

AEROSPACE

SHORT COURSES

Urban Air Mobility System Development and Operations (AERO0740)

Instructor: Robert Lunn

Course Description

This course examines the development and operations of Urban Air Mobility (UAM) as critical components for safely and efficiently transporting people and cargo in urban areas. Students will explore the FAA and NASA frameworks for integrating UAM operations into the National Airspace System (NAS), including the phases of initial, midterm, and mature UAM operations. Key topics covered include the role of autonomous systems in facilitating the safe integration of UAM passenger and cargo operations, as well as the contributions of government agencies, inter-agency working groups, UAM operators, infrastructure providers, eVTOL manufacturers, and communities in advancing UAM development and operations. Additionally, students will examine innovative strategies employed by industry leaders, academic institutions, and government organizations to integrate eVTOL aircraft and necessary infrastructure. The course also analyzes U.S. and global standards and regulations shaping UAM development and the operation of eVTOL aircraft within the NAS. Lastly, students will explore the essential role of vertiports, charging systems, and connectivity networks in enabling the safe and efficient integration of eVTOL aircraft into UAM operations. Throughout the course, students will engage in a comprehensive analysis of both current and future UAM system concepts, emphasizing the strategies and technologies that will drive the continued evolution of UAM.

Who Should Attend?

Engineering professionals who design and develop aircraft and related technology, specifically systems engineers, mechanical engineers, electrical engineers, and aerospace engineers.

Learning Objectives

- Comprehend UAM Development and Integration - Analyze the critical elements of UAM development, including operations, infrastructure, and their role in safely and efficiently transporting people and cargo in urban areas.
- Interpret the FAA Framework for UAM - Explain the FAA framework for integrating UAM operations into the NAS, including the phases of initial, midterm, and mature operations.
- Assess the Role of Autonomous Systems in UAM - Evaluate how autonomous systems enable the safe integration of UAM passenger and cargo operations, focusing on

innovative strategies and technology from industry leaders and government organizations.

Classroom hours / CEUs

28 classroom hours

2.8 CEUs

Certificate Tracks

Unmanned Aircraft (UA)

Course Fees

Early registration course fee: \$2,295 if you register and pay by the early registration deadline (45 days out).

Regular registration course fee: \$2,495 if you register and pay after the early registration deadline.

Course Materials

Course materials, including outlines, presentation copies, and supplementary materials, will be accessible through Canvas, KU's online learning system. Instructions to access Canvas will be provided upon completed registration. Students are required to bring a computer or other electronic device with PDF-viewing capabilities with them to class each day. If you require accommodation contact us at professionalprograms@ku.edu and we will work with you on an accessible solution.

U.S. Federal Employee Discount

This course is available to U.S. federal employees at 10% off the registration fee. To receive the federal employee discount, you must enter the code **FGVT116** during the checkout process. Please note that you must validate your eligibility to receive this discount by entering your U.S. government email address (ending in .gov or .mil) when creating your online registration profile. This discount is available for both the early registration and regular registration fees.

Canada Department of National Defence Discount

This course is available to Canada DND employees at 10% off the registration fee. Please contact the DND Procurement Authority (DAP 2-3) for details. Please note that you cannot register using our online system when requesting this discount. This discount is available for both the early registration and regular registration fees.

Instructor Bio

Robbie Lunnie is an assistant professor of aviation at the John D. Odegard School of Aerospace Sciences and an adjunct assistant professor at Embry-Riddle Aeronautical University. With over 20 years of experience in aerospace education, he has developed and taught undergraduate

and graduate courses in aviation, UAS, UAM, and space studies. He holds degrees in nuclear weapons systems technology, professional aeronautics, aviation management, and space studies. He is pursuing a Ph.D. at the University of North Dakota, focusing on simulation and sub-scale flight models using UAM/AAM training. Robbie's research spans flight corridor and vertiport development, training, regulatory frameworks, automation, airworthiness, and economic impacts in UAM/AAM operations. He has worked on funded projects with the State of North Dakota, FAA, and NASA and develops graduate-level curricula in UAS, UAM, AAM, and Vertiport operations. He is experienced with Simlat's IMPACT UAS simulation software and integrates simulation and experiential learning into classroom education. A retired U.S. Air Force veteran, Robbie served 24 years specializing in nuclear weapons operations and safety, with deep expertise in ALCM/ACM systems, nuclear surety, and high-reliability theory.

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