Engineering Faculty Document No. 1-00
September 20, 2000

TO: The Faculty of the Schools of Engineering

FROM: The Faculty of the School of Aeronautics and Astronautics

SUBJECT: Change of course requirements and credits for the B. S. Degree in Aeronautical and Astronautical Engineering

The Faculty of the School of Aeronautics and Astronautics has approved the following changes in the curriculum for the B. S. degree in Aeronautical and Astronautical Engineering effective for students entering the School in the Spring Semester 2001. Many of the changes indicated below are part of the School's Astronautics Initiative, designed to allow students to pursue a specialization in Astronautical Engineering. This action is now submitted to the Engineering Faculty with a recommendation for approval.

An updated curriculum proposed by the Faculty of the School of Aeronautics and Astronautics is attached. Two suggested plans of study are given: one for students specializing in Aeronautics; and one for students specializing in Astronautics. Changes are summarized as follows:

Change 1: MA 266 is moved from Semester 4 to Semester 3
Reason: Differential Equations (MA 266) serves both AAE 203 and EE 201, and is more effective in Semester 3.

Change 2: EE 201 is moved from Semester 3 to Semester 4
Reason: This move allows the move of MA266 in Change 1.

Change 3: Phys 342 has been replaced with a Technical Elective
Reason: Change reflects EFD 29-99

Change 4: AAE 464 has been renumbered to AAE 364
Reason: Change reflects EFD 2-00

Change 5: AAE 421 has been replaced with AAE 421 OR AAE 440
Reason: This change is part of our Astronautics Initiative. The new course AAE 440 is supported by EFD 3-00

Change 6: AAE 372 has been replaced with AAE 372 OR AAE 439
Reason: This change is part of our Astronautics Initiative

Change 7: AAE 421L has been renumbered AAE 364L
Reason: Change reflects EFD 4-00

Change 8: AAE 451 has been replaced with AAE 450 or AAE 451
Reason: This change is part of our Astronautics Initiative. The courses are supported by EFDs 5-00 and 6-00.

APPROVED FOR THE FACULTY
OF THE SCHOOLS OF ENGINEERING
BY THE COMMITTEE ON
FACULTY RELATIONS

CFR Minutes #929

Date 10/11/00

Chairman CFR C. D. Sutton

Thomas N. Farris, Head
School of Aeronautics and Astronautics

Curriculum in Aeronautics and Astronautics

The basic BSAAE degree program has a minimum of 131 credit hours including the Freshman Engineering requirements. Divided into topical areas, the required curriculum is:

Basic Program		Credit Hours
Mathematics: Calculus: MA165, 166, 261		12
	Linear Algebra MA265	3
	Differential Equations MA266,304	6
Sciences:	Chem 115,116	8
	Phys 152,241	7
Communications, Humanities and Social Sciences:		
	Composition ENGL101	3
	Speech COM114	3
	Engr100	1
	General Education Electives	18
Computer Skills		
	ENGR106	2
	Programming CS152 or 156	2
	Graphics CGT163	2

Aeronautics and Astronautics Program		
Structures:	AAE204, 204L, 352	7
Aerodynamics:	AAE333, 333L, 334	7

Lab Elective: AAE352L or 334L	1
Note: The selected lab should be taken with the corresponding course.	
Propulsion: Thermodynamics ME200	3
Jet Propulsion AAE372 or Rocket Prop. 439	3
Note: students planning to specialize in aeronautics should take 372; those aimed at astronautics should take 439.	
Dynamics and Control:	
Statics and Dynamics AAE203, 340	6
Controls EE201, AAE364,364L	7
Vehicle Dynamics AAE 421 or 440	3
Note: students planning to specialize in aeronautics should take 421; those aimed at astronautics should take 440. AAE364L is to be taken following 364.	
Design:	
Introduction: AAE251	3
Spacecraft, AAE450 or Aircraft, AAE 451	3
Note: students planning to specialize in aeronautics should take 451; those aimed at astronautics should take 450.	
Major Electives	9
Minor Electives	6
Note: Major and Minor electives are topically related specializations within aerospace engineering. They must be approved by the academic advisor.	
Technical Electives	6
Note: Technical electives may be chosen from a broad range of science, engineering, or technology courses, subject to the approval of the academic advisor.	
TOTAL: 131	

Suggested Plan of Study for Aeronautical and Astronautical Engineering

AERONAUTICS CONCENTRATION

Credit Hours Required for Graduation: 131*

Freshman Year, see page 24.

CGT 163 is required in the aeronautical and astronautical engineering curriculum.

Sophomore Year

Third Semester	Fourth Semester
(3) **AAE 203** (Aeromechanics I)	(3) **AAE 204** (Aeromechanics II)
(4) **MA 261** (Multivariate Calculus)	(1) **AAE 204L** (Aeromechanics II Laboratory)
(3) **MA 266** (Differential Equation)	(3) **AAE 251** (Introduction to Aerospace Design)
(3) **PHYS 241** (Electricity and Optics)	(3) **EE 201** (Linear Circuit Analysis I)
(3) General education elective	(3) **MA 265** (Linear Algebra)
(16)	(3) General education elective
	(16)

Junior

Fifth Semester	Sixth Semester
(3) **AAE 333** (Fluid Mechanics)	(3) **AAE 334** (Aerodynamics)
(1) **AAE 333L** (Fluid Mechanics Laboratory)	(1) **AAE 334L** (Aerodynamics Laboratory **or AAE 352L** (Structural Analysis I Laboratory)
(3) **AAE 352** (Structural Analysis I)	(3) **AAE 340** (Dynamics and Vibration)
(3) **MA 304** (Differential Equations for Engineering and the Sciences [including Analysis of Nonlinear Systems])	(3) **AAE 372** (Jet Propulsion Power Plants)
(3) **ME 200** (Thermodynamics I)	(3) **AAE 364** (Control Systems Analysis)
(3) General education elective	(3) General education elective
(16)	(16)

Senior

Seventh Semester	Eighth Semester
(3) **AAE 421** (Flight Dynamics and Control)	(3) **AAE 451** (Aircraft Design)
(1) **AAE 364L** (Controls Laboratory)	(9) Major or minor area electives
(3) Technical Elective	(3) Technical elective
(6) Major or minor area electives	(3) General education electives
(3) General education elective	(18)
(16)	

Total — 131 Credits

18 credits of general education electives

9 credits of major area electives

6 credits of minor area electives

6 credits of technical electives

*The required courses and the major and minor area courses cannot be taken on a pass/not-pass basis.

Suggested Plan of Study for Aeronautical and Astronautical Engineering

ASTRONAUTICS CONCENTRATION

Credit Hours Required for Graduation: 131*

Freshman Year, see page 24.

CGT 163 is required in the aeronautical and astronautical engineering curriculum.

Sophomore

Third Semester

(3) **AAE 203** (Aeromechanics I)
(4) **MA 261** (Multivariate Calculus)
(3) **MA 266** (Differential Equation)
(3) **PHYS 241** (Electricity and Optics)
(3) General education elective
(16)

Fourth Semester

(3) **AAE 204** (Aeromechanics II)
(1) **AAE 204L** (Aeromechanics II Laboratory)
(3) **AAE 251** (Introduction to Aerospace Design)
(3) **EE 201** (Linear Circuit Analysis I)
(3) **MA 265** (Linear Algebra)
(3) General education elective
(16)

Junior

Fifth Semester

(3) **AAE 333** (Fluid Mechanics)
(1) **AAE 333L** (Fluid Mechanics Laboratory)
(3) **AAE 352** (Structural Analysis I)
(3) **MA 304** (Differential Equations for Engineering and the Sciences [including Analysis of Nonlinear Systems])
(3) **ME 200** (Thermodynamics I)
(3) General education elective
(16)

Sixth Semester

(3) **AAE 334** (Aerodynamics)
(1) **AAE 334L** (Aerodynamics Laboratory **or AAE 352L** (Structural Analysis I Laboratory)
(3) **AAE 340** (Dynamics and Vibration)
(3) **AAE 364** (Control Systems Analysis)
(3) Major or minor area elective
(3) General education elective
(16)

Senior

Seventh Semester

(3) **AAE 439** (Rocket Propulsion)
(1) **AAE 364L** (Controls Laboratory)
(3) Technical Elective
(6) major or minor area electives
(3) General education elective
(16)

Eighth Semester

(3) **AAE 440** (Spacecraft Attitude Dynamics)
(3) **AAE 450**(Spacecraft Design)
(9) Major or minor area electives
(3) General education elective
(18)

Total — 131 Credits

18 credits of general education electives

9 credits of major area electives

6 credits of minor area electives
6 credits of technical electives

*The required courses and the major and minor area courses cannot be taken on a pass/not-pass basis.