THE OHIO STATE UNIVERSITY

College of Engineering

122 Hitchcock Hall
2070 Neil Avenue
Columbus, OH 43210-1278

Phone 614-292-2651
FAX 614-292-9379
E-mail engosu@osu.edu

Date: 24 February 2011

To: Randy Smith
Vice Provost, Office of Academic Affairs

From: Ed McCaul
Secretary, College of Engineering Committee on Academy Affairs (CCAA)

Subject: Semester Conversion Proposal for the Undergraduate Minor in Aviation

Attached is a letter from Meyer Benzakein, Department Chair of Aviation, as well as a semester conversion proposal for their Undergraduate Minor in Aviation. Their proposal was reviewed by a subcommittee of CCAA. After reviewing the proposal and having some changes made to it the subcommittee recommended to the full committee that it be approved. After a discussion, CCAA approved the proposal on the 23rd of February 2011 and requested that I forward it to you for consideration by CAA. If you have any questions concerning this proposal please let me know.

THE OHIO STATE UNIVERSITY

Aviation Department

400 Aviation Building
164 West 19th Avenue
Columbus, OH 43210-1110

Phone (614) 292-2405
Fax (614) 292-1014
Web: www.aviation.osu.edu

REVISED APRIL 18, 2011
PER CAA FEEDBACK

To: Office of Academic Affairs
From: Meyer Benzakein, AVN Chair
Date: May 27, 2010 revised November 8, 2010, revised January 15, 2011
Re: **Minor in Aviation** , Semester Curriculum Proposal, Dept. of Aviation

The faculty and staff of the Department of Aviation (AVN) have worked diligently over the past year to prepare the attached proposal for the department's undergraduate engineering curriculum under the university's proposed semester-based academic calendar. This proposal describes the department's proposed curriculum and plans for transition from the current quarter-based calendar. The faculty has unanimously voted to approve this proposal, and I personally recommend its approval.

AVN currently administers the following programs in the College of Engineering:

- **BS in Aviation**: An undergraduate program focusing on aviation systems and management, with a fundamental emphasis on engineering principles.

- **Minor in Aviation:** A minor program offered as a compliment to undergraduate major programs throughout the university.

AVN also administers the following degree curricula within and outside of the College of Engineering:

- **BA in Social and Behavioral Sciences with a concentration in Aviation**: An undergraduate program focusing on the aviation systems and management, with a fundamental emphasis on social and behavioral principles. This program is offered through the College of Social and Behavioral Sciences (SBS).

- **BS/BA in Business with a special major in Aviation**: An undergraduate program focusing on the aviation systems and management, with a fundamental emphasis on business principles. This program is offered through the Fisher College of Business.

All of the above programs will continue to be offered under the semester calendar.

This proposal will detail the planned changes to the Minor in Aviation offered through the College of Engineering. Proposals for the other programs listed above are offered under separate cover. This proposal has been vetted through the AVN Dept. and discussed among faculty, staff, and student leaders. The faculty voted unanimously (2 for, 0 opposed) to support this proposal, and staff and representative students have expressed their approval.

Meyer Benzakein, AVN Dept. Chair

Aviation (AVN) Minor Program Proposal

Primary Contact: Meyer Benzakein, Dept. Chair
e-mail: Benzakein.1@osu.edu
tel. 292-7699

Secondary Contact: Seth Young, Associate Professor
e-mail: young.1460@osu.edu
tel. 292-4556

1. Name of Program

Aviation (AVN)

2. Names of Degrees

Minor in Aviation

3. Responsible Academic Unit

The academic unit responsible for this program will be the Department of Aviation, a tenure initiating unit within the College of Engineering.

4. Type of Program

Undergraduate minor program

5. Semester Conversion Designation

Changes to course numbers, core course requirements, and elective course requirements.

6. Program Learning Goals

Although the AVN program is not itself accredited by ABET, this proposal will describe program learning goals, separated into “objectives” and “outcomes”, as specified by ABET accrediting requirements. ABET terminology defines these terms as follows:

Program Educational Objectives: broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve.

Program Outcomes: narrower statements that describe what students are expect to know and be able to do by the time of graduation (related to skills, knowledge, and behaviors that students acquire in their matriculation through the program).

Program Educational Objectives

The AVN program has the following educational objectives:

1. Graduates of the Minor program will be exposed to the fundamentals that govern the aviation industry
2. Graduates of the Minor program will apply the principles learned from their other coursework to solving problems within the aviation industry
3. Graduates of the Minor program will have had the opportunity to earn FAA pilot ratings
4. Graduates will be informed and involved members of the aviation community.
5. Graduates will be prepared and motivated for further collegiate study in aviation.

Program Outcomes

The outcomes of the AVN program are that the students will attain the following skills and abilities:

a. An understanding of professional, social, and ethical responsibility
b. An understanding of rules, regulations, and policies specific to the aviation industry
c. A knowledge of contemporary issues
d. An ability to communicate effectively, both orally and in written form
e. Recognition of the need for, and an ability to engage in life-long learning.

7. Proposed Program Requirements

The **Minor in Aviation program** is designed to supplement a student's bachelor's degree program with a focus in aviation. To this end, in addition to the requirements of the student's desired major requirements (which include GEC, core, and elective requirements associated with the major), the Minor in aviation will require a total of 17 credit hours of aviation courses, including:

- Aviation Minor Core – 11 semester credit hours

  The Minor in Aviation program will require 11 semester credit hours of pre-determined courses that make up the "Aviation Minor Core". The courses that make up the Aviation Minor Core are (current course number in parentheses):

Aviation 2000	(AVN 300)	Introduction to the Aviation Industry	(3 hours)
Aviation 2100	(AVN 310)	Private Pilot Fundamentals	(5 hours)
Aviation 3000	(AVN 550/654)	Aviation Management and Marketing	(3 hours)

- Aviation Minor Electives – 6 semester credit hours

  The Aviation Minor program will require 6 semester credit hours of aviation electives. Students may select from the following list of courses to complete this requirement:

Aviation 2101 (341)	Private Pilot Flight Lab I	(2 hours)
Aviation 2102 (342)	Private Pilot Flight Lab II	(2 hours)
Aviation 2501 (443)	Commercial Cross Country Flight Lab	(2 hours)
Aviation 3100 (415)	Instrument Flight Fundamentals	(3 hours)
Aviation 3101 (441/442)	Instrument Pilot Flight Lab	(3 hours)
Aviation 3193 (493)	Individual Studies in Aviation	(2-5 hours)
Aviation 4000 (650/652)	Air Transportation Analysis I	(3 hours)
Aviation 4100 (413)	Commercial Flight Operations	(3 hours)
Aviation 4101 (444/445)	Commercial Pilot Flight Lab	(3 hours)
Aviation 4300 (417)	Advanced Multi-Engine Operations	(2 hours)
Aviation 4301 (446)	Comm. / Inst. Pilot AMEL Flight Lab	(2 hours)
Aviation 4400 (552)	Airport Management	(3 hours)
Aviation 4800 (489)	Professional Practices in the Industry	(2 hours)
Aviation 4193 (593)	Individual Studies in Aviation	(2-5 hours)
Aviation 5000 (750/591)	Air Transportation Analysis II	(3 hours)
Aviation 5100 (421)	Flight Instruction Methodology	(2 hours)
Aviation 5101 (461)	Flight Instructor ASEL Flight Lab	(2 hours)
Aviation 5102 (463)	Flight Instructor AMEL Flight Lab	(1 hour)
Aviation 5193 (693)	Individual Studies in Aviation	(2-5 hours)
Aviation 5194 (694)	Individual Studies in Aviation	(2-5 hours)
Aviation 5200 (422)	Instrument Flight Instruction Methodology	(2 hours)
Aviation 5201 (462)	Instrument Flight Instruction Flight Lab	(1 hours)
Aviation 5300 (674)	Airport Planning, Design, & Development	(3 hours)

8. Current and Proposed Advising Sheets

Due to the fact that this is a Minor program, there are no formal advising sheets. However, advising will be directed to advise students to take Aviation 2000 and 2100 within the first three semesters of their program, AVN 3000 sometime between the third and fifth semesters of study, and aviation minor electives between the fourth and eighth semesters of study.

9. Curriculum Map

A curriculum map that is typically used for BS degrees within the College of Engineering is not applicable to the minors within the college.

10. Rationale for Program Changes and Description of Changes

The conversion to a semester-based academic calendar, along with the transfer of the undergraduate AVN program to the CAS, offers a unique opportunity to make important revisions to the current program. To this end, the faculty and staff of AVN have spent the better part of a year to revise the current curriculum.

The faculty and staff had the following goals in mind when considering any proposed changes to the curriculum:

- The curriculum must continue to meet requirements set forth by the Federal Aviation Administration (for those desiring to achieve pilot certifications).
- The curriculum had to maintain a wide spectrum of courses covering topics important to the aviation industry

- It was desired that the curriculum offer an increased flexibility on the part of students to select courses particular to their specific interest.
- The curriculum was to remain competitive in comparison to similar offerings at peer institutions, many of which house their aviation programs in colleges other than engineering
- The ability to complete the aviation Minor program within a reasonable amount of time must be maintained, in consideration of students' additional course requirements for their respective majors.

As a result of a series of discussions among the faculty and staff of the Department of Aviation and certain faculty within the College of Engineering, the proposed curriculum includes the following significant changes:

1. The Aviation minor core curriculum will be revised to the three courses listed above. It is felt that these courses most effectively deliver the fundamentals of aviation systems and aviation management, and are also prerequisite courses for most of the aviation electives.

2. With the following exceptions identified below, courses will retain their current credit hour designations and will maintain the same subject matter, with enhanced coverage of each subject matter topic, given the additional available hours under the semester system.

3. Current course AVN 300 "The National Aviation System" will be renamed AVN 2000 "Introduction to the Aviation Industry". The material in the course will remain the same with the addition of material from AVN 322 – Aviation History. AVN 322, currently sporadically offered as an elective, will be eliminated.

4. Current courses AVN 410 "Aviation weather" and AVN 411 "Aircraft Performance" will be combined into one course: AVN 2300 "Aircraft Performance and Weather". The material taught in each existing course will be retained and combined to better reflect how meteorological conditions affect the performance of aircraft in flight. This will be a required course in the Aviation core.

5. Current courses AVN 540 "Aviation Human Factors" and AVN 560 "Aviation Safety" will be combined into one course: AVN 3300 "Aviation Human Factors and Safety". The material taught in each existing course will be retained and duplication of material between the two courses will be eliminated. This will be a required course in the Aviation core.

6. Current courses AVN 550 "Aviation Management" and AVN 654 "Airline Marketing" will be combined into one course: AVN 3000 "Aviation Management and Marketing". The material taught in each existing course will be retained and duplication of material between the two courses will be eliminated. This will be a required course in the Aviation core.

7. Current courses AVN 441 "Instrument Flight Lab I" and AVN 442 "Instrument Flight Lab II" will be combined into one course: AVN 3101 "Instrument Flight Lab". The material taught in each existing course will be combined into one semester-long course. This will be an elective course in the major, but a required course towards earning an OSU professional pilot certification.

11. Credit Hour Changes

The following table describes the changes to credit hour requirements from the current quarter-based curriculum to the proposed semester-based curriculum:

	Current Minor	2/3rds calculation	Semester minor
Total hours required for completion of program	25	16.67	17
Required Hours offered by the unit	25	16.67	17
Required Hours offered outside the unit	0	0	0

12. Rationale for Significant Change in Credit Hours

The rationale for the above significant changes in credit hours is based on:

- The change from a quarter-based system to a semester-based system
- A desire to enhance the aviation minor core and electives

13. Transition Policy

The following policy for transitioning from a quarter based curriculum to a semester based curriculum has been developed with the following goals:

- Students progressing towards their undergraduate degrees with a minor in aviation will not be impeded by the conversion from quarters to semesters.

- For students beginning their undergraduate program under the quarter based system, any aviation courses completed under quarters will be honored under the semester based system, with a semester credit hour adjustment of 3 quarter credit hours = 2 semester credit hours. Any students that will be completing their program under semesters will be required to satisfy the total requirement of 17 semester hours. The course conversion table found in Attachment B shall be used as guidance towards crediting courses taken under quarters to meet requirements under semesters.

- All students completing the program under the semester curriculum will be required to satisfy the course requirements of this new curriculum. For students who will be starting their program under the current quarter based system and completing their program under the semester-based curriculum, courses taken as Aviation electives under quarters will be allowed to act as substitutes for new required courses.

- ***For students that have completed AVN 441but not AVN 442 during the quarter calendar, a special transition course "AVN 3101.1" will be created. This course will cover the material in***

AVN442 only, and will be valued at 1 semester credit hour. It is expected that less than 10 students will be affected.

- ***For students that have completed AVN444 but not AVN 445 during the quarter calendar, a special transition course "AVN 4101.1" will be created. This course will cover the material in AVN445 only, and will be valued at 1 semester credit hour. It is expected that less than 10 students will be affected.***

14. Assessment Practices

AVN has long followed an informal practice of assessing the progress of students through the undergraduate program. The department will be developing a formal assessment strategy in preparation for measuring the effectiveness of the proposed curriculum. Such an assessment strategy is proposed to include assessment tools such as pre-exams, surveys, and continued communication with students upon completion of their program.

15. Assessment on File with OAA

Upon its creation, the department's formal curriculum assessment program will be placed on file with the Office of Academic Affairs, understanding that formal assessment programs are not required to be filed with the OAA for minor programs.

Attachment A

Course Conversion Table

Course Conversion Table

Updated: January 13, 2011

Existing Course							Proposed Course							
Course #	**Title**	**Hours**	**Core**	**Elective**	**Classroom**	**Flight Lab**	**Course #**	**Title**	**Hours**	**Core**	**Elective**	**Classroom**	**Flight Lab**	**Pre-req's**
300	The National Airspace System	3	x		x		2000	Intro to the Aviation Industry	3	x		x		
322	Aviation History	3		x	x		(combined into 2000)							
310.01	Private Pilot Fundamentals	5	x		x		2100	Private Pilot Fundamentals	5	x		x		
341	Private Pilot Flight Lab I	2		x		x	2101	Private Pilot Flight Lab I	2		x		x	
342	Private Pilot Flight Lab II	2		x		x	2102	Private Pilot Flight Lab II	2		x		x	2100, 2101
443	Commercial Flight Lab I	3		x		x	2501	Commercial Cross Country Flight Lab	2		x		x	2100, 2101, 2102
520	Aviation Communication	3	x		x		2200	Aviation Communication	3	x		x		
410	Aviation Weather	3	x		x		2300	Aircraft Performance & Weather	3	x		x		2000, 2100
411	Aircraft Performance	(currently dormant course)					(combined into 2300)							
550	Aviation Management	3	x		x		3000	Aviation Management & Marketing	3	x		x		2000, 2100
654	Airline Marketing	3		x	x		(combined into 3000)							
415	Instrument Flight Fundamentals	3		x	x		3100	Instrument Pilot Fundamentals	3		x	x		2300
441	Instrument Flight Lab	3		x		x	3101	Instrument Flight Lab	3		x		x	
442	Instrument Flight Lab II	3		x		x	(combined into 3101)							
530	Aviation Regulations	3	x		x		3200	Aviation Regulations	3	x		x		2100
540	Aviation Human Factors	3	x		x		3300	Aviation Human Factors and Safety	3	x		x		2000, 2100
560	Aviation Safety	3		x	x		(combined into 3400)							
650	Air Transportation Analysis I	3		x	x		4000	Air Transportation Analysis I	3		x	x		3000
652	International Aviation Analysis	3		x	x		(combined into 4000)							
413	Commercial Flight Operations	3		x	x		4100	Commercial Flight Operations	3		x	x		2300
444	Commercial Flight Lab II	3		x		x	4101	Commercial Flight Lab I	3		x		x	2102
445	Commercial Flight Lab III	3		x		x	(combined into 4101)							
417	Advanced Multi Engine Operations	2		x	x		4300	Advanced Multi-Engine Operations	2		x	x		2300
446	Commercial Pilot MEL Flight Lab	2		x		x	4301	Commercial Pilot MEL Flight Lab	2		x		x	4100, 4102
552	Airport Management	3		x	x		4400	Airport Management	3		x	x		3000
489	Professional Practice in Industry	2		x			4800	Professional Practice in Industry	2		x			
591	Flight Network Analysis and Optimization	3		x	x		5000	Air Transportation Analysis II	3		x	x		3000
750	Air Transportation Analysis II	3		x	x		(combined into 5000)							
421	Flight Instruction Methodology	2		x	x		5100	Flight Instruction Methodology	2		x	x		2300, 3100, 4100
461	Flight Instructor SEL Flight Lab	3		x		x	5101	Flight Instructor SEL Flight Lab	2		x		x	5100, 4102
463	Flight Instructor MEL Flight Lab	3		x		x	5102	Flight Instructor MEL Flight Lab	1		x		x	5100, 4201
422	Instrument Instruction Methodology	3		x	x		5200	Instrument Flight Instruction Methodology	2		x		x	5100
462	Instrument Instruction Flight Lab	3		x		x	5201	Instrument Flight Instruction Flight Lab	1		x		x	5200, 4102
674	Airport Planning, Design, & Development	3		x	x		5300	Airport Planning, Design, & Development	3		x	x		4300 (recommended)
							5500	Aviation Capstone	3	x		x		3000

294	Group Studies in Aviation	2-5		x	2194	Group Studies in Aviation	2-5	x
493	Individual Studies in Aviation	2-5		x	3193	Individual Studies in Aviation	2-5	x
593	Individual Studies in Aviation	2-5		x	4193	Individual Studies in Aviation	2-5	x
693	Individual Studies in Aviation	2-5		x	5193	Individual Studies in Aviation	2-5	x
694	Group Studies in Aviation	2-5		x	5194	Group Studies in Aviation	2-5	x
H783	Honors Research in Aviation	2-5		x	H5998	Honors Research In Aviation	2-5	x