

BACHELOR OF SCIENCE IN SYSTEMS ENGINEERING



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.

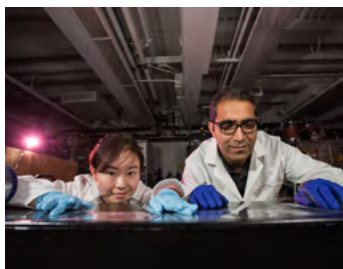
A 2022 salary survey produced by Payscale.com found that these types of graduates earned an average starting salary of \$81,386, with that growing closer to \$90,000 after several years of accrued experience.

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. The UH/HCC Engineering Academy is a partnership with Houston Community College (HCC) where students are co-enrolled at both institutions. 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

117 Total Undergrad Students in Department

146 Total Faculty in Cullen College

\$81,386 Average Salary

22:1 Student-to-Faculty Ratio Across the University

YEAR 1

SEMESTER 1			SEMESTER 2			Total
ENGI 1100	Introduction to Engineering	1	ENGI 1331	Computing for Engineers	3	
CHEM 1311	Fundamentals of Chemistry*	3	MATH 2414	Calculus II*	4	
CHEM 1111	Fundamentals of Chemistry Lab	1	PHYS 2325	University Physics I*	3	
ENGL 1301	First Year Writing I*	3	ENGL 1302	First Year Writing II*	3	
MATH 2413	Calculus I*	4	CORE	Social & Behavioral Sciences*	3	
HIST 1301	The United States To 1877*	3				
Semester Hours 15			Semester Hours 16			31



YEAR 2

SEMESTER 1			SEMESTER 2			
INDE 2331	Computer Applications for Industrial Engineers	3	HIST 1302	The United States Since 1877*	3	
GOVT 2305	U.S. & TX Constitution & Politics*	3	CORE	Creative Arts*	3	
INDE 2333	Engineering Statistics I	3	GOVT 2306	U.S. Government*	3	
MATH 2415	Calculus III	4	ENGI 2304	Technical Communications*	3	
PHYS 2326	University Physics II	3	MATH 3321	Engineering Mathematics	3	
Semester Hours 16			Semester Hours 15			31



YEAR 3

SEMESTER 1			SEMESTER 2			
CEA 3201	Computer Programming for Engineers	2	INDE 3333	Engineering Economy I	3	
INDE 3330	Finance and Cost Management	3	INDE 3381	Linear Optimization	3	
INDE 3364	Engineering Statistics II	3	INDE 4331	Analysis of Industrial Activities	3	
INDE 3310	Quality Control and Improvement	3	SYSE 3355	Systems Thinking	3	
SYSE 3301	Fundamentals of Systems Engineering	3	SYSE 3340	Systems Integration, Verification and Validation	3	
SYSE 3315	Systems Architecture & Design	3				
Semester Hours 17			Semester Hours 15			32



YEAR 4

SEMESTER 1			SEMESTER 2			
INDE 4370	Discrete Event Simulation	3	INDE 4315	Supply Chain Management	3	
INDE 3382	Stochastic Modeling	3	INDE 4364	Data Analytics	3	
SYSE 4111	Systems Engineering Seminar	1	INDE 4337	Human Factors & Ergonomics	3	
SYSE 4320	Project Management of Complex Systems	3	SYSE 4334	Systems Engineering Capstone Design	3	
SYSE ELEC	Concentration Elective 1	3	SYSE ELEC	Concentration Elective 2	3	
CORE	Language, Philosophy, & Culture*	3				
Semester Hours 16			Semester Hours 15			31
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

UH Department of Industrial Engineering: www.ie.uh.edu
Undergraduate Program: www.ie.uh.edu/undergraduate-program/overview

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