

MECHANICAL ENGINEERING

UNIVERSITY OF THE DISTRICT OF COLUMBIA

SCHOOL OF ENGINEERING AND APPLIED SCIENCES



BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Accredited by the Engineering Accreditation Commission of ABET
<http://www.abet.org>

Mechanical Engineering (ME) advances industries such as aerospace, automobiles, energy production, biomedical and robotics. Mechanical Engineering jobs offer higher salaries than most of the other engineering disciplines. The program for a Bachelor of Science in Mechanical Engineering at UDC prepares students for a variety of career opportunities through a unique combination of hands-on experience, state-of-the-art technologies, and inventive methods.

Our ME faculty collaborate extensively with neighboring federal laboratories, industry, and other universities. We are actively engaged in innovative research in Nanotechnology, Renewable Energy, Biomedical Engineering, and Advanced Manufacturing.

The ME program emphasizes hands-on learning and excellence in design. During first and second years, focus is placed on strengthening math and science foundation while developing basic engineering skills. In third and fourth year, focus is placed on core ME courses and technical electives.

Students in the ME program directly participate in research projects and build the skills needed for the workplace or graduate studies. Students work in groups for their ME senior design capstone projects. These projects are aimed at the design of new systems and products using state-of-the-art software, as well as building, analyzing, and testing the desired systems.

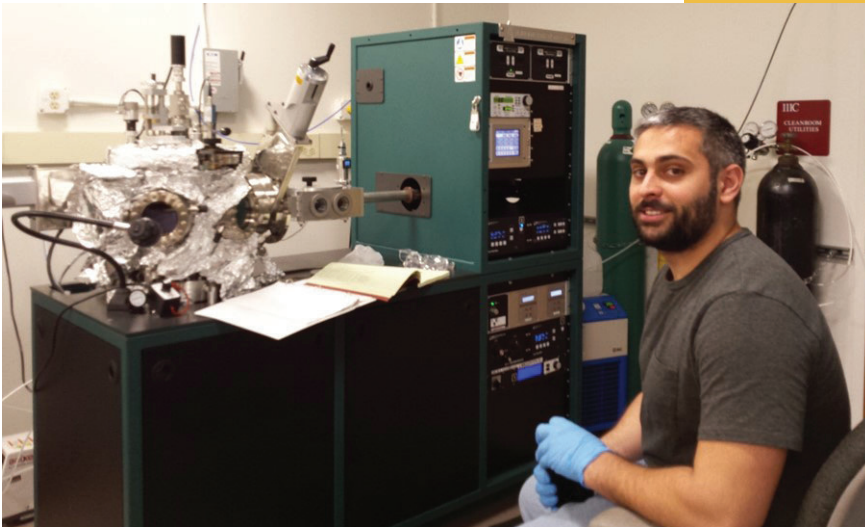
Our Mechanical Engineering program is accredited by Engineering Accrediting Commission (EAC) of ABET. Major employers and graduate schools prefer graduates from ABET programs.

Your total 128 credit-hour program consists of:

General Education (with emphasis on freedom, responsibility, and the pursuit of learning)	21
Engineering Science and Mathematics	30
General Engineering Courses	15
Core Mechanical Engineering Courses	53
Mechanical Technical Electives	9

WHY A BS IN MECHANICAL ENGINEERING AT UDC?

- UDC's Mechanical Engineering program is ABET-accredited
- Affordable and accessible • Student-focused campus mission •
- Covers a wide range of ME topics • Average class size is around 15 students • Lower tuition fees compared to other schools •
- Many scholarship, internship and research opportunities for undergraduates • Convenient for Metropolitan DC Area residents



What makes UDC's Mechanical Engineering program different?

Our engineers are nurtured in the classroom and beyond. The Mechanical Engineering program at UDC is designed with the success of the individual student in mind. With smaller class sizes, students benefit from a teaching environment and individual attention.

How will my credits transfer?

Once you are enrolled, a Mechanical Engineering faculty member will evaluate your previous academic record and let you know about transfer credits. We have articulation agreements with Metropolitan DC Region community colleges, including Montgomery College and NOVA.

May I speak to a current UDC student?

Absolutely. Contact the undergraduate program director to be connected with a continuing or recently graduated student who will share their experience with you.

A recipient of the Boren Fellowship "I have never felt underestimated for being a minority woman in the UDC mechanical engineering program. I realize I don't know everything and I'm learning and that is the most exciting part of this process."

~ ERIKA M. SPANGLER, Mechanical Engineering / Class of 2016

For more information about Mechanical Engineering visit www.udc.edu/seas or contact:

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UNIVERSITY OF THE DISTRICT OF COLUMBIA
 SCHOOL OF ENGINEERING AND APPLIED SCIENCES
 DEPARTMENT OF MECHANICAL ENGINEERING
MECHANICAL ENGINEERING PROGRAM
 Effective Fall 2018 (for newly matriculated students)

STUDENT _____ Student ID # _____

First Semester				Second Semester			
Course #	Course Name	Credits	Grade	Course #	Course Name	Credits	Grade
IGED-110	Found Writ Arts & Hum	3		IGED-111	Found Writ Soc. & Nat Sc.	3	
IGED-130	Found Oral Comm.	3		MECH-108	Programming for Engrs	1	
CHEM-111	General Chemistry I Lec	3		MATH-152	Calculus II Lec	3	
CHEM-113	General Chemistry I Lab	1		MATH-156	Calculus II Lab	1	
MATH-151	Calculus I Lec	3		PHYS-201	University Physics I Lec	3	
MATH-155	Calculus I Lab	1		PHYS-205	University Physics I Lab	1	
CCEN-101	Intro to Engineering	2		MECH-107	ME Computer Graphics	3	
	Total	16			Total	15	
Third Semester				Fourth Semester			
Course #	Course Name	Credits	Grade	Course #	Course Name	Credits	Grade
PHYS-202	University Physics II Lec	3		CVEN-202	Engineering Mechanics II	3	
PHYS-206	University Physics II Lab	1		MECH-206	Mech of Materials Lec	3	
CVEN-201	Engineering Mechanics I	3		MECH-207	Mech of Materials Lab	1	
MECH-205	Materials Science	3		MECH-208	Thermodynamics	3	
ELEC-225	Electric Circuits Lec	3		MECH-222	Engr. Measurements Lec	3	
ELEC-226	Electric Circuits Lab	1		MECH-224	Engr. Measurements Lab	1	
MATH-254	Differential Eq. (or 260)	3		MECH-302	Res Exp & Tech Comm*	3	
	Total	17			Total	17	
Fifth Semester				Sixth Semester			
Course #	Course Name	Credits	Grade	Course #	Course Name	Credits	Grade
IGED-140	Found Ethics & Values	3		IGED-210	Discov Expos Writing	3	
CVEN-308	Appl. Num Analysis	3		MATH-253	Calculus III Lec	3	
MECH-381	Microcontrollers in ME	3		MATH-255	Calculus III Lab	1	
MECH-321	Fluid Mechanics Lec	3		MECH-351	Heat Transfer Lec	3	
MECH-322	Thermo/Fluid Lab	1		MECH-361	Machine Design	3	
MECH-341	Anal & Synth of Mechsm	3		MECH-371	Design of Control Sys Lec	3	
				MECH-373	Design of Control Sys Lab	1	
	Total	16			Total	17	
Seventh Semester				Eighth Semester			
Course #	Course Name	Credits	Grade	Course #	Course Name	Credits	Grade
IGED-270	Discov Loc/Glob Cul	3		IGED-280	Discov Civ/Ser/Team	3	
MECH-406	Engineering Economics	3		MECH-462	Design of Energy Systems	3	
MATH-381	Probability & Statistics	3		MECH-492	Capstone Sr. Design Pr. II*	3	
MECH-491	Capstone Sr. Design Proj I*	3		MECH-xxx	**ME Technical Elective	3	
MECH-xxx	**ME Technical Elective	3		MECH-xxx	**ME Technical Elective	3	
	Total	15			Total	15	
					GRAND TOTAL CREDITS	128	

Advisor _____ Date _____ Department Chair _____ Date _____

- *Contains intensive writing component
- **ME Technical Electives (current concentrations in Adv. Manufacturing, Renewable Energy, and Biomedical): MECH-465, MECH-478, MECH-483, MECH-487, MECH-488, MECH-495, BMEG-301, BMEG-302, BMEG-404, BMEG-495, and ELEC-410.
- A completed copy of this form must accompany each student's Graduation Clearance Form

MECHANICAL ENGINEERING Prerequisite Course List

Course No	Course Name	Co-Req	Pre-Requisite
CCEN-101	<i>Introduction to Engineering</i>	-	-
MECH-107	<i>ME Computer Graphics Lab</i>	-	-
MECH-108	<i>Programming for Engineers</i>	-	-
CVEN-201	<i>Engineering Mechanics-I</i>	-	PHYS-201
CVEN-202	<i>Engineering Mechanics-II</i>	-	CVEN-201
MECH-205	<i>Material Science</i>	-	CHEM-111
MECH-206	<i>Mechanics of Materials Lec</i>	MECH-207	MECH-205, CVEN-201
MECH-207	<i>Mechanics of Materials Lab</i>	MECH-206	-
MECH-208	<i>Thermodynamics</i>	-	PHYS-201
ELEC-225	<i>Electrical Circuits Lec</i>	ELEC-226	PHYS-201
ELEC-226	<i>Electrical Circuits Lab</i>	ELEC-225	-
MECH-222	<i>Eng. Measurements Lec</i>	MECH-224	ELEC-225
MECH-224	<i>Eng. Measurements Lab</i>	MECH-222	ELEC-226
MECH-302	<i>Research Experience & Technical Communication</i>	-	CCEN-101, Permission of Instructor
MECH-321	<i>Fluid Mechanics Lec</i>	MECH-322	MATH-254 or 260 MECH-208, CVEN-202
MECH-322	<i>Thermo/Fluid Lab</i>	MECH-321	-
MECH-341	<i>Anal. & Synth. of Mechanisms</i>	-	CVEN-202
CVEN-308	<i>Applied Numerical Analysis for Engineers</i>	-	MATH-254 or 260
MECH-351	<i>Heat Transfer</i>	-	MECH-321 MATH-254 or 260
MECH-361	<i>Machine Design</i>	-	MECH-206
MECH-371	<i>Design of Control Sys Lec</i>	MECH-373	MATH-254 or 260, ELEC-225
MECH-373	<i>Design of Control Sys Lab</i>	MECH-371	MECH-224, ELEC-226
MECH-381	<i>Microcontrollers in ME</i>	-	ELEC-225, Junior Standing
MECH-406	<i>Engineering Economics</i>	-	Senior Standing
MECH-462	<i>Design of Energy Systems Lec</i>	-	MECH-351
**MECH-465	<i>Advanced Manufacturing</i>	-	MECH-107, MECH-205, Junior Standing
**MECH-478	<i>Mechatronics</i>	-	MECH-381, Senior Standing
**MECH-483	<i>Robot Mechanics & Control</i>	-	MECH-341, MECH-371, Senior Standing
**MECH-487	<i>Photovoltaic and Solar Thermal Energy</i>	-	MECH-205, Senior Standing
**MECH-488	<i>Fuel Cell Fundamentals & Technologies</i>	-	Senior Standing
MECH-491/492	<i>ME Capstone Sr. Design Proj I/II</i>	-	Senior Standing