

# Mechanical Engineering

## Bachelor of Science (BS.ENG M)

Core Requirements			Credits	Notes/Instructions
College Sem.	Quest for Meaning	CSEM 100	3	†A student may be required to take ENGL 105 and/or MATH 100 based on placement exams administered prior to their first semester at King's College. ENGL 105 and MATH 100 are 3-credit courses and will count as free electives. †† The Intercultural Competence requirement can be satisfied by taking a 100-level language class for 3 credits or participating in an approved Study Abroad experience. SBM = Satisfied By Major requirement(s) and credit(s) listed below.
Communication & Creative Expression	Writing	ENGL 110†	3	
	Oral Communication	COMM 101	3	
	Literature	ENGL 140-149	3	
	The Arts	ARTS 100-149	3	
Citizenship	History	HIST 100-149	3	
	Intercultural	FREN/GERM/SPAN 100-level or Study Abroad††	3	
	Global Connections	ECON 150-199; GEOG 150-199; HIST 150-199; PS 150-199; SOC 150-199	3	
Quantitative & Scientific Reasoning	SBM Quantitative Reasoning	MATH 120+ or higher level	-	
	SBM Scientific Endeavor	NSCI 100	-	
	SBM Science in Context	NSCI 171-199	-	
	Human Beh. & Soc. Inst	ECON 111, 112; GEOG 101, 102; PS 101, PSYC 101, SOC 101	3	
Wisdom, Faith, & the Good Life	Introduction to Phil.	PHIL 101	3	
	Phil. Investigations	PHIL 170-199; MSB 287	3	
	Theology & Wisdom	THEO 150-159	3	
	Theology & the Good Life	THEO 160-169	3	
<b>Total Core Credits</b>			<b>39</b>	

Mathematics & Science Requirements		Credits	Mechanical Engineering Requirements		Credits
	PHYS 113 <sup>CR,2</sup> Physics for Sc & Eng I	3		PHYS 241 <sup>PR</sup> Statics	3
	PHYS 113L Phy for Sc & Eng I Lab	1		PHYS 242 <sup>PR</sup> Mechanics of Solids	3
	PHYS 114 <sup>PR</sup> Physics for Sc & Eng II	3		PHYS 350 <sup>PR</sup> Thermodynamics & Statistical Mech.	3
	PHYS 114L <sup>PR</sup> Phy for Sc & Eng II Lab	1		CS 111 Programing for Science & Engineering I	2
	CHEM 113 <sup>2</sup> Gen. Chem. I	3		CS 111L Programing for Science & Engineering I Lab	1
	CHEM 113L Gen. Chem. I Lab	1		ENGR 150 Engineering Seminar	2
	CHEM 114 <sup>PR</sup> Gen. Chem. II	3		ENGR 250 <sup>PR</sup> System Design & Analysis	3
	CHEM 114L <sup>PR</sup> Gen. Chem. II Lab	1		ENGR 250L <sup>PR</sup> Sys Design & Analysis Lab	1
	MATH 129 Calculus I	4		ENGR 320 <sup>PR</sup> Fluid Mechanics	3
	MATH 130 <sup>PR</sup> Calculus II	4		ENGR 320L <sup>PR</sup> Fluid Mechanics Lab	.5
	MATH 231 <sup>PR</sup> Calculus III	4		ENGR 330 <sup>PR</sup> Project Mgmt & Eng Econ	3
	MATH 237 <sup>PR</sup> Math Meth. for Phys. Sci.	3		ENGR 350 <sup>PR</sup> Engineering Materials	3
	MATH 238 <sup>PR</sup> Differential Equations	3		ENGR 350L <sup>PR</sup> Engineering Materials Lab	.5
				ENGR 360 <sup>PR</sup> Probability & Eng Statistics	3
				ME 200 <sup>PR</sup> Introduction to Mechanical Engineering	3
				ME 200L <sup>PR</sup> Intro to Mechanical Engineering Lab	.5
				ME 320 <sup>PR</sup> Manufacturing Systems	3
				ME 320L <sup>PR</sup> Manufacturing Systems Lab	1
				ME 340 <sup>PR</sup> Dynamics	3
				ME 340L <sup>PR</sup> Dynamics Lab	.5
				ME 360 <sup>PR</sup> Heat Transfer	3
				ME 360L <sup>PR</sup> Heat Transfer Lab	1
				ME 380 <sup>PR</sup> Mechatronics	3
				ME 380L <sup>PR</sup> Mechatronics Lab	1
				ME 400 <sup>PR</sup> Mechanical Design	3
				ME 400L <sup>PR</sup> Mechanical Design Lab	1
				ME 420 <sup>PR</sup> System Dynamics	3
				ME 420L <sup>PR</sup> System Dynamics Lab	1
				ME 440 <sup>PR</sup> Senior Design	3
				ME 440L <sup>PR</sup> Senior Design Lab	1
				ME 480 <sup>PR</sup> Senior ME Seminar	1
				ME 410 Special Topics in Mechanical Engineering	3
<b>Other Requirements</b>					
	HCE 101 Holy Cross Experience	1			
<b>Total Mathematics &amp; Science &amp; Other Credits</b>		<b>35</b>	<b>Total Mechanical Engineering Credits</b>		<b>66</b>

### Total Credits Required for Graduation = 140

Mechanical Engineering students are eligible to sit for industry certification exams based on the completion of the following courses:

- ENGR 330: Proj. Mgmt & Eng Econ: Certified Associate in Project Management (CAPM)<sup>®</sup> - Project Management Institute
- ME 480 Senior ME Seminar: Fundamentals of Engineering – Mechanical (NCEES)

# Mechanical Engineering

## Suggested Sequence

A suggested course sequence of degree requirements is listed below. Refer to the college catalog for course titles, descriptions, and prerequisites. Always consult your Academic Advisor when planning and scheduling your classes.

Fall 2019		Credits	Spring 2020		Credits
CHEM 113 <sup>2</sup> General Chemistry I		3	CHEM 114 <sup>PR</sup> General Chemistry II		3
CHEM 113L General Chemistry I Lab		1	CHEM 114L <sup>PR</sup> General Chemistry II Lab		1
PHYS 113 <sup>CR,2</sup> Physics for Scientists & Engineers I		3	PHYS 114 <sup>PR</sup> Physics for Scientists & Engineers II		3
PHYS 113L Physics for Scientists & Eng I Lab		1	PHYS 114L <sup>PR</sup> Physics for Scientists & Eng II Lab		1
MATH 129 <sup>2</sup> Calculus I		4	MATH 130 <sup>PR</sup> Calculus II		4
ENGR 150 Engineering Seminar		2	Core Course <sup>1</sup>		3
HCE 101 Holy Cross Experience		1	Core Course <sup>1</sup>		3
		<b>15</b>			<b>18*</b>
Summer 2020		Credits			
Fall 2020		Credits	Spring 2021		Credits
ME 200 <sup>PR</sup> Intro to Mechanical Engineering		3	ENGR 250 <sup>PR</sup> System Design & Analysis		3
ME 200L <sup>PR</sup> Intro to Mechanical Engineering Lab		.5	ENGR 250L <sup>PR</sup> System Design & Analysis Lab		1
MATH 231 <sup>PR</sup> Calculus III		4	ENGR 350 <sup>PR</sup> Engineering Materials		3
MATH 238 <sup>PR</sup> Differential Equations		3	ENGR 350L <sup>PR</sup> Engineering Materials Lab		.5
CS 111 Programming for Science & Engineering I		2	PHYS 242 <sup>PR</sup> Mechanics of Solids		3
CS 111L Programming for Science & Engineer. I Lab		1	MATH 237 <sup>PR</sup> Math Meth. for Phys. Sciences		3
PHYS 241 <sup>PR</sup> Statics		3	Core Course <sup>1</sup>		3
		<b>16.5</b>	Core Course <sup>1</sup>		3
					<b>19.5*</b>
Summer 2021		Credits			
Fall 2021		Credits	Spring 2022		Credits
ENGR 320 <sup>PR</sup> Fluid Mechanics		3	ME 360 <sup>PR</sup> Heat Transfer		3
ENGR 320L <sup>PR</sup> Fluid Mechanics Lab		.5	ME 360L <sup>PR</sup> Heat Transfer Lab		1
ENGR 330 <sup>PR</sup> Project Management & Engr. Econ.		3	ME 340 <sup>PR</sup> Dynamics		3
ME 320 <sup>PR</sup> Manufacturing Systems		3	ME 340L <sup>PR</sup> Dynamics Lab		.5
ME 320L <sup>PR</sup> Manufacturing Systems Lab		1	ENGR 360 <sup>PR</sup> Probability & Engineering Statistics		3
PHYS 350 <sup>PR</sup> Thermodynamics		3	Core Course <sup>1</sup>		3
Core Course <sup>1</sup>		3	Core Course <sup>1</sup>		3
Core Course <sup>1</sup>		3			
		<b>19.5*</b>			<b>16.5</b>
Summer 2022		Credits			
Fall 2022		Credits	Spring 2023		Credits
ME 400 <sup>PR</sup> Mechanical Design		3	ME 480 <sup>PR</sup> Senior ME Seminar		1
ME 400L <sup>PR</sup> Mechanical Design Lab		1	ME 440 <sup>PR</sup> Senior Design		3
ME 380 <sup>PR</sup> Mechatronics		3	ME 440L <sup>PR</sup> Senior Design Lab		1
ME 380L <sup>PR</sup> Mechatronics Lab		1	ME 420 <sup>PR</sup> System Dynamics		3
ME 410 Special Topics in ME <b>OR</b> Core Course <sup>1</sup>		3	ME 420L <sup>PR</sup> System Dynamics Lab		1
Core Course <sup>1</sup>		3	Core Course <sup>1</sup> <b>OR</b> ME 410 Special Topics in ME		3
Core Course <sup>1</sup>		3	Core Course <sup>1</sup>		3
		<b>17*</b>	Core Course <sup>1</sup>		3
					<b>18*</b>
<b>Total Credits Required for Graduation = 140</b>					

### NOTES:

\* Students are encouraged to take a summer course to relieve the credit load during this semester

<sup>1</sup>Choose one course from each of the Core Requirements listed on the reverse side.

<sup>2</sup>Course may satisfy both a Major and a Core requirement. CHEM 113 and PHYS 113 will satisfy the Scientific Endeavor and Science in Context Core requirements, MATH 129 will satisfy the Quantitative Reasoning Core requirement.

<sup>PR</sup> Course has a prerequisite – check college catalog.

<sup>CR</sup> Course has a co-requisite – check college catalog.