested in airport management as a career field or others who can benefit from an exposure to airport management. Prerequisite: AVSC 3301.

AVSC 3350. AIRPORT-AIRLINE RELATIONS: BUSINESS AND OPERATIONAL DYNAMICS. 3 Hours.

This course provides an in-depth, fundamental examination of the critical business and operational relationship between commercial airports and their primary tenants, the airlines. The curriculum explores the nature of this partnership, focusing on the legal, financial, and logistical structures that bind them. Prerequisite: AVSC 3301 or permission of instructor.

AVSC 3388. SPECIAL TOPICS IN AVIATION. 3 Hours.

Special topics or problems in the field of aviation. May be repeated for credit when the topic changes.

AVSC 4310. LEVERAGING AVIATION DATA SOURCES. 3 Hours.

This course provides an introduction to the wide variety of data sources that may be leveraged to better understand and conduct research and analysis of the aviation industry. Students will learn how to find, access, collect, and begin to analyze data to answer important questions of relevance to the aviation industry. The course emphasizes a practical, hands-on approach, culminating in a team-based hypothetical research project. Prerequisite: AVSC 3301.

AVSC 4350. AVIATION RESEARCH METHODS. 3 Hours.

This course provides an introduction to the principles and practices of conducting effective research in the field of aviation management. Students will learn how to design and execute a research project intended to provide tangible benefits to an aviation organization, such as an airport, airline, or regulatory body. Topics include formulating a research question, developing a research strategy and schedule, conducting a literature review, understanding different research methodologies, collecting and analyzing data using spreadsheets, models, or simulations, and effectively communicating findings through written reports and oral presentations. The course emphasizes a practical, hands-on approach, culminating in a team-based research project. Prerequisite: AVSC 3301, 60 hours, and permission of instructor.

AVSC 4394. AVIATION CAPSTONE. 3 Hours.

The Aviation Capstone course is designed to provide aviation students with real-world experience to help them prepare for their careers. In this course, students will complete a project associated with a problem in the aviation industry that provides significant evidence of their experience in business, technology, and aviation-specific studies. Students will work with designated faculty members to formulate, develop, and complete their aviation project. Prerequisite: AVSC 3301, AVSC 3310, AVSC 3320, and 90+ hours.