
Docket Item:

Community College Approval: Chemeketa Community College, Certificate of Completion in Computer Information Systems, within 11.0101 – Computer and Information Sciences, General.

Summary:

Chemeketa Community College proposes a new Certificate of Completion in Computer Information Systems. Higher Education Coordinating Commission (HECC) staff completed a review of the proposed program. After analysis, HECC staff recommends approval of the degree as proposed.

Staff Recommendation:

The HECC recommends the adoption of the following resolution:
RESOLVED, that the Higher Education Coordinating Commission approve the following degree: CCo in Computer Information Systems.



Chemeketa Community College seeks the Oregon Higher Education Coordinating Commission’s approval to offer an instructional program leading to a Certificate of Completion in Computer Information Systems.

Program Summary

The Computer Information Systems Certificate prepares the student for work in the design and implementation of business systems solutions, software and systems troubleshooting, technical support and end user training. Manage workgroup resources including file shares, print shares, and physical connections. Install, configure and support industry required applications to the enterprise environment. Use integrated software packages to analyze and support business problems related to the IT infrastructure.

1. Describe the need for this program by providing clear evidence.

From qualityinfo.org and from NOA: “Employment in this occupation in 2017 was somewhat larger than most occupations in the region. The total number of job openings is projected to be somewhat larger than most occupations in the region through 2027. This occupation is expected to grow at about the regional average growth rate for all occupations through 2027” (qualityinfo.org, 2019 Nov. 7). Starting salary for someone in this field is estimated at \$33,238 with an average salary of \$53,458, so this certificate will support a living wage. In the Mid-Valley region there are an average of 59 annual openings with 9 of those openings coming from change in the industry. Qualityinfo.org is projecting 13.5% increase in employment for this field

2. Does the community college utilize systemic methods for meaningful and ongoing involvement of the appropriate constituencies?

The college uses a range of sources to establish ongoing partnerships with its community constituencies. Some of these partnerships include: Northwest Commission on Colleges and Universities, the State Board of Education, Community College Workforce Development, employment advisory boards, student placement organizations, and licensing boards for appropriate occupations.

The Computer Information Systems Certificate of Completion was approved on April 28, 2020 by the Chemeketa Community College’s Curriculum Committee and then approved by Chemeketa Community College’s Board of Education on June 24, 2020.

Chemeketa Community College has partnerships with local high schools to offer courses in their schools for college credit. These courses will prepare students for entry into the program soon after graduating. Other required and general education courses will be valuable in preparation for entrance into the program and the workforce.

Collaboration with workforce and economic development partners assists the college to build a skilled and trained workforce ready to enter their fields immediately upon completion of the program. The Computer Information Systems department that will be offering this Computer Information Systems Certificate of Completion has an advisory committee composed of professionals from across the Willamette Valley:

Judson Birkel, South Salem High School, Salem

Eric Bradfield, Salem Keizer Public Schools, Salem

Chad Cassidy, PH Tech, Salem

Shayna Conner, State of Oregon-Higher Education, Salem

Paul Dyke, State of Oregon, Salem

Ammon Farris, Helion Software Inc., Salem

Andrew Gawne, Department of Consumer & Business Services, State of Oregon, Salem

Drew Hinds, Silver Falls School District, Silverton

Jordan Miller, PH Tech, Salem

Dan Palacios, Department of Consumer & Business Services, State of Oregon, Salem

Kevin Rich, Bookbyte, Salem

Greg Smith, West Salem High School, Salem

Francisco Zavala, Linn Benton Lincoln ESD, Albany

3. ***Is the community college program aligned with appropriate education, workforce development, and economic development programs?***

The advisory committee has approved the courses for this program so that students are fully prepared for the workforce. The program courses are:

- CIS102A: Cyber Security and Safety (4)
- CIS120: Digital Literacy (4)
- CIS120A: Computer Information Services Pathway (1)
- CIS121: Introduction to Programming (4)
- CIS125A: Database Access (3)
- CIS125E: Excel-Workbooks (4)
- CIS133SC: Scripting Languages (4)
- CIS140B: Microcomputer Operating Systems (3)

- CIS140U: Unix/Linux (3)
- CIS145: Computer Hardware (4)
- CIS178W: Fundamentals of Web Design (4)
- CIS179: Introduction to Client-Server Networks (4)

These courses were approved by the advisory committee on [Click or tap here to enter text.](#)

Chemeketa's Computer Information Systems Certificate of Completion program will lead to employable skills at the end of the program. Individuals in this field earn an annual wage of \$53,458 per year and starting wages at \$33,238 (qualityinfo.org), therefore it will allow these students to enter the workforce in a family-wage career.

4. *Does the community college program lead to student achievement of academic and technical knowledge, skills, and related proficiencies?*

The design of the program is a 42 credit hour approved certificate of completion. The primary audience for this program are students who wish to focus on entry-level computer skills. The learner outcomes for each course provide a range of skills to allow graduates to pursue employment in this industry:

CIS102A: Cyber Security and Safety:

- Relate the history of computer security to current day issues.
- Evaluate the security, political and social issues, and human factors concerning the personal use of technologies.
- Explain the basic concepts of cryptography and digital signatures.
- Describe the basics of computer security and computer security terminologies.
- Explain computer security fundamentals concerning mobile phones, electronic voting, Radio Frequency Identification (RFID) tags, location-based tracking technologies, and the Digital Millennium Copyright Act (DMCA).
- Select and apply methods for personal computer security, intrusion detection, and protection from malicious computer activities.

CIS120: Digital Literacy

- Identify basic computer hardware terminology associated with input, output, processing, and storage.
- Discuss the historical evolution of digital computing technology.
- Identify various system software that manages computer hardware and resources.
- Identify various application and utility software for a given undertaking.
- Create and modify word processing, spreadsheet, database, and electronic presentation documents using appropriate features of the selected application.
- Describe key concepts of network infrastructure and identify types of electronic communication.
- Demonstrate file management of folders to organize files on a disk and online.

- Demonstrate a basic understanding of issues regarding software copyright, software licensing, software copying, computer viruses, and ways to protect computers from computer viruses.
- Define the ethical implications and role of technology in business and in society and utilize the Internet for communication and information access.
- Identify the role of security in a digital world.

CIS120A: Computer Info Sciences Pathway

- Describe the different opportunities in computer information sciences and computer technology fields.
- Explain how technology is used in various career paths.
- Perform Internet job searches for opportunities in computer information sciences and computer technology fields.
- Plan an academic pathway at Chemeketa Community College using ePathways.

CIS121: Intro to Programming Concepts:

- Use standard design tools such as hierarchical charts, IPO diagrams, and structured algorithm tools (i.e., flowcharting, Pseudo English, Warnier-Orr) to develop information science solutions.
- Draw a flowchart of a process involving sequence, selection, and iteration, and write one or two sentences describing the process.
- Use a programming language to write the code for a program solution from a standard design chart or diagram algorithm.
- Depict how to document code describing processes for later maintenance.
- Define common terms related to programming concepts.
- Identify and use coding standards for variables, constants, and naming.
- Design effective user interfaces.
- Use nested conditional statements and nested loop structures when completing a program walkthrough.
- Implement an array to hold multiple related data items

CIS125A: Access - Database

- Write a short description of the components that make up a DBMS software package.
- Define terms related to working with DBMS software.
- Navigate through the Graphical User Interface (GUI) menu of Microsoft Access.
- Use all aspects of the Help system provided by Windows and Microsoft Access.
- Perform basic table operations.
- Perform basic query operations.
- Design data entry forms.
- Create custom reports.

CIS125E: Excel - Workbooks

- Create, view, and open a new or existing workbook, enter text and numeric data into cells, manage rows and columns, copy and fill data, define workbook rows, columns, and page orientation for printing.
- Demonstrate the use of fill colors, number formatting, borders, cell styles, conditional formatting, and headers and footers.
- Demonstrate the use of formula constants, calculated values, relative and absolute referencing, date functions, logical functions, and What-If analysis.
- Create pie charts, bar charts, column charts, sparklines and databars within worksheets, modify chart legends, axes, and chart titles.
- Create and manage pivot tables and charts, sort and filter Excel databases.
- Demonstrate the ability to work with grouped worksheets, link external 3D references in multiple workbooks, create workbook templates.
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- Demonstrate the use of Logical Functions and structured references, use various Lookup Functions, Count Functions, and Average Functions.
- Create Excel Power BI Database Queries, Trendlines, Forecast Sheets, Manage Data in Power Query, Power Map, and Power View format.

CIS133SC: Scripting Languages

- Describe the basic features and structures of scripting languages
- Create client side and server side software, using HTML5 and scripting languages, including JavaScript and PHP
- Test, debug, and refine client side and server side script
- Utilize third party JavaScript libraries
- Update Web pages using AJAX
- Install and configure a test Web server

These courses lead to the following outcomes that students will be prepared to accomplish:

- 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
- Configure and troubleshoot access to resources, hardware devices and drivers, storage use and network connections

Learning will be ensured through the assessment of these program outcomes with the following methods:

- Tests
- Quizzes
- Projects
- Hands-on labs.

Instruction methods within this program will be online. Students will not have general education courses for the degree. Any general education courses may be provided in a face-to-face, a hybrid, or an online environment. Program course lectures provide various hands-on activities.

The college has a unit planning process that includes a program assessment on an annual basis. Student, faculty, advisory committee, and administrative collaboration is incorporated to ensure students are prepared with appropriate skills to enter the workforce and meet the requirements of the Computer Information Systems Certificate of Completion.

5. *Does the community college identify and have the resources to develop, implement, and sustain the program?*

The new program will have startup costs of \$0.

Year 0: Total Revenue: \$0 Total Expenditures: \$0 Net Income (Deficit): \$0

Year 1: Total Revenue: \$19,320 Total Expenditures: \$200 Net Income (Deficit): \$19,120

Year 2: Total Revenue: \$38,640 Total Expenditures: \$200 Net Income (Deficit): \$38,440

Year 3: Total Revenue: \$77,280 Total Expenditures: \$200 Net Income (Deficit): \$77,080

The Computer Information Systems program has 4 full-time faculty positions and 0 classified staff along with numerous adjunct faculty who generally work full-time in the industry. The program has the flexibility to use general fund dollars to expand the adjunct workforce to teach additional courses in the degree and to offset full-time workload as needed.

Chemeketa Community College has begun programs over the last fifty years and has had the institutional support in hiring qualified and trained faculty to teach in all CTE programs.

This new program and its courses have been developed and approved by the employer-based advisory committee, as well as approved by the college's Curriculum Committee and Chemeketa Community College's Board of Education.

Faculty will regularly participate in professional development activities to stay current and up to-date with industry changes and requirements, which will translate into the classroom-learning environment.

The program will reside at Salem Campus (online).

The college has strong relationships with industry partners/employers and will continue to foster these relationships. This program has an employer-based advisory committee. The program will continue to work with local industry leaders and educational institutions to recruit students for this program.

Assurances

Chemeketa Community College has met or will meet the four institutional assurances required for program application.

1. *Access.* The college and program will affirmatively provide access, accommodations, flexibility, and additional/supplemental services for special populations and protected classes of students.
2. *Continuous Improvement.* The college has assessment, evaluation, feedback, and continuous improvement processes or systems in place. For the proposed program, there will be opportunities for input from and concerning the instructor(s), students, employers, and other partners/stakeholders. Program need and labor market information will be periodically re-evaluated and changes will be requested as needed.
3. *Adverse impact and detrimental duplication.* The college will follow all current laws, rules, and procedures and has made good faith efforts to avoid or resolve adverse *intersegmental* and *intrasegmental* impact and detrimental duplication problems with other relevant programs or institutions.
4. *Program records maintenance and congruence.* The college acknowledges that the records concerning the program title, curriculum, CIP code, credit hours, etc. maintained by the Office are the official records and it is the college's responsibility to keep their records aligned with those of the Office. The college will not make changes to the program without informing and/or receiving approval from the Office.