Aerospace Systems Engineering 490000BS

The following information has official approval of the **College of Engineering**, but is intended only as a supplemental guide. Official degree requirements are established at the time of admission to the degree-granting college. The transfer process is completed through an appointment with your academic adviser**.**

For completion of this degree program, students will need to complete several required Co-Op's with corporations or governmental entities. If you are not a citizen or national of the United States or a permanent resident alien you may not be able to participate in the Co-Op's based on export control laws and will not be able to complete the degree program. If you are not a citizen or national of the United States or a permanent resident alien please contact the Engineering Dean's office to determine if you will be able to complete the degree program prior to admission into the program.

Italicized courses fulfill General Education requirements. Unless a course is specified, refer to the General Education guide at http://www.uakron.edu/advising/docs/General_Education_Guide.pdf

1st Year	Fall Semester	Credit Hours	Prerequisites
3150:151	*Principles of Chemistry I (Lecture and Recitation) (Natural Science Requirement)*	3	Placement into 3450:149 (Precalculus) or higher
3150:152	*Principles of Chemistry I Lab (Natural Science Requirement)*	1	3150:151 corequisite
3450:221	*Analytic Geometry-Calculus I (Mathematics Requirement)*	4	Placement test or 3450:149 (PreCalculus)
4900:165	Tools for Aerospace Systems Engineering	2	3450:149 (PreCalculus) or higher corequisite
	Physical Education Requirement	1	
	English Composition I Requirement	3	Appropriate placement by advisor
Total		**14**	

1st Year	Spring Semester		
3450:222	Analytic Geometry-Calculus II	4	3450:221 with C- or better
4900:166	ASE Project Management	1	4900:165
3650:291	*Physics I (Lecture and Lab) (Natural Science Requirement)*	4	3450:221 with C- or better
	English Composition II Requirement	3	3300:111 or equivalent
	Speech/Oral Communication Requirement	3	
	Social Science Requirement (not economics)	3	
Total		**18**	

2nd Year	Fall Semester		
3450:223	Analytic Geometry-Calculus III	4	3450:222 with C- or better
3650:292	Physics II (Lecture and Lab)	4	3650:291
4300:201	Statics	3	3450:222 and 3650:291 corequisites
3250:244	*Intro to Economic Analysis (Social Science Requirement)*	3	
3400:210 or 3400:221	*Humanities in the Western Tradition* ***-OR-*** *Humanities in the World since 1300*	4	32 credit hours and 3300:112 equivalent 32 credit hours and 3300:112 equivalent
Total		**18**	

2nd Year	Spring Semester		
4400:307	Basic Electrical Engineering	4	3650:292 prerequisite; 3450:335 corequisite
4600:203	Dynamics (Lecture and Problem)	3	3450:222, 3650:291, 4300:201 prerequisites 3450:223 corequisite
3450:335	Introduction to Ordinary Differential Equations	3	3450:223 with C- or better
4300:202	Mechanics of Solids (Lecture and Problem)	3	4300:201
4600:260	Engineering Analysis I	2	3450:222 prerequisite; 3450:223 corequisite
Total		**15**	

2nd Year	Summer Semester		
	Mandatory Co-Op		

3rd Year	Fall Semester		
4600:300	Thermodynamics I (Lecture and Problem)	3	3450:223
4600:310	Fluid Mechanics I (Lecture and Problem)	2	4600:203 and 3450:335
4900:336	Aerospace Structures	3	4300:202 and 3450:335
6200:201	Accounting Principles I	3	24 hours of college credit
4600:360	Engineering Analysis II (Lecture and Problem)	2	4600:260, 3450:335
4900:240	ASE I	3	3450:223
Total		**16**	

3rd Year	Spring Semester		
	Mandatory Co-Op		

3rd Year	Summer Semester		
4800:470	Human Factors Engineering	3	
4900:380	Aerospace Materials	3	3150:151, 3150:152, 4300:202
4900:340	Avionics I and Lab	3	4400:307
Total		**9**	

4th Year	Fall Semester		
	Mandatory Co-Op		

4th Year	Spring Semester		
4600:315	Heat Transfer (Lecture and Problem)	3	4600:310 or 4800:360, 4600:300, 4600:360 or 4800:220
4600:337	Design of Mechanical Components	3	4600:336
4600:411	Compressible Fluid Mech	3	*4600:301, 4600:311
4600:413	Intro to Aerodynamics	3	*4600:311
4600:483	M.E. Measurements Lab (Lecture and Lab)	2	4600:300, 4600:310 prerequisites 4600:340 corequisite
	Area Studies/Cultural Diversity Requirement	2	
		16	

4th Year	Summer Semester		
	Mandatory Co-Op		

5th Year	Fall Semester		
4900:320	ASE II	3	4900:240, 4600:360
4600:400	Thermal System Comp	3	*4600:301, 4600:311, 4600:315 or permission
4600:460	Concepts of Design (Lecture and Lab)	3	4600:337
4600:414	Intro to Aero Propulsion	3	Department Consent and 4600:311
4600:412	Fundamentals of Flight	3	*4600:311
Total		**15**	

5th Year	Spring Semester		
4900:420	Object Oriented D&M	3	4900:320
4900:450	Aerospace Computations	3	4300:202, 4600:315, 4600:360, 4600:411
	Humanities Elective Requirement	3	
4900:440	Avionics II and Lab	3	4900:340, 4600:412
4900:460	Aero Systems Manufacturing	3	4600:360, or permission
4900:490	Aerospace Design Project	2	Senior Standing or permission
Total		**17**	

	Minimum Total Credits for Degree	**139**	

ALERT: 1) By the end of your first 48 credit hours attempted, you should have completed your General Education English, Math, and Oral Communication (Speech) requirements; 2) By the end of your first 48 credit hours attempted, you should have declared a major and transferred to (been accepted by) a degree granting college at The University of Akron.

*Prerequisites denoted with an * are in the process of being approved through Curriculum Proposal, subject to change.

Department Chair - Dr. Shengyoung Wang , Auburn Science and Engineering Center 107D, (330) 972-8616.
E-Mail: wang@uakron.edu

SALARY LEVEL: Starting salary offers for new graduates range from $44,000 to $68,000 per year. The average is $57,500.

Aerospace Systems Engineering Program (4900) Admissions

1. All students wanting to major in ASE will be designated as 490005PA (pre-admission) by Admissions
    a. The Dept. of Mechanical Engineering (ASE Program) will take **positive action** to move those students into the 490005BS category at the following points:

        i. *Honors students*:
            1. They can be moved to the 490005BS category upon their acceptance into the Honors Program

        ii. *Non-Honors students who meet entrance requirements for the Honors Program*:
            1. They can be moved to the 490005BS plan code during their first semester at UA provided two things occur:
                a. They submit an essay on an assigned subject
                b. They are interviewed by a faculty member in the Department of Mechanical Engineering

        iii. Students not meeting entrance requirements to the Honors Program
            1. They are evaluated after completing at least 30 credit hours (post-HS). If the following occurs, they can be moved to the 490005BS plan code provided:
                a. They have a cumulative GPA of at least a 3.0 after completion of 30 credit hours (post-HS).
                b. They are in the College of Engineering (or meet the College of Engineering entrance requirements).
                c. They submit an essay on an assigned subject
                d. They are interviewed by a faculty member in the Department of Mechanical Engineering

2. Students who don't pass to the 490005BS plan from the 490005PA plan by completion of 45 credit hours (post-HS) will be moved to another Plan Code in Engineering (Undecided is the default).

3. Co-op GPA Determination
    a. In order to start their co-op assignment (after their 2nd year), students must have earned a cumulative GPA of at least 3.0 by the end of the semester prior to their first mandatory co-op assignment.
    b. If a student has not earned a cumulative GPA of 3.0 by this time, they are to be moved to another Plan Code in Engineering (Undecided is the default).

WOMEN AND MINORITY ENGINEERS: Eligible students are invited to register into the applicable engineering course elective. There are two options; 4100:110, Women in Engineering Seminar & Peer Group (Contact: Heidi Cressman, 330-972-7701, or hec9@uakron.edu). This course provides beginning women students an overview of the career opportunities for women in engineering. The course introduces relevant topics in engineering, an overview of career opportunities, student led discussion groups and an opportunity to meet with professionals in various engineering disciplines. The other option is 4100:120, Minority Engineering Seminar and Peer Groups (Contact: Julie Zhao, 330-972-2823, or zhao1@uakron.edu). This course provides an overview of disciplines and opportunities in engineering. It also reinforces educational/ career choices and provides role models of successful minority engineers.

PLACEMENT: The Engineering Co-op and Placement Office, ASEC 203, Akron, Ohio 44325 assists all graduates with full-time placement.

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