

A statewide policy that identifies the community college courses needed to transfer to a participating Oregon public university as a junior seeking a Bachelor of Science in Computer Science.

Statewide Transfer Articulation Agreement: Computer Science

Transfer Map Curriculum Articulation Policy in Computer Science

90-100 Credits

Associate of Science Transfer degree in Computer Science (AST-CS)

From: Blue Mountain Community College
Central Oregon Community College
Chemeketa Community College
Clackamas Community College
Lane Community College
Mt. Hood Community College
Oregon Coast Community College
Portland Community College
Rogue Community College
Southwestern Oregon Community College
Tillamook Bay Community College
Umpqua Community College

To: Eastern Oregon University
Oregon State University
Portland State University
Southern Oregon University
University of Oregon
Western Oregon University

A Major Transfer Map Curriculum and Articulation Policy (MTM CAP) is for students transferring from an Oregon community college to an Oregon university who know which major/bachelor's degree program they want to pursue. The MTM CAPs identify the optimal and specific set of lower division courses students must take to transfer efficiently into the major at the university. The successful completion of map courses allows students to receive the number of academic credits referenced in this MTM CAP, and comparable standing to the status of students with the same number of academic credits in the major course of study who began their postsecondary studies at the public university. MTM CAPs must include at least 30-credits of general education defined by the Core Transfer Map (CTM). MTM CAPs may choose to specify relevant or required General Education courses as part of the 30-credit CTM component of the MTM CAP. Receiving institutions will not require students to retake a course if the minimum grade requirements, specified in this agreement, have been met.

The statewide MTM CAP in Computer Science will use the following format. The selected format will be specified in each approved MTM program:

- an Associate of Science Transfer degree in Computer Science.

Students must have earned a cumulative grade point average of 2.0 and meet the residency requirements at the community college awarding the MTM.

When students complete an MTM, the general education courses in the "Core Transfer Map" portion of the MTM, for which minimum required grades have been earned, are guaranteed to transfer into general education, degree, or major requirements for a bachelor's degree at any Oregon public university (ORS 350.404).

Students who want to transfer prior to completing the MTM should talk with their community college advisor and an advisor at their target university prior to transfer about how their courses will count towards general education requirements and degree/major requirements. If the MTM is not awarded advisors can guide students to determine if they are eligible for a CTM.

The guarantees and limitations in the next two sections describe the requirements all participating institutions.

Part 1: Guarantees

Students who complete all the requirements specified within an MTM CAP (i.e. an MTM CAP associate's degrees or an MTM non-degree package when optimal transfer requires fewer than 90 credits) as defined, who have earned the minimum required grades and a cumulative 2.0 GPA or higher, meet residency requirements, and who are admitted to the receiving institution's corresponding major/degree program are guaranteed the following:

1. Time until completion of the major at the public university that is comparable to time until the completion of students with the same number of academic credits in the major course of study who began at the public university (when the MTM is equal to at least 90 credits this would equate to receiving "junior status in the major course of study at the public university").
2. Catalog rights follow the MTM CAP agreement. Eligibility to graduate following the Bachelors' degree requirements in effect at the university during the academic year the student first enrolled in the community college that awarded the Associate of Science Transfer degree in Computer Science (AST-CS). If the student does not complete the Bachelors' degree within 7 years of the first enrollment

at the community college awarding the AST-CS, they should meet with an advisor to determine which catalog to use.

3. If a student transfers before completing the MTM CAP, all courses will still transfer but may not apply in the same way as they would if the MTM CAP was completed. If the student has completed a CTM, the guarantees inherent in the CTM apply. All courses in the incomplete MTM or incomplete CTM will transfer individually.
4. The ability to file a student complaint.
 - a. Students encourage to first follow their home institution's internal complaint process (e.g., talk to their academic advisor, academic unit, Registrar or Provost)
 - b. Students may send complaints in writing to the Transfer Council.
transfercouncil@hecc.oregon.gov].
 - c. No later than 2027 the Commission will approve Oregon Administrative Rules that outline a comprehensive student complaint process that will center the Transfer Council as the primary focal point for interinstitutional transfer student complaints.
 - d. The HECC only has authority to handle student complaints if they are related to discrimination or retaliation.
5. Students who successfully complete the MTM CAP at a community college will have the MTM CAP notated on their transcript. If the MTM CAP takes the form of an associate degree, it will be reflected in the standard degree posting format used by the community college and specifically notated on page two of this document. If the MTM is not an associate degree, but rather an optimal transfer point with fewer than 90 credits, it will be posted as a notation on the community college transcript and specifically notated on page two of this document.

Part 2: Limitations

1. Completion of the prescribed curriculum in the MTM CAP does not guarantee admission to a participating receiving institution. Students must meet all admission and application requirements at the receiving institution in place at the time of admission, including the submission of all required documentation by stated deadlines.
2. Minimum grades required for general transfer and for application to major requirements and pre-requisites may vary by each Oregon public university and by each degree/major. Each MTM agreement will specifically list the minimum grade requirements that will guarantee transfer including minimum required grades for major courses and Pass/No Pass limitations. All schools accept a grade of a "C -" or better in all general education courses. Students should contact the admissions counselor or intake advisor at the university they intend to transfer to for more information.
3. Completion of an MTM CAP and admission to a receiving institution does not guarantee enrollment in a specific degree program. Some programs at receiving institutions have controlled and/or competitive entry due either to space limitations or academic requirements.
4. The credit and course transfer guarantees described in the specific MTM CAP agreements apply only to the specific degree programs covered by this policy. Therefore, if a student changes to a new major some courses may not apply the same way towards the new major as they would for the original major. When students change majors, the previous MTM CAP major guarantees may no longer apply and receiving institutions will evaluate applicability of transfer on a course-by- course basis.
5. AP (Advanced Placement) and IB (International Baccalaureate) credit:

✓ General Education Courses in the MTM CAP:

AP and IB articulated credits used to meet the general education components of the Major Transfer Map Curriculum Articulation Policy will transfer and are guaranteed to fulfill general education requirements at the receiving institution, as long as the articulated credits

are listed on the Advanced Placement and International Baccalaureate Statewide *Course Credit Policy* found on the HECC website.

✓ AP (Advanced Placement) and IB (International Baccalaureate) in the MTM:

Using the current *AP and IB Statewide Course Credit Policy* as a reference, the Major Transfer Map Curriculum Articulation Policy faculty subcommittee will assess how AP/IB exam scores apply to the MTM CAP (range of credits and course articulations). In particular, the MTM CAP faculty subcommittee will identify whether the credit range and course articulation of AP/IB exam scores differ among the 17 community colleges and 7 public universities in ways that create transfer misalignment for students earning the MTM.

The workgroup will refer all areas of misalignment to the AP/IB Statewide Policy Group, which will coordinate with the higher education institutions' appropriate representatives (including faculty and academic leadership) to resolve the areas of misalignment by establishing common range of credits and defined articulations across the 17/7 so that AP/IB exam credit awarded at any community college will transfer to all public universities and apply as intended in the MTM CAP.

If 17/7 alignment in range of credits and course articulation for AP/IB exam scores is not possible, the MTM CAP faculty subcommittee will determine whether the differences constitute acceptable and warranted variance within the MTM CAP. If so, the subcommittee will communicate about the variance to the Transfer Council upon submission of the MTM CAP. All participating institutions must adhere to the MTM CAP when accepting credits.

6. Please note that each Oregon public university has differing policies on institutionally administered exams (sometimes called Challenge Exams) and students should contact the admissions counselor or intake advisor at the university students intend to transfer to for more information.

7. Students should consult with advisors at their community college and receiving university if they have additional questions.

Part 3: Institutional Obligations

First, Oregon public universities and community colleges, will follow OAR 715-025-0055 to modify a MTM CAP. The OAR reads:

MODIFICATION OF MAJOR TRANSFER MAP CURRICULUM ARTICULATION POLICY

(1) An institution considering a course or curriculum change, including the creation of a new academic program, that impacts or may be impacted by an adopted CAP, shall notify the Transfer Council and Commission of the proposed course or curriculum change prior to the implementation of such change.

(2) If the change proposed as provided in section (1) of this rule is the creation of a new program, the Commission shall determine whether the program is subject to the requirements of an existing CAP.

(3) Pursuant to the annual review as provided in OAR 715-025-0050, or upon notification from an institution as provided in section (1) of this rule, the Council shall determine if modification to the CAP is required.

(4) The Council shall appoint a subcommittee for the purpose of considering any modifications and making recommendations for modifying the CAP to the Commission.

(5) Any modifications to a CAP shall be made in accordance to the processes and requirements established in OAR 715-025-0020(2) to (4) and OAR 715-025-0030(2) and (3).

(6) An institution shall not implement any modification to a course or curriculum that would have the effect of causing the institution to be out of compliance with obligations under a CAP unless a modification is approved through the process established in this rule, or the institution receives an exemption as provided in OAR 715-025-0060.

Second, participating institutions will continue to work toward maximizing course alignment as much as possible with the goal of awarding direct equivalencies for all MTM courses, even when a transferring student has not completed the entire MTM CAP.

Required Documentation for complete recommendation to Transfer Council

Each MTM CAP must complete the following list of documents in order to comply with statute, rule, Transfer Council process, HECC policy and student communication best practices.

- 1) MTM Course Development Template (subcommittee completes), including justification statement for the variance
- 2) MTM Crosswalk (Participating OPU's complete)
- 3) Advanced Placement and International Baccalaureate Worksheet (subcommittee completes)
- 4) Program Learning Outcome Writing Instructions for Associate Transfer Degrees (participating CCs complete)
- 5) Student Facing MTM course template (participating CCs complete)
- 6) If applicable: A memo from Chief Academic Officers identifying curriculum changes needed to align with the MTM CAP.

**Major Transfer Map: Statewide Articulation Agreement
Participants to the Agreement**

On May 16, 2024 and by a unanimous vote of 11 members of the Transfer Council recommended this MTM CAP.

Part 5: Major Transfer Map Faculty Subcommittee Participants

Co-chairs:

Mark Jones, Co-chair, Portland State University
Pam Morse, Co-chair, Columbia Gorge Community College

Subcommittee members:

Ken Swartwout, Central Oregon CC	Maggie Vanderberg, SOU
Jen Miller, Clackamas CC	Kathleen Freeman, UO
Andrew Scholer, Chemeketa CC	Becka Morgan, WOU
Vincent Yip, Umpqua CC	Nick Insalata, Portland CC
Tim Harrison, EOU	Sisi Virasak, Oregon Coast CC
Phil Howard, OIT	Yong Bakos, OSU

Public University Participants:

Eastern Oregon University
Oregon State University
Portland State University
Southern Oregon University
University of Oregon
Western Oregon University

Community Colleges Participants:

Blue Mountain Community College	Oregon Coast Community College
Central Oregon Community College	Portland Community College
Chemeketa Community College	Rogue Community College
Clackamas Community College	Southwestern Oregon Community College
Lane Community College	Tillamook Bay Community College
Mt. Hood Community College	Umpqua Community College

Higher Education Coordinating Commission Staff:

Erin Weeks-Earp	Office of Academic Policy & Authorization
Brittany Miles	Office of Community College & Workforce Development



Part 6: Oregon Transfer Council May 16, 2024

Jose Coll, Co-Chair, WOU
Teresa Rivenes, Co-Chair, Umpqua CC
Alix Gitelman, OSU
David Plotkin, Clackamas CC
Adam Whalen, K12 Officer
Tad Shannon, WOU
 Absent - Alex Sager, PSU
Traci Hodgson, Chemeketa CC
Randi Harris, PSU
Tyler Hayes, Central Oregon CC
 Vacant - HS Student
 Absent - Benji Henslee, K12 teacher
Kate Sullivan, Lane CC
 Absent - Nate Kersey, University Student
 Larry Roper, OSU (non-voting member)
Riley Smith, CC Student



Course Development Template

This Major Transfer Map Curriculum Articulation Policy (MTM CAP) outlines specific course requirements for students at any Oregon community college who plan to transfer to a four-year public university and earn a Bachelor of Science in Computer Science. Students may take classes that fit these categories at any participating Oregon community college and expect all classes to transfer into general education or the major at any Oregon public university. The MTM CAP is intended for students who know they want to transfer and earn a Bachelor of Science in Computer Science, but who are unsure of their intended transfer destination. Students should work with an advisor to ensure they fulfill the requirements of this major transfer map. Students who are certain of both their major and their intended transfer destination should consult an advisor for information on an existing specific articulation agreement or degree map that will prescribe their course requirements.

Students who complete courses that fit the listed Computer Science MTM categories and complete all science series coursework at one school can expect that all of their courses will transfer into general education, major requirements, or electives at any Oregon public university offering a Bachelor of Science (B.S.) in Computer Science. Students who complete all of the listed coursework and have a total of 90 credits can also complete an Associate’s degree. Because completion of the listed coursework or an associate degree is not required, students can transfer to their intended university at any time. Completion of the CTM and the MTM required courses are sufficient to enable transfer at Junior standing within the major. **The course substitutions and recommendations listed below should only be considered by students who are certain of both their intended major and transfer destination.** There is a decision point at the end of the first year of community college studies, at which point a student must decide between transfer to the OSU/PSU/UO cluster or the EOU/SOU/WOU cluster of university degree programs. More about these two pathways is included on the next page.

Note that in order for a student to successfully transfer to an Oregon public university, students must: 1) earn a minimum letter grade in courses in the major (see Table below); 2) take courses in the major for a letter grade—they will not be accepted as “pass/no pass”; and 3) earn a cumulative grade point average of 2.0 (unless otherwise indicated below in Table 3).

Students are strongly encouraged to: 1) seek advising before their first term of college; and 2) seek advising after they have completed the 27-35 credits of the Core Transfer Map (CTM) requirements. Students should also be aware that, if they want to complete an MTM CAP in two years, they should take an average of 45 credits per year, or approximately 15 credits per quarter. Finally, to earn an Associate’s degree, students will need to successfully complete at least 90 credits.

Six of the seven public universities in Oregon offer a Computer Science B.S. degree:

- Eastern Oregon University: (<https://www.eou.edu/computer-science/>)
- Oregon State University: (<https://eecs.oregonstate.edu/undergraduate-programs/computer-science>)
- Portland State University (<https://www.pdx.edu/computer-science/>)
- Southern Oregon University: (<https://sou.edu/academics/computer-science/>)
- University of Oregon: (<https://cs.uoregon.edu/undergraduate-education>)
- Western Oregon University: (<https://wou.edu/academics/computer-science/>)

Justification Statement from Computer Science Subcommittee about the path:

The MTM-CS faculty subcommittee has been asked to provide a statement to justify the fact that our MTM design requires students to commit to one of two pathways (the EOU/SOU/WOU cluster or the OSU/PSU/UO cluster) at the start of their second year. The specific guidance that we have been given for this is as follows:

OAR 715-025-0020 (4): At the time the subcommittee submits a CAP recommendation to the Council, it shall submit a statement of justification for any element of the CAP that requires a student to complete a different course or course sequence depending on the potential enrollment or destination institution of the student. The statement shall:

- (a) Describe efforts taken by the subcommittee and institutions to establish curriculum alignment to the greatest extent possible, including but not limited to any efforts taken to align learning outcomes, credit loads, lower-division requirements, and prerequisite requirements for upper-division coursework between institutions; and
- (b) Provide information pertaining to how any differences in courses or course sequences present in the CAP is of benefit to such students; and
- (c) Contain any further information the subcommittee determines is informative.

In response to (a), for many years prior to the introduction of the MTM, the Computer Science programs at each Oregon Public University evolved in different ways to meet the diverse needs of their students, local industry partners, community college partners, and other stakeholders. Each program provides its students with effective pathways to rewarding careers in Computer Science, but there are also fundamental differences in the ways that each program accomplishes this. The original committee that developed the MTM for Computer Science explored many options but determined that there was no way to serve all of these programs with a single MTM curriculum. For example, an MTM design that included all of the math, science, and computer science requirements that were needed by larger programs would be harder for community colleges to support, and would impose unnecessary requirements and barriers to success for students who were targeting the smaller programs where those courses were not needed. Conversely, a reduced set of requirements in the MTM would not provide students with the foundations needed to complete a four year degree at one of the larger programs where extra preparation is needed in the lower division to provide access to a broader range of advanced electives and research opportunities, and to satisfy requirements for professional accreditation through ABET, the Accreditation Board for Engineering and Technology.

ABET accreditation is particularly important for Computer Science departments that are based in engineering schools where there is a strong expectation for programs to adhere to established

ABET criteria and curriculum requirements (see <https://www.abet.org/accreditation/accreditation-criteria/>). These requirements, however, are overly constraining for departments in non-engineering schools that have developed their programs in ways that are more appropriate to their liberal arts homes.

For all the above reasons, it was clear that any MTM for Computer Science would need to allow for some variation depending on the student's choice of destination institution. The key challenge therefore was to find a design that keeps variations to a minimum, and that provides a clear structure that is easy for students to understand and follow.

The solution that the committee developed was to begin students with a common curriculum in their first year of the MTM degree, but then to offer a choice between one of just two paths in the second year, based on the transfer target. While these two paths have some amount of overlap, there are also significant differences because one includes additional (discrete) math, lab science, and computer science (system programming and architecture) requirements. The committee also recognized the importance of including a path with reduced requirements in math and science, noting that uniform adoption of such requirements would disproportionately impact students from communities that are underrepresented in Computer Science.

The two paths are identified as the "EOU/SOU/WOU cluster" and the "PSU/OSU/UO cluster". The committee considered many other choices of descriptive labels to distinguish between these two paths (e.g., regional/research, smaller/larger, etc.) but concluded that each of the options considered was imprecise and risked erasing or trivializing the nuanced characteristics of and distinctions between programs. Instead, the committee concluded that a naming scheme based on university names was more objective and more transparent to students.

The design of the MTM for Computer Science benefited considerably from prior work by the Oregon Council of Computer Chairs (OCCC, <https://occcwiki.org/>), which is a group dedicated to the promotion and coordination of computing curriculum among the public community colleges and universities in Oregon. OCCC has a long history dating back to at least 1997 and includes representatives from all of the public universities and almost all of the community colleges in the state. Prior to the development of the MTM, OCCC had already done significant work to establish common course outcomes for the core classes in Oregon public higher education CS programs (in particular, this includes CS 160, CS 161, CS 162, and CS 260; see https://occcwiki.org/courses/cs_outcomes.html). These courses were all adopted as part of the MTM curriculum, with the understanding that all participants would continue to follow the OCCC standards for course content and learning outcomes.

One area where there was no prior OCCC curriculum standard was in the area of low-level computing. Some public universities included required courses in this area, but there was no standardization between programs. Other universities did not have any requirement for a course in this area. To provide some uniformity, the MTM faculty subcommittee created a working group, including representatives from both community colleges and public universities, that worked over a period of several months to develop a new course, now known as "CS 205 System Programming and Architecture". The design of CS 205 was crafted so that it would meet the needs of any of the universities with a degree requirement in this area, but also be acceptable for elective credit at those universities that do not require such a course. The process was successful and has led to the formal approval of CS 205 at institutions across the state, all following the same course design. OCCC has accepted ongoing responsibility for maintaining the CS 205 course, including the

associated set of learning outcomes that are expected to be used for any offering of the course at any participating institution.

Additional program changes were developed and moved through the appropriate curriculum oversight processes at individual participating universities to ensure that each one would satisfy the requirements of the MTM. At PSU, for example, this required the elimination of a lower division course (CS 202), that could not be included in the MTM because there was no comparable course at other universities, as well the development and introduction of a new upper division course (CS 302) that was designed to help prepare students for success in the upper division. In addition, the introduction of the MTM also required a substantial overhaul of the PSU process for admitting students to the upper division. The previous process was incompatible with the MTM because it required students to complete a formal application in the Spring term of their second year, and because it used a selective process (to manage capacity) that did not guarantee admission. To address this, PSU developed a new “opt-in” process, designed to be completed instead during the first term of the student’s third year (their first term at PSU after completing an MTM (AST-CS) degree) and to guarantee admission for any student who has completed a specific set of lower-division required courses, all of which are included as part of the MTM. As a second example, at OSU, multiple curriculum changes were required to expand the writing requirement to include WR 122; to allow lower-division coursework to be applied to upper-division requirements; and to adjust baccalaureate standards to meet the science requirement of other universities. In similar ways, all of the other participating universities made the changes that were necessary to their programs to ensure that the requirements for the MTM could be satisfied.

In response to (b), the resulting MTM for Computer Science offers significant benefits to students by allowing them to transfer all of the credits that they have earned towards an MTM degree at their community college towards the completion of a four year degree in Computer Science with junior standing in the major at the time of the transfer. The design of the MTM for Computer Science does require students to choose between one of two pathways, but it does not require students to commit to a particular transfer target cluster until the start of their second year. This means that students have a year at the start of their program to explore different transfer options while building knowledge and skills in Computer Science, math, and laboratory science that provides a strong foundation for both pathways. This flexibility has been achieved without compromising the individual strengths and distinctive characteristics of the degree programs at each of our participating universities.

In response to (c), we note that Oregon Institute of Technology does not currently participate in the MTM for Computer Science because it does not currently offer a major in this specific area. However, the development and evolution of the MTM has consistently benefitted from participation from Oregon Tech faculty leadership in anticipation of the possibility that Oregon Tech may choose to add an MTM-compatible BS in Computer Science at some point in the future.

The course development table follows on the next two pages.

CORE TRANSFER REQUIREMENTS – MTM-CS			
<i>See an advisor for recommended courses before your first term</i>			
<i>Writing</i>			
1 course	WR121Z		4
<i>Arts & Letters</i>			
1 st course:	Select from AAOT course list		3-4
2 nd course:	Select from AAOT course list		3-4
<i>Social Sciences</i>			
1 st course	Select from AAOT course list		3-4
2 nd course	Select from AAOT course list		3-4
<i>Natural Sciences</i>			
2 courses	Select two lab science courses; this selection should occur after deciding between OSU/PSU/UO and EOU/SOU/WOU clusters <ul style="list-style-type: none"> ● OSU/PSU/UO: the first TWO courses from ONE of the following sequences, together with the associated lab course sections: <ul style="list-style-type: none"> a. PH201, PH202, PH203 (General Physics) b. PH211, PH212, PH213 (General Physics with calculus) c. CH221, CH222, CH223 (Chemistry) d. CH221, BI211, BI212 (Chemistry and Biology) e. BI211, BI212, BI213 (Biology) f. G201, G202, G203 (Geology) ● EOU/SOU/WOU: any two lab science courses 		8-10
<i>Mathematics</i>			
2 courses	Select from MTH 111Z, MTH 112Z, MTH 251, MTH 252		8
<i>At least 1 Core Transfer Requirement course must also satisfy Cultural Literacy outcomes for AAOT</i>			
Core Transfer Requirement Total			31-38
ADDITIONAL GENERAL EDUCATION COURSES			
<i>See an advisor for recommended courses</i>			
	EOU/SOU/WOU cluster		OSU/PSU/UO cluster
<i>Writing</i>	WR122Z	4	WR227Z 4
<i>Oral Communication</i>	COMM111Z	4	COMM111Z 4
Major specific COMPUTER SCIENCE COURSES			
<i>See an advisor for recommended courses</i>			
<i>Computer Science</i>	CS160, CS161, CS162, CS260	16	CS160, CS161, CS162, CS260 CS205 16
<i>Mathematics</i>	MTH251/252 (if not completed as part of the Core Transfer Map)	8	MTH251/252 (if not completed as part of the Core Transfer Map) 8
<i>Discrete Math</i>	-	-	MTH231/232 OR CS250/251 8
<i>Natural Sciences</i>	-	-	Complete sequence done under CTM (the third class listed for each sequence) 4-5
<i>Additional MTM Courses Total</i>		30-32	46-49

<i>[Major specific course] Total</i>				
<i>Electives</i>	Elective courses to 90 credits	20-29	Elective courses to 90 credits	3-13
<i>MTM Total</i>				<i>90</i>

Minimum letter grade and/or GPA requirements – for student advising

If the cell is blank, you must achieve a minimum letter grade of C- in that course.

Minimum Letter Grade and/or GPA requirements							
Category	Course	EOU/SOU/WOU cluster			OSU/PSU/UO cluster		
		EO U	SOU	WOU	OSU	PSU	UO
CTM	WR 121Z				C		
CTM	A&L 1						
CTM	A&L 2						
CTM	SocSci 1						
CTM	SocSci 2						
CTM	NatSci 1				C		
CTM	NatSci 2				C		
CTM	MTH 111Z						
CTM	MTH 112Z						
MTM	WR 122Z						
MTM	WR227Z				C		
MTM	COMM 111Z				C		
MTM	CS 160			C	C		
MTM	CS 161		B	C	C		B-
MTM	CS 162		C	C	C	C	B-
MTM	CS 260			C	C	C	B-
MTM	MTH 112Z						
MTM	MTH 251			C	C		
MTM	MTH 252			C	C		
MTM	CS 205			C	C	C	
MTM	MTH 231 or CS250			C	C	C	B-
MTM	MTH 232 or CS251			C	C	C	B-
MTM	NatSci 3				C		
	GPA	2.25	2.0	2.0	2.0	2.0	2.0

Recommended course schedule

Year 1

<i>Q1</i>		<i>Q2</i>		<i>Q3</i>	
Class	Credits	Class	Credits	Class	Credits
CS 160	4	CS 161	4	CS 162	4
MTH 111Z	4	MTH 112Z	4	MTH 251	4
WR 121Z	3-4	COM111Z	3-4	A&L 2	3-4
A&L 1	3-4	SS 1	3-4	SS 2	3-4
	14-16		14-16		14-16

Year 2 - OSU/PSU/UO cluster

<i>Q1</i>		<i>Q2</i>		<i>Q3</i>	
Class	Credits	Class	Credits	Class	Credits
CS 260	4	CS 205	4	WR227Z	3-4
MTH 252	4	MTH 231 or CS 250	4	MTH 232 or CS 251	4
Science 1	4-5	Science 2	4-5	Science 3	4-5
elective	3-4	elective	3-4	elective	3-4
	15-17		15-17		14-17

Year 2 - EOU/SOU/WOU cluster

<i>Q1</i>		<i>Q2</i>		<i>Q3</i>	
Class	Credits	Class	Credits	Class	Credits
CS 260	4	WR122Z	3-4	elective	3-4
MTH 252	4	elective	3-4	elective	3-4
Science 1	4-5	Science 2	4-5	elective	3-4
elective	3-4	elective	3-4	elective	3-4
	15-17		13-17		12-16

Appendix A. University-specific flexibility with respect to MTM required courses

Some of the universities have flexibility in the courses listed in the CTM and the MTM for their cluster. That flexibility is documented in the following table. The way to use this table is as follows: if a student has decided to transfer to a particular university, the student may take advantage of the listed flexibility in the remaining courses in the MTM degree. Note that taking advantage of that flexibility is likely to cause a student’s course of study to no longer qualify for junior standing at the other universities in that cluster.

Table A.1

Course	EOU	SOU	WOU
WR 122Z		May substitute WR227Z	
COMM 111Z			
CS 160	Not required	Not required if prerequisite to CS 161 otherwise met	
CS 161			
CS 162			
CS 260		May substitute CS258 Fall term of Junior year	
MTH 112			Not required if student does MTH 231-232
MTH 251			Accepts MTH 231
MTH 252			Accepts MTH 232
NatSci 1			
NatSci 2			

Table A.2

Course	OSU	PSU	UO
WR227Z			
COMM 111Z			
CS 160		Not required	VERY STRONGLY ENCOURAGED, but not required
CS 161			
CS 162			
CS 260			
MTH 112			
MTH 251			
MTH 252			
CS 205			VERY STRONGLY ENCOURAGED, but not required
MTH 231 or CS250			
MTH 232 or CS251			
NatSci 1			GEOL 201, 202, 203 are also accepted
NatSci 2			
NatSci 3			

Appendix B. University-specific recommended elective courses

Some of the universities have recommendations for elective courses that appear in the schedule for their cluster; following those recommendations will give the student more choice once they transfer. Those recommendations are documented in the following table. The way to use this table is as follows: if a student has decided to transfer to a particular university, the student should attempt to follow those recommendations for any remaining electives in their MTM-CS studies. Note that there is no guarantee that following the recommendations for one university in a cluster will also serve the same purpose in another university in that cluster.

Table B.1

Elective	EOU	SOU	WOU
Seven (7) Electives	<ul style="list-style-type: none"> ● C++ programming course ● A&L 3 in a 2nd or 3rd disc ● SS 3 in a 2nd or 3rd disc ● A general elective that fulfills “Difference, Power & Discrimination” Baccalaureate Core requirement 	<ul style="list-style-type: none"> ● 200-level database ● 200-level computer org/architecture ● CS 250 OR MTH 231 ● 200-level web design ● 200-level networking ● 200-level OO programming course ● 200-level C/C++ course if neither used in 161/162 	<ul style="list-style-type: none"> ● CS 205 (Comp Arch)

Table B.2

Elective	OSU	PSU	UO
Three (3) electives	<ul style="list-style-type: none"> ● WR 122Z (min grade C) ● A general elective that fulfills “Difference, Power & Discrimination” Baccalaureate Core requirement ● a general elective that is equivalent to HHS 231, Physical Activity or PAC equivalent ● CS 290 (if offered at your college) 	<ul style="list-style-type: none"> ● MTH 253 ● MTH 261 (linear alg) ● Additional ASOT-approved A&L or ASOT-approved SS elective 	<ul style="list-style-type: none"> ● At least 7 credits of ASOT-approved A&L courses ● At least 7 credits of ASOT-approved SS courses

Core Transfer Map	CC Credits	EOU	OSU	PSU	SOU	UO	WOU
Writing-WR 121Z	4	WR 121Z (4 credits) Transfers as WR 121Z in Gateway group.	1 of 1 Writing I course (4 credits)	1 of 2 University Writing courses (4 credits) Meets general education requirement for WR 121Z	Transfers as WR 121Z (4 credits in the Purposeful Learning Capacity - of 12 required)	WR 121Z (4 credits) 1 of 2 required Writing courses	1 of 2 Foundations: Writing courses
Arts & Letters: 2 courses	6-8	2 Aesthetics and Humanities courses (6-8 credits) Transfers as 6-8 credits in Aesthetics and Humanities group or Artistic Process and Creation group	1 of 1 Literature/Arts course (3-4 credits) 1 of 1 Western Culture course (3-4 credits)	6-8 Credits of Arts & Letters or Social Science courses	3-4 credits in Communication & Express Capacity + 3-4 credits of LD	6-8 of 15 credits of Core Education Arts & Letters group	2 of 2 Exploring Knowledge: Literary and Aesthetic Perspectives courses
Social Science: 2 courses	6-8	2 Social Science courses (6-8 credits) Transfers as 6-8 credits in Social Sciences group	1 of 1 Cultural Diversity course (3-4 credits) 1 of 1 Social Processes and Institutions course (3-4 credits)	6-8 Credits of Arts & Letters or Social Science courses	3-4 credits in Creativity & Innovation Capacity + 3-4 of credits LD	6-8 of 15 credits of Core Education Social Science group	2 of 2 Exploring Knowledge: Social, Historic, and Civic Perspectives courses
Natural Science: 2 of 3 courses in 2XX sequence	8-10	Transfers as 8-10 credits in Natural, Mathematical & Informational Sciences group	2 of 3 XX Science Courses (8-10 credits)	8-10 credits of 15 credit Lab Science requirement	3-4 credits in Inquiry & Analysis Capacity + 3-4 credits of Science required for CS Major	8-10 of 15 credits of Core Education Science group & 2 of 3 courses required by major additional science sequence	2 of 2 Exploring Knowledge: Scientific Perspectives courses & 2 of 3 required by major in BI 211-213 sequence
Math: 2 Courses (select from MTH 111Z, MTH 112Z, MTH 251, MTH 252)	4-5	Transfers as MATH 111Z, MATH 112Z, MATH 251, MATH 252, respectively.	Transfers as MTH 111Z, MTH 112Z, MTH 251, MTH 252, respectively. One course satisfies Math requirements for Baccalaureate Core; the other as a general elective.	Transfers as MTH 111Z, MTH 112Z, MTH 251, MTH 252, respectively.	Transfers as MATH 111Z, MATH 112Z, MATH 251, MATH 252, respectively Math 111Z, Math 112Z or Math 251 will fulfill 3-4 credits in Numerical Literacy. Math 251 and 252 are required for the CS major.	2 of 3 BS Math/Computing classes Can also use MTH 231 or MTH 251 or CIS 161 to satisfy this requirement Transfers as MTH 111Z, MTH 112Z, MTH 251, MTH 252, respectively	1 of 1 Foundations: Math course Can also use MTH 231 or 251 to satisfy this req Transfers as MTH 111Z, MTH 112Z, MTH 251, MTH 252, respectively
1 course must also satisfy AAOT Cultural Literacy Requirement		Transfers as Difference, Power and Discrimination group course.	N/A	N/A	3-4 credits in Equity, Diversity, & Inclusion Capacity	1 of 2 Core Education Cultural Literacy courses	N/A

<i>Courses must total minimum of 30 credits, can be filled by an elective credit if needed</i>		Additional credits taken to reach 30 in the Foundational Curriculum will be applied to the general education category associated with them.	Additional credits taken to reach 30 will be applied to the appropriate Gen Ed requirements.	Include additional Arts & Letters or Social Science Electives as necessary to ensure (at least) 24 credits of general education (including WR 121 and COMM 111Z)	WR 122Z transfers as 4 credits of 12 required in Purposeful Learning WR 123, WR 227, COMM 125, COMM 210, or COMM 225 transfers as 4 credits of 12 required in Purposeful Learning	Additional credits taken to reach 30 will be applied to the appropriate General Education requirement.	Additional credits taken to reach 30 will be applied to the appropriate General Education requirement.
Major and Elective Courses	CC Credits	EOU	OSU	PSU	SOU	UO	WOU
COMM 111Z	4	Transfers as COM 111Z in Gateway group	Transfers as COMM 111Z	Meets general education requirement for COMM 111Z.	Transfers as COMM 210	Transfers as Core Education Arts & Letters group	4 credits of Foundations: Communication and Language
CS 160	4	Transfers as CS Lower Division Elective.	Transfers as CS 160	Elective credits (transfers as CS LD)	Transfers as CS 200	Transfers as CIS 1xxT	Transfers as CS 160
CS 161	4	Transfers as CS 161	Transfers as CS 161	Transfers as CS 161	Transfers as CS 256	Transfers as CIS 210	Transfers as CS 161
CS 162	4	Transfers as CS 162	Transfers as CS 162	Transfers as CS 162	Transfers as CS 257	Transfers as CIS 211	Transfers as CS 162
CS 260	4	Transfers as CS 260	Transfers as CS 261	Transfers as CS 163	Transfers as CS 258	Transfers as CIS 212	Transfers as CS 260
MTH 251	4	Transfers as Math 251	Transfers as MTH 251	Transfers as MTH 251	Transfers as MTH 251	Transfers as MATH 251	Transfers as MTH 251
MTH 252	4	Transfers as Math 252	Transfers as MTH 252	Transfers as MTH 252	Transfers as MTH 252	Transfers as MATH 252	Transfers as MTH 252

Writing- 1 course	4	Take WR 122Z: Transfers as WR 122Z in Gateway GenEd.	Take WR 227Z - Transfers as WR 327. Satisfies both major requirements and writing requirements for Baccalaureate Core.	Take WR 227Z - Meets major requirement for WR 227Z	Take WR 122Z Transfers as WR 122Z	Take WR 227Z - 2 of 2 required Writing courses AND substitutes for WR 320 major requirement	Take WR 122Z - Transfers as WR 122Z WR 227Z - Transfers as elective WR 300
CS 205	4		Transfers as CS 271	Transfers as CS 205	Substitutes for CS 314	Substitutes for CS 314	Transfers as CS 271
Discrete Math: MTH 231-232 or CS 250-251	8		Transfers as MTH 231, 232	Meets major requirement for CS 250 and CS 251	CS 250 transfers as CS 250	Transfers as MATH 231-232; B.S. or Core Education Science group; CS 250-251 transfers as CIS 2xxT and substitutes for MATH 231-232 for major	Transfers as MTH 231-232 or satisfied by MTH 251-252
Natural Science: Complete sequence started under CTM	4-5		Transfers as PH 213, CH 223 or BIO 213	Completes 15 credit Lab Science requirement for major		Complete science sequence started under CTM PHYS 213, BIO 213, or CHEM 223 12-15 of 15 credits of Core Education Science group & 3 of 3 courses required by major additional science sequence	
Electives		Additional elective courses to 90 credits.	Elective Courses to get to 90 credits; Will apply to gen ed, or major requirements, or as electives. Recommended: • WR 122Z – transfers as WR 222. (CS dept. will accept WR 122 at PCC which transfers as WR LDT) • A general elective that fulfills “Difference, Power & Discrimination” Baccalaureate Core requirement • a general elective that is equivalent to HHS 231, Physical Activity or PAC equivalent • CS 290 (if offered at your college)	Additional elective courses to 90 credits. Recommended: Additional Arts & Letters or Social Science Electives as necessary to ensure (at least) 24 credits of general education (including WR 121 and COMM 111Z)	Additional elective courses to 90 credits.	Additional elective courses to 90 credits.	Additional elective courses to 90 credits.
Completed Major Transfer Map	CC Credits	EOU	OSU	PSU	SOU	UO	WOU

Credit Total	90	90	90	90	90	90	90
Remaining Degree Requirements		EOU	OSU	PSU	SOU	UO	WOU
General Education	0-14 credits in Aesthetics and Humanities (AEH) in two different disciplines	Difference, Power & Discrimination (3-4)	Junior Cluster (Univ. Studies) (12 credits)	12 Upper Division credits required: 4 in EDI, and 4 in each of two other capacities (Communication & Expression, Creativity & Innovation, Inquiry & Analysis, Numeral Literacy).	3-6 credits of Core Ed A&L courses, possibly including one multicultural course	3-4 credits of Foundations: Critical Thinking	
	0-14 credits in Artistic Process and Creation (APC) in two different disciplines	Fitness (3)	Additional Arts & Letters or Social Science Elective (3 credits)		7-9 credits of Core Ed Social Science courses, possibly including one multicultural course	4 credits of Foundations: Health Promotion	
	0-14 credits in Natural, Mathematical & Informational Sciences (SMI) in two different disciplines, including at least one physical/biological science.					*** First Year seminars requirements waived	
	0-14 credits in Social Sciences (SSC) in two different disciplines					3-4 credits of Integrating Knowledge: Science, Technology, Society (upper-division)	
	0-14 credits in Natural, Mathematical & Informational Sciences (SMI) in two different disciplines, including at least one physical/biological science.					3-4 credits of Integrating Knowledge: Science, Technology, Society (upper-division)	

General Education Credits		30	9-11	15	12	10-15	13-16
Major Requirements		CS 221 (4 credits) CS 311 (3 credits) CS 318 (4 credits) CS 330 (4 credits) CS 331 (3 credits) CS 360 (4 credits) CS 361 (4 credits) CS 362 (3 credits) CS 401 (1-6 credits) CS 407 (2 credits) MATH 231 (4 credits) MATH 341 (4 credits)	CS 361 (4 credits) CS 290 (4 credits) CS 362 (4 credits) CS 325 (4 credits) CS 372(4 credits) CS 344 (4 credits) CS 444 (4 credits) CS 381 (4 credits) CS 340 (4 credits) CS 461 (3 credits) CS 462 (3 credits) CS 463 (2 credits) CS 352 (4 credits) "CS 391 (3 credits) – Also fulfills Synthesis Baccalaureate Requirement " ST 314 (3 credits) WR 214/222 (3 credits)	CS 302 (4 credits) CS 305 (2 credits) CS 314 (4 credits) CS 333 (4 credits) CS 350 (4 credits) CS 358 (4 credits) CS 469 (3 credits) CS 470 (3 credits) CS 486 (4 credits) ECE 341 (4 credits)	CS 210 (4 credits) CS 250 (4 credits) CS 310 (4 credits) CS 314 (4 credits) CS 336 (4 credits) CS 360 (4 credits) CS 357 (4 credits) CS 411 (4 credits) CS 418 (4 credits) CS 452 (4 credits) CS 459 (4 credits) CS 469 (4 credits) CS 470 (4 credits) CS 471 (4 credits)	CIS 313 (4 credits) CIS 314 (4 credits) CIS 315 (4 credits) CIS 330 (4 credits) CIS 415 (4 credits) CIS 422 (4 credits) CIS 425 (4 credits) MATH choice group (8 credits)	IS 278 (4 credits) CS 360 (4 credits) CS 361 (4 credits) CS 363 (4 credits) CS 364 (4 credits) CS 365 (4 credits) CS 366(4 credits) CS 367 (4 credits) CS 460 (4 credits) CS 461 (4 credits) CS 462 (4 credits) CS 463 (4 credits)
Major Electives		COM 252	2 courses of CS Restricted Electives (6- 8	Approved CS Upper Division Electives, including at least one "Programming Intensive" course and at least one "Security elective" (6 courses/24 credits)	Complete 20 credits of computer science electives chosen from upper-division computer science courses, not including CS 310, CS 346, CS 401, CS 405, and CS 407	CIS upper-division electives (20 credits)	(2 courses) 400 level electives (8 credits)
		CS Upper Division electives (16 credits)	Approved Applied Plan Electives – approved by CS Head Advisor (16 credits)		A maximum of 4 credits of CS 409 - Practicum may be counted toward upper-division CS elective credits		
Major Elective Credits		16	22-24	24	20	20	8
Total Major Requirements Credits		40-45	57	38	56	36	44
Additional Electives				Additional Math Elective: MTH 253 or MTH 261 (4 credits)	Complete 20 credits of computer science electives chosen from upper-division computer science courses, not including CS 401, CS 405, and CS 407. A maximum of 4 credits of CS 409 - Practicum may be counted toward upper-division CS	MATH upper division elective (4 credits)	22 - 25 additional elective credits

					elective credits.		
				Approved Math Electives (7 credits)		up to 10 credits, including upper-division credits to at least 62 total	
Additional Electives Credits		0	0	15	0	14	22-25
Remaining Degree Requirements Credits Total		90	90	90	90	90	90
		180	180	180	180	180	180

Advanced Placement and International Baccalaureate Worksheet for MTM-CS
Table 1. Crosswalk of AP articulated Higher Ed Courses and MTM Requirements:

AP Exam Name	Score	Credit Range	Course Articulations	Computer Science MTM Major Requirements	Acceptable level of alignment	Not an acceptable level of alignment
AP Computer Science A	3	3-4	CAS 133 (4); Computer & Info Sci (1 course) (4); CIS 120 (4); CS 100T (4); CS 160 (3); CS 160 (4); CS 161 (4); CS 1xx (4); CS LD (4); CS 256 (4); CST Elective (4); Elective(4)	CS 160 or CS 161 (varies between institutions)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	4	4-8	CAS 133 (4); CIS 120 (4); CIS 210, 211 (8); CS 160 (4); CS 161 (4); CS 256, 257 (8); CST Elective (4); Elective (4)		<input type="checkbox"/>	<input checked="" type="checkbox"/>
	5	4-8	CAS 133(4); CIS 120(4); CIS 210, 211(8); CS 160(4); CS 161(4); CS 161+CS 162(8); CS 256, 257(8); CST Elective(4); Elective(4)		<input type="checkbox"/>	<input checked="" type="checkbox"/>
AP Computer Science Principles	3	3-4	CAS 133 (4); CIS 206 (4); Computer & Info Sci (1 course) (4); CS 100T (4); CS 160 (3); CS 160(4); CS LD (4); CS Elective (4); CST Elective (3); meets comp prof req; LD Elective (4)	CS 160	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	4 or 5	3-4	CAS 133 (4); CIS 206 (4); Computer & Info Sci (1 course) (4); CS 160 (3); CS 160 (4); CS LD (4); CS Elective (4); CST Elective (3); Elective (4)		<input type="checkbox"/>	<input checked="" type="checkbox"/>

There is significant misalignment exhibited in table for AP articulated courses. For “AP Computer Science”, a student may receive credit for CS 160 or for CS 161 (a distinct MTM requirement) or elective credit (not satisfying an MTM requirement), depending on the school in question. The number of credits awarded for a score of 4 or 5 may range from 4 to 8, again depending on the school. Similar misalignment occurs for “AP Computer Science Principles”, except that the choice is between articulating with CS 160 or not, and the variation in the number of credits is smaller.

Table 2. Crosswalk of IB articulated Higher Ed. Courses and MTM Requirements

IB course name	Score	Credit Range	Course Articulations	Computer Science MTM	Acceptable level of alignment	Not an acceptable
				Major Requirements		level of alignment
Computer Science (standard)	4	4	CS LD (4); CS 160 (4); CS 161 (4); CS 1xx Elective (4); Elective (4); TBA	CS 160 or CS 161	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	5 and above	4	CS LD (4); CS 122 (4); CS 160 (4); CS 161 (4); CS 1xx Elective (4); CSET LDT (4); TBA	CS 160 or CS 161	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Computer Science (high)	4	8	CIS 210+CIS211 (8); CS LD(8); CS 160+CS LDT (8); CS 160+CS 161 (8); CS 161+CS 162 (8); CS 1xx Elective (8); Elective (8); TBA	CS 160 or CS 161	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	5 and above	4?-8	CIS 210+CIS 211 (8); CS LD(8); CS 122+CS 161 (8); CS 160 (4?); CS 160+CS LD (8); CS 161+CS 162 (8); CS 1xx (6); CS 1xx Elective (8); CSET LDT (8); Elective (8); TBA	CS 160 or CS 161	<input type="checkbox"/>	<input checked="" type="checkbox"/>

There is significant misalignment exhibited in table for IB articulated courses. For both the standard and high levels of the IB “Computer Science”, a student may receive credit for CS 160 or for CS 161 (a distinct MTM requirement) or elective credit (not satisfying an MTM requirement), depending on the school in question.



Transfer Council: Major Transfer Maps (MTM) **COMPUTER SCIENCE MTM SUBCOMMITTEE**

Program Learning Outcomes (PLO)s:

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.

Template for Student-Facing Documents for the MTM in Computer Science

The following two pages show a template for the required student-facing documents that are required for every participating community college.

It is anticipated that representatives of individual community colleges (not necessarily members of academic departments) may adjust formatting, layout, etc. to match their institution's communication guidelines. The purpose of this template is to provide a starting point with textual content that documents the MTM as accurately as possible.

In terms of content, participating institutions will ultimately provide their own versions of the following elements (most of which are identified by **white text on a gray background** in this template):

1. Institutional logo (top left of first page)
2. Custom block for institutional imagery, contact information, website URL, etc. (left column on first page)
3. Name of community college (edit banner at top of second page)
4. Description of community college program (edit text block at top of second page)
5. Block of text describing recommendations if community college cannot support both paths for Year 2. (Delete for community colleges that do support both.) (Text block on lower left of second page)
6. URL for community college program. (link in text box near the bottom of the second page.)

Major Transfer Maps Computer Science

Associate of Science Transfer degree in
Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them towards a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them towards a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.

Replace with
Institution Logo

Right click and choose
"change picture"

Planning to transfer? Use this guide to plan your computer science path.

Use this space for institutional imagery, contact information, website URL, etc.

Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)

CCNAME Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, CCNAME Community College can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

In collaboration with your community college advisor, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

Year 1

<u>Computer Science</u>	Complete <u>CS 160</u> , <u>CS 161</u> , and <u>CS 162</u>	12
<u>Writing</u>	Complete <u>WR 121Z</u>	4
<u>Communications</u>	Complete <u>COMM 111Z</u>	4
<u>Math</u>	Complete <u>MTH 111Z</u> and/or <u>MTH 112Z</u> (if required by math placement) Complete <u>MTH 251Z</u>	5-13
<u>Social Sciences & Arts and Letters</u>	Complete two Social Science and two Arts & Letters Courses One of these must satisfy the Cultural Literacy requirement	16

Year 2 – Select Path Based on Transfer Target

EOU / SOU / WOU			PSU / OSU / UO		
<u>Computer Science</u>	Complete <u>CS 260</u>	4	<u>Computer Science</u>	Complete <u>CS 205</u> and <u>CS 260</u>	8
<u>Writing</u>	Complete <u>WR 122Z</u>	4	<u>Writing</u>	Complete <u>WR 227Z</u>	4
<u>Math</u>	Complete <u>MTH 252Z</u>	5	<u>Math</u>	Complete <u>MTH 252Z</u> Complete <u>MTH 231/232</u> or <u>CS 250/251</u>	13
<u>Science</u>	Complete any two lab science courses	8-10	<u>Science</u>	Complete a science sequence (with labs): • <u>BI 211-213</u> • <u>CH 211, BI 211-212</u> • <u>CH 211-213</u> • <u>GEO 201-203</u> • <u>PH 201-203</u> • <u>PH 211-213</u>	12-15
<u>Electives</u>	Complete electives* to reach 90 credits	14+	<u>Electives</u>	Complete electives* to reach 90 credits	0+

This space could be used to describe recommendations if the institution does not/cannot currently offer all of the courses required for one or both of the two second year paths.

Q: do we need to identify CTM courses?

* Electives must be courses numbered 100 or above. Check with an advisor for university-specific recommended electives.

Contact an advisor, or visit ccname.edu/computer-science/path-to-MTM-information to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Major Transfer Maps Computer Science



Associate of Science Transfer degree in Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them toward a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them toward a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.

Planning to transfer? Use this guide to plan your **computer science** courses.



Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)

Blue Mountain Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, Blue Mountain Community College can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

The following is a suggested course of study for students interested in pursuing a bachelor's degree in computer science. In collaboration with your community college advisor, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

SUBJECT	COURSES	CREDITS
General Education/Foundational		
<u>Communication and Writing</u>	Complete COMM 111Z , WR 121 , and either WR 122 (EOU/SOU/WOU) or WR 227 (OSU/PSU/UO).	9 – 12
<u>General Education</u>	Complete three courses from the AAOT Arts & Letters course list.	9 – 12
	Complete four courses from the AAOT Social Sciences course list.	18-24
	Complete one or more health/wellness courses (HE 115, HE 250, HE 252, HE 253, HPE23, PE 131, PE 185, PE 290, PE 291, PE 292, PE 293) totaling at least three credits At least one of these must also satisfy AAOT cultural literacy outcomes.	3
<u>Mathematics</u>	Complete MTH 251Z and MTH 252Z . Recommended preparation, if needed: MTH 111Z and MTH 112Z .	8 - 16
<u>Science</u>	Complete four science courses, three of which must be a lab science courses from one of the following sequences (OSU/PSU/UO): General Physics (PH 201 , PH 202 , PH 203); Physics with Calculus (PH 211 , PH 212 , PH 213); Chemistry (CH 221 , CH 222 , CH 223); Chemistry and Biology (CH 221 , BI 211 , BI 212); Biology (BI 211 , BI 212 , BI 213);	8 – 15

Computer Science

<u>Computer Science</u>	Complete CS 160 , CS 161 , CS 162 , and CS 260 .	16
<u>Discrete Math</u>	Complete MTH 231/232 or CS 250/251 . (OSU/PSU/UO only) *not required for BMCC degree, but recommended if transferring to listed institutions.	0 - 8

Electives

<u>Electives</u>	Complete 100 or 200 level courses to meet the overall requirement of 90 credits for this degree. Elective courses may be any number of credits. A maximum of 12 credits of Career and Technical Education courses, as designated by BMCC, may be applied to this degree with the exception of BA 104 and BA 105.	3 – 37
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Total Credits: 90

Note: To satisfy Core Transfer Map requirements, complete: WR 121; the two Arts & Letters courses; the two Social Sciences courses; two required lab science courses; and two of the four listed mathematics courses.

Contact an advisor, or visit <https://bluecc.edu/pathways-programs/applied-technology/> to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Major Transfer Maps Computer Science



Associate of Science Transfer degree in
Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them towards a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them towards a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.

Planning to transfer? Use this guide to plan your computer science path.

Learn More:

<https://computerscience.chemeketa.edu/>



Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Chemeketa Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, Chemeketa Community College can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

In collaboration with your community college advisor, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

Year 1

<u>Computer Science</u>	Complete <u>CS 160</u> , <u>CS 161</u> , and <u>CS 162</u>	12
<u>Writing</u>	Complete <u>WR 121Z</u>	4
<u>Communications</u>	Complete <u>COMM 111Z</u>	4
<u>Math</u>	Complete <u>MTH 111Z</u> and/or <u>MTH 112Z</u> (if required by math placement) Complete <u>MTH 251Z</u>	5-13
<u>Social Sciences & Arts and Letters</u>	Complete two Social Science and two Arts & Letters Courses One of these must satisfy the Cultural Literacy requirement	16

Year 2 – Select Path Based on Transfer Target

EOU / SOU / WOU			PSU / OSU / UO		
<u>Computer Science</u>	Complete <u>CS 260</u>	4	<u>Computer Science</u>	Complete <u>CS 205</u> and <u>CS 260</u>	8
<u>Writing</u>	Complete <u>WR 122Z</u>	4	<u>Writing</u>	Complete <u>WR 227Z</u>	4
<u>Math</u>	Complete <u>MTH 252Z</u>	5	<u>Math</u>	Complete <u>MTH 252Z</u> Complete <u>MTH 231/232</u>	13
<u>Science</u>	Complete any two lab science courses	8-10	<u>Science</u>	Complete a science sequence (with labs): <ul style="list-style-type: none"> • <u>BI 211-213</u> • <u>CH 211, BI 211-212</u> • <u>CH 211-213</u> • <u>GEO 201-203</u> • <u>PH 201-203</u> • <u>PH 211-213</u> 	12-15
<u>Electives</u>	Complete electives* to reach 90 credits	14+	<u>Electives</u>	Complete electives* to reach 90 credits	0+

* Electives must be courses numbered 100 or above. Check with an advisor for university-specific recommended electives.

Contact an advisor, or visit <https://computerscience.chemeketa.edu/advising/> to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).



Major Transfer Maps Computer Science

Associate of Science Transfer degree in
Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them towards a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them towards a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.

Planning to transfer? Use this guide to plan your computer science path.

Use this space for institutional imagery, contact information, website URL, etc.

Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Clackamas Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, Clackamas Community College can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

In collaboration with your community college advisor, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

Year 1

<u>Computer Science</u>	Complete <u>CS 160</u> , <u>CS 161</u> , and <u>CS 162</u>	12
<u>Writing</u>	Complete <u>WR 121Z</u>	4
<u>Communications</u>	Complete <u>COMM 111Z</u>	4
<u>Math</u>	Complete <u>MTH 111Z</u> and/or <u>MTH 112Z</u> (if required by math placement) Complete <u>MTH 251Z</u>	5-13
<u>Social Sciences & Arts and Letters</u>	Complete two Social Science and two Arts & Letters Courses One of these must satisfy the Cultural Literacy requirement	16

Year 2 – Select Path Based on Transfer Target

EOU / SOU / WOU			PSU / OSU / UO		
<u>Computer Science</u>	Complete <u>CS 260</u>	4	<u>Computer Science</u>	Complete <u>CS 205</u> and <u>CS 260</u>	8
<u>Writing</u>	Complete <u>WR 122Z</u>	4	<u>Writing</u>	Complete <u>WR 227Z</u>	4
<u>Math</u>	Complete <u>MTH 252Z</u>	5	<u>Math</u>	Complete <u>MTH 252Z</u> Complete <u>CS 250/251</u>	13
<u>Science</u>	Complete any two lab science courses	8-10	<u>Science</u>	Complete a science sequence (with labs): • <u>BI 211-213</u> • <u>CH 211, BI 211-212</u> • <u>CH 211-213</u> • <u>GEO 201-203</u> • <u>PH 201-203</u> • <u>PH 211-213</u>	12-15
<u>Electives</u>	Complete electives* to reach 90 credits	14+	<u>Electives</u>	Complete electives* to reach 90 credits	0+

* Electives must be courses numbered 100 or above. Check with an advisor for university-specific recommended electives.

Contact an advisor, or visit <https://www.clackamas.edu/academics/departments-programs/computer-science-as> to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Major Transfer Maps Computer Science



CENTRAL OREGON
community college

Associate of Science Transfer degree in
Computer Science

Planning to transfer? Use this guide to plan your computer science path.

Use this space for institutional imagery, contact information, website URL, etc.

Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them towards a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them towards a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Central Oregon Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, COCC can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

In collaboration with your community college advisor, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

Year 1

<u>Computer Science</u>	Complete <u>CS 160</u> , <u>CS 161</u> , and <u>CS 162</u>	12
<u>Writing</u>	Complete <u>WR 121Z</u>	4
<u>Communications</u>	Complete <u>COMM 111Z</u>	4
<u>Math</u>	Complete <u>MTH 111Z</u> and/or <u>MTH 112Z</u> (if required by math placement) Complete <u>MTH 251Z</u>	4-12
<u>Social Sciences & Arts and Letters</u>	Complete two Social Science and two Arts & Letters Courses One of these must satisfy the Cultural Literacy requirement	12-16

Year 2 – Select Path Based on Transfer Target

EOU / SOU / WOU			PSU / OSU / UO		
<u>Computer Science</u>	Complete <u>CS 260</u>	4	<u>Computer Science</u>	Complete <u>CS 205</u> and <u>CS 260</u>	8
<u>Writing</u>	Complete <u>WR 122Z</u>	4	<u>Writing</u>	Complete <u>WR 227Z</u>	4
<u>Math</u>	Complete <u>MTH 252Z</u>	4	<u>Math</u>	Complete <u>MTH 252Z</u> Complete <u>MTH 231/232</u>	12
<u>Science</u>	Complete any two lab science courses	8-10	<u>Science</u>	Complete a science sequence (with labs): <ul style="list-style-type: none"> • <u>BI 221-223</u> • <u>CH 221, BI 221-224</u> • <u>CH 221-223</u> • <u>GEO 201-203</u> • <u>PH 201-203</u> • <u>PH 211-213</u> 	15
<u>Electives</u>	Complete electives* to reach 90 credits	20+	<u>Electives</u>	Complete electives* to reach 90 credits	3+

* Electives must be courses numbered 100 or above. Check with an advisor for university-specific recommended electives.

Contact an advisor to learn more about the program listed above



Major Transfer Maps Computer Science

Associate of Science Transfer degree in
Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them towards a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them towards a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.

Planning to transfer? Use this guide to plan your computer science path.

Use this space for institutional imagery, contact information, website URL, etc.

Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Lane Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, Lane Community College can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

In collaboration with your community college advisor, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

Year 1

<u>Computer Science</u>	Complete <u>CS 160</u> , <u>CS 161C</u> , and <u>CS 162C</u> (<u>CS 161N/CS 162N</u> and <u>CS 161P/CS 162P</u> are also accepted)	12
<u>Writing</u>	Complete <u>WR 121Z</u>	4
<u>Communications</u>	Complete <u>COMM 111Z</u>	4
<u>Math</u>	Complete <u>MTH 111Z</u> and/or <u>MTH 112Z</u> (if required by math placement) Complete <u>MTH 251Z</u>	5-13
<u>Social Sciences & Arts and Letters</u>	Complete two Social Science and two Arts & Letters Courses One of these must satisfy the Cultural Literacy requirement	16

Year 2 – Select Path Based on Transfer Target

EOU / SOU / WOU			PSU / OSU / UO		
<u>Computer Science</u>	Complete <u>CS 260</u>	4	<u>Computer Science</u>	Complete <u>CS 205 and CS 260</u>	8
<u>Writing</u>	Complete <u>WR 122Z</u>	4	<u>Writing</u>	Complete <u>WR 227Z</u>	4
<u>Math</u>	Complete <u>MTH 252Z</u>	5	<u>Math</u>	Complete <u>MTH 252Z</u> Complete <u>MTH 231/232</u>	13
<u>Science</u>	Complete any two lab science courses	8-10	<u>Science</u>	Complete a science sequence (with labs): • <u>BI 221-223A/B</u> • <u>CH 221, BI 221-222</u> • <u>CH 221-223</u> • <u>G 201-203</u> • <u>PH 201-203</u> • <u>PH 211-213</u>	12-15
<u>Electives</u>	Complete electives* to reach 90 credits	14+	<u>Electives</u>	Complete electives* to reach 90 credits	0+

* Electives must be courses numbered 100 or above. Check with an advisor for university-specific recommended electives.

Contact an advisor, or visit <https://www.lanecollege.edu/programs-academics/areas-study/computer-science-and-information-technology/general-computer-science-transfer>

to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).



Major Transfer Maps Computer Science

Associate of Science Transfer degree in
Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them towards a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them towards a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.

Planning to transfer? Use this guide to plan your computer science path.

Use this space for institutional imagery, contact information, website URL, etc.

Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Mount Hood Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, Mount Hood Community College can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

In collaboration with your community college advisor, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

Year 1

<u>Computer Science</u>	Complete <u>CS 160</u> , <u>CS 161</u> , and <u>CS 162</u>	12
<u>Writing</u>	Complete <u>WR 121Z</u>	4
<u>Communications</u>	Complete <u>COMM 111Z</u>	4
<u>Math</u>	Complete <u>MTH 111Z</u> and/or <u>MTH 112Z</u> (if required by math placement) Complete <u>MTH 251Z</u>	5-13
<u>Social Sciences & Arts and Letters</u>	Complete two Social Science and two Arts & Letters Courses One of these must satisfy the Cultural Literacy requirement	16

Year 2 – Select Path Based on Transfer Target

EOU / SOU / WOU			PSU / OSU / UO		
<u>Computer Science</u>	Complete <u>CS 260</u>	4	<u>Computer Science</u>	Complete <u>CS 205</u> and <u>CS 260</u>	8
<u>Writing</u>	Complete <u>WR 122Z</u>	4	<u>Writing</u>	Complete <u>WR 227Z</u>	4
<u>Math</u>	Complete <u>MTH 252Z</u>	5	<u>Math</u>	Complete <u>MTH 252Z</u> Complete <u>CS 250/251</u>	13
<u>Science</u>	Complete any two lab science courses	8-10	<u>Science</u>	Complete a science sequence (with labs): • <u>BI 211-213</u> • <u>CH 221-223</u> • <u>PH 211-213</u>	15
<u>Electives</u>	Complete electives* to reach 90 credits	14+	<u>Electives</u>	Complete electives* to reach 90 credits	0+

* Electives must be courses numbered 100 or above. Check with an advisor for university-specific recommended electives.

Contact an advisor, or visit <https://catalog.mhcc.edu/programs-majors/computer-science-transfer-degree/> to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).



Major Transfer Maps Computer Science

Associate of Science Transfer degree in
Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them towards a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them towards a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.

Planning to transfer? Use this guide to plan your computer science path.

Use this space for institutional imagery, contact information, website URL, etc.

Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Oregon Coast Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, Oregon Coast Community College can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

In collaboration with your community college advisor, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

Year 1

<u>Computer Science</u>	Complete <u>CS 160</u> , <u>CS 161</u> , and <u>CS 162</u>	12
<u>Writing</u>	Complete <u>WR 121Z</u>	4
<u>Communications</u>	Complete <u>COMM 111Z</u>	4
<u>Math</u>	Complete <u>MTH 111Z</u> and/or <u>MTH 112Z</u> (if required by math placement) Complete <u>MTH 251Z</u>	5-13
<u>Social Sciences & Arts and Letters</u>	Complete two Social Science and two Arts & Letters Courses One of these must satisfy the Cultural Literacy requirement	16

Year 2 – Select Path Based on Transfer Target

EOU / SOU / WOU			PSU / OSU / UO		
<u>Computer Science</u>	Complete <u>CS 260</u>	4	<u>Computer Science</u>	Complete <u>CS 205</u> and <u>CS 260</u>	8
<u>Writing</u>	Complete <u>WR 122Z</u>	4	<u>Writing</u>	Complete <u>WR 227Z</u>	4
<u>Math</u>	Complete <u>MTH 252Z</u>	5	<u>Math</u>	Complete <u>MTH 252Z</u> Complete <u>MTH 231/232</u>	13
<u>Science</u>	Complete any two lab science courses	8-10	<u>Science</u>	Complete a science sequence (with labs): • <u>BIO 211-213</u> • <u>CH 221-223</u> • <u>PHY 211-213</u>	12-15
<u>Electives</u>	Complete electives* to reach 90 credits	14+	<u>Electives</u>	Complete electives* to reach 90 credits	0+

* Electives must be courses numbered 100 or above. Check with an advisor for university-specific recommended electives.

Contact an advisor, or visit <https://catalog.oregoncoastcc.org/associate-of-science-transfer-in-computer-science/associate-of-science-transfer-in-computer-science> to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

PCC
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Major Transfer Maps Computer Science

Associate of Science Transfer degree in Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them towards a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

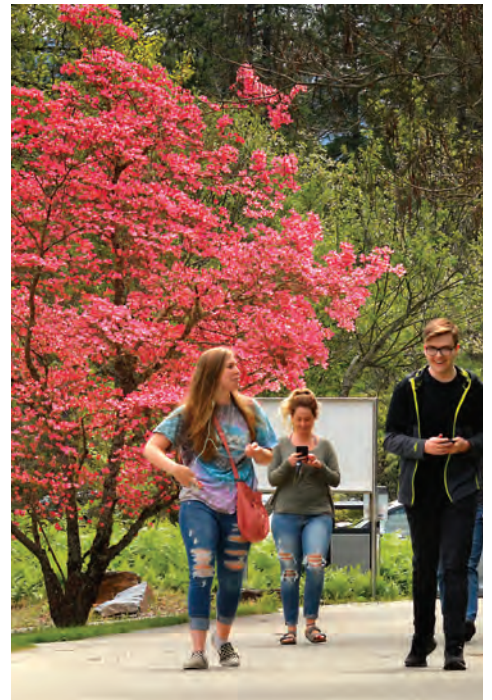
How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them towards a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.

Planning to transfer? Use this guide to plan your computer science path.



www.roguecc.edu

**Credits will transfer
to the following
universities:**

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)

Rogue Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, CCNAME Community College can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

In collaboration with your community college advisor, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

Year 1

<u>Computer Science</u>	Complete <u>CS 160</u> , <u>CS 161</u> , and <u>CS 162</u>	12
<u>Writing</u>	Complete <u>WR 121Z</u>	4
<u>Communications</u>	Complete <u>COMM 111Z</u>	4
<u>Math</u>	Complete <u>MTH 111Z</u> and/or <u>MTH 112Z</u> (if required by math placement) Complete <u>MTH 251Z</u>	5-13
<u>Social Sciences & Arts and Letters</u>	Complete two Social Science and two Arts & Letters Courses One of these must satisfy the Cultural Literacy requirement	16

Year 2 – Select Path Based on Transfer Target

EOU / SOU / WOU			PSU / OSU / UO		
<u>Computer Science</u>	Complete <u>CS 260</u>	4	<u>Computer Science</u>	Complete <u>CS 205</u> and <u>CS 260</u>	8
<u>Writing</u>	Complete <u>WR 122Z</u>	4	<u>Writing</u>	Complete <u>WR 227Z</u>	4
<u>Math</u>	Complete <u>MTH 252Z</u>	5	<u>Math</u>	Complete <u>MTH 252Z</u> Complete <u>MTH 231/232</u> or <u>CS 250/251</u>	13
<u>Science</u>	Complete any two lab science courses	8-10	<u>Science</u>	Complete a science sequence (with labs): <ul style="list-style-type: none"> • <u>BI 211-213</u> • <u>CH 211, BI 211-212</u> • <u>CH 211-213</u> • <u>GEO 201-203</u> • <u>PH 201-203</u> • <u>PH 211-213</u> 	12-15
<u>Electives</u>	Complete electives* to reach 90 credits	14+	<u>Electives</u>	Complete electives* to reach 90 credits	0+

* Electives must be courses numbered 100 or above. Check with an advisor for university-specific recommended electives.

Email: ComputerScienceInfo@roguecc.edu, or visit <https://bit.ly/4awzcQ2> to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Major Transfer Maps Computer Science



SOUTHWESTERN
AN OREGON COMMUNITY COLLEGE

Associate of Science Transfer degree in Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them toward a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them toward a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.

Planning to transfer? Use this guide to plan your computer science journey.



Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)

Southwestern Oregon Community College Computer Science Program

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, computer science might be for you! 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.

SUBJECT	COURSES	CREDITS
General Education/Foundational		
<u>Communication and Writing</u>	Complete COMM 111Z , WR 121Z , and either WR 122Z (EOU/SOU/WOU) or WR 227Z (OSU/PSU/UO).	9 – 12
<u>General Education</u>	Complete two courses from the AAOT Arts & Letters course list.	6 – 8
	Complete two courses from the AAOT Social Sciences course list. At least one of these must also satisfy AAOT cultural literacy outcomes.	6 – 8
<u>Mathematics</u>	Complete MTH 251 and MTH 252 . Recommended preparation, if needed: MTH 111Z and MTH 112Z .	8 – 16
<u>Lab Science</u>	Complete two lab science courses (EOU/SOU/WOU) or three lab science courses from one of the following sequences (OSU/PSU/UO): General Physics (PH 201 , PH 202 , PH 203); Physics with Calculus (PH 211 , PH 212 , PH 213); Chemistry (CH 221 , CH 222 , CH 223); Chemistry and Biology (CH 221 , BI 201 , BI 202); Biology (BI 201 , BI 202 , BI 203); or Geology (G 201 , G 202 , G 203).	8 – 15
Computer Science		
<u>Computer Science</u>	Complete CS 160 , CS 161 , CS 162 , and CS 260 .	16
<u>System Programming and Architecture</u>	Complete CS 205 . (OSU/PSU/UO only)	0 - 4
<u>Discrete Math</u>	Complete MTH 231/232 . (OSU/PSU/UO only)	0 - 8
Electives		
<u>Electives</u>	Choose any course numbered 100 or above that brings your total credits to 90 quarter hours. (Check with an advisor for university-specific recommended electives.)	3 – 37

Total Credits: 90

Note: To satisfy Core Transfer Map requirements, complete: WR 121; the two Arts & Letters courses; the two Social Sciences courses; two required lab science courses; and two of the four listed mathematics courses.

Contact an advisor, or visit <https://www.socc.edu/computerscience/> to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).

Major Transfer Maps Computer Science

Associate of Science Transfer degree in
Computer Science

What are Major Transfer maps?

A Major Transfer Map is a streamlined course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them toward a bachelor's degree in that major.

Who are they for?

A Major Transfer Map is right for you if:

- you are an Oregon community college student.
- you plan to transfer to a four-year Oregon public university or participating private university.
- you think you know what you want to major in.

How do they work?

If you successfully complete a Major Transfer Map, any Oregon public university with that major and participating private universities will accept all of those credits and count them toward a bachelor's degree in that specific major. Following one of these maps could save you time and money.

What if I don't know my major yet?

You can use the Core Transfer Maps, which are groups of eight classes that add up to at least 30 credits, if you have not yet declared a major and plan to transfer. Talk to an advisor about which path is right for you and how to use these maps to select general education courses.



Planning to transfer? Use this guide to plan your computer science path.



Credits will transfer to the following universities:

- Eastern Oregon University (EOU)
- Oregon State University (OSU)
- Portland State University (PSU)
- Southern Oregon University (SOU)
- University of Oregon (UO)
- Western Oregon University (WOU)



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Tillamook Bay Community College Computer Science Program

If you are interested in a career in computer science, software engineering, or technology, Tillamook Bay Community College can give you a strong foundation for your goals. The courses recommended in this pathway will help you 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.

The following is a suggested course of study for students interested in pursuing a bachelor's degree in computer science. In collaboration with your community college success coach, use the information below to select your courses to ensure they will meet requirements of your Oregon public university or participating private university.

SUBJECT	COURSES	CREDITS
General Education/Foundational		
<u>Communication and Writing</u>	Complete COMM 111Z , WR 121Z , and either WR 122Z (EQU/SOU/WOU) or WR 227Z (OSU/PSU/UO).	12
<u>General Education</u>	Complete CG 100 – College Survival and Success	3
	Complete two courses from the AAOT Arts & Letters course list. Complete EC 201 and EC 202 . At least one of these must also satisfy AAOT cultural literacy outcomes.	6 – 8 8
<u>Mathematics</u>	Complete MTH 111Z , MTH 112Z , MTH 251 , and MTH 252 .	16
<u>Lab Science</u>	Complete three lab science courses from one of the following sequences: Physics with Calculus (PH 211 , PH 212 , PH 213); Chemistry (CH 221 , CH 222 , CH 223); or Biology (BI 211 , BI 212 , BI 213).	12 – 15

Computer Science

<u>Computer Science</u>	Complete CS 160 , CS 161 , CS 162 , and CS 260 .	16
<u>System Programming and Architecture</u>	Complete CS 205 . (Articulation Only) (OSU/PSU/UO only)	0 - 4
<u>Discrete Math</u>	Complete MTH 231/232 .	8

Electives

<u>Electives</u>	Choose any course numbered 100 or above that brings your total credits to 90 quarter hours. (Check with a success coach for university-specific recommended electives.)	0 - 9
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Total Credits: 90

Note: To satisfy Core Transfer Map requirements, complete: WR 121Z; the two Arts & Letters courses; the two Social Sciences courses; two required lab science courses; and two of the four listed mathematics courses.

Contact a success coach, or visit <https://tillamookbaycc.edu/academics/academic-catalog/> to learn more about the program and courses listed above.



These materials reflect the collaboration between Oregon's public universities, Oregon's community colleges, and the Higher Education Coordinating Commission (HECC).



UMPQUA
Community College

**MAJOR TRANSFER MAP
(MTM)**

COMPUTER SCIENCE

ASSOCIATE OF SCIENCE
TRANSFER DEGREE IN

WHAT ARE MAJOR TRANSFER MAPS?	<p>A Major Transfer Map (MTM) is a streamlines course plan in a specific major. When completed, it will allow you to transfer all of your credits to any Oregon public university or participating private university and count them towards a bachelor's degree.</p>
WHO ARE THEY FOR?	<p>A MTM is right for you if:</p> <ul style="list-style-type: none">- You are an Oregon community college student.- You plan to transfer to a four-year Oregon public university or participating private university.- You think you know what you want to major in.
HOW DO THEY WORK?	<p>If you successfully complete a MTM any Oregon public university with that major and participating private universities will accept all of those credits and count them towards a bachelor's degree in that specific major. Following one of these maps could save you time and money.</p>
WHERE DO THEY TRANSFER?	<ul style="list-style-type: none">- Eastern Oregon University- Oregon State University- Portland State University- Southern Oregon University- University of Oregon- Western Oregon University

Associate of Science Transfer (AST) Computer Science

Program Outcomes: Students who complete the Computer Science AST will have the knowledge, skills, and abilities to:

- Acquire new information and adapt to changes in the computer technology field
- Apply a logical and systematic approach to solve problems
- Use written, oral, and visual interpersonal skills to communicate with individuals or small groups
- Design and implement computer software applications
- Evaluate and compare different algorithms applicable to a given task

Program Course Requirements

First Year

FIRST TERM		CREDITS
<u>AI 120</u>	Intro to AI ²	4
<u>CS 160</u>	Orientation-Computer Science	4
<u>MTH 111Z</u>	Precalculus I Functions (or higher)	4
<u>WR 121Z</u>	Composition I	4
Credits		16

SECOND TERM

<u>CS 161</u>	Computer Science I	4
<u>MTH 112Z</u>	Precalculus II Trigonometry	4
<u>MTH 231</u>	Elem Discrete Math I	4
<u>WR 227Z</u> or <u>WR 122Z</u>	Technical Writing ³ or Composition II	4
Credits		16

THIRD TERM

<u>ART 206</u>	History of Western Art III ¹	4
<u>CIS 275</u>	Intro to Database Mgmt Sys I ²	4
<u>CS 162</u>	Computer Science II	4
<u>MTH 232</u>	Elem Discrete Math II	4
Credits		16

Second Year

FIRST TERM

<u>CIS 195</u>	Authoring for the Web I ²	4
<u>CS 260</u>	Data Structures	4
<u>MTH 251</u>	Calculus I	5
<u>PH 211</u>	General Physics w-Calculus I ⁴	5
Credits		18

SECOND TERM

<u>COM 218Z</u>	Interpersonal Communication ¹	4
<u>HST 202</u>	History of United States II ¹	3
<u>MTH 252</u>	Calculus II	4

<u>PH 212</u>	General Physics w-Calculus II ⁴	5
Credits		16
THIRD TERM		
<u>COM 111Z</u>	Public Speaking	4
<u>CS 205</u>	Syst Programming Architecture	4
<u>PH 213</u>	General Physics w-Calculus III ⁴	5
<u>SOC 206</u>	Social Problems-Issues ¹	3
Credits		16
Total Minimum Credits		90-98

1

Arts & Letters and Social Science courses can be swapped with other approved courses, however one must have a cultural literacy component. See advisor for a list of course options.

2

These are recommended Computer Science specific electives- not all are required

3

Students who transfer to EOU/SOU/WOU must take WR122Z. Students who transfer to OSU/PSU/UO must take WR227Z.

4

Choose one (1) sequence: (BI 211, 212, 213) or (CH 221, 222, 223) or (PH 211, 212, 213).

NOTE: All courses must be completed with a grade of "C" or better, a minimum cumulative GPA of 2.00 is required at the time the AST is awarded. Many CS programs have competitive admission processes, minimum GPA and grades may not be high enough to guarantee admission into any transfer institution. If students vary from the suggested sequence, then prerequisites and term availability must be watched closely because class time conflicts may arise, and/or desired courses may not be available.

For more information see [Major Transfer Maps: Memoranda of Understanding](#).