

COMPUTER SCIENCE, ASSOCIATE OF SCIENCE TRANSFER

Are you fascinated by the thought of fortifying cybersecurity defenses, developing the next viral video game, or leveraging technology to solve real-world problems? If so, you're in the right place! Our Associate of Science Transfer in Computer Science (AST-CS) program is your stepping stone to these exciting career paths and more. Developed within the Oregon Major Transfer Map (MTM) framework, this program ensures you can transfer seamlessly to one of Oregon's public universities to complete a Bachelor of Science in Computer Science. Kick-starting your computer science journey with us allows you to save substantially on tuition costs, enabling you to transfer to your desired university as a junior with just a two-year path to completing your bachelor's degree.

We offer two specialized tracks tailored to your transfer university choices: one for students leaning towards Oregon State University, Portland State University, or the University of Oregon, and another for those eyeing Eastern Oregon University, Southern Oregon University, or Western Oregon University. The best part? You don't have to make this decision until your second year, giving you ample time to explore your interests and consult with advisors. So, why wait? Unlock a world of possibilities in computer science and set the stage for an impactful and fulfilling career.

GRADUATION REQUIREMENTS

Complete a minimum of 90 credit hours with a cumulative Grade Point Average (GPA) of 2.0 or better. All courses must be completed with a grade of 'C' or better. Twenty-four (24) credits must be completed at Southwestern before the degree is awarded. Students must have earned a cumulative grade point average of 2.0 and meet the residency requirements at the college.

Students must complete the graduation application process one term prior to the term of completion (e.g., spring term graduates must apply during winter term).

CORE TRANSFER MAP (CTM) REQUIREMENTS

All courses must be completed with a grade of 'C' or better.

WRITING

Code	Title	Credits
WR121Z	Composition I	4

Note: Information Literacy is included through embedding the appropriate content and analytical activity in courses that count toward the writing Foundational Requirement.

MATHEMATICS

Select **two** of the following courses:

Code	Title	Credits
MTH111Z	Pre-Calculus	4
MTH112Z	Precalculus II: Trigonometry	4
MTH251Z	Differential Calculus	4
MTH252Z	Integral Calculus	4

NATURAL SCIENCES

Select **TWO** courses from the following sequences:

OSU/PSU/UO Track:

Choose a course sequence in Physics, Chemistry, or Biology.

Code	Title	Credits
PH201	General Physics I: Mechanics	5
PH202	General Physics II: Heat, Waves, Relativity	5
PH203	Gen Physics III: Elect & Magnetism	5
OR		
PH211	General Physics with Calculus I	5
PH212	General Physics with Calculus II	5
PH213	General Physics with Calculus III	5
OR		
CHEM221Z	General Chemistry I (must also take CHEM227Z)	4
CHEM227Z	General Chemistry I Laboratory	1
CHEM222Z	General Chemistry II (must also take CHEM228Z)	4
CHEM228Z	General Chemistry II Laboratory	1
CHEM223Z	General Chemistry III (must also take CHEM229Z)	4
CHEM229Z	General Chemistry III Laboratory	1
OR		
CHEM221Z	General Chemistry I (must also take CHEM227Z)	4
CHEM227Z	General Chemistry I Laboratory	1
BI221Z	Principles of Biology: Cells	5
BI222Z	Principles of Biology: Organisms	5
OR		
BI221Z	Principles of Biology: Cells	5
BI222Z	Principles of Biology: Organisms	5
BI223Z	Principles of Biology: Ecolo/Evolut	5
OR		
G201	Physical Geology I	4
G202	Physical Geology II	4
G203	Historical Geology	4

EOU/SOU/WOU Track:

Code	Title	Credits
Any Two Lab Science Courses		8-10

ARTS AND LETTERS

Choose any two (2) courses:

Only second year foreign language courses fulfill the Arts and Letters category.

Code	Title	Credits			
ART115	Basic Design I Intro to Elements of Art and Principles of Design	4	MUS202	Intro to Music and its Literature	3
ART116	Basic Design II, Color Theory	4	MUS203	Intro to Music and its Literature	3
ART117	Basic Design III, Intro to 3D Design	4	MUS205	Intro to Jazz History	3
ART131	Introduction to Drawing I	3	MUS206	Intro to History of Rock and Roll	3
ART132	Introduction to Drawing II	3	MUS211	Advanced Music Theory I	3
ART133	Introduction to Drawing III	3	MUS212	Advanced Music Theory II	3
ART191	Beginning Sculpture	3	MUS213	Advanced Music Theory III	3
ART192	Beginning Sculpture	3	PHL101	Introduction to Philosophy: Philosophical Problems	3
ART204	History of Western Art: Introduction to Art History	3	PHL102	Ethics	3
ART205	History of Western Art: Introduction to Art History	3	PHL103	Intro to Logic and Critical Thnkg	3
ART206	History of Western Art: Introduction to Art History	3	PHL211	Existentialism	3
ART244	Bronze Casting	3	SPAN201	Second Year Spanish	4
ART253	Ceramics I	3	SPAN202	Second Year Spanish	4
ART256	Ceramics II	3	SPAN203	Second Year Spanish	4
ART281	Painting I Beginning	3	WR241	Imaginative Creative Writing Fiction	3
ART282	Painting II Beginning	3	WR242	Imaginative Writing Poetry	3
ART283	Painting III Beginning	3	WR243	Imaginative Creative Writing - Play	3
ART284	Painting I Intermediate	3	SOCIAL SCIENCES		
ART285	Painting II Intermediate	3	Choose any two (2) courses:		
ART286	Painting III Intermediate	3	Code	Title	Credits
ASL201	2nd Yr American Sign Language I	4	ANTH201	Physical Anthropology and Evolution	3
ASL202	2nd Yr American Sign Language II	4	ANTH202	Introduction to Archaeology	3
ASL203	2nd Yr American Sign Language III	4	ANTH203	Language and Culture	3
COMM100Z	Introduction to Communication	4	ANTH221	Intro to Cultural Anthropology	3
COMM111Z	Public Speaking	4	ANTH222	Cultural Anthropology II	3
COMM218Z	Interpersonal Communication	4	ANTH223	Cultural Anthropology III	3
COMM219	Small Group Discussion	4	ANTH224	Intro to Medical Anthropology	3
COMM220	Gender And Communication	4	ANTH230	Native North Americans: Oregon	3
ENG104Z	Introduction To Fiction	4	ANTH231	Native North Americans: PNW	3
ENG105Z	Introduction To Drama	4	ANTH232	Native North Americans	3
ENG106Z	Introduction To Poetry	4	CJ101	Intro to Criminology	4
ENG107	World Literature	3	ED169	Overview of Student Special Needs	3
ENG108	World Literature	3	ED258	Multicultural Education	3
ENG109	World Literature	3	GEOG105	Cultural Geography	3
ENG201	Shakespeare	3	HDFS140	Contemporary American Families	3
ENG204	Survey of English Literature	3	HDFS222	Understanding Families: Supporting Diversity Disability and Risk	3
ENG205	Survey of English Literature	3	HDFS229	Child Development PreK - Adolescent	3
ENG206	Survey of English Literature	3	HDFS247	Child Development 0-8	3
ENG253	Survey of American Literature	3	HST101	History of Western Civilization	3
ENG254	Survey of American Literature	3	HST102	History of Western Civilization	3
ENG255	Survey of American Literature	3	HST103	History of Western Civilization	3
HUM204	World Mythology & Religion	3	HST104	History of the Middle East	3
HUM205	World Mythology & Religion	3	HST195	History of the Vietnam War	3
HUM206	World Mythology & Religion	3	HST201	History of the United States	3
MUS101	Music Fundamentals	3	HST202	History of the United States	3
MUS111	Music Theory I	3	HST203	History of the United States	3
MUS112	Music Theory II	3	HST240	Hist of Oregon and the South Coast	3
MUS113	Music Theory III	3	PS201	American Government: Political Institutions	3
MUS201	Intro to Music and its Literature	3			

PS202	American Government: Policy Issues
PS203	Local Politics and Government
PS205	International Relations: US Foreign Policy in the 20th Century
PSY100	Introduction to Psychology
PSY201Z	Introduction to Psychology I
PSY202Z	Introduction to Psychology II
PSY216	Social Psychology
PSY228	Introduction to Social Science Research
PSY231	Human Sexuality
PSY237	Life Span Development
PSY239	Introduction to Abnormal Psychology
PSY243	Drugs and Behavior
SOC204Z	Introduction to Sociology
SOC205Z	Social Change and Institutions
SOC206Z	Social Problems
SOC208	Sociology of Sport
SOC210	Marriage and Family
SOC213	Racial and Ethnic Relations
SOC218	Sociology of Gender

CULTURAL LITERACY

Students are required to complete at least one (1) course from any of the above discipline studies that meets the statewide criteria for cultural literacy. SWOCC offers these courses that satisfy the Cultural Literacy requirement.

Code	Title	Credits
ANTH201	Physical Anthropology and Evolution	3
ANTH202	Introduction to Archaeology	3
ANTH203	Language and Culture	3
ANTH221	Intro to Cultural Anthropology	3
ANTH222	Cultural Anthropology II	3
ANTH223	Cultural Anthropology III	3
ANTH224	Intro to Medical Anthropology	3
ANTH230	Native North Americans: Oregon	3
ANTH231	Native North Americans: PNW	3
ANTH232	Native North Americans	3
ED258	Multicultural Education	3
ENG107	World Literature	3
ENG108	World Literature	3
ENG109	World Literature	3
GEOG105	Cultural Geography	3
HDFS140	Contemporary American Families	3
HUM204	World Mythology & Religion	3
HUM205	World Mythology & Religion	3
HUM206	World Mythology & Religion	3
HST104	History of the Middle East	3
MUS205	Intro to Jazz History	3
MUS206	Intro to History of Rock and Roll	3
PSY216	Social Psychology	3
PSY231	Human Sexuality	3

3	SOC208	Sociology of Sport	3
3	SOC210	Marriage and Family	3
3	SOC213	Racial and Ethnic Relations	3
4	SOC218	Sociology of Gender	3
4	COMM220	Gender And Communication	4

COMPUTER SCIENCE MAJOR TRANSFER MAP (MTM) REQUIREMENTS - EOU/SOU/WOU

All courses must be completed with a grade of 'C' or better.

COMPUTER SCIENCE SPECIFIC COURSES (TOTAL OF 16 CREDITS):

Code	Title	Credits
CS160	Introduction To Computer Science	4
CS161	Computer Science I	4
CS162	Computer Science II	4
CS260	Data Structures	4

WRITING SPECIFIC COURSES:

Code	Title	Credits
WR122Z	Composition II	4

COMMUNICATION SPECIFIC COURSES:

Code	Title	Credits
COMM111Z	Public Speaking	4

MATHEMATICS SPECIFIC COURSES:

Complete the following courses (if not completed as part of the CTM):

Code	Title	Credits
MTH251Z	Differential Calculus	4
MTH252Z	Integral Calculus	4

ELECTIVES

Should Bring total credits to 90.

COMPUTER SCIENCE MAJOR TRANSFER MAP (MTM) REQUIREMENTS - OSU/PSU/UO

All courses must be completed with a grade of 'C' or better.

COMPUTER SCIENCE SPECIFIC COURSES (TOTAL OF 20 CREDITS):

Code	Title	Credits
CS160	Introduction To Computer Science	4
CS161	Computer Science I	4
CS162	Computer Science II	4
CS260	Data Structures	4
CS205	System Programming & Architecture	4

NATURAL SCIENCES

Complete sequence started under the Core Transfer Map (the third class listed for each sequence).

WRITING SPECIFIC COURSES:

Code	Title	Credits
WR227Z	Technical Writing	4

COMMUNICATION SPECIFIC COURSES:

Code	Title	Credits
COMM111Z	Public Speaking	4

MATHEMATICS SPECIFIC COURSES:

Complete the following courses (if not completed as part of the CTM):

Code	Title	Credits
MTH251Z	Differential Calculus	4
MTH252Z	Integral Calculus	4

ELECTIVES

Should Bring total credits to 90.

ELECTIVES

- Students must take college-level Lower Division science courses above 100-Level that would bring total credits to 90.
- All courses must be completed with a grade of 'C' or better.
- A maximum of nine (9) credits of PE185 sport/activity courses may be applied to the AST-CS degree.
- Three (3) credit hours of PE185 sport/activity courses may be granted toward the AST-CS for completion of military basic training. A copy of the military transcript or DD-214 is required.
- Courses numbered 199/299 will qualify as elective credit only.
- A maximum of 45 credits is allowed for basic, developmental, or supportive courses under federal financial aid guidelines.

STUDENT PROGRAM LEARNING OUTCOMES

COMPUTER SCIENCE MAJOR OUTCOMES

- Develop software using both structured and object-oriented paradigms that meets the requirements of a written specification;
- Explain the software development life cycle and the specific tools and processes used to create software; **and**
- 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.

ARTS & LETTERS

- Interpret and engage in the Arts & Letters, making use of the creative process to enrich the quality of life; **and**

- Critically analyze values and ethics within a range of human experience and expression to engage more fully in local and global issues.

CULTURAL LITERACY

- Identify and analyze complex practices, values, and beliefs and the culturally and historically defined meanings of difference.

MATHEMATICS

- Use appropriate mathematics to solve problems; **and**
- Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results.

SOCIAL SCIENCE

- Apply analytical skills to social phenomena in order to understand human behavior; **and**
- Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.

SPEECH/ORAL COMMUNICATION

- Engage in ethical communication processes that accomplish goals;
- Respond to the needs of diverse audiences and contexts; **and**
- Build and manage relationships.

WRITING

- Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences;
- Locate, evaluate, and ethically utilize information to communicate effectively; **and**
- Demonstrate appropriate reasoning in response to complex issues.

INFORMATION LITERACY

- Formulate a problem statement;
- Determine the nature and extent of the information needed to address the problem;
- Access relevant information effectively and efficiently;
- Evaluate information and its source critically; **and**
- Understand many of the economic, legal, and social issues surrounding the use of information.

SCIENCE OR COMPUTER SCIENCE

- Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions;
- Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically evaluate existing or alternative explanations, solve problems, and make evidence-based decisions in an ethical manner; **and**
- Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.

RECOMMENDED PROGRAM SCHEDULE

The OSU/PSU/UO and EOU/SOU/WOU tracks both have the same schedule for the first year to allow students time to decide on their preferred transfer university before committing to a track. **Students**

who are undecided on a transfer university in the second year should complete the OSU/PSU/UO track. Please work with your advisor to determine courses.

FIRST YEAR (OSU/PSU/UO AND EOU/SOU/WOU TRACKS)

Course	Title	Credits
First Year		
Fall		
CS160	Introduction To Computer Science	4
MTH111Z	Pre-Calculus	4
WR121Z	Composition I	4
Arts and Letters Course ¹		3-4
Credits		15-16
Winter		
CS161	Computer Science I	4
MTH112Z	Precalculus II: Trigonometry	4
COMM111Z	Public Speaking	4
Social Science Course ¹		3-4
Credits		15-16
Spring		
CS162	Computer Science II	4
MTH251Z	Differential Calculus	4
Arts and Letters Course ¹		3-4
Social Science Course ¹		3-4
Credits		14-16
Total Credits		44-48

SECOND YEAR (OSU/PSU/UO TRACK)

Course	Title	Credits
Second Year		
Fall		
MTH231	Elements of Discrete Mathematics I	4
WR227Z	Technical Writing	4
Elective		3-4
PH211	General Physics with Calculus I (Science Course) ²	5
or CHEM221Z	or General Chemistry I	
or BI221Z	or Principles of Biology: Cells	
Credits		16-17
Winter		
MTH232	Elements of Discrete Mathematics II	4
MTH252		4
CS260	Data Structures	4
PH212	General Physics with Calculus II (Science Course) ²	5
or CHEM222Z	or General Chemistry II	
or BI221Z	or Principles of Biology: Cells	
Credits		17
Spring		
CS205	System Programming & Architecture	4
PH213	General Physics with Calculus III (Science Course) ²	5
	or General Chemistry III	

or CHEM223Z or Principles of Biology: Ecolo/Evolut

or BI223Z	
Elective ¹	3-4
Elective ¹	3-4
Credits	15-17
Total Credits	48-51

¹ Most universities have specific recommendations for elective courses that will streamline degree completion at their institutions. Consult with an advisor for guidance on selecting electives.

² If taking chemistry, concurrent lab enrollment is required.

SECOND YEAR (EOU/SOU/WOU TRACK)

Course	Title	Credits
Second Year		
Fall		
WR122Z	Composition II	4
Elective ¹		3-4
Elective ¹		3-4
Science 1 (any lab science)		4-5
Credits		14-17
Winter		
MTH251Z	Differential Calculus	4
CS260	Data Structures	4
Elective ¹		3-4
Science 2 (any lab science)		4-5
Credits		15-17
Spring		
Elective ¹		3-4
Elective ¹		3-4
Elective ¹		3-4
Elective ¹		3-4
Credits		12-16
Total Credits		41-50

¹ Most universities have specific recommendations for elective courses that will streamline degree completion at their institutions. Consult with an advisor for guidance on selecting electives.