PURDUE UNIVERSITY

Aeronautics & Astronautics Engineering

College of Engineering

code-BS-AAE
Code-XXX
130 Credits for Graduation
Students must have a graduation index of 2.0

AAE Engineering Major Courses (41 credits)

_____ (0) AAE 20000 - Undergrad Sophomore Seminar
_____ (3) AAE 20300- Aeromechanics I
_____ (3) AAE 25100 –Intro Aerospace Design
_____ (3) AAE 20400- Aeromechanics II
_____ (1) AAE 20401- Aeromechanics II Lab
_____ (0) AAE 30000 – Undergrad Junior Seminar
_____ (3) AAE 30100 - Signals Analysis
_____ (3) AAE 33300 – Fluid Mechanics
_____ (1) AAE 33301 –Fluid Mechanics Lab
_____ (3) AAE 33400 - Aerodynamics
_____ (1) AAE 33401/AAE 35201 –Aerodynamics Lab/ Structural Analysis Lab
_____ (3) AAE 34000 – Dynamics and Vibrations
_____ (3) AAE 33800/33900 – Thermal Sciences (Typically fall and spring)/Aerospace Propulsion (Typically spring only)
_____ (3) AAE 35200 – Structural Analysis I
_____ (3) AAE 36400 – Control System Analysis
_____ (1) AAE 36401 – Controls Systems Laboratory
_____ (1) AAE 40000 – Undergrad Senior Seminar
_____ (3) AAE 42100/44000 – Flight Dynamics & Control (Typically fall and spring)/Spacecraft Attitude Dynamics (Spring only)
_____ (3) AAE 45000/45100 – Spacecraft Design/Aircraft Design

AAE Technical Electives - (6 credits)

AAE Major/Minor Electives (15 credits)

Other Departmental /Program Course Requirements (50 credits)

_____ (2) CGT 16300 – Computer Graphics
_____ (4) CHM 11500 – General Chemistry I (Satisfies FYE requirement)
_____ (3) COM 11400 - First-Year General Education Elective (strongly recommended)
_____ (3) CS 15900 - Science Elective(Satisfies FYE requirement)
_____ (2) ENGR 13100 - Transforming Ideas to Innovation I (Satisfies FYE requirement)
_____ (2) ENGR 13200 - Transforming Ideas to Innovation II (Satisfies FYE requirement)
_____ (4/3) ENGL 10600/ENGL 10800– English Composition(Satisfies FYE requirement)
_____ (4/5) MA 16500/16100 – Calculus I (Satisfies FYE requirement)
_____ (4/5) MA 16600/16200 – Calculus II (Satisfies FYE requirement)
_____ (4) MA 26100 – (Satisfies Math and Physics requirement)
_____ (3) MA 26500 - (Satisfies Math and Physics requirement)
_____ (3) MA 26600 - (Satisfies Math and Physics requirement)
_____ (3) MA 30400 – Diff Eqn for Engr. And Sci.
_____ (3) ME 20000 – Thermodynamics
_____ (4) PHYS 17200 - Physics I (Satisfies FYE requirement)
_____ (3/4) PHYS 24100/27200 Electricity Optics/E&M Interactions - (Satisfies Math and physics requirement)

NOTE: COM 11400 is a highly recommended general elective and is counted separately from the 18 credits of Gen Ed requirement. Therefore the general education requirement is 18 + 3 credits = 21 when including COM 11400. AAE also requires students to complete a business elective and a communications/writing elective at the 300-level or higher.

General Electives (18 credits)

_____ (3)	G.E.-I	_____ (3)	G.E.-IV	_____ ( )	_____	_____ ( )	_____
_____ (3)	G.E.-II	_____ (3)	G.E.-V	_____ ( )	_____	_____ ( )	_____
_____ (3)	G.E.-III	_____ (3)	G.E.- VI	_____ ( )	_____	_____ ( )	_____

University Core Requirements

Human Cultures Humanities		*Science, Technology & Society Selective*	
Human Cultures Behavioral/Social Science		*Written Communication*	ENGL 10600/10800
Information Literacy	ENGR 13100	*Oral Communication*	COM 11400
Science Selective	PHYS 17200	*Quantitative Reasoning*	MA 26500
Science Selective	CHM 11500		

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The student is ultimately responsible for knowing and completing all degree requirements.
Degree Works is knowledge source for specific requirements and completion

****

Aeronautical & Astronautical Engineering

https://engineering.purdue.edu/AAE/Academics/Undergrad/pos/20130528_POS_Instructions.pdf

old

Suggested Arrangement of Courses:

		Requisites				Requisites	
Credits	**Fall 1st Year**	**Pre**	**Co**	Credits	**Spring 1st Year**	**Pre**	**Co**
4	MA 16500			4	MA 16600	MA 16500	
4	CHM 11500*			4	PHYS 17200*		
4 3	ENGL 10600* or ENGL 10800*			3	CS 15900**		
2	ENGR 13100*			2	ENGR 13200*	ENGR 13100	
2	CGT 16300**			3	COM 11400*		
15				**16**			

		Requisites				Requisites	
Credits	**Fall 2nd Year**	**Pre**	**Co**	Credits	**Spring 2nd Year**	**Pre**	**Co**
3	AAE 20300++	PHYS 17200	MA 26100	3	AAE 20400++	AAE 20300	
3	AAE 25100	ENGR 13200, CGT 16300	AAE 20000	1	AAE 20401		AAE 20400
4	MA 26100			3	PHYS 24100**	PHYS 17200	
3	Gen Elec I			3	MA 26600		
3	MA 26500*			3	ME 20000**		
0	AAE 20000			3	Gen Elec II		
16				**16**			

		Requisites				Requisites	
Credits	**Fall 3rd Year**	**Pre**	**Co**	Credits	**Spring 3rd Year**	**Pre**	**Co**
3	AAE 33300	AAE 20300 AAE 20000	MA 30300 **OR** MA 30400, AAE 25100	3	AAE 33400	AAE 33300, AAE 33301, ME 20000	
1	AAE 33301		AAE 33300	1	AAE 33401 OR AAE 35201		AAE 33400 OR AAE 35200
3	AAE 35200	AAE 20400 & AAE 20401 & AAE 20000	AAE 25100	3	AAE 34000	AAE 20300, MA 30400	
3	MA 30400			3	AAE 36400	AAE30100	
3	AAE 30100	AAE 20000, MA 26500 & MA 26600	AAE 25100	3	AAE 33800/33900	AAE 20000 ME 20000	AAE 33400
0	AAE30000	AAE 20000		3	Gen Elec IV		
3	Gen Elec III						
16				**16**			

		Requisites				Requisites	
Credits	**Fall 4th Year**	**Pre**	**Co**	Credits	**Spring 4th Year**	**Pre**	**Co**
3	AAE 42100 or Tech Elec	AAE 34000, AAE 20000	AAE 36400	3	AAE 44000 or Tech Elec	AAE 34000	
1	AAE 36401	AAE 36400		9	Major/Minor Electives		
6	Major/Minor Electives			3	AAE 45000/45100	AAE 33400, AAE 34000, AAE 35200, AAE 36400	AAE 40000
3	Gen Elec V			3	Gen Elec VI		
3	Tech Elec						
1	AAE 40000	AAE 30000					
17				**18**			

*Satisfies a University Core Requirement

**Satisfies a Non-departmental Major Course Requirement

++Students must earn a "C-" or better

130 semester credits required for Bachelor of Science degree.

2.0 Graduation GPA required for Bachelor of Science degree.

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The student is ultimately responsible for knowing and completing all degree requirements.

Degree Works is knowledge source for specific requirements and completion

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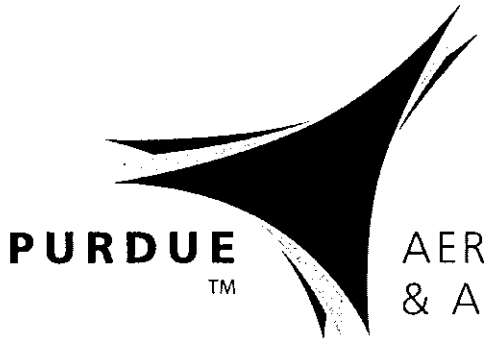

Undergraduate Plan of Study Guide

August 2015

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Undergraduate Advising Staff

Have a question or concern regarding your degree plan or AAE, or just need to talk to someone? Any of these individuals are able and willing to help you!

William Anderson, Professor and Associate Head for Undergraduate Programs
wanderso@purdue.edu ARMS 3301 (765)-496-2658

Taylor Weast, Academic Advisor,
tweast@purdue.edu ARMS 3313 (765) 494-5137

Rebecca Weast, Academic Advisor
rwhitley@purdue.edu ARMS 3312 (765)-494-4086

Lisa Crain, Undergraduate Program Coordinator
lcrain@purdue.edu ARMS 3314 (765) 494-5157

The AAE Advising staff consists of two academic advisors and the undergraduate program coordinator. All three are available to help you with general questions and concerns you may have either about your classes, the AAE program as a whole, Purdue's campus, or non-campus related items that may affect you as a student. Specific items that staff members can assist you with include but are not limited to:

- Course selection and advisement
- myPurduePlan and Plan of Study assistance/interpretation
- Registration questions
- Re-entry and Re-admission assistance
- Purdue probation and drop policies and procedures
- Co-Op/Internship assistance
- Prospective student advising
- Study abroad course selection and approval
- Cover letter/personal statement/resume review
- Form 23, Form 231, CPT Form, & Form VT
- Permission for credit hour overrides
- Integrating outside minors into the AAE degree program
- List of available tutors
- Change of Degree Objective (CODO) paperwork
- Resource referrals (Registrar, Bursar, Dean of Students, Academic Success Center, Counseling and Psychological Services, Purdue Student Health, etc.)
- General policy and procedure questions

See **Lisa** for the following:

- Performs overrides **after permission has been granted from advisor**
- Adds outside minors and certificates to student's academic record
- Maintains closed course waitlist
- Provides proof of enrollment letters
- Co-Op coordination and documentation
- AAE Awarded Scholarships

Introduction

The purpose of this document is to help you plan your BSAAE degree program.

The basic requirements for the BS degree are tabulated below. There are five distinct categories of classes:

- Required
- Either/Or
- General Education Electives
- Technical Electives
- Major/Minor Electives

Each is defined below, together with the number of credits.

The order and speed at which you complete the degree requirements is your choice, provided you adhere to the pre-requisite rules. In other words, there are many possible plans of study. This document provides standard 8 semester plans, however it is up to each student to develop an individual plan with their academic advisor.

Students who entered Purdue Fall 2013 and earlier are expected to use the Plan of Study system on the AAE website.

Students who entered Purdue Fall 2014 and later are required to use the Student Educational Planner and My Purdue Plan for degree planning purposes.

Basic Requirements

The basic BSAAE degree program has a minimum of 130 credit hours including the Freshman Engineering requirements. (129 credit hours for those of entered AAE before Spring 2012).

- **Pass-Fail Courses**:
  The required courses and the major and minor area courses cannot be taken on a pass/not-pass basis.
- **GPA Rule** :
  Students must have a 2.0 GPA Average in Required Courses and Major/Minor electives to graduate.
  Students must have a 2.0 overall GPA to graduate from Purdue.

Required (85 cr)

Where one specific class is listed in the table of requirements, most students will take that class. Substitutions are possible, but the substitute must cover the same material, at the same or higher level, as the requirement (e.g., Phys27200 for Phys24100). The table lists some common substitutions. You should check with your advisor first about anything else.

Either/Or (10 cr)

There are 4 cases where students normally choose between two options:

1. AAE 35201 (structures) or AAE 33401 (aerodynamics)
2. Propulsion requirement:
   a. AAE 33800 Thermal Sciences – required for students who plan to major or minor in propulsion.
   b. AAE 33900 Aerospace Propulsion – intended for students who ***do not*** want to major or minor in propulsion.
3. AAE 42100 (Aircraft) or AAE 44000 (Spacecraft) Vehicle Dynamics
4. AAE 45100 (Aircraft) or AAE 45000 (Spacecraft) Senior Design

Note that the choice of labs is often made before decisions regarding Major/Minor areas. It is normally based on nothing more than your preference for 20401 or 33301.

Aeronautics: AAE 43800, 42100, and 45100
Astronautics: AAE 43900, 44000, and 45000

"Course Availability" for the expected schedule of these classes.

General Education Electives (18 cr)

There are two sets of General Education rules current: one that applies to students who started at Purdue before Fall 2013 and another that applies to students who started at Purdue in or after Fall 2013.

Students Entering Purdue Fall 2013 and Later

B.S. students in the Schools of Engineering are required to complete a general education program of at least 24 credit hours, of which, at least 18 credit hours must be taken outside of the Colleges of Engineering, Science, and Technology. This program consists of two components:

1. Foundational Learning Outcomes
   - Students must select from the list of courses approved by the University Core Council (UCC) to satisfy all six of the Foundational Learning Outcomes.
   - Students must earn a C- or better in order to receive credit towards meeting the Foundational Learning Outcome and this General Education Program.
2. Programmatic Requirements
   - Sufficient credit hours to meet the minimum 24 credit hour requirement (once the Foundational Learning Outcomes are completed, students may take any class from the College of Liberal Arts to satisfy remaining general education requirements).
   - At least 6 credit hours must come from courses at the 30000-level or above, or from courses with a required prerequisite in the same department.
   - 3 credit hours of approved business-focused coursework and 3 credit hours of approved written/oral communication coursework.

Approved business-focused coursework:

ECON 25100; ECON 25200; MGMT 20000; ENTR 20000; IE 34300
*note: ECON will count as a general education class, but ENTR, MGMT, and IE classes will count as technical electives.

Approved written/oral communication coursework:

ENGL 42100; ENGL 42000; ENGL 30400; COM 30700; COM 31400; COM 32500
*note: all of the ENGL/COM coursework listed above counts as gen ed.

Students who Entered Purdue Before Fall 2013

There are 24 required credits of Humanities and Social Science, divided up into 3 credit hours of required of written composition (ENGL 10600 or 10800, generally), 3 credit hours of "FYE General Ed Elective", and 18cr of Gen Ed electives beyond the first year. Students must complete 18cr of General Education courses beyond FYE. These 18cr must be drawn from the College of Liberal Arts. An example of acceptable topic areas is listed below:

Agricultural Economics	Audiology and Speech Sciences
Child Development and Family Studies	Communications
Economics	English
Foreign Languages and Literatures	History
Interdisciplinary Studies	Philosophy
Political Sciences	Psychological Sciences
Sociology	Anthropology
Visual and Performing Arts	

Any course offered by these departments is allowable, provided that it is open to students in the offering department and is not focused primarily on professional training, natural science or mathematics.

Society: 9cr (any general education class from the College of Liberal Arts)

Breadth: 6cr (two classes in the same subject. Ex. 6cr of Economics)

Foreign Lang: 6 cr (optional)

Depth: 6cr (two classes at the 300-level or higher, or classes which have a prerequisite in the same subject. Ex. SPAN 10200 has a prerequisite of SPAN 10100, so it can satisfy a depth requirement)

Business & Written/Oral Communication: 3 credit hours of approved business-focused coursework and 3 credit hours of approved written/oral communication coursework as follows:

Approved business-focused coursework:

ECON 25100; ECON 25200; MGMT 20000; ENTR 20000; IE 34300

*note: ECON will count as a general education class, but ENTR, MGMT, and IE classes will count as technical electives.

Approved written/oral communication coursework:

ENGL 42100; ENGL 42000; ENGL 30400; COM 30700; COM 31400; COM 32500

*note: all of the ENGL/COM coursework listed above counts as gen ed.

Technical Electives (6 cr)

Technical Electives are courses which are generally selected from engineering, science, management, entrepreneurship, or technology. A list of courses is included in this document which the faculty recommend as strengthening the AAE degree. Note that any engineering course is automatically included. Technical electives do not have to be selected from this list, and do not have to be closely related to aerospace engineering.

If a student completes either the advanced band (8 semesters) or advanced ROTC course (30000 and 40000 level courses), then six credit hours of these courses may be applied to this category of electives.

Pre-engineering courses (like MA 15300) and recreational courses are not permitted as Technical Electives.

The following schools offer classes which can be used as technical electives, though **final approval must always come from the academic advisor. This list may not be exhaustive.**

AFT	ASTR	AT
BAND (16cr in Band=6cr tech elect)	BIOL	BME
CE	CEM	CGT
CHM	CS	EAPS
EDPS	ENTR	EPCS
ECE	EEE	IE
MA	ME (limited choices)	MGMT
MSE	NS	NUCL
OLS	PHYS	

Major/Minor Electives (15 cr)

Courses in this category are to be chosen from AAE or very closely related disciplines. The objective is for you to develop a concentration in some sub-areas of aerospace engineering that will make you a more desirable employee or give you a head start on graduate study.

It is important to understand that your Purdue transcript and diploma will show that your degree is "BS in Aeronautical and Astronautical Engineering," regardless of what specialization you elect. So as far as Purdue University is concerned, your "major" is AAE, and your "minor", if you choose to do one, might be, for example, Physics. (See "Minors outside AAE" below.) The internal Major/Minor are departmental, not university, categories.

The School's required curriculum can be divided into five categories: aerodynamics, design, dynamics and control, propulsion, and structures and materials. With the Major/Minor electives, you choose two of these subdivisions to study in greater depth.

Your major electives are 9 credits chosen from one of the above categories.

Your minor electives are 6 credits chosen from another of the above categories.

Lists of classes for each category are included in this document:

1. aerodynamics
2. design
3. dynamics and control
4. propulsion
5. structures and materials

The lists overlap and are not complete. In particular, temporary numbered courses (AAE 49000 or 59000) are not listed, even though they might be perfectly acceptable. If you are in doubt about whether a particular course could count toward a major or minor, ask your advisor before registering.

If you are interested in pursuing a major or minor in an area that is not one of the above five, talk to your advisor.

Registration Policy and Procedures

Taking more than 18 credit hours:

You must receive permission from your AAE Academic Advisor to enroll in over 18 credit hours. Enrolling in over 18 credit hours can lead to an extremely challenging semester so we treat each request on an individual basis. If you receive permission from your advisor to enroll in over 18 credit hours, you must email Lisa Crain (lcrain@purdue.edu) for the override to enroll. You must include your PUID, name, and the number of credit hours you have been approved to take.

Class time conflicts:

On occasion, you may want or need to take two classes that conflict with one another. It is possible to be approved to take both classes, but the advising staff must receive notification from one of the instructors that you have set up a plan to make up any work you miss due to the conflict. You will not be waived from completing course requirements just because the classes overlap, you must complete all class requirements as set out by the instructor. If you receive permission from an instructor to enroll, please have the instructor email Lisa Crain (lcrain@purdue.edu) with your name and PUID.

AAE Closed Courses:

AAE does not use the Purdue waitlist system, we use our own system in order to watch enrollment numbers and move classes to larger classrooms as we are able. Sometimes, classes will close and we will have to work to find a solution. If you need to enroll in a closed course, please place your name on the AAE CLOSED COURSE WAITLIST: https://engineering.purdue.edu/AAE/Academics/Registration/ClosedCourseWaitlist. We will do everything in our power to accommodate your request, but we also recommend developing a back-up plan in the event we are not able to increase the capacity of the class.

Enrolling in non-AAE classes:

Some schools and departments on campus do not restrict their classes, and you will be able to register for the classes as long as you have met the pre-requisites. Other schools and departments restrict their classes, and do not open up enrollment to all students until open registration. Lastly, some schools and departments will require that you obtain department permission to enroll no matter what. Generally, any questions regarding a non-AAE class should be directed to the school that maintains the class (the math department can answer questions about math classes), but some schools have specific procedures for enrolling:

CGT: You must have declared a CGT minor in order to take CGT classes beyond CGT 16300. In order to enroll in a CGT class, you must have a Form 23 signed by your AAE academic advisor. This form can be turned into the CGT department on the first day of open registration each semester, and students are added into CGT classes on a first come, first serve basis.

CS: Students within the CS department are given enrollment priority over non-CS students, so you will not be able to register for CS classes until open registration. You must submit a form through

the CS website in order to obtain permission to enroll in a CS class during open registration. More information can be found here: https://www.cs.purdue.edu/academic-programs/courses/registration.html

300-400 Level ECON & MGMT classes: These classes will remain closed to non-ECON and non-MGMT students until open registration. You will need a "FIELD OF STUDY" override in order to enroll in these courses. "FIELD OF STUDY" overrides can only be provided by the department offering the class.

Change of Degree Objective (CODO):

We require that students have a 2.5 cumulative GPA or higher AND have completed First-Year Engineering (FYE) classes with a C- or higher.

Transfer (non-Purdue student)

Students from institutions other than Purdue may transfer into our program if their cumulative GPA is a 3.0 or higher and they have completed classes' equivalent to the First-Year Engineering (FYE) requirements. If a student will not have all of the FYE requirements met upon admission to Purdue, they must start in FYE and transition into AAE once FYE requirements are completed.

Minors outside AAE

Many departments at Purdue offer a "minor." If you complete their requirements, your transcript will show that you have earned a "BS in AAE with a minor in X.". All such minors will require some extra work on your part. (This "minor" has nothing to do with the "AAE minor area")

All final transcripts of students requesting minors are reviewed by the offering departments and either approved or denied. There is generally no formal mechanism to get prior approval. Some departments, like CS, ECE, MGMT and ECON, require that you get written permission to enroll in their courses (at least the non-introductory ones).

Declaring an outside minor:

If you have decided you want to pursue a minor or certificate, it is in your best interest to declare the minor/certificate early! That way, if the minor requirements change in the future, you will not be responsible for fulfilling the new requirements. In order to declare a minor/certificate please contact Lisa Crain (lcrain@purdue.edu) with your PUID, name, and the minor(s)/certificate(s) you would like to have added to your academic record. You will not be required to complete any minors or certificates you add to your record, but if you do they will appear on your transcript upon graduation. Declaring a minor/certificate does not guarantee you entrance into your minor classes.

Engineering Honors Program

Qualified students may participate in the Engineering Honors Program.

For more information about this, go to https://engineering.purdue.edu/Engr/InfoFor/Honors

Course Numbers and Levels

AAE 45000/45100

Normally you will take the senior design class in your last semester before graduation, when you have the maximum possible background. There are many circumstances, however, in which you can move it to your next-to-the-last semester. For example: the class style is different in the fall and spring, and you may have a strong preference for one over the other. Or, electives you want might be available only in your last semester and conflict with senior design.

AAE 49000

AAE 49000 (and 59000) are variable title, variable credit "courses" that have no particular meaning until a faculty member assigns a specific title and credit value and content.

Instructions for adding AAE 49000 Special Projects

Since AAE 49000 (or 59000) has no a prior definition, you will need to upload a description of it in your Plan of Study if you want it to apply to the BS-AAE degree. A form for this purpose is posted on the AAE Plan of Study webpage. Use it for variable title courses in other departments as well, as appropriate (like ME 49700). You do not need this documentation if you use it as a Technical Elective or extra.

AAE 49000 is the designation for our Variable Title, Variable Credit course.
(59000 is the same at graduate level. The comments below apply equally)

Some explanation is needed about how these courses can be used in your POS and what kind of documentation you will or won't need.

1) Scheduled courses

Some AAE 49000 courses are listed on the "Current and Future AAE Course Plans and Schedules" along with title and instructor.

http://eng.purdue.edu/jump/b414f0 - Spring 2015 and forward

https://engineering.purdue.edu/~aaeugrad/CourseSchedules// - Fall 2014 and prior

Starting in Spring 2014, each such entry includes a statement about how that course may be used in your Plan of Study.

For example, in the Spring 2014 plan:
AAE49000, Design/Build/Test under Sullivan states: "UG POS category; Design".

That means if you have declared Design as a Major or Minor Area, you can put DBT there. It doesn't need further documentation

2) 49000 Independent Projects

This course is intended to allow undergraduates to engage in independent study and individual or small group research projects under the direction of the faculty. Projects may be initiated by students or by faculty. Interested students should follow the procedures listed here.

Registration

1. The student must have a faculty sponsor. (Only an AAE faculty member can award credit for an AAE 49000 project).
2. The student and sponsoring faculty member should discuss and agree on the intent and focus of the course and the individual expectations of both the student and faculty supervisor.
3. Send Lisa Crain an email, lcrain@purdue.edu with the information below for the Form 23VT to be completed.

   The following information is needed to complete the form.

   - Name
   - Purdue ID Number
   - Student Classification
   - AAE 49000
   - Number of credits
   - 30 Character Title - including spaces
   - Signatures from both you and the instructor

   Once the form has been completed and you have all of the required signatures, you will take it to Hovde Room 55 for registration processing.

   Note: When calculating the number of credits, the student should spend 3 hours per week per credit hour. For example, a student signed up for 2 credit hours for the 15 weeks of class would need to spend 6 hours per week (90 per semester).

Applying the 49000 to your Plan of Study

If you want the 49000 to apply to your Plan of Study, you will need to complete the AAE49000 Course Description Form and upload it into your POS-Documents & Files.

Note: If the project is "extra", in the sense that it is not going to apply toward the BS degree, a description is not essential.

3) Scheduled courses with non-approved POS category

If you want to take a scheduled 49000 for some purpose other than that listed, you will need to follow the same documentation policy as for unscheduled courses. For example, if you want to count DBT as an Aerodynamics elective, you would need to prepare the 49000 Course Description Form showing how it is an Aerodynamics project and get the instructor to approve it.

4) Warning:

AAE 49000 (and 59000) are said to be "Repeatable". That means you can take them as many times as you like and each take counts as a new course and grade as long as the titles are not exactly the same. If a course is taken with the same course number and title, the grade will be replaced by the most recent attempt. That's different from all permanent numbered course... like AAE33300, say. These are "Non-Repeatable". If you retake a Non-Repeatable course the new grade replaces the old one in your GPA.

There are two consequences of this. If you wanted to take some project course with a permanent number twice ... AAE 45100, say, you would have to arrange for the 2nd take to be a 49000 if you wanted them to count separately.

The second consequence is that you cannot get rid of the grade in a Repeatable course by repeating it. If you register for a 49000 or 59000 and get a bad grade... there is nothing you can do about it.

So be careful. Know the risks you take in registering for a 49000 or 59000 course.

50000 Level Classes

These are so called dual-level classes, which can be taken by either undergraduate or graduate students. If you are interested in one, make sure that you have the required background. However, it is normal for students to take 50000 level classes as part of their BS POS, since there are more 50000 than 40000 level electives.

60000 Level Classes

Undergraduates need the permission of the instructor and must have senior standing and at least a 3.2 GPA.

Special Credits

Graduate Credit

Some 50000 or 60000 level classes you take but do not use in the BS plan of study can be used for graduate credit. You need to be classified as a junior or senior, and to get a grade of B or better. (See University Regulations). A Form 350 will need to be completed. Contact your advisor or Lisa Crain for more information.

Transfer Credit

If you want to take a course at some other university, you should first look it up in the Purdue Transfer Credit Database. If you don't find it there, follow the instructions on how to get Admissions to evaluate it and put it into the database. If it is listed, but as "Undistributed" (e.g. PHIL2XXXX), then you would need to send me the course description and an explanation of what you want to do with it in your POS.

Never register for a course outside Purdue before it has been approved in writing. Avoid taking engineering courses from non-accredited programs.

Note that only credit transfers in; not grades. Transfer credit will have no effect on your GPA at Purdue.

Co-Op and Internship

Students doing one of the Purdue Co-Op programs must register when they are on work assignment under the AAE XXX99 designation. The correct sequence of course numbers to use depends on which certificate program is followed. You will get instructions when you first sign up.

AAE 39699 is the analogous class that any student can register for (with departmental approval) while on work assignment outside a formal co-op arrangement. The purpose of this registration is to make you officially, and legally, a student, even though you are off campus. Student Visa holders (but not US citizens) will need to register for 39699 even for summer jobs to comply with visa requirements.

Course Information

Course Availability

AAE has always had the policy of offering all required courses both in the fall and spring semesters, if at all possible.

Courses which are part of an either/or requirement are generally offered once a year, in alternating semesters. The exception is the labs, 33401/35201, which have always been offered both semesters. The two senior design classes, AAE 45000 and 45100 are also usually available both semesters, though there have been times when we were only able to offer one of them.

Electives are different: Some are offered only once a year; some are offered every two years; while some have not been offered in a while, and we keep them in the hope that we may be able to offer them again someday. This means that lists of classes, like the ones in this document or in the catalog, are unreliable sources of information on what is going to be available in a given semester. Always check the Purdue course schedule to see what is available. If a schedule is not yet available for the semester of interest, look at the last analogues semester.

http://eng.purdue.edu/jump/b414f0 - Spring 2015 and forward

https://engineering.purdue.edu/~aaeugrad/CourseSchedules// - Fall 2014 and prior

Summer Classes

Occasionally, the department offers some AAE courses during the summer. You must check the summer schedule when it appears (in January), and plan accordingly.

The University is encouraging more summer offerings in its pursuit of a Trimester calendar. You may see an increasing number of courses available in the coming years.

The basic math, science, CGT 16300, ME 20000, and many general ed. classes are usually available in the summer. Therefore, if you plan on taking a summer session, it is better to do it early in your program, when there are lots of courses to take.

Many students also arrange AAE 49000 projects during the summer.

Summary of Pre-requisites for Required Courses

(The "asterisked" courses are recommendations; they are not listed in the catalog this way)

	Prerequisites	Corequisites
AAE 20300	PHYS 17200	MA 26100, MA 26500(*)
AAE 20400	AAE 20300	AAE 20401(*)
AAE 20401		AAE 20400
AAE 25100	ENGR 13200, CGT 16300	AAE 20000
AAE 30100	AAE 20000, MA 26500 & MA 26600	AAE 25100
MA 30400	MA 26500 & MA 26600	
AAE 33300	AAE20000, AAE20300	MA 30400, MA30300, AAE 25100
AAE 33301		AAE 33300
AAE 33400	AAE 33300, ME 20000 ,AAE 33301	
AAE 33401	AAE 33301(*)	AAE 33400
AAE 33800	ME 20000, AAE 20000	AAE 33400
AAE 33900	ME 20000, AAE 20000	AAE 33400
AAE 34000	AAE 20300, MA 30300, MA 30400	
AAE 35103	AAE 25100	
AAE 35200	AAE 20000, AAE 20400, AAE 20401	AAE 25100
AAE 35201	AAE 20401(*)	AAE 35200
AAE 36400	AAE 30100	
AAE 36401	AAE 36400	
AAE 42100	AAE 34000, AAE 30000	AAE 364000
AAE 44000	AAE 34000,36400(*)	
AAE 45000	AAE 33400, AAE 3400, AAE 35200, AAE 36400	AAE 40000
AAE 45100	AAE 33400, AAE 3400, AAE 35200, AAE 36400	AAE 40000

Plans of Study

Standard 8 Semester Plan

The standard plan of study shows one way of completing the BS-AAE requirements in 8 semesters.

This plan of study is for students who entered Purdue during the fall 2013 semester or earlier.

1	MA 16500	CHM 11500	CGT 16300	ENGR 13100			ENGL COMP	15
	Calc 1	Chem 1	Graphics	Innovation 1			Composition	
	4	4	2	2			3	
2	MA 16600	PHYS 17200	CS 15900	ENGR 13200			Gen Ed	16
	Calc 2	Mechanics	C Programming	Innovation 2				
	4	4	3	2			3	
3	MA 26100	MA 26500	AAE 25100	AAE 20300		AAE 20000	Gen Ed	16
	Multivar.	Linear Alg	Intro Design	Statics&Dyn		Seminar 1		
	4	3	3	3		0	3	
4	MA 26600	ME 20000	PHYS 24100	AAE 20400	AAE 20401		Gen Ed	16
	Diff Eq I	Thermo	Elec & Mag	Structures I	Struc Lab			
	3	3	3	3	1		3	
5	MA 30400	AAE 30100	AAE 33300	AAE 33301	AAE 35200	AAE 30000	Gen Ed	16
	Diff Eq 2	Signals	Fluid Mech	Fluids Lab	Structures 2	Seminar 2		
	3	3	3	1	3	0	3	
6	AAE 34000	PROPUL	AAE 33400	Lab ELECT	AAE 36400		Gen Ed	16
	Dyn & Vib	33800 or 33900	Aerodyn	Stru or Aero	Controls			
	3	3	3	1	3		3	
7	TECH EL	VEH DYN	MINOR EL	MAJOR EL	AAE 36401	AAE 40000	Gen Ed	17
		42100 (air) or 44000 (space)			Controls Lab	Seminar 3		
	3	3	3	3	1	1	3	
8	TECH EL	DESIGN	MINOR EL	MAJOR EL	MAJOR EL		Gen Ed	18
		45000 (space) or 45100 (air)						
	3	3	3	3	3		3	

This plan of study is for students who entered Purdue during the fall 2014 semester for later.

PURDUE UNIVERSITY

Aeronautics & Astronautics Engineering

College of Engineering

code-BS-AAE
Code-XXX
130 Credits for Graduation
Students must have a graduation index of 2.0

AAE Engineering Major Courses (41 credits)

_____ (0) AAE 20000 - Undergrad Sophomore Seminar
_____ (3) AAE 20300- Aeromechanics I
_____ (3) AAE 25100 -Intro Aerospace Design
_____ (3) AAE 20400- Aeromechanics II
_____ (1) AAE 20401- Aeromechanics II Lab
_____ (0) AAE 30000 - Undergrad Junior Seminar
_____ (3) AAE 30100 - Signals Analysis
_____ (3) AAE 33300 - Fluid Mechanics
_____ (1) AAE 33301 -Fluid Mechanics Lab
_____ (3) AAE 33400 - Aerodynamics
_____ (1) AAE 33401/AAE 35201 - Aerodynamics Lab/ Structural Analysis Lab
_____ (3) AAE 34000 - Dynamics and Vibrations
_____ (3) AAE 33800/33900 – Thermal Sciences (Typically fall and spring)/Aerospace Propulsion (Typically spring only)
_____ (3) AAE 35200 - Structural Analysis I
_____ (3) AAE 36400 - Control System Analysis
_____ (1) AAE 36401 Controls Systems Laboratory
_____ (1) AAE 40000 Undergrad Senior Seminar
_____ (3) AAE 42100/44000 Flight Dynamics & Control (Typically fall & spring)/Spacecraft Attitude Dynamics (spring only)
_____ (3) AAE 45000/45100 - Spacecraft Design/Aircraft Design

AAE Technical Electives - (6 credits)
AAE Major/Minor Electives (15 credits)

Other Departmental /Program Course Requirements (50 credits)

_____ (2) CGT 16300 - Computer Graphics
_____ (4) CHM 11500 General Chemistry I (Satisfies FYE requirement)
_____ (3) COM 11400 - First-Year General Education Elective (strongly recommended)
_____ (3) CS 15900 - Science Elective(Satisfies FYE requirement)
_____ (2) ENGR 13100 - Transforming Ideas to Innovation I (Satisfies FYE requirement)
_____ (2) ENGR 13200 - Transforming Ideas to Innovation II (Satisfies FYE requirement)
_____ (4/3) ENGL 10600/ENGL 10800 English Composition(Satisfies FYE requirement)
_____ (4/5) MA 16500/16100 - Calculus I (Satisfies FYE requirement)
_____ (4/5) MA 16600/16200 - Calculus II (Satisfies FYE requirement)
_____ (4) MA 26100 - (Satisfies Math and Physics requirement)
_____ (3) MA 26500 - (Satisfies Math and Physics requirement)
_____ (3) MA 26600 - (Satisfies Math and Physics requirement)
_____ (3) MA 30400 Diff Eqn for Engr. And Sci.
_____ (3) ME 20000 Thermodynamics
_____ (4) PHYS 17200 - Physics I (Satisfies FYE requirement)
_____ (3/4) PHYS 24100/27200 Electricity Optics/E&M Interactions - (Satisfies Math and physics requirement)

NOTE: COM 11400 is a highly recommended general elective and is counted separately from the 18 credits of Gen Ed requirement. Therefore the general education requirement is 18 + 3 credits = 21 when including COM 11400. AAE also requires students to complete a business elective and a communications/writing elective at the 300-level or higher.

General Electives (18 credits)

_____ (3)	G.E.-I	_____ (3)	G.E.-IV	_____ ( )	_____	_____ ( )	_____
_____ (3)	G.E.-II	_____ (3)	G.E.-V	_____ ( )	_____	_____ ( )	_____
_____ (3)	G.E.-III	_____ (3)	G.E.-VI	_____ ( )	_____	_____ ( )	_____

University Core Requirements

Human Cultures Humanities		*Science, Technology & Society Selective*	
Human Cultures Behavioral/Social Science		*Written Communication*	ENGL 10600/10800
Information Literacy	ENGR 13100	*Oral Communication*	COM 11400
Science Selective	PHYS 17200	*Quantitative Reasoning*	MA 26500
Science Selective	CHM 11500		

The student is ultimately responsible for knowing and completing all degree requirements.
Degree Works is knowledge source for specific requirements and completion

Aeronautical & Astronautical Engineering

Suggested Arrangement of Courses: Effective Fall 2015

Credits	Fall 1st year	Pre-requisites	Co-requisites	Credits	Spring 1st year	Pre-requisites	Co-requisites
4	MA 16500++			4	MA 16600++	MA 16500	
4	CHM 11500*			4	PHYS 17200*		
4 or 3	ENGL 10600* or ENGL 10800*			3	CS 15900**		
2	ENGR 13100*			2	ENGR 13200*	ENGR 13100	
2	CGT 16300**			3	COM 11400*		
15				**16**			
Credits	**Fall 2nd year**	**Pre-requisites**	**Co-requisites**	**Credits**	**Spring 2nd year**	**Pre-requisites**	**Co-requisites**
3	AAE 20300++	PHYS 17200	MA 26100	3	AAE 20400++	AAE 20300	
3	AAE 25100	ENGR 13200, CGT 16300	AAE 20000	1	AAE 20401		AAE 20400
4	MA 26100++	MA 16600		3	PHYS 24100**	PHYS 17200	
3	Gen Elec I			3	MA 26600	MA 26100	
3	MA 26500*	MA 16600	MA 26100	3	ME 20000**	CHM 11500	MA 26100, ENGR 13200
0	AAE 20000			3	Gen Elec II		
16				**16**			
Credits	**Fall 3rd year**	**Pre-requisites**	**Co-requisites**	**Credits**	**Spring 3rd year**	**Pre-requisites**	**Co-requisites**
3	AAE 33300	AAE 20000, AAE 20300	MA 30300 or MA 30400, AAE 25100	3	AAE 33400	AAE 33300, AAE 33301, ME 20000	
1	AAE33301		AAE 33300	1	AAE 33401 or AAE 35201		AAE 33400 or AAE 35200
3	AAE 35200	AAE 20400, AAE 20401, AAE 20000	AAE 25100	3	AAE 34000	AAE 20300, MA 30400	
3	MA 30400			3	AAE 36400	AAE 30100	
3	AAE 30100	AAE 20000, MA 26500 & MA 26600	AAE 25100	3	AAE 33800/33900	AAE 20000, ME 20000	AAE 33400
0	AAE 30000	AAE 20000		3	Gen Elec IV		
3	Gen Elec III						
16				**16**			
Credits	**Fall 4th year**	**Pre-requisites**	**Co-requisites**	**Credits**	**Spring 4th year**	**Pre-requisites**	**Co-requisites**
3	AAE 42100 or Tech Elec	AAE 34000, AAE 20000	AAE 36400	3	AAE 44000 or Tech Elec	AAE 34000	
1	AAE 36401	AAE 36400		9	Major/Minor Electives		
6	Major/Minor Electives			3	AAE 45000/45100	AAE 33400, AAE 34000, AAE 35200, AAE 36400	AAE 40000
3	Gen Elec V			3	Gen Elec VI		
3	Tech Elec						
1	AAE 40000	AAE 30000					
17				**18**			

*Satisfies a University Core Requirement **Satisfies a Non-departmental Major Course Requirement

++Students must earn a "C-" or better

130 semester credits required for Bachelor of Science degree.

2.0 Graduation GPA required for Bachelor of Science degree.

****

The student is ultimately responsible for knowing and completing all degree requirements.
Degree Works is knowledge source for specific requirements and completion

Suggested Major or Minor Area Electives

Note: Only permanently numbered courses will be listed here. Most new courses are offered under temporary numbers (AAE 49000 or 59000). These may be perfectly good Major or Minor electives, so keep an eye out for such things every semester.

Aerodynamics

Suggested Major or Minor Area Electives

(1) Fall Semester (2) Spring Semester

AAE 41200 Intro. Computational Fluid Dynamics (1)
AAE 41600 Viscous Flows
AAE 41800 Zero-Gravity Flight Experiment
AAE 51100 Introduction to Fluid Mechanics (1)
AAE 51200 Computational Aerodynamics (2)
AAE 51400 Intermediate Aerodynamics (2)
AAE 51500 Rotorcraft Aerodynamics
AAE 51700 Unsteady Aerodynamics
AAE 51800 Low Gravity Dynamics
AAE 51900 Hypersonic Aerothermodynamics
AAE 52000 Experimental Aerodynamics (2)

ME 41300 Noise Control (2)
ME 50900 Intermediate Fluid Mechanics (1)
ME 51000 Gas Dynamics (2)
ME 51300 Engineering Acoustics (1)

Design

Suggested Major or Minor Area Electives

(1) Fall Semester (2) Spring Semester

AAE 35103	Aerospace Systems Design(1)
AAE 41800	Low Gravity Flight Experiment (1, even years)
AAE 45000	Spacecraft Design (1&2)
AAE 45100	Aircraft Design (1&2)
AAE 45400	Design of Aerospace Structures (1)
AAE 50800	Optimization in Aerospace Engineering (2, even years)
AAE 52300	Intro to Remote Sensing (2)
AAE 53500	Propulsion Design, Build, Test (2)
AAE 55000	Multidisciplinary Design Optimization (1)
AAE 55100	Design Theory and Methods for Aerospace Systems (2)
AAE 56000	System-of-Systems Modeling & Analysis

Students wishing to major in Design must take AAE 35103 (applies to students entering AAE in the Fall of 2011 or after).
Other Purdue University classes that have design content applicable to aerospace engineering are listed below.

CGT 22600	Introduction to Constraint-Based Modeling
CGT 32600	Introduction to 3D Surface Geometry
NOTE:	**The CGT department wants you to sign up for the Product Lifecycle Management (PLM)to take these courses**
NOTE:	**Only one CGT course will be counted toward the Major or Minor Area.**
ME 35200	Machine Design
ME 44400	Computer-Aided Design and Prototyping
ME 55300	Product & Process Design
ME 55700	Design for Manufacturability
ME 56100	Optimal Design: Theory with Practice

Note: Access to several ME courses is very restricted due to space limitations

Dynamics and Control

Suggested Major or Minor Area Electives

(1) Fall Semester (2) Spring Semester

AAE 42100 Flight Dynamics and Control (1)
AAE 44000 Spacecraft Attitude Dynamics (2)
AAE 50700 Basic Mechanics III (1)
AAE 50800 Optimization in Aerospace Engineering (2, even years)
AAE 53200 Orbit Mechanics (1)
AAE 54600 Aerospace Structural Dynamics & Stability (1)
AAE 55600 Aeroelasticity
AAE 56400 Systems Analysis and Synthesis (1)
AAE 56500 Guidance and Control of Aerospace Vehicles (2)
AAE 56700 Applied Stochastic Processes (2)
AAE 56800 Applied Optimal Control And Estimation
AAE 57500 Satellite Navigation and Positioning (1)

ECE 30200 Probabilistic Methods In Electrical And Computer Engineering

IE 23000 Probability And Statistics In Engineering I

ME 56200 Advanced Dynamics (2)
ME 56400 Vibrations of Discretized Systems (1)
ME 56500 Vehicle Dynamics (2)
ME 57500 Theory and Design of Control Systems (1)

STAT 51100 Statistical Methods

NOTE: Only one class from STAT, IE & ECE options may be used towards the major or minor area

Propulsion

Suggested Major or Minor Area Electives

(1) Fall Semester (2) Spring Semester

AAE 41200	Introduction to Computational Fluid Dynamics (1)
AAE 43800	Air-breathing Propulsion (2)
AAE 43900	Rocket Propulsion (1)
AAE 53500	Propulsion Design, Build, Test
AAE 53600	Advanced Energy Conversion
AAE 53700	Hypersonic Propulsion
AAE 53800	Air-Breathing Jet Propulsion
AAE 53900	Advanced Rocket Propulsion (2)
ME 30000	Thermodynamics II (1&2)
ME 31500	Heat and Mass Transfer (1&2) ***OR***
ME 43300	Principles of Turbomachinery (2)
ME 43800	Gas Turbine Engines
ME 52500	Combustion (2)
ME 53300	Turbomachinery II (2)
NUCL 35100	Nuclear Thermal Hydraulics II (2)

NOTE:

Students majoring in Aerodynamics may not choose AAE41200 to fulfill Propulsion Minor Requirements. In addition, we also require that at least one of the elected courses must be from AAE.

If you took CHM37300 or 37400 before Spring 2010, they will be accepted in your Plan of Study

Structures

Suggested Major or Minor Area Electives

(1) Fall Semester (2) Spring Semester

AAE 45300	Matrix Methods of Aerospace Structures (2)
AAE 45400	Design of Aerospace Structures (1)
AAE 54600	Aerospace Structural Dynamics and Stability (1)
AAE 54700	Experimental Stress Analysis (2)
AAE 55000	Multidisciplinary Design Optimization in Aerospace Engineering (1)
AAE 55200	Nondestructive Evaluation of Structures and Materials (2, even years)
AAE 55300	Elasticity in Aerospace Engineering (1)
AAE 55400	Fatigue of Structures and Materials (1)
AAE 55500	Mechanics of Composite Materials (2)
AAE 55600	Aeroelasticity
AAE 55800	Advanced Matrix Methods in Aerospace Structures (1)
AAE 55900	Mechanics of Friction and Wear (2, odd years)
ME 36300	Principles & Practices of Manufacturing Process
ME 56400	Vibrations of Discretized Systems (1)
ME 56900	Mechanical Behavior of Materials (2)
MSE 23000	Structure and Properties of Materials (1&2)

Suggested Technical Electives

The following courses are recommended by the AAE faculty as Technical Electives. In addition, any course which appears in a Major/Minor Electives list is recommended.

ASTR 36300	Intermediate Astronomy I
ASTR 36400	Intermediate Astronomy II
AT 10100	Gateway to Aviation Technology
AT 21700	Aviation Meteorology
AT 25800	Air Transportation
AT 26200	Basic Aircraft Powerplant Technology
AT 27100	Powerplant Propulsion Systems
AT 27000	Introduction to Composite Technology
AT 27800	Nondestructive Testing for Aircraft
AT 30000	Aviation Infrastructure
AT 32900	Advanced Navigation
AT 35000	Advanced Aircraft Powerplant Technology
AT 36900	Air Traffic Control
AT 37600	Aircraft Gas Turbine Engine Technology I
AT 47600	Aircraft Gas Turbine Engine Technology II
CE 36100	Transportation Engineering
CE 39200	Stochastic Concepts and Methods in Civil Engineering
CE 47000	Structural Design in Metals
CE 56300	Airport Design
CE 56400	Airport Systems Planning and Analysis
CGT 22600	Constraint-based Modeling
CGT 32600	Manufacturing Graphics Standards
CGT 42300	Manufacturing Documentation Prod. & Management
CGT 42600	Industrial Applications for Simulation
CHM 37300	Physical Chemistry I
CHM 37400	Physical Chemistry II
CS 25100	Data Structures (1, 2)
CS 31400	Numerical Methods (1, 2)
EAS 22500	Science of the Atmosphere
EAS 32500	Aviation Meteorology

EAS 42100	Atmospheric Thermodynamics
EAS 42200	Atmospheric Dynamics I
ECE 255	Introduction to Electronic Analysis and Design
ECE 270	Introduction to Digital System Design
ECE 302	Probabilistic Methods in Electrical and Computer Engineering
IE 23000	Probability and Statistics in Engineering I
IE 33500	Operations Research and Optimization
IE 33600	Operations Research and Stochastic Models
IE 34300	Engineering Economics
MA 51000	Vector Calculus
MA 51100	Linear Analysis
MA 52000	Boundary Value Problems
MA 52300	Partial Differential Equations
MA 52500	Complex Analysis
ME 31500	Heat and Mass Transfer (1, 2)
ME 36300	Principles and Practices of Manufacturing Processes (1)
ME 36500	Systems and Measurements (1, 2)
ME 41300	Noise Control (2)
ME 44400	CAD and Prototyping (1, 2)
ME 49200	Technology and Values (2)
ME 58100	Numerical Methods in Mechanical Engineering (1)
MSE 23000	Structure and Properties of Materials
MSE 23500	Materials Properties Laboratory
MSE 24000	Processing and Properties of Materials (MSE230 is a pre-requisite)
MSE 36700	Materials Processing Laboratory (AAE20400 and 35200 would fit pre-requisite)
MSE 38200	Mechanical Response of Materials
PHYS 33000	Intermediate Electricity and Magnetism
PHYS 34200	Modern Physics
PHYS 43500	Introduction to Plasma Physics
PHYS 56000	Astrophysics

Aeronautics Electives

The following courses are specifically about, or have significant content related to, aircraft and atmospheric flight. (Neither Astronautics nor Aeronautics are intended to be Major or Minor areas of specialization; this list is provided as a guide.)

AAE 37200 Jet Propulsion Power Plants (2)
AAE 42100 Flight Dynamics and Control (1)
AAE 45100 Aircraft Design (1,2)
AAE 41200 Intro. Computational Fluid Dynamics (1)
AAE 41600 Viscous Flows
AAE 51100 Introduction to Fluid Mechanics (1)
AAE 51200 Computational Aerodynamics (2)
AAE 51400 Intermediate Aerodynamics (2)
AAE 52000 Experimental Aerodynamics (2)
AAE 53800 Airbreathing Propulsion (1)
AAE 55600 Aeroelasticity (2)
AAE 56500 Guidance and Control of Aerospace Vehicles (2)

Astronautics Electives

The following courses are specifically about, or have significant content related to, space flight. (Neither Astronautics nor Aeronautics are intended to be Major or Minor areas of specialization; this list is provided as a guide.)

AAE 43900 Rocket Propulsion (1)
AAE 44000 Spacecraft Attitude Dynamics (2)
AAE 41800 Low Gravity Experiments (2)
AAE 45000 Spacecraft Design (1,2)
AAE 51800 Low Gravity Fluid Mechanics
AAE 51900 Hypersonic Aerothermodynamics
AAE 53200 Orbit Mechanics (1)
AAE 53500 Rocket Combustor Design Build Test (2)
AAE 53600 Advanced Energy Conversion
AAE 53900 Advanced Rocket Propulsion (2)
AAE 57500 Satellite Navigation and Positioning (1)

AAE General Education Courses

AAE HUMANITIES

A&D	105, **106,** 125, **200, 205, 206,** 207, **213, 214,** 215, 216, 217, **221,** 226, 227, **230, 235,** 242, **245, 246, 250,** 255, **259, 262,** 265, 266, 270, 271, **275, 276, 307, 311, 312, 314, 316, 327, 330, 332, 333, 341, 342, 350, 351, 353, 357, 358, 359, 362, 363, 365, 366, 368, 369, 370, 371, 376, 380, 381, 382, 383, 384, 385, 390, 391, 395, 398, 400, 421, 442, 450, 451, 452, 454, 455, 458, 462, 468, 470, 475, 476, 485, 490, 492**
ARAB	101, 102, 201, 202, 301, 302
ASAM*	24000*, **34000***
CHNS	101, **102, 201, 202, 220,** 230, 241, 280, 285, **301, 302, 305, 313, 341, 342, 490, 493**
CLCS	230, 237, **330, 331,333*, 335, 336, 337, 338*, 339*, 385**
DANC	101, 102, 103, 130, **140, 201, 202, 203, 240, 241,** 250, **301, 302**
ENGL	201, 227, 230, 231, 232, 233, 234, 235, 237, 238, 239, 240, 241, 250, 257, 258, 262, 264, 266, 267, 276, 279, **304*, 305, 327, 331, 333, 335, 337, 350, 351, 352, 356, 358, 360, 361, 362, 364, 365, 366, 368, 372, 373, 374, 375, 376, 377, 379, 381, 382, 383, 386, 387, 396, 406, 407, 409, 411, 412, 413, 414, 441, 442, 444, 455, 460, 462, 463, 466, 468, 469, 470**
FLL	101, **102, 201, 202,** 230, 233, 235, 239, 261, 331, 361, **368, 371, 490**
FR	101, **102, 103, 112, 201, 202, 211, 212,** 230, 231, **241, 260, 280, 301, 302, 330, 341, 342, 361, 362, 380, 394, 396, 401, 402, 443, 480**
GER	101, **102, 103, 112, 201, 202, 211, 212,** 230, 231, **241, 260, 280, 301, 302, 323, 330, 341, 342, 360, 385, 401, 402, 441, 442, 446, 480, 483**
GREK	101, 102, 201, 202, 344, 446, 490
HEBR	101, 102, 201, 202
HIST	102, 103, 104, 105, 151, 152, 228, 229, 240, 241, 243, 245, 271, 272, 290,**302*, 303, 304, 307, 312, 317, 318, 320, 322, 323, 324, 326, 327, 328, 329, 330,331, 332, 333, 334, 335, 337, 339, 340, 341, 342, 343, 344, 345, 350, 351,352, 353, 355, 356, 357, 358, 359, 360, 361, 362, 365, 366, 368, 371, 372, 376, 377, 381, 382, 383, 385, 386, 387, 391, 392*, 395*,396, 398, 399, 402, 403, 404, 405, 406, 407, 408, 409, 412, 414, 415, 416, 417, 419, 420, 427, 438, 439, 440, 441, 443, 450, 460, 461, 463, 465, 467, 468, 469, 471, 472, 473, 475, 492, 493, 494, 497, 595***
IDIS	220, 260, 271, 280, **330, 370, 371, 371F, 372, 373, 375, 376, 378, 380, 381, 420, 460, 473, 480, 481, 482, 483, 490, 490B**
ITAL	101, **102, 105, 112, 201, 202, 211, 212,** 231, **241, 260, 301, 302,** 330, **335, 341, 342, 394**
JPNS	101, **102, 201, 202,** 230, **241,** 280, **301, 302, 341, 342, 361, 362, 363, 401, 402, 480, 490**
LATN	101, 102, 201, 202, 343, 344, 345, 346, 442, 443, 444, 445, 446, 490, 492

MUS	**250, 361, 362, 363, 364, 371, 372, 373, 374, 375, 377, 378, 490**
PHIL	110, 111,120*, 150*, 206, 219, 221, 225, 240, 242, 260, 270, 275, 280, 290, **293, 301, 302, 303, 304, 306, 319, 330, 331, 402, 406, 411, 421, 425, 430, 431, 432, 435, 465, 490, 493**
PTGS	101, 102, 105, 112, 201, 202, 211, 212
RUSS	101, **102,** 111, **112, 201, 202, 211, 212, 223,** 230, 231, 232, 233, 234, 236, 237, **241**, 281, 289, **301, 302, 330, 341, 342, 361, 362, 401, 402, 480**
SPAN	101, **102, 103,** 112, **201, 202, 211, 212, 230,** 231, 235, **241, 260, 280, 301, 302, 330, 335, 341, 342, 361, 362, 401, 402, 480, 481, 482**
THTR	168, 201, 202, **213, 233,** 260, **323, 333, 334, 336, 380, 413, 433, 434, 440, 480**
NS*	214*, **413***
AFT*	**351*, 361*, 471*, 481***

AAE General Education Courses

SOCIAL SCIENCES

AGEC	250, 296, 340, 406, 410, 415, 423, 450
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