



**Department of
Higher Education**

John R. Kasich, Governor
John Carey, Chancellor

**INITIAL INQUIRY
REQUEST TO OFFER A NEW PROGRAM**

Date of submission: *Date to come (sent after EPC)*

Name of institution: Kent State University

Primary institutional contact for this request:

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Name of new program: Aeronautical Systems Engineering Technology major within the Bachelor of Science degree

For institutions that are already approved/authorized by the chancellor

- New degree designation
 New program within an existing degree (e.g., major, minor, concentration)
 New technical certificate program
 New licensure/endorsement area (educator preparation)

Delivery options (check all that apply):

- Campus-based
 Online/hybrid delivery
 Flexible or accelerated delivery
 Offering the program at a new offsite location
 Offering the program at an existing offsite location
 Program contains off-campus experiences (e.g., internship, clinical, practicum, student teaching)

The institution will be seeking specialized accreditation for the program:

- No Yes

If “yes,” provide the name of the accrediting agency:

Kent State will be seeking specialized accreditation from the Engineering Technology Accreditation Commission (ETAC) of ABET (formerly known as the Accreditation Board for Engineering and Technology).

Provide a brief description of the request.

Kent State University's College of Applied Engineering, Sustainability and Technology offers a Bachelor of Science degree, Aeronautics major, with five concentrations: Flight Technology, Air Traffic Control, Aeronautical Studies, Aviation Management and Aeronautical Systems Engineering Technology.

The college proposes elevating the concentration in Aeronautical Systems Engineering Technology to become a separate major under the Bachelor of Science degree. Doing so will eliminate the need to maintain the current core of aeronautics courses and allow the program to better serve its graduates and the aeronautics industry by creating educational depth in the areas of engineering materials, electro-mechanical devices and control and systems engineering.

Explain the academic unit's rationale for making the request.

In October 2015, the College of Applied Engineering, Sustainability and Technology hosted a visiting team from the Engineering Technology Accreditation Commission (ETAC) of ABET in pursuit of accreditation for its existing aeronautics concentration in aeronautical systems engineering technology. During the exit interview, the college was cited for having a weakness in the area of curriculum. Specifically, "The present curriculum has a substantial core that emphasizes professional aeronautics but lacks a focus on technical engineering concepts. As a result, engineering technology topics are not covered in depth...the program must ensure that its curriculum has a technical core, develops student competency in the use of equipment and engineering tools appropriate to the discipline, and prepares students for increasingly complex technical specialties of the program".¹

In informal conversations with members of the ABET visiting team, a refocused curriculum was proposed, which was well received. Additionally, there were no indications that changes to the curriculum now would adversely affect the current bid for ABET accreditation. On the contrary, the accreditation process for ABET is such that the noted weakness in its curriculum criteria may be reduced to either a concern or eliminated entirely prior to the commission's review of the visiting team's report; in this case, changing the curriculum may in fact help the current bid for accreditation from the Engineering Technology Accreditation Commission.

The state of Ohio requires those pursuing professional licensure through the Fundamentals of Engineering and the Professional Engineering exams to have graduated from an ABET-accredited institution.² Presently, there are no public or private universities in Ohio offering an ABET-accredited aeronautical systems engineering technology program. There are only two similar programs nationwide, the closest being at Purdue University in Indiana.³

The base infrastructure for the proposed Aeronautical Systems Engineering Technology major is already in place through the existing aeronautical systems engineering technology concentration in the BS degree in Aeronautics. The Aeronautical Systems Engineering Technology major will require no new courses and will take advantage of existing courses offered in the aeronautics program and technology programs (e.g., statics, programmable logic controllers and mechatronics).

¹ ABET Program Audit Form T-301 for Kent State University (Oct 20, 2015).

² Ohio General Guidelines for Professional Engineers and Professional Surveyors Applicants. Retrieved from www.peps.ohio.gov/Portals/0/forms/exams/General%20Guidelines%20Exam%2020140515.pdf.

³ Find an ABET-Accredited Program. Retrieved from <http://main.abet.org/aps/accreditedprogramsearch.aspx>.

Technology trends in the aerospace industry are shifting toward increasing the sustainability, safety and reliability of current airframes while minimizing their environmental impact. The proliferation of unmanned aerial systems (UAS) over the past decade has affected the aerospace industry in a way never before anticipated or imagined. Although government dominance has declined in recent years, the rise of the commercial space and UAS industries is expected to translate to a growth rate of 4,000 new jobs in the U.S. between 2010 and 2020.

The emergence of the UAS industry contributes to the greater demand for additional aeronautical systems engineering technology graduates within the state. Ohio recently partnered with Indiana to designate an Unmanned Aerial Systems Test Center near Dayton, with the hopes of becoming one of the FAA's UAS Unmanned Aerial Systems Test Centers. With the requirements to integrate unmanned aerial systems into the National Airspace System as part of the 2012 FAA Reauthorization Act, Kent State could be poised to play a significant role in these aerospace milestones with its already established and recognized programs in air traffic control and flight technology, in addition to a separate aeronautical systems engineering technology program that contains the critical depth in the areas of electro-mechanical devices and control and systems engineering.

Indicate whether additional faculty and staff will be needed to support the proposed request.

Per 15th day census for fall 2015, there were 60 students declared in the aeronautical systems engineering technology concentration (there were 574 total students in the major). The needs of current students are being met by existing faculty and staff in the College of Applied Engineering, Sustainability and Technology. While the change from a concentration to a distinct bachelor degree calls a curriculum overhaul that will replace the current aeronautics core with eight courses, all of the courses required for the new core are existing and offered by Kent State faculty. The only need for additional faculty and staff will be as a result of program growth, which is expected to occur if ABET accreditation is earned.

The removal of the eight courses from the aeronautics core will not detract from the existing BS degree in Aeronautics; in fact, removing approximately eight to 15 students from the aeronautics core will allow for program growth in other concentrations without over-stressing the current faculty load and course section size.