

MAE SPECIFIC PROFESSIONAL SCHOOL COURSE REQUIREMENTS

ME Specific Criteria AE Specific Criteria

Course No.	Course Title	Prerequisites	Eng Eng Abet Outcomes													ME Specific Criteria			AE Specific Criteria				
			Fa	Sp	Su	Des	Sci.	a	b	c	d	e	f	g	h	i	j	k	ME1	ME2	ME3	AE1	AE2
1. The following basic sciences																							
CHEM 1414 or CHEM 1515																							
PHYS 2014		MATH 2144 pre or co-requisite																					
PHYS 2114		PHYS 2014																					
2. The following Engineering Science Courses:																							
ENGR 1111	Introduction to Engineering		X	X	X								X		X	X							
ENGR 1332	Engineering Design with CAD		X	X	X							X	X	X	X	X					X		
ENGR 1412	Introductory Engineering Computer Programming		X	X	X							X		X							X		
ENSC 2113	Statics	MATH 2144, PHYS 2014	X	X	X			3	X					X									
ENSC 2123	Elementary Dynamics	ENSC 2113	X	X	X			3	X					X									
ENSC 2143	Strength of Materials	ENSC 2113	X	X	X			3	X					X							X		
ENSC 2213	Thermodynamics	1515, MATH 2144, PHYS 2014	X	X	X			3	X			X		X									
ENSC 2613	Introduction to Electrical Science	MATH 2153, PHYS 2114	X	X	X			3	X					X							X		
ENSC 3233	Fluid Mechanics	ENSC 2113, MATH 2153	X	X	X			3	X	X				X									
ENSC 3313	Materials Science (1hr basic science)	CHEM 1314, 1414 or 1515	X	X	X			2	X	X	X	X	X		X	X	X	X	X				
3. A total of 24 credit hours as follows:																							
MAE 3013	MAE Analysis (3hr math)	MATH 2233, ENSC 2123, ENSC 2613	X	X			0	0	X	X				X							X		
MAE 3113	Measurements and Instrumentation	ENSC 2123 & 2613	X	X			1	2	X	X	X	X	X		X	X					X		
MAE 3223	Thermodynamics II	ENSC 2213	X	X			0.5	2.5	X		X						X				X		
MAE 3233	Heat Transfer	ENSC 3233	X	X			0.5	2.5	X		X			X							X	X	
MAE 3323	Mechanical Design I	ENSC 2113, ENSC 2143	X	X			1	2	X		X			X	X	X					X		
MAE 3403	Computer Methods in Analysis and Design	ENGR 1412	X	X			0.5	2.5	X		X	X	X								X	X	
MAE 3723	Dynamic Systems	MATH 2233, ENSC 2123, ENSC 2613	X	X			0.5	2.5	X		X			X			X				X	X	
IEM 3503	Engr Economic Analysis	MATH 2153	X	X	X			0	3														

X Student Outcome taught.

X Student Outcome taught and assessed.

4. A total of 19 credit hours from the following 4 categories and 6 hours of MAE electives, selecting one course from each category so that all 4 categories are represented.

AE students must take those courses marked AERO. ME Specific Criteria AE Specific Criteria

Course No.	Course Title	Primary Prerequisites	Eng Outcomes													ME Specific Criteria			AE Specific Criteria							
			Fa	Sp	Su	Des	Sci.	a	b	c	d	e	f	g	h	i	j	k	ME1	ME2	ME3	AE1	AE2	AE3		
Category I (Thermal Systems Realization)																										
MAE 4243	Propulsion and Power Systems	ENSC 3233	X			1	2	X	X	X			X			X		X	X	X	X	X	X			
MAE 4263	Energy Conversion	MAE 3223, MAE 3233		X		1	2	X	X	X			X	X		X		X	X							
MAE 4703	Design of Indoor Environmental Systems	MAE 3223, MAE 3233		X		1	2	X	X	X			X	X	X	X		X	X							
MAE 4713	Thermal System Design	3223, MAE 3233 CO: MAE 3403	X			1	2	X	X	X			X			X		X	X							
sum								1		1	1			1			1			1	1	1	1	1	1	1

Category II (Mechanical Systems Realization)																										
MAE 4353	Mechanical Design II	MAE 3033,3323,3403	X	X		1	2	X	X	X			X	X		X		X	X							
MAE 4513	Aerospace Structures I	MAE 3323, 3403	X			1	2	X	X	X			X	X		X		X	X	X	X	X	X	X	X	X
MAE 4363	Advanced Methods in Design	MAE 3113, 3323		X		1	2	X	X	X	X		X	X		X		X	X							
sum								1		1	1	1	1	1		1		1	1	1	1	1	1	1	1	1

Category III (Laboratory)																										
MAE 4273	Expt Fluid Dynamics	ENSC 3233, MAE 3113	X			1	2	X	X	X	X	X	X	X	X	X	X									
MAE 4333	Mechanical Metallurgy	ENSC 3313		X		1	2	X	X	X	X	X	X	X	X	X	X									
MAE 4733	Mechatronics Design	MAE 3113, 3403	X			1	2	X	X	X	X	X	X	X	X	X	X			X	X					
MAE 4223	Aero Engr Lab AE reqt	MAE 3113, 3253, 4283		X		0	3	X	X	X	X	X	X	X	X	X	X						X	X		
sum								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Category IV (Capstone Design)																										
MAE 4344	Design Projects	MAE 3113, 3323	X	X		4	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 4354	Aero Systems Design ME	MAE 3113, 3323 senior, instructor consent		X		4	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 4374	Aero Systems Design AE	ME 4243, 4283, 4513 senior, instructor consent		X		4	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
sum								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

MAE Electives (6 hours required)																										
electives can include MAE courses in categories not taken to satisfy that category																										
MAE 3033	Design of Machines and Mechanisms	ENGR 1332, ENSC 2123	X	X		3	0	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 3123	Manufacturing Processes	ENSC 2143, ENSC 3313 or equivalent	X			1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 3253	Applied Aero & Perf - AE reqt	MATH 2233, ENSC 3233		X		1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 3293	Compressible Fluid Flow - AE reqt	MATH 2233, ENSC 2213, ENSC 3233	X			1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 4053	Automatic Control Systems	MAE 3723	X			1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 4063	Mechanical Vibrations	MAE 3723		X		1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 4283	Aerospace Vehicle Stab & Cont - AE reqt	ENSC 2123, MAE 3253, MAE 3723	X			1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 4213	Spacecraft Design	MAE 3113, MAE 3253, senior, instructor consent	X			1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 4313	Adv. Proc. of Engr. Materials	ENSC 3313		X		1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MAE 4623	Biomechanics	MATH 2163, ENSC 2143, ENSC 3233		X		1	2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

X Student Outcome taught.
X Student Outcome taught and assessed. JKG April 2015