B.S. IN ENGINEERING CURRICULUM

|Beginning Fall 2022|

ENGR 324 Mechanics

LUC Core

ENGR 324L Core Engineering Lab (1)



LUC Core

FRESHMAN YEAR SOPHOMORE YEAR FALL - 16 credit hours SPRING - 18 credit hours FALL - 17 credit hours SPRING - 17 credit hours **ENGR 201 Experiential Engineering ENGR 311 Engineering Systems I COMP 170 Object-Oriented Programming** ENGR 101 Introduction to Engineering Design (4) MATH 263 Multivariate Calculus (4) MATH 161 Calculus I (4) MATH 162 Calculus II (4) ENGR 321 Electronic Circuits & Devices (2) BIOL 101 General Biology I PHYS 122 College Physics II CHEM 171 General Chemistry for ENGR MATH 266 Differential Equations and Linear Algebra BIOL 111 General Biology Lab (1) PHYS 112L College Physics Lab (1) CHEM 173 General Chemistry Lab for ENGR (1) **LUC Core UCWR 110 Writing Responsibility** PHYS 121 College Physics I **LUC Core LUC Core** Foreign Language 101 Foreign Language 102 UNIV 101 First Year Seminar (1) LUC Core ENGR 102 Freshman Seminar (1) SENIOR YEAR JUNIOR YEAR FALL - 16 credit hours SPRING - 12 credit hours FALL - 15 credit hours SPRING - 16 credit hours ENGR 38x Specialty Capstone Design I (4) **ENGR 312 Engineering Systems II ENGR 313 Engineering Systems III** ENGR 39x Specialty Capstone Design II **ENGR 322 Chemical & Thermal Processes ENGR 325 Materials Engineering ENGR 3xx Specialty Engineering II ENGR 3xx Specialty Engineering III ENGR 3xx Specialty Engineering I** ENGR 323 Digital Electronics/Computer Engineering (2) **LUC Core LUC Core**

LUC Core

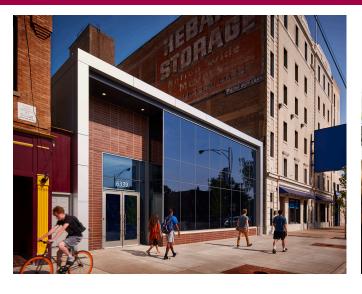
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ENGR 3xxL Specialty Engineering I Lab (1)

STAT 203 Statistics

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.

