

Docket Item:

University Program Approval: Eastern Oregon University, BA/BS/BAS in Informational Technology Management.

Summary:

Eastern Oregon University proposes a new degree program leading to a BA/BS/BAS in Informational Technology Management. The statewide Provosts' Council has unanimously recommended approval. Higher Education Coordinating Commission (HECC) staff completed a review of the proposed program. After analysis, HECC staff recommends approval of the program as proposed.

Staff Recommendation:

The HECC recommends the adoption of the following resolution:

RESOLVED, that the Higher Education Coordinating Commission approve the following program:
BA/BS/BAS in IT Management at Eastern Oregon University.

Proposal for a New Academic Program

Institution: Eastern Oregon University

College/School: College of Science, Technology, Mathematics and Health Sciences

Department/Program Name: Computer Science

Degree and Program Title: BA/BS/BAS Information Technology Management

1. Program Description

- a. Proposed Classification of Instructional Programs (CIP) number. CIP 11.10
- b. Brief overview (1-2 paragraphs) of the proposed program, including its disciplinary foundations and connections; program objectives; programmatic focus; degree, certificate, minor, and concentrations offered.
 - i) We are proposing the ***establishment of Bachelor of Art (BA), Bachelor of Science (BS) and Bachelor of Applied Science (BAS) degrees in Information Technology Management at Eastern Oregon University.*** The BA/BS options for IT Management carry requisite general education, elective, and institutional requirements in satisfaction of the degree. The BAS option for IT Management requires an earned applied associate's degree that is transferred in, plus satisfaction of 45 general education credits and satisfaction of all other upper division required elective and institutional requirements towards the degree.
 - ii) The BA/BS/BAS options for the degree share a common curriculum, including a core computer science course sequence (CS 335 Networking/Networking Administration and CS 314 Computer Architecture and Assembly Language), and CS 331A "Database Management Systems"(and their pre-requisites), in addition to completion of the CS 221 C/C++ Programming course and a practicum. These courses are highly relevant to employment in data network centers. At the recommendation of a regional community college's computer science industry advisory board, the BA/BS/BAS (i.e. beyond the lower division courses) major curriculum has balanced CS courses with providing facility and people management as well as leadership skills through the business components for the major. The BAS option, in particular, is designed for students who wish to stay employed while preparing themselves to assume leadership and management roles within their place of employment (which may have in-house company-specific technical training programs, but frequently do not provide business and management training).
 - iii) The BAS degree option of the IT Management major will allow for a 1 + 3 scenario (a one-year certificate plus three years in the Bachelor's program) and a 2 + 2 scenario (a two-year (Applied Science) Associate's degree plus two years in the Bachelor's degree program). See Appendix for program courses.
- c. Course of study – proposed curriculum, including course numbers, titles, and credit hours.

See attached Check Sheets Appendices A & B for Program Requirements
- d. Manner in which the program will be delivered, including program location (if offered outside of the main campus), course scheduling, and the use of technology (for both on- campus and off-campus delivery).

Program will be offered in the on campus, online delivery, and hybrid modalities. Required CS courses are currently being converted to the online modality and will be available by the proposed program start date.
- e. Adequacy and quality of faculty delivering the program.

Current EOU faculty and/or adjuncts will be teaching the program. All required courses are offered by other programs and will be available.

- f. Adequacy of faculty resources – full-time, part-time, adjunct.

May be taught by a combination of full-time, part-time and adjunct faculty.

- g. Other staff.

All EOU resources are available, and support staff is specific to the College of Science Technology, Mathematics, and Health Sciences (computer-science related courses) and in the College of Business (business-related courses).

- h. Adequacy of facilities, library, and other resources.

All EOU resources are available to faculty and students

- i. Anticipated start date. Fall Term 2020.

2. Relationship to Mission and Goals

- a. Manner in which the proposed program supports the institution’s mission, signature areas of focus, and strategic priorities.
- b. Manner in which the proposed program contributes to institutional and statewide goals for student access and diversity, quality learning, research, knowledge creation and innovation, and economic and cultural support of Oregon and its communities.

Computer science has for many years been supported state initiatives funded through ETSF (previously ETIC). Technology, with its attendant training and retention of computer science and information technology professionals, is indispensable for Oregon’s current and future economy.

- c. Manner in which the program meets regional or statewide needs and enhances the state’s capacity to:
 - i. improve educational attainment in the region and state;
 - ii. respond effectively to social, economic, and environmental challenges and opportunities; and
 - iii. address civic and cultural demands of citizenship.

The program responds to market demand for higher-level management and leadership skills in various computer science and information technology fields, providing pathway options towards a baccalaureate degree (BA/BS) or professional/technical degree (BAS). The BAS degree not only provides a degree pathway for graduates who have earned an AAS degree, but also responds to market demand by providing AAS degree-holders currently employed in business and industry to assume management/leadership within their companies by combining additional subject/technical courses with business/management courses to earn a bachelor’s-level credential. This allows retention and promotion of a skilled workforce in their current place of employment. Moreover, a steady and continually developing workforce in various information technology fields such as Database Administrators, Network and Computer Systems Administrators, Computer Network Architects, Computer Network Support Specialists, etc. have the potential to attract more network/data centers to the rural parts of the State. Eastern Oregon has already experienced the benefits of rural economic development through the corporate location of logistics, network, and data centers on the east side of the state, and such pathways are required to sustain a tech-educated workforce for the foreseeable future.

3. Accreditation

- a. Accrediting body or professional society that has established standards in the area in which the program lies, if applicable.

Northwest Commission on Colleges and Universities (NWCCU)

- b. Ability of the program to meet professional accreditation standards. If the program does not or cannot meet those standards, the proposal should identify the area(s) in which it is deficient and indicate steps needed to

qualify the program for accreditation and date by which it would be expected to be fully accredited.

Program will meet all NWCCU standards.

- c. If the proposed program is a graduate program in which the institution offers an undergraduate program, proposal should identify whether or not the undergraduate program is accredited and, if not, what would be required to qualify it for accreditation.

Not Applicable.

- d. If accreditation is a goal, the proposal should identify the steps being taken to achieve accreditation. If the program is not seeking accreditation, the proposal should indicate why it is not.
NWCCU notification will occur after HECC approval.

4. Need

- a. Anticipated fall term headcount and FTE enrollment over each of the next five years.

Providing both a typical (BA/BS) and professional/technical (BAS) pathway to a bachelor’s degree, the BAS degree in particular enables holders of Associate of Applied Science degrees a streamlined path to graduation with a Bachelor of Applied Science degree. Unlike the BA/BS pathway, the BAS reaches a hitherto underserved group of students by accepting technical credits and satisfying general education through a reduced number of credits to satisfy requirements for the bachelor’s degree. With appropriate marketing, EOU expects a full-time cohort of 55 split between on campus and online in the initial launch phase, Fall 2020 (Y1), with steady state enrollment of 224 by Fall 2024 (Y4).

- b. Expected degrees/certificates produced over the next five years.

For BA/BS/BAS earners, it is expected that between Y3 and Y5 (allowing for two years minimum time to graduation for transfer students who are full time), the number of graduates will grow from 30 at a minimum to 50 at a maximum by year 5. As the BAS pathway specifically targets the professional development needs of employers and employees, we expect a larger number of part time students who take fewer courses at one time while maintaining full-time employment, thus extending time-to-degree completion.

- c. Characteristics of students to be served (resident/nonresident/international; traditional/nontraditional; full-time/part-time, etc.).

The primary target are professionals who have some information/computer technology training, who are working at information technology (data) facilities, and who wish to develop professionally both in the computer/information technology field as well as in management areas in order to assume operational and administrative management roles in these facilities.

- d. Evidence of market demand.

New Program Annual Supply (degree) and Demand (occupational openings) data for Tri-States Region

Program	Annual Degree Production	Annual Occupational Openings	Highest annual degree production in region	Implementation Year	Program modality	Steady state enrollment
BA/BS/BAS Information Technology	87	528	56	2020	online	224

Degree production is the sum total for all institutions located in selected regions of average annual degrees awarded in CIP codes at the corresponding degree level identified with that program (see list on CIP code page) in the states of ID, OR, and WA (2015-2017). Occupational openings is the total annual openings estimated in the occupations associated with the program CIP code(s) (see SOC list) for the areas of Eastern Oregon, Southwestern ID, North Central ID, Benton-Franklin WA, South Central WA, and Eastern WA (2016-2026). It is assumed that EOU will achieve at least equivalent to the highest number of degrees produced in these majors across the tri-state region. Enrollment at steady state is calculated using the current ratio of fall enrollments by student level to annual degrees produced at that level for EOU. Steady state is achieved incrementally at 25% annually for each new program. Programs offered in both modalities have enrollments split evenly across modalities. Enrollment to FTE is calculated using current ratios by modality.

- e. If the program's location is shared with another similar Oregon public university program, the proposal should provide externally validated evidence of need (e.g., surveys, focus groups, documented requests, occupational/employment statistics and forecasts).

According to data provided by EOU's Institutional Research Office for Bachelor's degree holders, there were the following numbers of job openings in Oregon for these CIP code 11 standard occupational classification Codes and Titles: Database Administrators 459; Network and Computer Systems Administrators 1052; Computer Network Architects 366; Computer Network Support Specialists 461. The ten-year supply estimate for all Oregon Higher Education Institutions (IPEDS) is 5890 for Bachelor's degree awards, with a demand gap of 6317. (Sources: Oregon Employment Projections Full Table, 2014-2024- Oregon Employment Department, Workforce and Economic Research; IPEDS Completions data 2013-14, 2014-15, 2015-16).

- f. Estimate the prospects for success of program graduates (employment or graduate school) and consideration of licensure, if appropriate. What are the expected career paths for students in this program?
 - i) See e. Above.

5. Outcomes and Quality Assessment

- a. Expected learning outcomes of the program.

Graduates with a BA/BS/BAS in Information Technology Management will have demonstrated proficiencies in the following four areas:

Content Knowledge: Broad-based knowledge in operation and management (fiscal and people) of information technology systems and facilities such as data centers, etc.

Problem Solving: Graduates will demonstrate problem-solving skills with regard to the technical aspects of information technology facilities, but also with regard to management issues (fiscal and people).

Inquiry and Analysis: Graduates will be able to employ the skills of independent, careful analysis of all operational aspects of information technology facilities.

Communication: Graduates will be able to use written and oral communication skills both in the information technology and the fiscal/people management arena.

- b. Methods by which the learning outcomes will be assessed and used to improve curriculum and instruction.

The outcomes for each class will be clearly stated on the syllabus. Assessments for included courses will address both the conceptual and applied aspects of the class. Means of assessment will include projects, quizzes, and exams. The objectives for projects and other assigned work will tie directly into course outcomes.

- c. Nature and level of research and/or scholarly work expected of program faculty; indicators of success in those areas.

Faculty, hired from graduate institutions or business and industry with advanced degrees, are evaluated for continuance and promotion based on teaching excellence, evidence of demonstrated application of research or scholarly work to the teaching and learning environment, and commitment to continuous improvement as demonstrated by KPI targets for participation in professional development and assessment of student learning outcomes.

6. Program Integration and Collaboration

- a. Closely related programs in this or other Oregon colleges and universities.

The Oregon Institute of Technology offers a Bachelor of Science in Information Technology with focus area options of Cybersecurity, Networking, Database, Programming, or Business Analytics. It is offered at Klamath Falls, Portland Metro, and online (see Appendix B). It appears to include a less rigorous computer science component.

- b. Ways in which the program complements other similar programs in other Oregon institutions and other

related programs at this institution. Proposal should identify the potential for collaboration.

- i. BA/BS/BAS degree options serve all students, regardless of modality of instruction or level of entry into the IT Management major. Our community college partners have long requested pathways for their Associate of Applied Science degree and/or IT certificates into EOU's Computer Science program, while keeping the total number of years required for obtaining a Bachelor's degree within the parameters and timeframe of a 2+2 program. Such a pathway exists for students graduating with an Associate of Science Oregon Transfer/Computer Science (ASOT/CS), and is now available to AAS degree holders, as well, who can accomplish a 2+2 BAS degree in IT Management from EOU.
 - ii. The employment profile for IT Management is different than the employment profile for computer scientists. An Applied Science Associate degree in Cyber Security & Network lacks preparation for the rigors of a computer science program, particularly in mathematics. Similarly, IT Management focuses not on complex computer programming skills, but rather management and supervision of work in data centers, network switching centers, etc., performing oversight of network maintenance and security tasks, as well as technical and IT support.
Students seeking a BA/BS/BAS degree in Information Technology Management usually do not intend, nor do they need, a mathematics and programming intensive bachelor's level degree.
- c. If applicable, proposal should state why this program may not be collaborating with existing similar programs.
Not Applicable
- d. Potential impacts on other programs.

Program will enhance the opportunities for students seeking employment as web developers, database administrators, and network and computer systems administrators through achievement of the BA/BS/BAS degree options. Earning an AAS degree from Oregon Community Colleges enables this population of students to continue their studies in a growing field within four years, with no credit loss, and within the parameters and timeline for a 2+2 degree.

7. External Review

If the proposed program is a graduate level program, follow the guidelines provided in *External Review of New Graduate Level Academic Programs* in addition to completing all of the above information.

Not applicable this is an undergraduate program

APPENDIX C: *Oregon Institute of Technology Bachelor of Science in Information Technology Curriculum*

Freshman Year

Fall

MATH 111 - College Algebra Credit Hours: 4
SPE 111 - Public Speaking Credit Hours: 3
WRI 121 - English Composition Credit Hours: 3
Science Elective Credit Hours: 4

Winter

ECO 201 - Principles of Microeconomics Credit Hours: 3 MIS
102 - Spreadsheet Lab Credit Hours: 1
MIS 145 - Introduction to PC Hardware/Software Credit Hours: 4 WRI
122 - Argumentative Writing Credit Hours: 3
Humanities Elective Credit Hours: 3

Spring

BUS 215 - Principles of Management Credit Hours: 3 ECO
202 - Principles of Macroeconomics Credit Hours: 3 MIS 251 -
Networking I Credit Hours: 4
MIS 275 - Introduction to Relational Databases Credit Hours: 3
Humanities Elective Credit Hours: 3

Sophomore Year

Fall

ACC 201 - Principles of Accounting I Credit Hours: 4
MIS 118 - Introduction to Programming in C# Credit Hours: 4 MIS
273 - Systems Administration I Credit Hours: 4
WRI 227 - Technical Report Writing Credit Hours: 3

Winter

BUS 223 - Marketing I Credit Hours: 3
MATH 361 - Statistical Methods I Credit Hours: 4 MIS
218 - Database Programming Credit Hours: 4
SPE 321 - Small Group and Team Communication Credit Hours: 3
Elective Credit Hours: 3

Spring

ACC 203 - Principles of Managerial Accounting Credit Hours: 4
MATH 362 - Statistical Methods II Credit Hours: 4
MGT 335 - Project Management Credit Hours: 3 PSY
201 - Psychology Credit Hours: 3

Junior Year

Fall

ACC 325 - Finance Credit Hours: 4
BUS 356 - Business Presentations Credit Hours: 4
MIS 311 - Introduction to Systems Analysis Credit Hours: 3
Focused Sequence Elective Credit Hours: 4 a

Winter

MIS 312 - Systems Analysis I Credit Hours: 4
MIS 341 - Relational Database Design I Credit Hours: 4 WRI
350 - Documentation Development Credit Hours: 3 Focused
Sequence Elective Credit Hours: 4 a

Spring

BUS 226 - Business Law Credit Hours: 3
MIS 322 - Systems Analysis II Credit Hours: 4
MIS 495 - Senior Project Selection Credit Hours: 1
Focused Sequence Elective Credit Hours: 4 a Focused
Sequence Elective Credit Hours: 4 a

Senior Year

Fall

BUS 457 - Business Research Methods II Credit Hours: 3 MGT
461 - Lean/Six Sigma Management I Credit Hours: 3 MIS 496 -
Senior Project Management Credit Hours: 3 PSY 347 -
Organizational Behavior Credit Hours: 3 Focused Sequence
Elective Credit Hours: 3 a

Winter

ANTH 452 - Globalization Credit Hours: 3
MIS 497 - Senior Project II Credit Hours: 3

PHIL 331 - Ethics in the Professions Credit Hours: 3 or
PHIL 342 - Business Ethics Credit Hours: 3

Spring

BUS 478 - Strategic Management Credit Hours: 3 MIS
498 - Senior Project III Credit Hours: 3 Focused
Sequence Elective Credit Hours: 4 a Focused Sequence
Elective Credit Hours: 4 a

Institution: Eastern Oregon University
Program: BA/BS/BAS in Information Technology Management

Action: At the **May 7, 2019** meeting, the Statewide Provosts Council approved a new program for **EOU, BA/BS/BAS in Information Technology Management**, to move forward to the Oregon Higher Education Coordinating Commission for its review and approval. The **EOU** Board of Trustees approved the program at its **April 11, 2019** meeting.

Eastern Oregon University

Sarah Witte, provost

Approved

Opposed

Abstained



Oregon State University

Ed Feser, provost

Approved

Opposed

Abstained



Portland State University

Susan Jeffords, provost

Approved

Opposed

Abstained



University of Oregon

Jayanth Banavar, provost

Approved

Opposed

Abstained



Oregon Health & Science University

Elena Andresen, interim provost

Approved

Opposed

Abstained



Oregon Tech

Gary Kuleck, provost

Approved

Opposed

Abstained



iversity
it

Approved

Opposed

Abstained



Western Oregon University

Rob Winningham, provost

Approved

Opposed

Abstained

