AERN 45300 **Air Traffic Control Capstone**, 3 Cr requests ELR course status.

I. Learning Outcomes

This course provides excellent opportunities for students to fulfill all three learning outcomes.

a) Connect ideas, concepts, and skills developed at the university with their applications to new and different contexts: The students shall take AT-Basic quizzes that cover information from previous classes as well as some new information. The students will also combine the skills they have learned, in previous classes, in a simulation that includes the three (3) primary areas of Air Traffic Control (ATC): Tower, terminal radar approach facilities (TRACON), and En Route. Additionally, students will develop advanced controller skills which go beyond the skills developed in previous courses through the use of advanced ATC scenarios incorporating preplanned special events such as runway changes, in-flight emergencies and equipment malfunctions.

b) Demonstrate how this experience has broadened their understanding of the discipline, the world, or themselves as learner: Students will solve multifaceted problems on their own and in a team environment during laboratory exercises as they work to provide proper, timely and safe air traffic control instructions to increasingly complex scenarios; students will gain further understanding into the normal operation within an FAA facility and how that facility ties into others in the air traffic system. They will experience what consequences their control instructions have on others' as well as their own traffic.

c) Reflect on the meaning of the experience for their current and future learning: Students will be given an opportunity to reflect on the meaning of their aviation management capstone experience for their current and future learning through the submission of a final reflection paper that addresses, at a minimum, the following items:
    a. Which part of the process for course assignments did you put the most effort into? Which part of the process for course assignments do you wish you had spent more time on?
    b. What was the *most* difficult part of this course? Were there topics/courses that were missing from your previous coursework which could have better prepared you for this class?
    c. What was the biggest problem you encountered during this course? How successful were you in solving that problem? What tools did you use? What might you have done better if experiencing a similar situation in the future?
    d. What did you learn about yourself as an aviation management major (or about aviation management in general) in the process of completing this course?
    e. How does the completion of this course prepare you for future career opportunities?
    f. How do you feel the ideas, concepts and skills developed throughout the course have prepared you for new experiences in aviation management?

g. How do you feel this course has broadened your understanding of aviation management, the world, or yourself as a learner?

II. Assessment of learning outcomes

The learning outcomes are assessed from AT basics quizzes, laboratory exercises, presentations and the final reflection paper. Since much of their coursework is student driven, the faculty member will observe the groups during every class and offer suggestions when necessary. Successfully completing each assignment requires out of class work, reflection and problem solving. These all contribute to the learning outcomes.

III. Unit commitment

This proposal has been developed with input from key faculty members. The importance of meeting these expectations was presented by college faculty members. Faculty members have expressed an understanding of these criteria and assessments to accreditation of the university and the college. At present there is only one section of this course. The basic data sheet/ course catalog update sheets will explicitly state that this is an ELR course and faculty members teaching this course will be made aware of the requirements of such courses by the division coordinators.

Experiential Learning Course Proposal Cover Sheet

Program/Department/School Submitting Proposal Aeronautics **Date Submitted** 20 Aug 14

Contact Person Maureen McFarland **E-mail** mmcfarl2@kent.edu **Phone** 330.672.9867

Course Number/Title AERN 45300 ATC Capstone **# of Credits** Three (3)

Check one:
☒ **New Proposal** ☐ **Resubmission with Revision (Date of Original Submission: _____)**
☐ **Renewal of Approved ELR Section**

Check one:
☒ **Request for Section and Full Course Approval** ☐ **Request for Full Course Approval Only**
☐ **Request for Section Approval Only**

Select Appropriate Experiential Learning Category/Categories: [ ]Civic Engagement, [ ]Creative/Artistic Activities, [X]Practical Experiences, [X]Research, [ ]Study Abroad/Away

INFORMATION NEEDED FOR SECTION APPROVAL ONLY:
Faculty Member of Record: _____

CRN: _____ **Section #:**_____ **Semester/Yr:**_____/_____

APPROVAL ROUTING: Check one and obtain associated signatures

☒ **Kent Campus and Regional Campus- FULL-COURSE approval if housed on Kent Campus**

Chair/Director: Maureen R. McFarland Date: 21 Aug 2014

Date Approved by College Curriculum Committee: 10 Sept 2014

Dean: Robert G. Sines Date: 11 Sept 2014

☐ **Kent Campus and Regional Campus - Section Approval ONLY**

Chair/Director: _____ Date: _____

URCC College Representative: _____ Date: _____

RC ONLY:
Asst. or Assoc. Dean: _____ Date: _____

☐ **REGIONAL COLLEGE SECTION AND FULL-COURSE Approval**

Asst. or Assoc. Dean: _____ Date: _____

RC Assoc. Provost & Dean: _____ Date: _____

SECTION ONLY:
URCC College Representative: _____ Date: _____

Name: Maureen R. McFarland Submission Date: 9/9/2014

Organization: Flight & Air Traffic Control

Course Catalog Update

<< Go back to Course Catalog Update form

Print

Course Catalog Update Information: **STU0004**

Reference Number: CCU007599 **Date:** 09-SEP-14

Level: of **Currently On The Worklist Of: ,** unassigned

Owner: Office of Curriculum Services, 330-672-8558 or 330-672-8559, curriculum@kent.edu

Basic Course Data
Change type: Revise
Faculty member submitting this proposal:
Requested Effective Term: 201580
Campus: Kent
College: AT-College of Applied Engineering, Sustainability and Technology
Department: AEST-Applied Engineering, Sustainability and Technology
Course Subject: AERN-Aeronautics
New Course Subject:
Course Number: 45300
New Course Number:
Course Title: AIR TRAFFIC CONTROL CAPSTONE
Title Abbreviation: AIR TRAFFIC CONTROL CAPSTONE
Slash Course and Cross-list Information:
Credit Hours
Minimum Credit/Maximum Credit: 3 to 3
Contact Hours: Lecture - Minimum Hours/Maximum Hours: 2 to 2
Contact Hours: Lab - Minimum Hours/Maximum Hours: 2 to 2
Contact Hours: Other - Minimum Hours/Maximum Hours:
Attributes
Is this course part of the LER, WIC or Diversity requirements: Yes
If yes, course attributes: 1. LADL-LER-Additional Course 2. 3.

Can this course be repeated for credit: No Repeat	**Course Limit:**	**OR Maximum Hours:**
Course Level: Undergraduate	**Grade Rule:** B-Standard letter	

Rationale for an IP grade request for this course (if applicable): There is no IP requested.
Schedule Type(s): 1. LLB-Combined Lecture and Laboratory 2. 3.
Credit by Exam: N-Credit by exam-not approved
Prerequisites & Descriptions
Current Prerequisite/Corequisite/Catalog Description: Designed to prepare the student for the AT-Basics, AT-SAT, and to act as the culminating experience for the air traffic control program of study. Includes a combination of practical terminal and enroute operations. A grade of "B" or higher must be achieved in order to graduate and receive a CTI endorsement. Prerequisites: AERN 45343 and AERN 45344.
Catalog Description (edited): Designed to prepare the student for the AT-Basics, AT-SAT, and to act as the culminating experience for the air traffic control program of study. Includes a combination of practical terminal and enroute operations. A grade of "B" or higher must be achieved in order to graduate and receive a CTI endorsement. Fulfills experiential learning requirement.
Prerequisites (edited): AERN 45343 and AERN 45344
Corequisites (edited):
Registration is by special approval only: No
Content Information
Content Outline:

Content Hours per Course Topic	Topic Description

20	AT-BASICS
20	AT-SAT Prep
20	Culminating Experience

Display/Hide Delimited Course Outline

Total Contact Hours: 105

Textbook(s) used in this course: Textbook(s) used in this course: 7110.65 Current Edition

Writing Expectations: Reflective essay

Instructor(s) expected to teach: As assigned

Instructor(s) contributing to content: Boergerhoff, Priestly, McFarland

Proposal Summary

Explain the purpose for this proposal:

The purpose of this proposal is to designate the course as fulfilling the experiential learning requirement for students in the aviation management area of concentration. As there was no "ELR" designator under the "course attributes" drop down box, LER was chosen to highlight the prospective change.

Explain how this proposal affects program requirements and students in your unit:

This proposal will present an opportunity for students to fulfills their experiential learning requirements when they apply previously gained knowledge and experience in ATC to their responses to real-word air traffic control scenarios.

Explain how this proposal affects courses, program requirements and student in other units:

None

Explain how this proposal affects enrollment and staffing:

None

Units consulted (other departments, programs or campuses affected by the proposal):

None

Revisions made to form (if applicable):

☐ Course Content	☐ Number
☐ Credit by Exam	☐ Prerequisites
☐ Credit Hours	☐ Schedule Type
☐ Cross-Listed / Slash	☐ Subject
☑ Description	☐ Title
☐ Diversity	☐ Title Abbreviation
☐ Grade Rule	☐ Writing-Intensive (WIC)
☑ Liberal Education Requirement (LER)	☑ Other

Comments (500 Character Maximum):

NOTE: Please do not use the following restricted characters: (~ * / \ --)

Submit

You must click the submit button to submit your catalog update request for approval. After the document is successfully submitted, a printable confirmation page will appear.

Stop Workflow

COLLEGE OF APPLIED ENGINEERING, SUSTAINABILITY, & TECHNOLOGY
AERONAUTICS DIVISION
Fall 2014
Air Traffic Control Capstone (AERN 45300) (CRN11061)

Instructor: Jason Boergerhoff, MS & Robert A. Priestley, MS

Class Meeting: 1230 – 1345 T &R, VDN 202

Office Location: 212 Van Deusen

Contact: 330-672-4273, jboerger@kent.edu
330-672-3935, rpriestl@kent.edu

Office Hours: All times by appointment

Course Title, Number, and Description: Air Traffic Control Capstone (AERN 45300).
Designed to act as the culminating experience for the air traffic control program of study. Includes a combination of practical terminal and enroute operations. A grade of "C" or higher must be achieved. Prerequisites: AERN 45320 and 45321 AND 45343 AND 45344

Required Textbooks

***FAA JO 7110.65: Air Traffic Control,* Current Edition. Washington, D.C.**
Available online

Attendance and LAB Policy
Students are strongly advised to attend lecture and lab, arrive on time, and stay for the entire period. The class will start on time, so it is important to be there on-time or early. The door to the lab will close 5 minutes after the scheduled start of the lab. The beginning of each lab section involves in-briefing and position assignments and it is a distraction for the instructor and on time students to have to re-brief late-comers. Students are responsible for signing in at the beginning of each lab and reporting to their assigned position and stay for the entire period in order to receive credit for attendance. Absences will only be excused in accordance with the University attendance policy. All students will be required to complete a two (2) page written makeup assignment to be assigned by the instructor on subject matter materials covered for the lecture/lab they missed. This makeup assignment is to be submitted to the Instructor at the beginning of the next scheduled class or when they return from the approved absence. A student's grade may be lowered one grade level, based on having two or more unexcused absences and/or due to their failure completing the required makeup assignments.

Tobacco, food, or any substance in any form is not allowed in the classroom or lab. **Cell phones should be turned off and either stowed or placed on the desk. No texting or other types of electronic communication during class or lab. This will be enforced! Unless you are a primary care provider on call, you should be able to go the length of the class without texting or calling.**

NextSIM simulator is subject to damage from un-authorized use such as USB or internet usage. No student is permitted to use a USB or other type storage device or to access the internet on any NextSIM workstation. Students may be billed for damage to university property, whether by vandalism, horseplay or accident. All lab students can collectively be held responsible for damages to public areas that cannot be attributed to specific individuals.

Course Objectives and Measurements

Course Learning Objectives	Supports AABI General Program Outcomes
1. Develop an understanding of the National Airspace System (NAS) including: NAVAIDS, Facilities, Airports and Landing Areas, Charts and Tech information, Rules and regulations and aviation safety *(Assessment: Term paper and power point presentation on elements of the NAS, Quizzes, Final Exam)*	1. An understanding of the national and international aviation environment
2. Develop an understanding of ATC standards and procedures and communications, airspace classifications, and Tower TRACON and Enroute functions and how they relate to the ATC system and NAS *(Assessment: NextSIM ATC lab and integrated scenarios for Enroute, Terminal Radar and Control Tower. (Quizzes, Midterm, Final Exam, Graded Scenarios)*	2. Ability to apply knowledge of mathematics, science and applied sciences to aviation-related disciplines 2. Ability to work effectively on multi-disciplinary & diverse teams
3. Develop an understanding of the occupation of "Air Traffic Controller," through the study of actual facility work logs and quality assurance documents, attributes of an aviation professional, National and international labor issues including bargaining units *(Assessment: AT-Basic quizzes)*	3. An understanding of professional and ethical decision-making 3. An understanding of the national and international aviation environment

4. Develop skills such as ATC teamwork and effective communication *(Assessment: NextSIM ATC lab and integrated scenarios for Enroute, Terminal Radar and Control Tower (Lab Performance Review Scenarios))*	4. Ability to work effectively on multi-disciplinary & diverse teams 4. Ability to analyze and interpret data
5. Develop advanced controller skills which go beyond the skills developed in Fundamentals, Enroute and Terminal OPS through the use of advanced ATC scenarios incorporating preplanned special events such as runway changes, in-flight emergencies and equipment malfunctions *(Assessment: Lab scenarios, class presentations)*	5. An ability to use the techniques, skills, and modern technology necessary for professional practice 5. An ability to apply pertinent knowledge in identifying and solving problems 5. Ability to analyze and interpret data

AT- Basics

There are 31 different lessons within the AT-Basics curriculum. A major part of this class will be going over and testing these lessons which will provide a summary review of all of the Air Traffic studies completed here at Kent.

The following is a list of the main topics found in the AT Basics curriculum.

Introduction to the ATC System and NAS
Teamwork in ATC
Airports
Separation
Notams
Fundamentals of Radar
Intro to FAA Orders and Manuals
Intro to LOA's and SOP's
Airspace
FAR's
FAR Part 91
Principles of Flight
Wake Turbulence
Aircraft Characteristics
Basic Navigation
Radio and Satellite Nav
Enroute IFR Charts
SIDS and STARS
Approaches
Pilot Environment
Pilot Emergencies
SAR
Fundamentals of WX and Aviation WX SVCs
Hazardous WX
Current WX
Forecasts and Advisories
Pilot WX Reports
Basic Communication
Strip marking
ATC Clearances
VFR Charts and Pubs

Resume

Students will be required to prepare and submit a resume in preparation for a mock interview exercise to be conducted independent of this course. This topic will be discussed in class as it pertains to career planning.

Power Point Presentation and Briefing:

As a senior level course, students may choose to do a PowerPoint Presentation. The Instructor shall approve the topic. The student shall prepare and submit an outline of the PowerPoint during the 4th week of class. Student who choose this option do not have to submit a Term Paper. The PowerPoint presentation must contain a personal view or opinion and be at least 20 slides in length. Students who choose to do the PowerPoint Assignment must be prepared to give an oral briefing/argument on their position during the 12th week of the semester and not exceed 15 minutes in length. An electronic copy of the Power Point shall be submitted onto Blackboard by the 12th week of the semester

Term Paper

As a senior level course, students may choose to write a term paper for Capstone. The Instructor shall approve the topic. The student shall prepare and submit an outline of the term paper during the 4th week of class. Student who choose this option do not have to submit a Power Point presentation.

The length requirement is a minimum of 10 pages and a maximum of 15, using a 1-inch top, bottom, left, & right margins, and 12-point font. Insure that your header, footer, introduction, summary, bibliography, and your footnotes/endnotes/references used in the text are to be in the required APA format. If you use a statement verbatim (or near verbatim) out of a reference, it must be quoted according to APA format. KSU provides help for preparing a term paper, including advice on the APA style of writing, and an example grading sheet, is provided on the Outline for Term Paper Handout provided by the Instructor.

Writing style should conform to the APA (American Psychological Association) format. The twofold purpose of most term papers is 1.) To research and learn more about a topic of your choice; and 2.) To help develop, improve, and perfect your written communications skills. In most professional jobs, letter and report writing skills are very important. KSU term paper requirements are designed to help you improve the technical writing skills you will need in your jobs. In that regard, written course work must be completed in accordance with the APA format .
(see writing commons) (see online writing lab: owl.english.purdue.edu)

Topics for PowerPoint or Term Paper Requirements:
The PowerPoint or Term Paper Topic should cover one of the following areas as they relate to the NAS and ATC.

The PowerPoint or Term Paper should include the requirements for proper compliance with applicable EPA, DOT, FAA, ICAO, IATA, OSHA or related State regulations, including material handling, emergency response, permitting, environmental impact, recordkeeping and reporting.
Students who choose to do the Term Paper Assignment must be prepared to submit an electronic copy of the Final copy onto Blackboard by the 12th week of the semester.

Grading of Briefing and Power Point Presentation and Term Paper:
The Instructor will provide an Outline for the grading scale used to evaluate the PowerPoint Presentation and Term Paper.

Discussion Topics

Week	Mon	-	Fri	Classes
1	25 Aug	-	29 Aug	Day 1: Syllabus, Introduction, AT Basics 3120.4 Day 2: Puesdo Refresher, Enroute, Tower, Approach, Refresher
2	1* Sept	-	5 Sept	Day 1: AT Basics:Intro to ATC and NAS, Teamwork Airports Day 2: Enroute, Tower, Approach, Refresher
3	8 Sept	-	12 Sept	Day 1: AT Basics: Separation, Notams, Fund of Radar Day 2: Enroute, Tower, Approach, Refresher
4	15 Sept	-	19 Sept	Day 1: AT Basics:FAA Orders and Manuals, LOA& SOP, Airspace Day 2: Enroute Tower, Approach Advanced exercise Term Paper/Power Point topic outline due
5	22 Sept	-	26 Sept	Day 1: AT Basics: FAR's, Principles of Flight, Wake Turb Day 2: Enroute Tower, Approach Advanced exercise
6	29 Sept	-	3 Oct	Day 1: AT Basics: Acft characteristics, Basic Navigation, Radio and SAT Nav (ATCA Conference) Day 2: Triple Play Basic
7	6 Oct	-	10 Oct	Day 1: AT Basics:VFR Charts and Pub, IFR Charts, SIDS And STARS Day 2: Triple Play Basic (UAA Conference)
8	13 Oct	-	17 Oct	Day 1: AT Basics: Approaches, Pilot Environment, Emergencies Day 2: Mid Term LAB Performance Eval
9	20 Oct	-	24 Oct	Day 1: AT Basics: SAR, Aviation WX, Forecasts and Advisories Day 2: Triple Play Special Event: AAC ARPT Closure Due To Emergency on the airport
10	27 Oct	-	31 Oct	Day 1: AT Basics: PIREPS, Basic Comm, ATC Clearances Day 2: Triple Play Special Event: Med Emergency From Sector 66 Landing AAC
11	3 Nov	-	7 Nov	Day 1: Triple Play with JAN Approach North South RWY Change 28's to 10's Day 2: Triple Play Special Event: AAC Change RWYS
12	10* Nov	-	14 Nov	Day 1: Triple Play with JAN Approach North South Stagger 28L/28R Day 2: Triple Play with JAN Approach North South Stagger 28L/28R Power point and term papers due on Bb by COB (1700) 11/21/14
13	17 Nov	-	21 Nov	Day 1: PPT Presentation Day 2: Final LAB Performance Eval
14	24 Nov	-	25 Nov	Day 1: PPT Presentation Day 2: Thanksgiving Recess
15	1 Dec	-	5 Dec	Day 1: PPT Presentation; SSI due this week Day 2: PPT Presentation
16	8 Dec	-	14 Dec	Final
				Final Exam: pending registrar approval 12:45 - 3:00 p.m. | Wed. | Dec. 10 VDN202

Goals of the Experiential Learning component

- Connect ideas, concepts, and skills developed at the university with their applications to new and different contexts;
- Demonstrate how this experience has broadened their understanding of the discipline, the world, or themselves as learners; and
- Reflect on the meaning of the experience for their current and future learning

Grading System

AT-Basic Quizzes (30quizzes 10 pts each)	300
Class Participation (Attendance)	200
Lab Performance	100
Resume	25
Outline for Power Point or Term Paper	25
Power Point OR Term Paper	250
Final Exam	100
TOTAL	1000 points

Grading Scale

Final grades will be issued on the following basis:

900 - 1000	=	A
800 - 899	=	B
700 - 799	=	C
699 or less	=	F

Final grade average resulting in a decimal value of .5 or greater will be rounded to the next whole number Example 93.525 will be rounded to 94.

Academic Honesty

Cheating means to misrepresent the source, nature, or other conditions of your academic work (e.g., tests, papers, projects, assignments) so as to get underserved credit. The use of the intellectual property of others without giving them appropriate credit is a serious academic offense. The University considers cheating and plagiarism very serious offenses and provides for sanctions up to and including dismissal from the University or revocation of a degree. The University's administrative policy and procedures regarding student cheating and plagiarism can be found in the University Policy Register, 3-01.8. By submitting any material in this (or any other class) you are certifying that it is free of plagiarism.

If you would like more information on plagiarism, what it is, and how to avoid it, please visit the following site: http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml

Withdrawal Deadline

For fall and spring semesters, the course withdrawal deadline is in accordance with University policy

Students with Disabilities

University policy 3342-3-01.3 requires that students with disabilities be provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these through Student Accessibility Services (contact 330-672-3391 or visit www.kent.edu/sas for more information on registration procedures).

Proper Enrollment

Students have responsibility to ensure they are properly enrolled in classes. You are advised to review your official class schedule (using Student Tools in FlashLine) during the first two weeks of the semester to ensure you are properly enrolled in this class and section. Should you find an error in your class schedule, you have until (date will be provided by the Undergraduate Office in advance) to correct the error with your advising office. If registration errors are not corrected by this date and you continue to attend and participate in classes for which you are not officially enrolled, you are advised now that your will not receive a grade at the conclusion of the semester for any class in which you are not properly registered.

Copyright and Intellectual Property

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