



September 2005

DRAFT

Bachelor of Applied Science in Information Technology and Administrative Management Central Washington University

Introduction

Central Washington University (CWU) seeks Higher Education Coordinating Board (HECB) approval to offer a Bachelor of Applied Science (BAS) degree in Information Technology and Administrative Management. The program is designed to serve students who hold an applied professional/technical degree in information technology from a community college and work experience, but lack the general education coursework required for a Bachelor of Science degree. The program would be offered at CWU's main campus in Ellensburg and at the university centers in Des Moines and Lynnwood.

Relationship to Institutional Role and Mission and the Strategic Master Plan

The competencies outlined by the proposal's general education requirements would provide students with a foundation that will help them achieve goals integral to the mission of CWU. These include development of the tools necessary to become responsible citizens prepared to lead an enlightened and productive life.

The programmatic goals are consistent with the strategic master plan goals of providing opportunities for students to earn degrees and responding to the state's economic needs. The program is designed to provide a pathway to a baccalaureate degree for students with a technical educational background that would not transfer for academic credit toward most bachelor's degree programs. The proposed degree program would be responsive to the needs of employers and students by developing in students a strong set of technical skills and providing them with important communication, management, and teamwork skills.

Program Need

Several colleges and universities around the country are offering or developing BAS degrees. These degrees typically allow students to transfer credits from an applied associate degree and enroll in an additional two years of full-time study (or equivalent), with an emphasis on broad upper-division general education coursework, as well as additional coursework in the chosen professional field.

Applied science programs are intended to meet the educational and economic needs of a community by providing outreach and training that result in the practical utilization of scientific knowledge. With these programs, the universities train professionals who are able to apply and use what is known from the body of scientific research, as well as develop the critical thinking and analytical skills that are required of today's knowledge workers. The BAS Information Technology and Administrative Management degree is designed to meet state and regional student, employer, and community needs by responding to a need to develop programs that provide a mix of technical skills and management and communication skills.

Employers consistently report difficulty hiring appropriately trained workers with a correct mix of technical skills and management and communication skills. The proposed program would develop in students a unique blend of technical skills and problem solving, communication, administrative, and supervisory skills and other knowledge typically associated with a baccalaureate-level education. Existing baccalaureate programs do not provide a pathway for students with a technical degree in information technology to efficiently transfer and complete a baccalaureate degree program.

After a period of decline in hiring of information technology-related occupations, growth in the sector is expected to be strong over the coming years; however, employers are more selective than in the past and there is an emphasis on attracting workers with the mix of skills described above. The demand for workers in information technology-related fields is supported by the HECB statewide and regional needs assessment.

Program developers expect strong student demand, due to the large numbers of graduates from information technology programs at the community colleges and the need for workers to develop program-specific supervisory and management skills in order to effectively compete in the marketplace. A number of community colleges provided letters of support for the program and indicated a strong student interest in a baccalaureate degree program that is designed to meet the needs of their graduates.

Program Description

By offering the BAS degree in Information Technology and Administrative Management, CWU would join a growing number of institutions nationwide that are responding to changing workplace demands by providing an avenue for technically trained workers to obtain a bachelor's degree.

The program would enroll 25 students in the first year and grow to full enrollment at 100 students in year three. Students would be admitted to the program after completing an Associate of Applied Science or other appropriate associate-level program in an information technology-related field, satisfying the CWU basic skills requirements, and completing at least one year of full-time work (or 2,000 hours).

Once admitted to the program, students would be required to complete 60-68 quarter credits within the major (40-43 semester credits) and an additional 22-30 quarter credits outside the major. At least 60 credits must be completed at the upper-division level and 40 credits must be taken in approved information technology courses. Students could complete their course of study within six quarters of full-time enrollment (or equivalent part-time enrollment).

The general education requirements for students in the BAS degree program would be the same as those required of students in other baccalaureate degree programs at CWU. As with all BAS programs at CWU, students would receive a waiver of the foreign language requirement (this waiver is also available in certain other academic degree programs at CWU). The key competencies expected from foreign language study – such as an understanding of other cultures and traditions – would be met through other general education requirements.

The program would rely on existing courses delivered primarily through live instruction, two-way interactive video, and online.

The proposed program has well-defined goals and objectives. Assessment of program objectives is linked to specific coursework, with each objective assessed in multiple courses. Specific learning outcomes are identified for each of the courses included in the core curriculum.

The program would be assessed through a campus-wide review process on a five-year cycle. The administration and faculty would monitor three key indicators of program quality, which include student course evaluations, focus groups with exiting seniors, and surveys of graduates and their employers about the quality of preparation for work in the field.

The program faculty would consist of four full professors, two assistant professors and four non-tenure track instructors. In addition, the program would add a coordinator with instructional responsibilities and a half-time instructor at each center where the program is offered.

Diversity

The program would work with the CWU admissions staff on university-wide efforts for diversity. In addition, the program has identified various strategies to advise and support diverse students, including a telephone campaign to ensure that students are receiving the institutional support they need to be successful in the program, and attendance at conferences and other events that would attract a diverse audience. The program developers have identified specific groups on campus and in the community with whom they would collaborate to attract and retain

a diverse student body. These include: the Black Student Union, Movimiento Estudiantil Chicano de Aztlan (MECHA), American Indian Science and Engineering Society (AISES), the Washington State Association for Multicultural Education (WSAME), Lesbian Gay Bisexual Transgender Alliance (LGBTQA), and Multicultural Students of Color Yakima.

Program Costs

The program would draw largely on existing resources for curriculum delivery; however, additional faculty and staff support would be required to offer the BAS in Information Technology and Administrative Management. The program would add 1.7 FTE faculty in the first year and add an additional 2.3 FTE faculty by year three (full enrollment). Other staff required for the program include a part-time administrative support person (.5 FTE). The program's first-year estimated costs are \$7,770 per FTE, and \$5,131 per FTE at full enrollment in year three. Included in the overall program cost is an estimated impact on the delivery of general education instruction at a cost of \$27,300 in the first year and \$81,900 at full enrollment in year three to accommodate the need for additional general education coursework.

The program would add to the existing array of programs in the information technology area by providing a pathway for students with a technical education background to efficiently access a baccalaureate degree. It would not duplicate existing programs.

External Review

The program was reviewed by two external experts.

The chair of the business and information systems program at Utah State University, while in support of the program, expressed some concern that the course of study did not include sufficient coursework in management. In addition, he asked for clarification that a program would be in place at the Ellensburg campus that would prepare students for entry into the proposed degree program. While the latter concern was not addressed in the proposal, the curriculum was modified to include additional management coursework.

The chair of business technology at Linn-Benton Community College in Albany, Oregon, expressed support for the program, citing the unique mix of skills that students could develop, as well as employer demand. She asked for clarification about access to the program for graduates of programs outside of Washington and the alignment of course content and student learning outcomes.

In addition to the required outside reviews, letters of support for the program were submitted by a number of community and technical colleges, other departments at CWU, and Eastern Washington University.

Staff Analysis

The proposed program would support the unique role and mission of the institution by providing students a liberal arts foundation through general education courses and providing the technical skills required to be successful in the field. The goals of the state's strategic master plan would also be supported through a degree program that would be responsive to employer needs and allow baccalaureate degree access for students with technical education training.

The student and program assessment techniques are appropriate for the program and include input from current and former students, faculty, and employers that would provide institutional leadership and faculty with the information they need to develop a high-quality program. The required curriculum is well defined and would allow students to complete their studies in a reasonable amount of time.

The program would meet a clearly identified need expressed by employers. The local community colleges attest to a strong interest in the program among students and their communities.

The proposed program would add to the array of programs available to prepare students for jobs in information technology-related occupations. The program is unique in that it is designed to cater to students who hold an Associate of Applied Science degree and would not duplicate existing programs.

With availability at CWU's university centers as well as the main campus in Ellensburg, the program should appeal to a diverse population of students. The program developers have also committed to working with CWU admissions staff and a number of campus-based and outside groups on strategies to attract a diverse student body.

By drawing heavily on existing resources, the program would be offered at a reasonable cost, especially given the highly technical nature of much of the curriculum.

Recommendation

Based on careful review of the program proposal and supplemental sources, HECB staff recommend approval of the Bachelor of Applied Science in Information Technology and Administrative Management at the Central Washington University Ellensburg campus and Lynnwood and Des Moines university centers.

RESOLUTION NO. 05-12

WHEREAS, Central Washington University proposes to offer a Bachelor of Applied Science in Information Technology and Administrative Management; and

WHEREAS, The program would provide students with a liberal arts general education and advanced coursework in management and information technology; and

WHEREAS, The program would help meet student, employer, and community needs for degrees and programs; and

WHEREAS, The diversity and recruitment plans are appropriate for the program; and

WHEREAS, The program would not create unnecessary duplication and would be delivered at a reasonable cost; and

WHEREAS, The program would be delivered at the Central Washington University Ellensburg campus and university centers in Lynnwood and Des Moines;

THEREFORE, BE IT RESOLVED, That the Higher Education Coordinating Board approves the Bachelor of Applied Science (BAS) in Information Technology and Administrative Management.

Adopted:

September 22, 2005

Attest:

Bob Craves, Chair

Jesus Hernandez, Secretary



September 2005

DRAFT
Bachelor of Science in Informatics
Washington State University

Introduction

Washington State University (WSU) seeks Higher Education Coordinating Board approval to offer a Bachelor of Science (BS) in Informatics. Informatics emerges from the synthesis of business and computer science and statistics to effectively use information resources through systematic processing of data in support of evidence based in decision making.

The program is designed to serve students in the Spokane area and from across the state through in-person classroom instruction at the WSU Spokane Riverpoint campus.

Relationship to Institutional Role and Mission and the Strategic Master Plan

WSU has a statewide mission to foster learning and inquiry among individuals, institutions, and communities. In support of that mission, the Riverpoint education center provides a higher education magnet center that attracts an array of distinctive undergraduate and graduate degree programs to the Spokane community

The proposed program would meet strategic master plan objectives by providing access to a high-quality degree program that meets student needs as well as the economic needs of the state. Informatics fits within a broader category of information technology which has consistently been considered a high-demand field. The program would help meet that demand by providing a desirable mix of the technical and management skills employers are seeking.

Program Need

Statewide demand for workers in computer and mathematical occupations is growing at a pace that exceeds the state average growth rate of all occupations. In its May 2005 occupational projections, the Washington State Employment Security Department estimated over 4,000 annual

openings from 2007-2012, due to industry growth and job replacement needs. However, growth in the demand for computer and mathematical occupations in the Spokane region is expected to be slower than the state average, with a projected 110 annual openings during the same period.

The US Bureau of Labor Statistics Occupational Outlook Handbook points out that workers with a strong technical background and experience, along with strong communication and administrative skills, enjoy the best employment opportunities. The proposed program is designed to develop this mix of skills, which should position graduates well in the labor market.

In addition to state and national projections, the proposal references a local survey of businesses -- banks, credit unions, securities firms, government agencies, and health care non-profit organizations -- that indicates strong support for a BS in Informatics. Two-thirds of the respondents indicated the program would improve employees' opportunities for advancement, and half said they would hire program graduates. All of the respondents indicated they would provide flexibility in scheduling to allow their employees to attend the proposed program.

Student demand for the program is expected to be high. Although no survey of students was included with the proposal, demand for similar programs across the state has remained competitive.

Access to similar programs in Eastern Washington is limited. Pace University in New York continues to offer the first program in information systems accredited by the Accreditation Board for Engineering and Technology (ABET). Local programs include Eastern Washington University's Bachelor of Science in Computer Information Systems and the Computer Science program at Gonzaga University. EWU's program offers some similar components, but does not require the same level of preparation in the decision sciences and is not ABET accredited. The Gonzaga program is a traditional computer science program that does not include the decision science and business content provided in WSU's proposed degree program.

Program Description

The BS degree in Informatics at WSU would provide an interdisciplinary program with a distinctive emphasis that includes substantial coursework and experience in computer science, business, and decision sciences. The program would provide a broad technical and general education background, as well as an emphasis on communication and practical application of knowledge through project experiences and mentoring. The program has been developed with the goal of seeking Accrediting Board for Engineering and Technology (ABET) accreditation when eligible.

The program would require a total of 120 semester credits, of which students would typically transfer 60 semester credits from a community college, other four-year colleges, or another WSU campus.

The program would enroll approximately 12 students in the first year (10 FTE) and grow to approximately 70 students (66 FTE) at full enrollment by the fifth year. Students would be admitted after completing 60 semester credits -- including general education requirements and a series of required prerequisite courses that would include calculus, linear algebra, computer programming, accounting, and economics.

Admitted students would typically enroll full-time for two years, although part-time attendance would be possible. Students would be required to complete an additional 60 credits -- including 51 semester credits of required coursework and 9 approved elective credits.

The program proposal includes the upper-division curriculum as well as a proposed course of study for the first two years, including articulating courses at WSU Pullman and Spokane Falls Community College. Program staff would work closely with students and advisors at both SFCC and WSU Pullman in order to ensure that students are prepared to transfer with appropriate coursework.

Assessment/Program Review

The proposal identifies nine major learning outcomes for program graduates that are aligned to specific courses and experiences in the program. The primary measure of student success in achieving outcomes would be through student grades. To ensure that grade point average (GPA) is an accurate measure of student achievement, a faculty committee would review samples of work from each assignment to assess the range of work presented by students and make recommendations for improvements in the program that would ultimately improve student achievement and the program as a whole.

The accreditation process through ABET would entail additional scrutiny of program quality and resources.

Diversity

The program would actively participate in all WSU diversity plans. In addition, the program has identified resources for faculty and staff training in diversity issues, and WSU Spokane participates in a number of community initiatives -- including the Spokane Task Force on Race Relations and the Spokane Chamber of Commerce Workforce Diversity Committee. WSU also sponsors a number of community events around diversity. In addition, WSU Spokane participates in outreach programs (including MESA and CityLab) that work with students of color at local schools.

The proposed program's recruiting effort as a whole is robust and includes a variety of approaches -- including Web, print, and radio advertising; alumni support; and faculty participation through guest lectures, classroom visits, and participation at public events.

Program Costs

Program development would require 3.5 FTE faculty -- including one full-time tenure-track faculty member, two full-time term-appointment faculty members, and two part-time adjunct faculty members. Administrative support would be provided through a part-time (0.5 FTE) senior secretary position. The program would add 10 FTE students in the first year and grow to 66 FTE students at full enrollment in year five. The program's first-year estimated costs are \$15,861 per FTE, and \$7,433 per FTE at full enrollment in year five.

In the most recent accreditation visit (1999), the Cooperative Academic Library Service (CALs) was recognized as a major strength of WSU Spokane. Improvements in the library and additional space for the informatics program provided by development of the Academic Center Building on at the Riverpoint campus, would accommodate growth.

External Review

The program proposal was submitted to two experts in the field for review.

The interim dean of the College of Engineering at the University of Idaho provided a number of recommendations, to which the program developers responded with modifications to the program proposal and further explanation. Most notably, the UI reviewer was concerned with the depth of preparation in computer programming; a concern also raised by the WSU Faculty Senate. In response, the program proposal was modified to include a greater emphasis in this area, while maintaining a balance with other areas to preserve the interdisciplinary nature of the program.

The professor and chair of bioengineering at the University of Washington raised two key concerns; one which yielded a significant change in the program proposal. The reviewer commented that one of two proposed options would not meet ABET standards without substantial changes, a concern echoed by the WSU Faculty Senate. In response, the program proposal was modified to eliminate the option in question and instead focus on the remaining option that better fit ABET accreditation requirements. The second concern was whether students would be exposed to hands-on projects linked to industry. Program developers clarified that the intent of the senior project was to connect students with industry relevant projects and experiences.

The program proposal also was circulated among the public four-year colleges for review and comment. Central Washington University submitted a letter in support of the proposed degree program.

Staff Analysis

The program proposal provides a well-defined course of study. Transfer courses from the key feeder school (SFCC) are identified; as are WSU course numbers for the first two years of the program. This will enable advisors at the two-year and four-year schools to help students effectively plan their coursework and efficiently complete the degree requirements. In addition, the proposal indicates that program staff will work with SFCC and WSU Pullman staff to clearly communicate program requirements to prospective students.

The proposed program is designed to meet employer needs for information technology workers who have a diverse set of skills including key technical skills and essential “soft” skills in communication and management areas. While the employment demand statewide is large and growing, the employment picture in the Spokane region is less certain, with relatively few projected openings. Support of the local business community may be an indicator that the estimates are low or that workers with these skills are needed in other parts of the economy (beyond those included in the projections for computer and mathematical occupations).

The program proposal provides a mix of theory and practical experience that is consistent with the role and mission of a research university and the state’s strategic master plan goals.

The program assessment and review process, while focusing on grades as the key metric, provides a clear link between required coursework and established student learning outcomes. In addition, the process would provide a mechanism for faculty review of the assessment approaches, assignments, and student performance in order to recommend improvements in the program over time. The additional step of ABET accreditation would help ensure that the program is providing students and faculty with the appropriate resources to deliver a high quality program.

The program would fill a niche and does not appear to unnecessarily duplicate other programs offered by local colleges and universities.

The program also includes an aggressive recruitment plan that includes a number of strategies to attract a diverse student body.

Although program costs are high in the first few years, costs are reasonable by year five; particularly given the highly technical nature of the program.

Recommendation

Based on careful review of the program proposal and supplemental sources, HECB staff recommend approval of the Bachelor of Science in Informatics at Washington State University Spokane.

RESOLUTION NO. 05-13

WHEREAS, Washington State University proposes to offer a Bachelor of Science in Informatics degree; and

WHEREAS, The program would provide students with an interdisciplinary education rooted in computer science, management, and decision sciences; and

WHEREAS, The program would help meet student, employer, and community needs for degrees and programs; and

WHEREAS, The diversity and recruitment plans are appropriate to the program; and

WHEREAS, The program would not create unnecessary duplication, and would be delivered at a reasonable cost; and

WHEREAS, The program would be delivered at the Washington State University Riverpoint campus in Spokane;

THEREFORE, BE IT RESOLVED, That the Higher Education Coordinating Board approves the Bachelor of Science in Informatics at Washington State University Spokane.

Adopted:

September 22, 2005

Attest:

Bob Craves, Chair

Jesus Hernandez, Secretary