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

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
Required courses in Systems Science & Engineering		**26**
ESE 105	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 230	Introduction to Electrical and Electronic Circuits	4
ESE 326	Probability and Statistics for Engineering	3
ESE 351	Signals and Systems	3
ESE 4031	Optimization for Engineered Planning, Decisions and Operations	3
or ESE 415	Optimization	
ESE 441	Control Systems	3
Systems science and engineering electives (ESE 205, ESE 2971, ESE 359, ESE 400–428, ESE 437, ESE 440–459, ESE 470–499, ESE 502–529, ESE 540–559, and SWCD 5660)		18
Free electives		40
Mathematics, science and engineering electives		24
Computer Science requirement (CSE 131)		3
Humanities and social sciences electives		18
Total		**120**

The program must include at least 48 units at the 300 level or higher.