

# BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

## *2018-2019 Degree Requirements*

**TOTAL CREDITS FOR DEGREE: 132**

### UNIVERSITY CORE CURRICULUM

**42 credits**

#### ***Required Fundamental Courses:***

COMM 101	Oral Comm. & Pres.	3 credits
ENGL 101	College Composition	3 credits
UNIV 101	City-University Life	3 credits
	Senior Capstone	3 credits

#### ***Choose Thematic Core courses in the following:***

	Explore the World - Choice 1	3 credits
	Explore the World - Choice 2	3 credits
	Investigate Science	3 credits
	Investigate Mathematics	3 credits
	Interpret Creative Works	3 credits
	Understand People - Choice 1	3 credits
	Understand People - Choice 2	3 credits
	Succeed in Business	3 credits
	Appreciate & Apply the Arts	3 credits
	Discover Technology	3 credits

### MAJOR REQUIREMENTS

(C=taken in the Core)

**90 credits**

CHEM 101	General Chemistry (Inv. Science)	C	ET204	Programming for Engineering Tech.	3
CHEM 102	General Chemistry II	3	ET 405	Fund. Of Engineering Examination I	0
CHEM 103	General Chemistry Laboratory I	1	ET 406	Fund. Of Engineering Examination II	0
CHEM 104	General Chemistry Laboratory II	1	EE 101	Circuit Analysis I	3
MATH 181	Pre-Calculus	4	EE 102	Circuit Analysis II	3
MATH 190	Calculus I (Inv. Mathematics + 1 credit)	1	EE 103	Circuit Analysis Laboratory I	1
MATH 210	Calculus II	4	EE 104	Circuit Analysis Laboratory II	1
MATH 230	Linear Algebra	3	ME 101	Statics	3
MATH 300	Calculus III	4	ME 102	Dynamics	3
MATH 310	Differential Equations	3	ME 212	Properties of Materials	3
MATH 330	Mathematical Statistics	3	ME 213	Strength of Materials	3
NSET 101	Intro to NSET (Discover Technology)	C	ME 215	Thermodynamics	3
PHYS 201	Fundamentals of Physics I	3	ME 320	Kinematics of Machine Elements	4
PHYS 202	Fundamentals of Physics II	3	ME 331	Engineering Design Using Pro/ENGINEER	3
PHYS 103	Physics Laboratory I	1	ME 405	Heat Transfer	4
PHYS 104	Physics Laboratory II	1	ME 411	Fluid Mechanics	3
EGR 401	Engineering Design I	3	ME 416	Mechanical Vibrations	3
EGR 402	Engineering Design II (Senior Capstone)	3	ME 421	Machine Design Theory & Project	4
			ME 424	Finite Element Analysis	3
			ME 425	FEA with ANSYS	2

# **BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING**

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### **PROGRAM OBJECTIVES**

**Upon successful completion of this program, a student will be able to:**

1. Students will analyze and design structural systems
2. Students will analyze and design mechanical systems in motion
3. Students will analyze and design thermal systems and processes
4. Students will use engineering software in design and analysis and will create engineering software
5. Students will apply mathematics, physics, chemistry and material properties
6. Students will collaborate in classroom and laboratory settings
7. Students will produce effective documents and oral presentations
8. Students will plan and manage technical projects
9. Students will grow professionally through independent learning
10. Students will take the Fundamentals of Engineering examination as a first-step towards professional licensure
11. Students will have knowledge of professional laws and codes
12. Students will understand the personal and professional roles of an engineer in society