

# BSME MECHANICAL ENGINEERING (AEROSPACE CONCENTRATION)

## B.S.M.E. Degree Requirements for a Major in Mechanical Engineering (Aerospace Concentration)

Code	Title	Hours
<b>Required Courses</b>		
Minimum of 124 hours including the following:		
<i>Literature and Writing</i>		
ENG 1310	Research Writing: Writing and Academic Inquiry Seminars	3
GTX 2301	Intellectual Traditions of the Ancient World : Literature and Thought	3
or GTX 2302	Medieval Intellectual Traditions: Literature and Thought in Context	
PWR 3300	Technical Writing	3
<i>Religion</i>		
REL 1310	The Christian Scriptures	3
REL 1350	The Christian Heritage	3
<i>Foreign Language and Culture</i>		
Select 3 hours from the Foreign Language and Culture Distribution List for ECS Majors. Second-level proficiency must be reached if a foreign language is chosen.		3
<i>Other Requirements</i>		
PSC 1387	The U.S. Constitution, Its Interpretation, and the American Political Experience	3
or ENG 2301	British Literature	
EGR 2108	Engineering Economics	1
EGR 3305	Social and Ethical Issues in Engineering	3
or EGR 3315	Ethics of International Service	
EGR 1101	Engineering New Student Experience	1
Lifetime Fitness: Any two LF 11XX courses. ECS 2101 and select leadership courses may fulfill one of the Lifetime Fitness requirements.		2
Chapel: Two Semesters		0
<i>Mathematics and Basic Sciences</i>		
CHE 1301	Basic Principles of Modern Chemistry I	3
MTH 1321	Calculus I	3
MTH 1322	Calculus II	3
MTH 2311	Linear Algebra	3
MTH 2321	Calculus III	3
MTH 3325	Ordinary Differential Equations	3
STA 3381	Probability and Statistics	3
PHY 1420	General Physics I	4
PHY 1430	General Physics II	4
<i>Mechanical Engineering Major (Aerospace Concentration)</i>		
EGR 1301	Introduction to Engineering	3
EGR 1302	Introduction to Engineering Analysis	3

EGR 2170	Introduction to Computer Aided Design	1
EGR 3380	Engineering Design I	3
EGR 4390	Engineering Design II	3
ELC 2320	Electric Circuit Theory for non-ECE majors	3
ME 2320	Statics	3
ME 2321	Dynamics	3
ME 2345	Thermodynamics	3
ME 3122	Materials and Manufacturing Processes Lab	1
ME 3145	Thermal/Fluids Laboratory	1
ME 3320	Strength of Materials	3
ME 3321	Fluid Mechanics	3
ME 3322	Mechanical Engineering Materials and Manufacturing Processes	3
ME 3323	Machine Design	3
ME 3420	Instrumentation and Measurements	4
ME 4325	Dynamic Systems	3
ME 4327	Numerical Methods for Engineers	3
ME 4345	Heat Transfer	3
ME 4346	Introduction to Aeronautics	3
ME 4347	Analysis and Design of Propulsion Systems	3
ME 4350	Aircraft Flight Dynamics and Control	3
<i>Aerospace Engineering Elective</i>		
Select one course from the following:		3
ME 4322	Computer-Aided Engineering and Design	
ME 4324	Introduction to Finite Element Methods	
ME 4337	Introduction to Computational Fluid Dynamics	
ME 4344	Composite Materials	
ME 4349	Aircraft Structural Analysis	
ME 4356	Introduction to Space Flight	
<i>Engineering Elective</i>		
Select one course from the following list of courses or any course listed in the 'Aerospace Engineering Elective' section that was not used to satisfy the Aerospace Engineering Elective		3
EGR 3V95	Internship Experience	
EGR 4361	Conventional & Alternative Energy Systems	
EGR 4375	Elements of Nuclear Engineering	
EGR 4396	Special Topics in Engineering	
EGR 4V97	Special Projects in Engineering	
BME 4360	Introduction to Biomedical Engineering	
BME 4370	Biomaterials: Form and Function	
BME 4374	Biomechanics	
BME 4376	Introduction to the Design and Evaluation of Medical Devices	
ME 4305	Sustainable Engineering	
ME 4320	Computer-Aided Structural Analysis	
ME 4323	Mechanical Vibrations	
ME 4330	Introduction to Robotics	
ME 4336	Thermal Systems Design	
ME 4339	Tribology	
ME 4357	Cardiovascular Engineering and Instrumentation	

ME 4360	Renewable Energy Devices
ME 4377	Solar Energy
ME 4382	Selection of Materials and Manufacturing Processes in Design
ME 4384	Engineering with Plastics
ME 4385	Failure Analysis and Product Liability
ME 4386	Properties and Processing of Electronic Materials
ME 4388	Corrosion and Sustainable Metallurgy
ME 4396	Special Topics in Mechanical Engineering
ME 4V97	Special Projects in Mechanical Engineering

A grade of "C" or better in all the Mechanical Engineering hours counted towards major.

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**Total Hours** **124**