

B.S. IN ENGINEERING CURRICULUM

|Beginning Fall 2022|

	Math & Science Courses		Engineering Core
	LUC Core/Foreign Language		Engineering Systems
	Engineering Design		Specialty Engineering Courses

FRESHMAN YEAR

FALL - 16 credit hours

 ENGR 101 Introduction to Engineering Design (4)
 MATH 161 Calculus I (4)
 BIOL 101 General Biology I
 BIOL 111 General Biology Lab (1)
 PHYS 121 College Physics I
 UNIV 101 First Year Seminar (1)

SPRING - 18 credit hours

 COMP 170 Object-Oriented Programming
 MATH 162 Calculus II (4)
 PHYS 122 College Physics II
 PHYS 112L College Physics Lab (1)
 UCWR 110 Writing Responsibility
 LUC Core
 ENGR 102 Freshman Seminar (1)

JUNIOR YEAR

FALL - 15 credit hours

 ENGR 312 Engineering Systems II
 ENGR 322 Chemical & Thermal Processes
 ENGR 323 Digital Electronics/Computer Engineering (2)
 ENGR 324 Mechanics
 ENGR 324L Core Engineering Lab (1)
 LUC Core

SPRING - 16 credit hours

 ENGR 313 Engineering Systems III
 ENGR 325 Materials Engineering
 ENGR 3xx Specialty Engineering I
 ENGR 3xxL Specialty Engineering I Lab (1)
 STAT 203 Statistics
 LUC Core

SOPHOMORE YEAR

FALL - 17 credit hours

 ENGR 201 Experiential Engineering
 MATH 263 Multivariate Calculus (4)
 CHEM 171 General Chemistry for ENGR
 CHEM 173 General Chemistry Lab for ENGR (1)
 LUC Core
 Foreign Language 101

SPRING - 17 credit hours

 ENGR 311 Engineering Systems I
 ENGR 321 Electronic Circuits & Devices (2)
 MATH 266 Differential Equations and Linear Algebra
 LUC Core
 LUC Core
 Foreign Language 102

SENIOR YEAR

FALL - 16 credit hours

 ENGR 38x Specialty Capstone Design I (4)
 ENGR 3xx Specialty Engineering II
 LUC Core
 LUC Core
 LUC Core

SPRING - 12 credit hours

 ENGR 39x Specialty Capstone Design II
 ENGR 3xx Specialty Engineering III
 LUC Core
 LUC Core

ENGINEERING STUDENT-CENTERED LEARNING



A Nationally-Ranked Program

- ABET-accredited since Fall, 2020.
- Once eligible for ranking in Best Undergraduate Engineering Programs (No Doctorate), the 2022 U.S. News & World Report ranked Loyola Engineering 39th (tied) of 239 U.S. programs.
- Once eligible for ranking in the American Society for Engineering Education (ASEE) survey, Loyola Engineering is 6th of 429 in 2020 Percentage Bachelor's Degrees Awarded to Women.
- First U.S. program to fully integrate engineering and social justice.
- Engineering classrooms/labs are badge-access only for our students, to facilitate community.

A Distinctive Curriculum

- Industry leaders provide input to specialty courses, ensuring that students have relevant skills for summer internships.
- The curriculum focuses on system theory and engineering design--both are key areas that will set students apart when they graduate.
- Senior capstone projects are industry-sponsored over two semesters, with each student group meeting weekly with its Sponsor.
- Each ENGR course section seats at most 24 students, to facilitate Active Learning.

Active Learning

Definition: Any instructional method that engages students in the learning process, including Collaborative and Problem-Based Learning.

Learning Outcomes: Increased student performance (Freeman, et al., Proceedings of the National Academy of Sciences, 2014, 111: 8410-8415). Greater frequency of student-centered teaching leads to greater design skills for women (Ro and Knight, Journal of Engineering Education, 2016, 478-507).

Curriculum Use: Every ENGR course meeting starts with a mini-lecture, followed by group activities.

