WHAT IS SYSTEMS ENGINEERING?

The BS in systems engineering program provides students with the right blend of core engineering, statistics, optimization, systems approaches, and risk management to develop holistic viewpoints and methodologies that look at the big picture of a system to figure out how its sub-systems can be integrated efficiently and effectively to produce the best quality product. Graduates will become effective technical leaders who are able to plan, design, manage and maintain increasingly complex systems across different fields.

CAREERS IN SYSTEMS ENGINEERING

Systems engineers are trained to work virtually anywhere in industry to improve system performance. Specific industries include manufacturing, logistics and transportation, supply chain, energy, oil and gas, healthcare, retail, hotel chains, airlines, construction companies, banks, social services and government.

A 2022 salary survey produced by Payscale.com found that these types of graduates earned an average starting salary of $81,386, with that growing closer to $90,000 after several years of accrued experience.

WHY EARN YOUR SYSTEMS ENGINEERING DEGREE AT THE UNIVERSITY OF HOUSTON?

ACADEMICS

The systems engineering undergraduate degree program is a part of the Department of Industrial Engineering. Systems engineering undergraduates will take all of their major coursework at UH at Katy, located near the Grand Parkway & I-10, in Katy, Texas.

Undergraduate students in the industrial engineering department are taught by professors who are actively conducting research in the areas of healthcare and medical decision making, homeland and port security, energy, reliability and maintenance, logistics and transportation, supply chains and manufacturing. Additionally, undergraduate students are exposed to professional and research opportunities throughout their education.

RESEARCH

The industrial engineering department at the University of Houston Cullen College of Engineering places a huge emphasis on undergraduate research, encouraging all undergraduate students to get involved with faculty-led research projects or Capstone design projects before they graduate. With an incredible array of industrial engineering research taking place inside of the engineering buildings, students have unique access to some of the world’s most cutting-edge technological research and discoveries — so you have no excuse not to get involved!

Learn more at www.ie.uh.edu/research/overview

STUDENT ORGANIZATIONS

Students are encouraged to join academic and professional organizations to build leadership, communication and networking skills. Members of student organizations receive career guidance from engineering professionals and participate in activities that promote engineering. Student organizations include Alpha Pi Mu, an industrial engineering national honor society and the Institute of Industrial Engineers (IIE).

Learn more at www.ie.uh.edu/people/student-organizations

ABOUT UH AT KATY

The UH at Katy instructional site is an official part of the UH central campus. Completed in Fall 2019, the three-story, 80,000-square-foot-facility houses numerous programs from the UH Cullen College of Engineering, and is home to the prestigious Subsea Engineering graduate program— the first of its kind in the nation. Computer Engineering & Analytics, Systems Engineering and Construction Engineering are exclusively offered at UH at Katy.

UH at Katy is also one of the sites of the UH/HCC Engineering Academy. Students who are interested in computer engineering and analytics, systems or construction engineering and would like to complete all four years of their degree in the Greater Katy Area, may want to consider the cost-effective opportunities that the UH/HCC Engineering Academy has to offer. UH at Katy is located near the Grand Parkway & I-10, in Katy, Texas.

Learn more at https://www.egr.uh.edu/engineering-academies/hcc

IE FAST FACTS

145 Total Undergrad Students in Department
208 Total Faculty in Cullen College
$81,386 Average Salary
21:1 Student-to-Faculty Ratio Across the University
# Bachelor of Science in Systems Engineering

## Illustrative Four-Year Academic Plan

### Year 1

#### Semester 1
- ENGI 1100: Introduction to Engineering
- CHEM 1311: Fundamentals of Chemistry*
- ENGL 1301: First Year Writing I*
- MATH 2413: Calculus I*
- HIST 1301: The United States To 1877*

#### Semester 2
- ENGI 1331: Computing for Engineers (3)
- PHYS 2325: University Physics I* (3)
- ENGL 1302: First Year Writing II* (3)
- CORE Social & Behavioral Sciences* (3)
- Semester Hours: 15

### Year 2

#### Semester 1
- INDE 2331: Computer Applications for Industrial Engineers (3)
- GOVT 2305: U.S. & TX Constitution & Politics* (3)
- MATH 2415: Calculus III (4)
- PHYS 2326: University Physics II (3)

#### Semester 2
- HIST 1302: The United States Since 1877* (3)
- CORE Creative Arts* (3)
- GOVT 2306: U.S. Government* (3)
- MATH 3321: Engineering Mathematics (3)
- Semester Hours: 16

### Year 3

#### Semester 1
- CEA 3201: Computer Programming for Engineers (2)
- INDE 3330: Finance and Cost Management (3)
- INDE 3364: Engineering Statistics II (3)
- INDE 3310: Quality Control and Improvement (3)
- SYSE 3301: Fundamentals of Systems Engineering (3)
- SYSE 3315: Systems Architecture & Design (3)

#### Semester 2
- INDE 3333: Engineering Economy I (3)
- INDE 3381: Linear Optimization (3)
- INDE 4331: Analysis of Industrial Activities (3)
- SYSE 3355: Systems Thinking (3)
- SYSE 3340: Systems Integration, Verification and Validation (3)
- Semester Hours: 17

### Year 4

#### Semester 1
- INDE 4370: Discrete Event Simulation (3)
- INDE 3382: Stochastic Modeling (3)
- SYSE 4111: Systems Engineering Seminar (1)
- SYSE 4320: Project Management of Complex Systems (3)
- SYSE ELEC Concentration Elective 1 (3)
- CORE Language, Philosophy, & Culture* (3)

#### Semester 2
- INDE 4315: Supply Chain Management (3)
- INDE 4364: Data Analytics (3)
- SYSE 4337: Human Factors & Ergonomics (3)
- SYSE 4334: Systems Engineering Capstone Design (3)
- SYSE ELEC Concentration Elective 2 (3)
- Semester Hours: 16

### Total Semester Hours: 125

*State of Texas Core Curriculum; All Major Courses will be taken out of the UH at Katy Campus. Students should meet with their academic advisor to formulate their personalized graduation plan.

## For More Information

Get in touch with us and schedule a virtual or in person meeting: [https://www.egr.uh.edu/academics/undergraduate-programs](https://www.egr.uh.edu/academics/undergraduate-programs)

UH Department of Industrial Engineering: [www.ie.uh.edu](http://www.ie.uh.edu)

Undergraduate Program: [www.ie.uh.edu/undergraduate-program/overview](http://www.ie.uh.edu/undergraduate-program/overview)

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