

Mechanical Engineering (14MEBS)

		Freshman Year			
<i>Fall Semester</i>		<i>Credits</i>	<i>Spring Semester</i>		<i>Credits</i>
CH	101 Chemistry, A Molecular Science ¹	3	CSC	113 Intro Comp MATLAB	3
CH	102 General Chemistry Lab ¹	1	MA	241 Calculus II ¹	4
E	101 Introduction to Engr & Prob Solv ^{1,2}	1	PY	205 Physics for Engr & Sc I ¹	3
E	115 Intro to Computing Environ ^{1,2}	1	PY	206 Physics for Engr & Sc I ¹ Lab	1
ENG	101 Academic Writing and Research ^{1,2}	4	GC	120 Foundations of Graphics	3
MA	141 Calculus I ¹	4	HESF	10* Fitness & Wellness Course*	1
EC	205 Economics (or EC 201 or ARE 201)*	3	E	102 Engineering in the 21st Cent	2
HES	*** Health & Exercise Studies	1			
Semester Total 18			Semester Total 17		
		Sophomore Year			
<i>Fall Semester</i>		<i>Credits</i>	<i>Spring Semester</i>		<i>Credits</i>
MA	242 Calculus III	4	MA	341 Appl Differential Eq	3
MAE	200 Introduction to ME Design ³	1	MAE	201 Thermal-Fluid Sciences ²	3
MAE	206 Engineering Statics ²	3	MAE	305 ME Lab I	1
PY	208 Physics for Engr & Sc II	3	MAE	208 Engineering Dynamics ²	3
PY	209 Physics for Engr & Sc II Lab	1	MAE	214 Solid Mechanics ²	3
ST	370 Prob & Stat for Engineers (or ST 371)	3	***	*** GEP Requirement*	3
***	*** GEP Requirement*	3			
Semester Total 18			Semester Total 16		
		Junior Year			
<i>Fall Semester</i>		<i>Credits</i>	<i>Spring Semester</i>		<i>Credits</i>
ENG	331 Comm Engr & Tech	3	ECE	331 Principles of Elec. Engr. I	3
MAE	302 Engr Thermodynamics II	3	MAE	310 Heat Transfer Fundamentals	3
MAE	306 ME Lab II	1	MAE	316 Strength of Mech Comp	3
MAE	308 Fluid Mechanics	3	MSE	200 Mech. Prop. Engr. Materials (or MSE 201)	3
MAE	315 Fundamentals of Vibrations	3	**E	*** Tech Elective ⁴	3
***	*** GEP Requirement*	3			
Semester Total 16			Semester Total 15		
		Senior Year			
<i>Fall Semester</i>		<i>Credits</i>	<i>Spring Semester</i>		<i>Credits</i>
MAE	405 Controls Lab	1	**E	*** Tech Elective ⁴	3
MAE	435 Prin of Auto Control	3	MAE	416 ME Senior Design ⁷	4
MAE	4** Mech Engr Design Elective ⁵	3	***	*** GEP Requirement*	3
E	* Tech Elective ⁴	3	***	*** Ethics (GEP Req*) ⁶	3
ISE	311 Engr Econ Analysis	3			
Semester Total 13			Semester Total 13		
Minimum Total Credit Hours Required for Graduation 126					

Major/Program requirements and footnotes:

¹Courses required for Change of Degree Audit (CODA). CH 101, 102; MA 141, 241; PY 205, 206 must be completed with C or higher.

²Minimum grade of C-, E 115 requires satisfactory completion (S).

³MAE 200 may be taken in the fall semester of the sophomore or junior year.

⁴Technical electives must be selected from the following list: <https://www.mae.ncsu.edu/academics/undergraduate-programs/electives/>

⁵Choose one: Either MAE 415 for traditional senior design or MAE 482 for Engineering Entrepreneurship senior design

⁶Select from IDS 201, STS 302, STS 304, STS(PHI) 325, PHI 214 or PHI 375.

⁷Students who choose MAE 482 for the Mech Engr Design Elective should enroll in MAE 483 + MAE 484 instead of MAE 416.

*General Education Program (GEP) requirements and GEP Footnotes:

To complete the requirements for graduation and the General Education Program, the following category credit hours and co-requisites must be satisfied.

University approved GEP course lists for each of the following categories can be found at <http://oucc.ncsu.edu/gep-courses>.

Humanities (6 credit hours selected from two different disciplines/course prefixes)

Choose from the University approved GEP Humanities course list.

Social Sciences (6 credit hours selected from two different disciplines/course prefixes)

Choose 3 credits from the University approved GEP Social Sciences course list in a discipline other than Economics.

Economics 205 (or EC 201 or ARE 201), taken as part of the Major requirements, satisfies 3 credit hours needed to fulfill the GEP Social Sciences requirement

Health and Exercise Studies (2 credit hours – must include one HESF 100-level course and one additional HES course)

Choose from the University approved GEP Health and Exercise Studies course list.

Additional Breadth - (3 credit hours to be selected from the following University approved GEP course lists)

Choose from the Humanities/Social Sciences/Visual and Performing Arts

Interdisciplinary Perspectives (5-6 credit hours)

Choose from the University approved GEP Interdisciplinary Perspectives course list.

The following **Co-Requisites** must be satisfied to complete the General Education Program requirements:

- I. **U.S. Diversity (USD)**
Choose from the University approved GEP U.S. Diversity course list or choose a course identified on the approved GEP course lists as meeting the U.S. Diversity (USD) co-requisite.
- J. **Global Knowledge (GK)**
Choose from the University approved GEP Global Knowledge course list or choose a course identified on the approved GEP course lists as meeting the Global Knowledge (GK) co-requisite.
- K. **Foreign Language proficiency** - Proficiency at the FL_102 level is required for graduation.