

Shawnee State University

CS Major

This program is inspired by ACM suggestions and ABET accreditation requirements.

Major Courses

- ETCS 1821: Introduction to Computer Science 1 3 credits
 - ETCS 1822: Introduction to Computer Science 2 3 credits
 - ETCS 1823: Introduction to Computing Research 3 credits
 - ETCS 2901: Computing Research 1 2 credits
 - ETCS 2902: Computing Research 2 1 credit
 - ETCS 3901: Advanced Research 1 3 credits
 - ETCS 3902: Advanced Research 2 **OR** ETCO 3185: Internship 3 credits
 - Select two: 6 credits
 - ETCS 3400: Web Programming
 - ETCS 4200: Machine Learning
 - ETGG 4803: Artificial Intelligence
 - ETCS 4500: Mobile, IoT, and Sensor Computing
 - ETEC 2101: Data Structures 3 credits
 - ETEC 2104: Object-Oriented Programming and Software Engineering 3 credits
 - ETEC 2110: Systems Programming 3 credits
 - ETEC 2601: Database Systems 3 credits
 - ETEC 3201: Networking and Communication 3 credits
 - ETEC 3401: Algorithms 3 credits
 - ETEC 3402: Automata and Formal Languages 3 credits
 - ETEC 3701: Operating Systems 3 credits
 - ETEC 3702: Concurrency 3 credits
 - ETEC 4301: Design Lab 1 3 credits
 - ETEC 4302: Design Lab 2 3 credits
 - ETEC 4401: Compiler Design 3 credits
- 60 credits**

Mathematics Courses

- MATH 2110: Calculus 1 4 credits
- MATH 2120: Calculus 2 4 credits
- MATH 2200: Discrete Mathematics with Graph Theory 4 credits
- Select one (Selecting two earns a Mathematical Sciences Minor): 3 credits
 - MATH 2300: Linear Algebra
 - MATH 3100: Ordinary Differential Equations
 - MATH 3610: Probability 1
 - MATH 3620: Probability 2
 - MATH 4300: Numerical Analysis

- STAT 2500: Statistics 1
- STAT 3500: Statistics 2
- STAT 3510: Mathematical Statistics 1
- STAT 3520: Mathematical Statistics 2

15 credits

Science Courses

Two-course lab-based sequence

8 credits

8 credits

GEP

First-Year Experience

1 credit

English Composition

6 credits

Oral Communication

3 credits

Literature

3 credits

Fine Arts

3 credits

Natural Sciences

*

Quantitative Reasoning

*

Engaged Citizenry

3 credits

Global Perspectives

3 credits

Historical Perspectives

3 credits

Ethical Insight and Reasoning

3 credits

Human Behavior

3 credits

Capstone (ETEC 4301)

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31 credits

Electives

Free electives

6 credits

Year One

Autumn		Spring	
ETCS 1821: Introduction to Computer Science 1	3	ETCS 1822: Introduction to Computer Science 2	3
MATH 1250: Trigonometry if needed*	3	ETCS 1823: Introduction to Computing Research	3
ENGL 1102: Discourse and Comp	3	MATH 2110: Calculus 1	4
UNIV 1100: First Year Experience	1	ENGL 1105: Comp & Argument	3
GEP x 2	6	GEP	3
Total	16	Total	16

Year Two

Autumn		Spring	
ETCS 2901: Computing Research 1	2	ETCS 2902: Computing Research 2	1
ETEC 2110: Systems Programming	3	ETEC 2101: Data Structures	3
ETEC 2601: Database Systems	3	ETEC 2104: Object Oriented Programming	3
MATH 2120: Calculus 2	4	MATH 2200: Discrete Mathematics with Graph Theory	4
GEP Natural Science	4	GEP Natural Science	4
Total	16	Total	15

Year Three

Autumn		Spring	
ETCS 3901: Advanced Research 1	3	ETCS 3902: Advanced Research 2 or ETCO 3185: Internship	3
ETEC 3401: Algorithms	3	ETEC 3201: Networking and Communication	3
ETEC 3701: Operating Systems	3	ETEC 3702: Concurrency	3
Elective	3	GEP	3
GEP	3	GEP	3
Total	15	Total	15

Year Four

Autumn		Spring	
ETEC 3402: Automata and Formal Languages	3	ETEC 4401: Compiler Design	3
ETEC 4301: Design Lab 1	3	ETEC 4302: Design Lab 2	3
ETCS 3400: Web Programming or ETCS 4200: Machine Learning	3	ETCS 4500: Mobile, IoT, and Sensor Computing or ETGG 4803: Artificial Intelligence	3
MATH	3	GEP	3
Elective	3	GEP	3
Total	15	Total	15