

BACHELOR OF SCIENCE WITH A MAJOR IN SYSTEMS ENGINEERING (BS)

Degree Requirements

CIP: 14.2701.00

Hours Required

A minimum of 131 semester credit hours (SCH): 48 hours must be advanced, and fulfillment of degree requirements as specified in the "Requirements for Graduation (<https://catalog.tamiau.edu/undergraduate-information/academic-regulations/>)" section of this catalog.

Requirements

Code	Title	Semester Credit Hours
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[University Core Curriculum] (<https://catalog.tamiau.edu/appendix-a-core-curriculum-optional-course-information/>)

Select 42 SCH as outlined in the suggested plans and as specified in the "Requirements for Graduation." MATH 2413 must be taken as part of the core.	42
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Major

Engineering

CSCE 1136	Funds of Programming Lab	1
CSCE 1336	Fundamentals of Programming	3
CSCE 1137	Object-Oriented Program Lab	1
CSCE 1337	Object Oriented Programming	3
CSCE 2330	Digital Logic Design	3
ENGR 1201	Foundations of Engineering	2
ENGR 1304	Computer-Aided Design	3
ENGR 2103	Statics & Dynamics Lab	1
ENGR 2303	Statics & Dynamics	3
ENGR 2105	Principles of Elec Engr Lab	1
ENGR 2305	Principles of Elec Engineering	3
ENGR 2360	Thermodynamics & Fluid Mech	3
ENGR 2372	Engineering Statistics	3
ENGR 3300	Engineering Economics	3

Systems Engineering

SENG 3320	Engineering Modeling & Design	3
SENG 3330	Operations Research I	3
SENG 3340	Robotics and Automation	3
SENG 3345	Microprocessor Systems	3
SENG 3370	Computer Int Manufacturing	3
SENG 3380	Measurements and Devices	3
SENG 4301	Senior Design I	3
SENG 4315	Embedded Systems	3
SENG 4350	Facilities Design & Logistics	3
SENG 4360	Systems Simulation	3

SENG 4390	Senior Design II	3
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Math and Sciences

PHYS 2126	University Physics II Lab	1
MATH 2414	Calculus II	4
MATH 2415	Calculus III	4
MATH 3310	Introduction to Linear Algebra	3
MATH 3330	Ordinary Diff Equations	3
GEOL 4450	Geo Info Science for Engr	4
Select 1 SCH surplus from core		1

Systems Engineering Electives

Select 3 SCH from the following:		3
SENG 3310	Intro to Control Systems	
SENG 4330	Operations Research II	
SENG 4340	Intelligent Systems	
SENG 4370	Intro to Virtual Manufacturing	
SENG 4152	Internship in Systems Engr	
SENG 4252	Internship in Systems Engr	
SENG 4352	Internship in Systems Engr	
SENG 4185	Special Topics in Systems Engr	
SENG 4285	Special Topics in Systems Engr	
SENG 4385	Special Topics in Systems Engr	
SENG 4195	Undergraduate Research	
SENG 4295	Undergraduate Research	
SENG 4395	Undergraduate Research	
SENG 4199	Directed Study in SENG	
SENG 4299	Directed Study in SENG	
SENG 4399	Directed Study in SENG	

Total Semester Credit Hours 131

Four-Year Degree Plan

Following is a suggested four-year degree plan. Students are encouraged to see their advisor each semester for help with program decisions and enrollment; responsible for reviewing the **Program of Study Requirements**, meeting all course prerequisites, and **writing intensive course (WIN)** requirements for graduation. See Academic Regulations-Undergraduate online. (<https://catalog.tamiau.edu/undergraduate-information/academic-regulations/>)

Freshman

Fall		Semester Credit Hours
CSCE 1136	Funds of Programming Lab	1
CSCE 1336	Fundamentals of Programming	3
ENGL 1301	English Composition I	3
ENGR 1201	Foundations of Engineering	2
HIST 1301	The US to 1877	3
MATH 2413	Calculus I	4
UNIV 1201	Learn a Global Context I	2
Semester Credit Hours		18

Spring

ENGL 2311	Technical Communication-WIN	3
ENGR 1304	Computer-Aided Design	3

MATH 2414	Calculus II	4
PHYS 2125	University Physics I Lab	1
PHYS 2325	University Physics I	3
UNIV 1302	Signature Course	3
Semester Credit Hours		17

Sophomore

Fall

CSCE 1137	Object-Oriented Program Lab	1
CSCE 1337	Object Oriented Programming	3
ENGR 2103	Statics & Dynamics Lab	1
ENGR 2303	Statics & Dynamics	3
ENGR 3300	Engineering Economics	3
HIST 1302	The US Since 1877	3
MATH 2415	Calculus III	4
Semester Credit Hours		18

Spring

CSCE 2330	Digital Logic Design	3
ENGR 2105	Principles of Elec Engr Lab	1
ENGR 2305	Principles of Elec Engineering	3
ENGR 2372	Engineering Statistics	3
MATH 3310	Introduction to Linear Algebra	3
PSCI 2305	American National Government	3
Semester Credit Hours		16

Junior

Fall

MATH 3330	Ordinary Diff Equations	3
PHYS 2126	University Physics II Lab	1
PHYS 2326	University Physics II	3
PSCI 2306	American State Government	3
SENG 3320	Engineering Modeling & Design	3
SENG 3380	Measurements and Devices	3
Semester Credit Hours		16

Spring

ENGR 2360	Thermodynamics & Fluid Mech	3
SENG 3330	Operations Research I	3
SENG 3340	Robotics and Automation	3
SENG 3345	Microprocessor Systems	3
SENG 3370	Computer Int Manufacturing	3
Language, Philosophy, and Culture		3
Semester Credit Hours		18

Senior

Fall

SENG 4301	Senior Design I	3
SENG 4315	Embedded Systems	3
SENG 4360	Systems Simulation	3
SENG Advanced Elective*		3
Creative Arts		3
Semester Credit Hours		15

Spring

GEOL 4450	Geo Info Science for Engr	4
SENG 4350	Facilities Design & Logistics	3
SENG 4390	Senior Design II	3
Social & Behavioral Sciences		3
Semester Credit Hours		13
Total Semester Credit Hours		131

*Advanced Systems Engineering elective: select 3 semester credit hours from SENG 3310, SENG 4330, SENG 4340, SENG 4370, SENG 4152-4352, SENG 4185-4385, SENG 4195-4395, or SENG 4199-4399.

Actual degree plans may vary depending on availability of courses in a given semester.

Some courses may require prerequisites not listed.