

MECHANICAL ENGINEERING

What do mechanical engineers do? Mechanical engineers put machines to work for people. We made the steam engines that powered the industrial revolution; we still use steam power to generate most of the electricity in the USA. We also make better use of energy by designing more efficient buildings, vehicles, and even washing machines. We design hip implants for aging people, toys for kids, and kitchen utensils for people with disabilities. We make factories work by making machines that make things and by leading multidisciplinary teams. We design airplanes, helicopters, and space vehicles. Mechanical engineers design robots in every industry we work in: we make robots for surgery, cleaning, manufacturing, and space exploration. Some of us wind up doing things that don't look like engineering but still require compassion, teamwork, creativity, and curiosity; we are scientists, clergy, social workers, managers, teachers, and physicians. Mechanical engineering is a broad field so mechanical engineering graduates can find fulfilling work in any industry.

What's great about careers in mechanical engineering?

Mechanical engineers have high career satisfaction because they get to be creative and work together to help people. Because ME is the broadest engineering discipline, we have options for career growth including technical specialization, management, and entrepreneurship. Our work stays interesting because technology is always changing and because we can move between fields; our flexibility helps us be resilient to changing market conditions. Many ME jobs have a family-friendly combination of salary and working hours.



What makes the King's Mechanical Engineering program different?

Engineering by people, for people. Our work is animated by a desire to meet human needs and it is done collaboratively and creatively. Because we start with people, it's natural for us to be ethical and responsible to society, and for us to help everyone on the team be better. At King's College, small class sizes enable close interactions with faculty who can guide students on how to start design with understanding the people we're serving.

Authentic engineering experiences. Our students do design throughout the program. In class, students don't just use textbook knowledge; they use engineering handbooks, codes, standards, and catalogs. Most courses in our engineering curriculum have hands-on labs. In labs, students solve complex, open-ended problems by using the tools that real engineers do, such as solid modeling and finite element analysis software, measurement tools, and fabrication equipment.

Industriousness. Our students take initiative to tackle challenging problems. When they experience setbacks, they determine what went wrong and figure out how to make it work.

Integration of professional and techni-

cal skills. Mechanical engineers don't just size gears or heat exchangers—they start by understanding people's needs, then work in teams to do the research, experimentation, and design to meet those needs. Therefore, our students don't just learn technical skills, they practice those skills in a professional context.

The engineering programs at King's take an interdisciplinary approach toward exposing students to the transferable skills of liberal learning that are cultivated in a King's College education. We want to instill in our students the values that King's College and the Congregation of Holy Cross represent. Our mission is to give our students a transformative experience by helping them develop the skills to start a career within the engineering profession, as well as a sense of social responsibility and a commitment to serve others.

Engineering is a noble and rewarding profession that enables practitioners to create value for society in a variety of ways and have a profound impact on human progress. Engineering can be viewed as both a profession and a vocation—a way to make a living, but also a call to service for the benefit of others. Consider joining us at King's College as we work toward engineering a better future.

To learn more about majoring in Mechanical Engineering at King's College, please contact the Office of Admission at 1-888-KINGS PA or admissions@kings.edu.

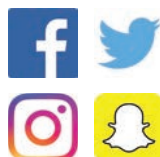
Mechanical Engineering (139.5 Credit Hours)

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.

1 st Year - Fall		1 st Year - Spring	
	cr.		cr.
CHEM 113 General Chemistry I	3	CHEM 114 General Chemistry II	3
CHEM 113L General Chemistry I Lab	1	CHEM 114L General Chemistry II Lab	1
PHYS 113 Physics for Scientists & Engineers I	3	PHYS 114 Physics for Scientists & Engineers II	3
PHYS 113L Physics for Scientists & Eng I Lab	1	PHYS 114L Physics for Scientists & Eng II Lab	1
MATH 129 Calculus I	4	MATH 130 Calculus II	4
ENGR 150 Engineering Seminar	2	Core Course	3
HCE 101 Holy Cross Experience	1	Core Course	3
	15		18*
2 nd Year – Fall		2 nd Year – Spring	
ME 200 Intro to Mechanical Engineering	3	ME 250 Thermodynamics	3
ME 200L Intro to Mechanical Engineering Lab	.5	ENGR 250 System Design & Analysis	3
MATH 231 Calculus III	4	ENGR 250L System Design & Analysis Lab	1
MATH 238 Differential Equations	3	ENGR 350 Engineering Materials	3
PHYS 241 Statics	3	ENGR 350L Engineering Materials Lab	.5
Core Course	3	PHYS 242 Mechanics of Solids	3
		Core Course	3
		Core Course	3
	16.5		19.5*
3 rd Year – Fall		3 rd Year – Spring	
ME 320 Manufacturing Systems	3	ME 360 Heat Transfer	3
ME 320L Manufacturing Systems Lab	1	ME 360L Heat Transfer Lab	1
ME 340 Dynamics	3	ME 400 Mechanical Design	3
ME 350 Fluid Mechanics	3	ME 400L Mechanical Design Lab	1
ME 350L Fluid Mechanics Lab	.5	ENGR 360 Probability & Eng Statistics	3
CS 111 Programming for Science & Engineering	2	MATH 237 Math Meth. for Phys. Sciences	3
CS 111 L Programming for Science & Eng Lab	1	Core Course	3
Core Course	3	Core Course	3
	16.5		20*
4 th Year – Fall		4 th Year – Spring	
ME 380 Mechatronics	3	ME 420 System Dynamics	3
ME 380 Mechatronics Lab	1	ME 420L System Dynamics Lab	1
ME 480 Senior ME Seminar	1	ME 440 Senior Design	3
ME 410 Special Topics in ME OR Core Course	3	ME 440 Senior Design Lab	1
ENGR 330 Project Mgmt & Eng Econ	3	ME 410 Special Topics in ME OR Core Course	3
Core Course	3	Core Course	3
Core Course	3	Core Course	3
	17*		17*
Total Credits Required for Graduation = 139.5			

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



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