

# **ASCI202e Introduction to Aeronautical Science**

**Level:** 2

**Credit Units:** 5 Credit Units

**Language:** ENGLISH

**Presentation Pattern:** EVERY SEMESTER

**E-Learning:** BLENDED - Learning is done MAINLY online using interactive study materials in Canvas. Students receive guidance and support from online instructors via discussion forums and emails. This is supplemented with SOME face-to-face sessions. If the course has an exam component, this will be administered on-campus.

## **Synopsis:**

An introductory course in aeronautical sciences that provides students an orientation in aviation topics appropriate to Aeronautical Science degree programs. Subjects include: the aviation profession, the science of flight, safety, security and human factors; aviation resources; the aviation environment; and meteorology.

## **Topics:**

- Aeronautical Science, Aviation Professionalism, Aviation Careers and Aviation Certifications
- Aerodynamics
- Aircraft Performance
- Aircraft Systems
- Aircraft Maintenance
- Airport, Airspace, and Air Traffic Control
- Aviation Security
- Human Factors and Team Resource Management
- Aviation Safety
- Aviation National and International Laws and Regulations and Environmental Issues
- Aviation Weather Theory
- Aviation Weather Observations, Analysis and Forecasting

## **Learning Outcome:**

- Explain the qualifications, attributes, ethics, and responsibilities of aviation professionals and examine the financial and educational requirements of those aviation careers.
- Describe the qualifications, privileges, and limitations of all classes of certification to include pilot, maintenance, avionics, dispatch, and air traffic control.
- Explain the aerodynamic considerations and performance capabilities of aircraft and discuss the importance of environmental factors affecting aircraft performance.
- Describe the operating characteristics of aircraft propulsion, control, electrical, environmental, and hydraulic systems.
- Identify aviation reliability and maintainability issues and compare typical maintenance cycles.
- Discuss aviation safety and security concerns including, Safety Management Systems (SMS), aircraft accident prevention, National Transportation Safety Board (NTSB) regulations on accident reporting, and the regulations, policies, and procedures of the Transportation Security Agency.
- Determine the responsibilities of operators, pilots, mechanics, managers, and owners regarding human factors and team resource management.
- Explain the framework of National and International Laws and Regulations that regulate the aviation industry.
- Explain the impact of airport design, development, operations, funding sources, environmental issues, and environmental laws on airport systems.
- Outline the basic structure of the national airspace system and compare air traffic control systems between enroute, terminal, tower, and flight service functions; and describe equipment and capacity limits. Describe the impact of the FAA's National Airspace System Plan (NASP).
- Explain weather hazards, structure, and energy of the atmosphere, and air mass circulation and fronts. Use weather observations, analysis, and forecasting to determine risk management policies for critical weather situations and severe storms.

**Assessment Strategies:**

<b>Continuous Assessment Component</b>	<b>Weightage (%)</b>
TUTOR-MARKED ASSIGNMENT	100
<b>Sub-Total</b>	<b>100</b>

<b>Examinable Component</b>	<b>Weightage (%)</b>
<b>Sub-Total</b>	

**Weightage Total** **100**