

COMPUTER SCIENCE - ASSOCIATE OF SCIENCE TRANSFER (AST)

Description

The Computer Science Associate of Science Transfer degree is designed for students interested in a career in computer science, software engineering, or technology. The courses recommended within these pathways help students to develop the skills and knowledge to become a professional computer scientist or software developer, including problem solving, programming, data structures, computer systems, and key foundations in mathematics and science.

This program is part of a statewide Major Transfer Map (MTM) agreement that identifies the community college courses needed to transfer to any Oregon public university as a junior seeking a Bachelor of Science in this field of study.

Program Learning Outcomes

Upon successful completion of the program, students will be able to:

1. Develop software using both structured and object-oriented paradigms that meets the requirements of a written specification.
2. Explain the software development lifecycle and the specific tools and processes used to create software.
3. Design, analyze, and implement algorithms to solve computational problems using various data structures as problem-solving tools. These data structures must include arrays, stacks, queues, linked lists, trees, and hash tables.

Entrance Requirements

While this program has no formal entrance requirement, individual courses may have prerequisites which must be met before enrollment.

Course Requirements

Course	Title	Credits
Core Transfer Requirements		
<u>Cultural Literacy:</u>		
One course from the Core Transfer Requirements must be designated as cultural literacy on the Discipline Studies list (credits count once).		
<u>Arts and Letters:</u>		
Choose two courses		6-8
<u>Mathematics:</u>		
Choose two courses from the following:		8
MTH 111Z	Precalculus I: Functions	
MTH 112Z	Precalculus II: Trigonometry	
MTH 251Z	Differential Calculus	
MTH 252Z	Integral Calculus	
<u>Science/Math/Computer Science:</u>		8-10
EOU/SOU/WOU choose any two lab science courses		
OSU/PSU/UO choose the first two courses from one of the following sequences:		
Sequence A:		
BI 221Z	Principles of Biology: Cells	
BI 222Z	Principles of Biology: Organisms	

BI 223Z	Principles of Biology: Ecology and Evolution	
Sequence B:		
CH 221Z & CH 227Z	General Chemistry I and General Chemistry I Laboratory	
BI 221Z	Principles of Biology: Cells	
BI 222Z	Principles of Biology: Organisms	
Sequence C:		
CH 221Z & CH 227Z	General Chemistry I and General Chemistry I Laboratory	
CH 222Z & CH 228Z	General Chemistry II and General Chemistry II Laboratory	
CH 223Z & CH 229Z	General Chemistry III and General Chemistry III Laboratory	
Sequence D:		
G 201	Geology I - The Dynamic Earth	
G 202	Geology II - Earth's Surface	
G 203	Geology III - Earth History	
Sequence E:		
PH 201	General Physics I	
PH 202	General Physics II	
PH 203	General Physics III	
Sequence F:		
PH 211	General Physics I	
PH 212	General Physics II	
PH 213	General Physics III	
<u>Social Science:</u>		
Choose two courses		6-8
<u>Writing:</u>		
WR 121Z	Composition I	4
Additional Major Transfer Map Courses		
COMM 111Z	Public Speaking	4
CS 160	Computer Science Orientation	4
CS 161	Computer Science I	4
CS 162	Computer Science II	4
CS 260	Data Structures	4
MTH 251Z	Differential Calculus (If not completed as part of Core Transfer Map)	0-4
MTH 252Z	Integral Calculus (If not completed as part of Core Transfer Map)	0-4
EOU/SOU/WOU Pathway:		
WR 122Z	Composition II	
OSU/PSU/UO Pathway:		
CS 205	System Programming and Architecture	
MTH 231	Discrete Mathematics	
MTH 232	Discrete Mathematics II	
<u>Science/Math/Computer Science:</u>		
Complete Science sequence from Core Transfer Requirements		
WR 227Z	Technical Writing	
Electives:		

Choose courses numbered 100 or above that brings the total credits to 90 quarter hours.¹

Total Credits **90**

¹ Consult with your academic advisor to select electives that transfer to the Oregon public university of choice.

Sample Plan

First Year

First Term		Credits
CS 160	Computer Science Orientation	4
Elective		4
MTH 111Z	Precalculus I: Functions	4
<u>Science/Math/Computer Science:</u>		4-5

EOU/SOU/WOU choose any lab science course

OSU/PSU/UO choose the first course from one of the following sequences:

Sequence A:

BI 221Z	Principles of Biology: Cells
BI 222Z	Principles of Biology: Organisms
BI 223Z	Principles of Biology: Ecology and Evolution

Sequence B:

CH 221Z & CH 227Z	General Chemistry I and General Chemistry I Laboratory
BI 221Z	Principles of Biology: Cells
BI 222Z	Principles of Biology: Organisms

Sequence C:

CH 221Z & CH 227Z	General Chemistry I and General Chemistry I Laboratory
CH 222Z & CH 228Z	General Chemistry II and General Chemistry II Laboratory
CH 223Z & CH 229Z	General Chemistry III and General Chemistry III Laboratory

Sequence D:

G 201	Geology I - The Dynamic Earth
G 202	Geology II - Earth's Surface
G 203	Geology III - Earth History

Sequence E:

PH 201	General Physics I
PH 202	General Physics II
PH 203	General Physics III

Sequence F:

PH 211	General Physics I
PH 212	General Physics II
PH 213	General Physics III

Credits **16-17**

Second Term

COMM 111Z	Public Speaking	4
CS 161	Computer Science I	4
MTH 112Z	Precalculus II: Trigonometry	4
<u>Science/Math/Computer Science:</u>		4-5

OSU/PSU/UO requires second course in series selected

EOU/SOU/WOU choose any lab science course

Credits **16-17**

Third Term

CS 162	Computer Science II	4
MTH 251Z	Differential Calculus	4
<u>Science/Math/Computer Science:</u>		4-5
WR 121Z	Composition I	4

Credits **16-17**

Second Year

First Term

<u>Arts and Letters:</u>		3-4
CS 260	Data Structures	4
MTH 252Z	Integral Calculus	4
WR 122Z or WR 227Z	Composition II ¹ or Technical Writing	4

Credits **15-16**

Second Term

<u>Arts and Letters:</u>		3-4
MTH 231	Discrete Mathematics ³	4
Elective		2
<u>Social Science:</u>		3-4

Credits **12-14**

Third Term

CS 205	System Programming and Architecture ³	4
Elective		4
MTH 232	Discrete Mathematics II ³	4
<u>Social Science:</u>		3-4

Credits **15-16**

Total Credits **90-97**

¹ EOU/SOU/WOU Pathway: WR 122Z
OSU/PSU/UO Pathway: WR 227Z

² One course from the Core Transfer Requirements must be designated as Cultural Literacy on the Discipline Studies list.

³ EOU/SOU/WOU Pathway substitute with elective credit.

OSU/PSU/UO Pathway requires CS 205, MTH 231, and MTH 232.

⁴ EOU/SOU/WOU substitute with elective

OSU/PSU/UO complete selected science series