

## NCSU Mechanical Engineering

(Unofficial Community Colleges to NCSU Curriculum)

Degree Earned: NCSU Bachelor of Science in Mechanical Engineering

Transfer GPA = 3.8+

Effective: 2015-2016

Grey Highlighted Courses – Take Courses at NCSU

### FRESHMAN YEAR

	Fall Semester	Credit		Spring Semester	Credit
CHM 151	CH 101 Chemistry -- A Molecular Science <sup>5</sup>	3	CSC 134	CIS 113 MATLAB	3
CHM 151	CH 102 General Chemistry Lab <sup>5</sup>	1	MAT 272	MA 241 Calculus II <sup>5</sup>	4
EGR 150	E 101 Intro to Engr & Problem Solving <sup>1</sup>	1	PHY 251	PY 205 Physics for Engr & Science I <sup>5</sup>	4
NCSU	E 115 Intro to Computing Environment	1	ENG 231/ENG 232/REL 110	GEP Requirement* (Humanities)	3
ENG 111 & ENG 112	ENG 101 Academic Writing & Research <sup>1</sup>	4	PED 110	Health and Exercise Studies Course	1
MAT 271	MA 141 Calculus I <sup>5</sup>	4			
ECO 251	EC 205 Economics (EC 201, ARE 201)* (GEP Social Sciences)	3			
<b>17</b>			<b>15</b>		

### SOPHOMORE YEAR

	Fall Semester	Credit		Spring Semester	Credit
DFT 170	GC 120 Foundations of Graphics (or GC 210)	3	MAT 285	MA 341 Applied Differential Equations	3
MAT 273	MA 242 Calculus III	4	EGR 225	MAE 208 Engr Dynamics <sup>1,2</sup>	3
EGR 220	MAE 206 Engr Statics <sup>1,2</sup>	3	NCSU	MAE 301 Thermodynamics	3
PHY 252	PY 208 Physics for Engr & Science II	4	NCSU	MSE 200 Mech Prop Engr Materials	3
COM 231/MUS 112	GEP Requirement* (Additional Breadth)	3	POL, PSY, SOC	GEP Requirement* (Social Sciences)	3
			PED 110	Health and Exercise Studies Course	1
<b>17</b>			<b>16</b>		

### JUNIOR YEAR

	Fall Semester	Credit		Spring Semester	Credit
NCSU	ENG 331 Comm Engr & Tech	3	NCSU	ECE 331 Principles of Electrical Engr I	3
NCSU	MAE 314 Solid Mechanics I <sup>1</sup>	3	NCSU	MAE 302 Engr Thermodynamics II	3
NCSU	MAE 305 ME Lab I	1	NCSU	MAE 306 ME Lab II	1
NCSU	MAE 308 Fluid Mechanics	3	NCSU	MAE 310 Heat Transfer Fundamentals	3
NCSU	MAE 315 Dynamics of Machines	3	NCSU	MAE 316 Strength of Mech Comp	3
NCSU	ST 370 Prob & Stat for Engineers	3	HUM 110	GEP Requirement* (Interdisciplinary Perspectives)	3
<b>16</b>			<b>16</b>		

### SENIOR YEAR

	Fall Semester	Credit		Spring Semester	Credit
NCSU	MAE 405 Controls Lab	1	NCSU	MAE 412 Energy Systems	3
NCSU	MAE 415 Mech Engr Analysis	3	NCSU	MAE 416 ME Senior Design	4
NCSU	MAE 435 Principles of Auto Control	3	NCSU	MAE 4** Technical Elective <sup>3</sup>	3
NCSU	ISE 311 Engr Econ Analysis	3	NCSU	Ethics (GEP Requirement*) <sup>4</sup>	3
NCSU	MAE 4** Technical Elective <sup>3</sup>	3			
	GEP Requirement* (see advisor for assistance in selecting)	3			
<b>16</b>			<b>13</b>		

**NCSU - Minimum Credit Hours Required for Graduation in Mechanical Engineering\*:**

**126**

## NCSU Mechanical Engineering (continued)

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### **Major/Program requirements and footnotes:**

<sup>1</sup> Minimum grade of C- required.

<sup>2</sup> Students must have a 2.3 GPA to enroll in this course.

<sup>3</sup> Technical electives must be selected from the following list (when offered): ISE 311, MAE 403, MAE 406, MAE 408, MAE 421, MAE 442, MAE 495 and the following with permission from the instructor: MAE 496 (limited to 3 credit hours), MAE 5\*\*.

<sup>4</sup> Ethics course must be chosen from STS 302, STS 304, STS 320, PHI 214 or PHI 375. A course selected from this list will also fulfill a GEP requirement – see below.

<sup>5</sup> Grade of C (2.0) or higher required.

### **\* General Education Program (GEP) requirements:\***

To complete the requirements for graduation and the General Education Program, the following credit hours and co-requisites must be satisfied. University approved GEP course lists for each category can be found at

<http://oucc.ncsu.edu/gep-courses>.

**PHYSICAL EDUCATION**- 2 hours to be selected from the approved GEP Physical Education list.

a. One fitness and wellness course (any PE 100-level course).

b. One additional credit hour of PE activity courses.

**HUMANITIES**- 6 credits to be selected in two different disciplines (two different course prefixes) from the approved GEP Humanities list. PHI 214 or PHI 375 taken as part of the Major requirements satisfies 3 credit hours of the 6 credit hours needed to fulfill the GEP Humanities requirement

**SOCIAL SCIENCES**- 3 credits to be selected in a discipline other than economics from the approved GEP Social Sciences list. EC 205, 201 or ARE 201 taken as part of the Major requirements satisfies 3 credit hours of the 6 credit hours needed to fulfill the GEP Social Sciences requirement.

**ADDITIONAL BREADTH**- 3 credits to be selected from the approved GEP Humanities, Social Sciences or Visual and Performing Arts lists.

**INTERDISCIPLINARY PERSPECTIVES**- 5-6 credits to be selected from the approved GEP Interdisciplinary Perspectives list. STS 302, STS 304 or STS 320 taken as part of the Major requirements satisfies 3 credit hours of the 5 credit hours needed to fulfill the GEP Interdisciplinary Perspectives requirement.

### **Co-requisites:**

U.S. Diversity and Global Knowledge co-requisites must be satisfied to complete the General Education requirements. Choose course(s) that are identified on the approved GEP course lists as meeting the U.S. Diversity and Global Knowledge co-requisites.

Foreign Language proficiency at the FL\_102 level will be required for graduation.