

Bachelor of Science in Applied Science (Systems Science & Engineering) (ESE)

This program provides the student with the opportunity to prepare their academic career with maximum flexibility but also with enough organization to ensure substantive, consistent training in systems science methodology and outlook. This program is recommended if students wish to pursue a program that does not follow conventional lines. It is an especially advantageous degree for a double major in association with mathematics, physics, economics or another engineering discipline. The program can be planned to provide a desirable background for graduate work in biological, medical or management fields. This applied science degree is not accredited by the Engineering Accreditation Commission of ABET.

The degree requirements include the residency and general requirements of the university and the McKelvey School of Engineering as well as the following:

Code	Title	Units
<i>Required courses in Systems Science & Engineering</i>		26
ESE 1050	Introduction to Electrical and Systems Engineering	4
ESE 2180	Linear Algebra and Component Analysis	3
ESE 2190	Vector Calculus and Dynamics of Physical Systems	3
ESE 2300	Introduction to Electrical and Electronic Circuits	4
ESE 3260	Probability and Statistics for Engineering	3
ESE 3510	Signals and Systems	3
ESE 4031	Optimization for Engineered Planning, Decisions and Operations	3
or ESE 4150	Optimization	
ESE 4410	Control Systems	3
Elective systems science & engineering electives (ESE 2050, ESE 2992, ESE 3590, ESE 4000–4280, ESE 4370, ESE 4400–4590, ESE 4700–4999, ESE 5020–5290 and ESE 5400–5590.)		18
Free electives		40
Mathematics, science and engineering electives		24
Computer Science requirement (CSE 1301)		3
Humanities and social sciences electives		18
Total		120