OREGON COAST
COMMUNITY COLLEGE

March 11, 2021

To: OCCC Board of Education
From: Dan Lara, Vice President of Academic Affairs
Recommendation: 2021 March 18, BOE Agenda Item E.c.
    Request adoption of the following: Associate of Science Transfer – Computer Science (AST-CS)

**Justification**

According to the Bureau of Labor Statistics by 2024 nearly 4.6 million high wage jobs will be in CS and related fields, yet there has not been enough graduates to meet demand. The shortage of CS bachelor's degree earners is particularly severe among groups historically underrepresented in the field, where in 2018–2019, only 21% were awarded to women, 11% to Hispanic students, 9% to Black students, and 0.3% (a total of 258 degrees nationally) to American Indian/Alaskan Native students.  (National Center for Education Statistics). To address these gaps, the national spotlight has focused on the K-12 and university levels.

But unfortunately community colleges are often overlooked in efforts to increase diversity for the CS field despite the fact that community colleges serve large numbers of traditionally underrepresented students-- 45% of all U.S. undergraduates are educated at community colleges, including 57% of Hispanic and 52% of Black undergraduates (American Association of Community Colleges).

Computer Science remains one of the highest requested degree programs in Lincoln County, particularly amongst graduating high school students, and provides a highly employable skillset that supports existing and emerging fields in the service area.   However, a lack of consistency amongst receiving universities in the state has made it challenging for small, rural institutions to provide the breadth of courses necessary to support the first two years of a comprehensive computer science curriculum.

In 2017, as a result of collaboration among the HECC, Oregon's community colleges and public universities, and lawmakers, the State Legislature passed House Bill 2998, a bill designed to streamline transfer between Oregon's community colleges and public universities. The legislation directs the HECC to bring together community colleges and universities to establish statewide "foundational curricula," now called Core Transfer Maps, of at least 30 credits and major-specific "unified statewide transfer agreements," now called Major Transfer Maps, that prepare students for transfer into one of Oregon's public universities in a particular major.

Since HB 2998's passage, the HECC has been working with community colleges, public universities, student associations, and other stakeholders to simplify and better align pathways for students to successfully transfer between institutions, maximize credits toward their degrees and certificates, and decrease time-to-degree completion.

The Associate of Science Transfer degree in Computer Science (AST-CS) is a recently completed Major Transfer Map that has been proposed for adoption across all of the Oregon Community Colleges.  The AST-CS will meet a local need that will support multiple sectors in Lincoln County, and students will have the ability to

complete Bachelor's Degrees in Computer Science at numerous state universities via distance education without ever leaving Lincoln County.

**Labor Market Data for Computer Science**

Burning Glass identified 395 unique Jog-Postings in 2019 across the three-county region of Linn, Benton and Lincoln Counties, with postings for individuals with an Associate's Degree in Computer Science starting at $40k/year and postings for individuals with Bachelor's Degrees in Computer Science starting at $59k/year.

**Sustainability Planning**

We anticipate starting the transfer pathway utilizing part-time faculty to teach the required CS courses.  In Year 1 of the program (starting Fall 2021) this would represent one CS course taught in each of the Fall, Winter, and Spring terms.  Year 2 of the program would see the repeat of the three courses from Year 1, as well as the addition of a second course in each of the regular academic terms (for a total of two CS courses per term).  Two new math courses would also be offered in the second year, which could either be taught by part-time faculty or existing full-time faculty.

As the county, state, and nation emerge from the pandemic, there is laser focus on workforce development initiatives.  OCCC will continue to work with local and regional educational, governmental, and private partners to build a high-skilled labor force to support economic development in Lincoln County.  Recently, particular emphasis has been placed on building the capacity of coastal Oregon to support the Maritime Sector.   The College is actively participating in securing grant funding for workforce development, which could further support the AST-CS.  Additionally, Lincoln County School District is exploring directing $30,000/year to support Computer Science instruction at OCCC (which would then support Dual Credit in Computer Science at area high schools).

**Proposed Degree**

**Associate of Science Transfer – Computer Science (AST-CS)**

| CORE TRANSFER REQUIREMENTS | | |
|---|---|---|
| Category | Details | Credits |
| *Writing* | | |
| 1st course | WR 121 | 4 |
| *Arts & Letters* | | |
| 1st course | Choose from AAOT-approved courses | 3-4 |
| 2nd course | Choose from AAOT-approved courses | 3-4 |
| *Social Sciences* | | |
| 1st course | Choose from AAOT-approved courses | 4 |
| 2nd course | Choose from AAOT-approved courses | 4 |
| *Natural Sciences* | | |
| 2 courses | Select two lab science courses; this selection should occur after deciding between <br>• OSU/PSU/UO: BI211-212 OR CH221-222 <br>• EOU/SOU/WOU: any two lab sciences | 10 |
| *Mathematics* | | |
| 1st course | MTH 111 | 5 |
| 2nd course | MTH 112 | 5 |
| *At least 1 Core Transfer Requirement course must also be an AAOT-approved Cultural Literacy Course.* | | |

| MAJOR TRANSFER MAP COURSES | | |
|---|---|---|
| Category | For EOU/SOU/WOU cluster | For OSU/PSU/UO cluster |
| *Writing* | | |
| 1st course | WR 122 – 4 credits | WR 227 –4 credits |
| *Oral Communication* | COMM 111 – 4 credits | COMM 111 – 4 credits |
| *Mathematics* | | |
| 1st course | MTH 251 – 5 credits | MTH 251 – 5 credits |
| 2nd course | MTH 252 – 5 credits | MTH 252 – 5 credits |
| 3rd course | | MTH 231 – 4 credits |
| 4th course | | MTH 232 – 4 credits |
| *Computer Science* | | |
| 1st course | CS 160 – 4 credits | CS 160 – 4 credits |
| 2nd course | CS 161 – 4 credits | CS 161 – 4 credits |
| 3rd course | CS 162 – 4 credits | CS 162 – 4 credits |
| 4th course | CS 260 – 4 credits | CS 260 – 4 credits |
| 5th course | | CS 205 – 4 credits |
| *Natural Sciences – 3 classes* | | |
| 1st course | | BI 213 – 5 credits OR <br>CH 223 – 5 credits |
| **Total MTM Requirements** | 34 credits | 56 credits |
| *Electives* | 26-28 credits | 4 credits |
| | | |
| **Total Degree Requirements** | 98-100 credits | 98-100 credits |