

Bachelor of Applied Science in Information Systems

December 2013



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**COVER SHEET
NEW DEGREE PROGRAM PROPOSAL**

Program Information

Program Name: Bachelor of Applied Science in Information Systems

Institution Name: Olympic College

Degree: B.A.S. Information Systems Level: Bachelor Type: Applied Science CIP Code: 11.0103
(e.g. *B.S. Chemistry*) (e.g. *Bachelor*) (e.g. *Science*)

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12/4/13
Date

INTRODUCTION

Olympic College (OC) is pleased to develop a Bachelor of Applied Science Degree in Information Systems (BAS IS) program, with an anticipated start of fall 2014. The program builds upon OC's current Associate in Applied Science--Transfer (AAS-T) Information Systems Specialist degree to fill proven industry demand for bachelor-level information technology professionals.

The BAS IS program mission states, *We prepare students to be agile information systems professionals who can strategically plan, coordinate, and implement solutions to benefit businesses, industries, and communities.* Designed for place-bound students interested in developing expertise and enriching their credentials, this degree will provide students with the broad foundation and highly technical skills necessary to be successful in an increasingly competitive workforce. Students will learn to strategically plan, manage, and apply information technology solutions to business processes and challenges. To align closely with industry expectations, the program offers a rigorous, competency-based curriculum that ensures students demonstrate mastery of relevant knowledge, skills, and abilities.

Core topics include business processes, software development, Web, networking, information assurance, project management, analytics, communication, teamwork and leadership. The program also includes work-based learning, internships, and capstone projects to equip students better for industry demands and to assist with job placement in positions such as network and computer systems administrator, computer systems analyst, and information security analyst.

In this new degree program proposal, Olympic College presents:

- BAS IS curriculum, including program learning outcomes, course preparation needed by students transferring with technical associates degrees, general education components, coursework needed at junior and senior levels, and program evaluation criteria and process.
- Qualified faculty to teach technical coursework, general education courses, and electives, in sufficient number to support the curriculum.
- The BAS IS selection and admission process and OC's commitment to serve a diverse population.
- Descriptions of critical Olympic College services provided to BAS IS students, including services for financial aid and academic advising.
- Administrative staff to support BAS IS program operation and the success of program students.
- The college's plan to sustain the BAS IS program over time. A comprehensive financial plan for the first five years of program operation is included.
- Rationale for not seeking specialized program accreditation for the BAS degree in Information Technology program.
- Pathways for BAS IS students who wish to continue their studies in graduate school.
- A summary of external expert program evaluations.

CRITERION 1: CURRICULUM DEMONSTRATES BACCALAUREATE LEVEL RIGOR

In order to create a strong course of study for the Bachelor of Applied Science in Information Systems (BAS IS) program, Computer Information Systems (CIS) faculty researched best practices and worked with a skilled, BAS curriculum developer. They also collaborated with CIS Advisory Committee members and a regional information technology (IT) industry roundtable to formulate program objectives and learning outcomes that align closely with industry expectations. In addition, care was taken to evaluate coursework in the CIS AAS-T Information Systems Specialist degree to ensure BAS classes built on existing student knowledge, skills, and abilities, and to address any potential gaps in student learning that could become a barrier to success at the baccalaureate level.

Guiding Principles

The Bachelor of Applied Science in Information Systems (BAS IS) program is directed by guiding principles that reflect state, college, and program missions, affirm core values, articulate program objectives, and shape program outcomes.

These principles are as follows:

Access: *We believe in fostering opportunities for all students.*

- The program welcomes a diverse student body.
- All aspects of the program will be learner-centered
- Learning materials will be available online and ADA compliant
- Students may be awarded credit for prior learning
- Smooth pathways from high school to associates degree and through to the BAS will be clearly established
- Pathways beyond the baccalaureate will be identified and facilitated
- Lifetime relationships between students and alumni will be cultivated

Adaptability: *We believe students should be agile players in a dynamic industry.*

- The program will be responsive to rapidly changing industry trends
- Curriculum will be continually reviewed and revised to ensure currency and relevance
- Students will develop their own professional development strategies to stay current with technology
- Industry-based projects and models will assist students in seamless transition to the workplace

Civility: *We believe students should be locally and globally engaged.*

- Course content will be taught in the context of sound, ethical, and sustainable decision-making
- Students will be knowledgeable about global perspectives
- Students will apply theory to real-world needs and solutions
- Respectful discourse, active listening, and cooperative learning will be nurtured

Rigor: *We believe students should be well-prepared.*

- Students will be conversant in broad-based information systems concepts
- Curriculum will be competency-based
- Curriculum will be aligned with industry certifications

- Sound security practices will be integrated throughout the curriculum
- Critical thinking, research, and project-based group work will be integral to classroom success
- Student knowledge will be tried and expanded through internships, work experience, and practicums

Evaluation: *We believe in continuous improvement through ongoing assessment.*

- All classes will have clear, measurable objectives and learning outcomes
- Students will be successful through demonstrated mastery of core knowledge and abilities
- Program assessments will be inclusive to measure student learning and success
- There will be an ongoing process for program analysis, development, and evaluation

Program Learning Outcomes

The Bachelor of Applied Science in Information Systems (BAS IS) program will broaden and deepen students' foundational knowledge, adding general education, theory, advanced technical and professional skills, and integrative and collaborative learning. Upon successful completion of the program, all students will be able to:

1. Develop organizational solutions based on information systems, applying integrated problem solving techniques and systems thinking.
2. Analyze and develop recommendations for information systems design and implementation in accordance with best practices and standards, legal and regulatory requirements, and ethical and social considerations including respect for privacy and intellectual property.
3. Apply effective collaborative and communication skills in a wide range of technical team environments and evaluate the success of various team strategies based on the project goals and constraints.
4. Develop successful and respectful relationships with clients, coworkers, managers, and stakeholders, applying a wide range of adaptive and effective communication skills to convey complex technical concepts.
5. Present and compare industry standard tools and applications in content delivery across various media, including Web, mobile and client/server environments, and discuss how they support the organization's goals.
6. Develop solutions for networking and security problems, balancing business concerns, technical issues, and security.
7. Perform analysis, design, implementation, testing and maintenance of computer-based systems, following established procedures and stressing software development best practices.
8. Critically evaluate and analyze data using proven methods to aid organizational decision-making.
9. Design professional development strategies for evaluating, recommending and applying new techniques, technologies, computer languages and user requirements as both the needs of the organization and capabilities of the technology emerge.

Program Evaluation Criteria and Process

Olympic College is dedicated to ongoing program evaluation as part of its commitment to continuous improvement and student success. The Bachelor of Applied Science in Information Systems (BAS IS) program will benefit from this commitment, as well as from established procedures and available resources already promoted by the college.

Ongoing Evaluation

Even in its developmental stages, the BAS IS has undergone rigorous internal and external review. To ensure a viable program at the start, numerous strategies were employed to determine the need for the BAS in Information Systems, and to define the best possible program outcomes and curriculum. Strategies included numerous discussions between Computer Information Systems (CIS) faculty and IT managers in local-area industry, student and employer surveys, state, regional and local labor market research, advisory board input, and external reviews by IT educators at post-secondary institutions.

To ensure the most comprehensive approach throughout the program, evaluation processes will continue to engage all stakeholders, including students, faculty, college divisions and departments, industry, K-12 partners, and the community. Industry will continually participate in review and recommendation of the BAS degree in Information Systems program curriculum and program elements through the already-existing CIS Advisory Board. Board members include IT industry managers and workers representing a variety of IT-based systems from large and small companies as well as local government contracting agencies. The Advisory Board, which has been integral to the ongoing support of program planning and curriculum of Olympic College's Associate of Applied Science-Information Systems Specialist degree, will expand its scope to include the BAS degree in Information Systems program. The BAS IS Advisory Board will meet regularly to help keep the program abreast of changes in the field, advise on curriculum, evaluate program success, and ensure rigor and continued relevance.

Program evaluations will survey and assess efficiencies and successes by measuring student performance or satisfaction in the areas of:

- Curriculum and learning outcomes
- Course-level assessments and measurements
- Instructional materials
- Learner interaction and engagement
- Course technologies used
- Equipment and resources
- Services provided throughout the college
- Advising, intake and post-graduation

Internal Review Processes

Several means for measuring effectiveness will be employed that include both already existing college processes and those developed specifically for the BAS. For example, Olympic College conducts a formal five-year review of all its programs, in which the BAS program will participate. The formal five-year program review process looks at a variety of indicators to assess how well existing programs are meeting stated outcomes and goals, both general to the college and specific to the program. Indicators include institutional statistics on student retention, student demographics, enrollments, student-to-faculty ratios (as compared to state averages), and quarterly course completions. The program review process provides for commendations and recommendations as indicated. Detailed follow-ups are performed periodically throughout the five year period, at the end of which the process starts again. Satisfaction surveys, student course completions, and, most-notably, the student portfolio will be used to assess the extent to which learning outcomes are being attained.

Portfolios

Electronic portfolios will be a critical component in providing students and faculty with formative and summative assessment of essential knowledge, skills and abilities articulated in the program learning outcomes. During the first program quarter, faculty will guide students in exploring the purpose and

prominence of portfolios for ongoing assessment of learning. Careful planning and organization as portfolios are being developed will build a solid foundation for their use throughout the program.

Each quarter, students will carefully select products and artifacts for inclusion into their portfolios. Items will be chosen to demonstrate attainment of established program learning outcomes. They will also display individual student strengths, interests and goals. Students’ reflective statements will help document the learning process and progress.

The portfolios will consist of a collection of each student’s work throughout the two year program. It will serve as a key method for students and faculty to assess individual student progress. During the last program quarter, students will refine their portfolios for presentation to work-based learning supervisors and prospective employers.

The aggregate portfolios of all program students will serve as an essential factor for faculty to review and assess the attainment of program learning outcomes for students as a group. They will use information to critically assess their teaching and learning activities and continually make improvements.

Metrics for Program Success

Direct, indirect, qualitative, and quantitative data will be used to measure success and to define areas in need of improvement. Continuous improvement by evaluating relevant, evidenced-based measurements will be the basis for program success. To ensure that the most-relevant data and approaches are used, indicators will be defined, refined, and measured throughout the student experience and program life-cycle. Results collected and compiled will be the subject of periodic and regular analysis by the appropriate reviewers, including discipline faculty, deans, program director and others as needed. Based on this analysis, recommendations for implementation into the program will be developed.

Table I outlines various assessment tools that will be used for program assessment.

TABLE I: PROGRAM ASSESSMENT

Methods/Tools	Used to Assess	Notes
STUDENTS		
Student course evaluations	Course learning outcomes, materials, resources, equipment, facilities	Course evaluations will be done regularly throughout the program, and results will help target areas of strength and weakness
Student survey	Faculty, student services, facilities	Existing OC surveys already in place will be utilized
Graduate survey	Career preparedness, workplace expectations relevance, wage and career progression	Exit surveys will be done for all program graduates; follow-up surveys will be done one-year from graduation

EXTERNAL/EMPLOYERS		
Advisory Board	Curriculum, labs, facilities, resources (i.e., subscriptions), equipment, materials, learning outcomes, capstone coursework, and professional portfolios	Advisory board members will meet regularly throughout program year, and further will participate in annual focus groups to review and provide feedback and recommendations
Employer survey	On-going program relevance	Periodic survey results will help target areas of strength and weakness
Post graduate employer survey	Program effectiveness of employer expectations; employees' knowledge, skills and abilities improvements; overall program effectiveness	Employers will be asked to participate in periodic surveys, per already-existing college processes
INTERNAL/PROGRAM		
Capstone course	How well students apply all knowledge and skills across the curriculum	Capstone course will involve completion of portfolio as well as field-work application and documentation of knowledge, skills and abilities attained throughout the program
Professional portfolio	Evidence of quality of skills and abilities attained	Portfolio materials will be developed and collected across the curriculum and throughout the program
Industry certifications	Student ability and aptitude in selected technologies that parallel course and program learning outcomes	BAS coursework will include requirements to pass three industry certifications: MCSA, CompTIA™ Project+, and CompTIA™ Security+ (see descriptions below)
INTERNAL/INSTITUTION		
Faculty survey	Support services, facilities, library resources	Periodic surveys to program faculty in all disciplines to assess service levels
Administrative survey	Program impact to college services	Periodic surveys to major college

		departments to assess program impact to college services
Institutional statistics	Student demographics, trends in enrollments and retention, course completions (and student success as measured by 2.0 or better), student progression throughout the program	Data tracking conducted by the Office of Institutional Planning, Assessment, and Research will be leveraged
Instructional Program Planning Five-year review	How well program is meeting its stated goals and outcomes	An existing, formal process already in place at the college will be used

Course Preparation Needed by Students Transferring with a Technical Associates Degree

Olympic College’s Bachelor of Applied Science in Information Systems (BAS IS) degree is designed to ensure a smooth pathway for students who hold an IT-related technical associates degree. Students with such a degree will typically be able to complete the BAS IS program in two years with little additional preparation.

As an open door institution, Olympic College seeks to accommodate as many qualified students as possible. The entry requirements of the BAS IS program as outlined in Table II establish minimum qualifications to provide maximum access to the degree and at the same time ensure student success at the baccalaureate level.

TABLE II: ENTRY REQUIREMENTS FOR BAS IS

Prerequisite	Specifications
IT-related technical associates degree or equivalent credits	90 credits from a regionally- or nationally-accredited institution
2.0 cumulative GPA	
2.0 GPA or higher in all general education courses which meet program entry requirements	25 credits; see Table IV for general education components
2.5 GPA or higher in all IT-related courses which meet program entry requirements	35 credits; see Table III below

In order to assure student success at the baccalaureate level, students entering OC’s BAS IS program will be expected to already have developed a strong IT foundation. The required courses outlined in Table III, or their equivalents*, contain foundational knowledge upon which upper--division BAS IS courses build. Applicants transferring with a technical associates degree will be prepared for upper--division courses by successfully completing these courses or demonstrating proficiency in commensurate technical skills prior to entering the program.

TABLE III: FOUNDATIONAL IT COURSES AND TECHNICAL SKILL REQUIREMENTS FOR BAS IS ENTRY

Course	Subject	Industry Relevance
CIS 110 Information Systems Concepts	Broad knowledge of Information Technology	Core concepts
CIS 111 Introduction to Operating Systems	Operating systems	Microsoft and Open Source technologies
CIS 141 Introduction to Programming	Programming skills	Open source PHP standards and programming practices
CIS 155 Web Development I	Web development	W3C.org HTML5 and CSS3 standards and practices
CIS 182 Networking Concepts	Networking knowledge	CompTIA™ Network+
CIS 205 Introduction to XML	XML/Databases	W3C.org XML standards
CIS 236 Information Systems I	Security	CompTIA™ Security+

* Applicants with prior coursework, previously-earned degrees, industry certifications, and/or extensive work experience should meet with the program director to discuss options.

General Education Components

As reflected in the program outcomes, Olympic College expects all students who graduate with a Bachelor of Applied Science in Information Systems (BAS IS) degree to be not only technically proficient but also to demonstrate a baseline of knowledge in communication skills, quantitative/symbolic reasoning, humanities, social sciences, and natural sciences. The general education components of the BAS IS program as described in Table IV have been carefully selected to build competency in these areas, complement technical coursework, and adhere to state general education requirements as outlined by the SBCTC's Instruction Commission.

TABLE IV: GENERAL EDUCATION REQUIREMENTS FOR BAS IS

Subject	Credits	Course	Typical Completion
Communication (10 credits)			
ENGL& 101	5	English Composition	Associate
ENGL& 235	5	Technical Writing	Associate
Quantitative Symbolic Reasoning (5 credits)			

Math& 141	5	Pre-Calculus: Algebra I	Associate
Humanities (10 credits)			
CMST& 210	5	Interpersonal Communication	Associate
CMST& 230	5	Small Group Communications	BAS
Social Science (10 credits)			
BUS& 101	5	Introduction to Business	Associate
SOC 319	5	Sociology in a Digital World	BAS
Natural Sciences (10 credits)			
BUS 215	5	Business Statistics	BAS
Natural Science Lab	5	A natural science lab course	BAS
Other (15 credits)			
IS 390	5	Reading and Research	BAS
IS 415	5	Informatics and Analytics	BAS
OLRM 320	5	Business and Leadership in a Digital Economy	BAS
TOTAL REQUIRED	60		

Coursework Needed at Junior and Senior Levels in the BAS

Ninety (90) credits of junior- and senior-level coursework in the Bachelor of Applied Science in Information Systems (BAS IS) are required. As outlined in Table V, this includes 35 general education credits and 55 credits in core information systems classes. The total number of credits required for graduation is 180, which includes 90 credits transferred from the associates as described in Table I.

Emphasizing the BAS IS degree's broad-based and applied course of study, 300- and 400-level classes build on foundational information systems credits earned at the associates level to instill a wide range of technical and professional knowledge, skills, and abilities (KSAs) necessary to succeed in the IT industry. These KSAs draw from core technical topics such as software development, Web, networking, and information assurance, as well as professional subjects like project management, communication, and teamwork. Throughout this two-year course of study, students will assemble a portfolio that reflects their growing mastery of learning outcomes.

Although students will move through these courses as a cohort, several classes offer students room for customization. For instance, in IS 390, Reading and Research, students will conduct independent research on a technical subject of their choice, guided by a faculty mentor and working closely with library resources to deepen theoretical knowledge and produce a substantial scholarly paper. In IS 490, Senior Project, students will apply theory to practice. After developing a proposal with faculty, students

will work in industry placements, pursue advanced certifications, and/or strengthen skills applications as they anticipate more focused career roles or graduate school. They will also finalize portfolios.

While core program topics will often be addressed in discrete courses, some--like security and critical thinking--will also be threaded throughout the curriculum. IS 470, Enterprise Systems Practicum, asks students to integrate their knowledge, skills, and abilities in these topics as they form work-based teams, developing an enterprise-level environment by taking roles as network admins, software developers, web database designers and project managers. Teams will produce professional documentation and will work with faculty to ensure high quality results.

For detailed upper-level course descriptions, please see Appendix A.

TABLE V: JUNIOR AND SENIOR LEVEL COURSEWORK FOR BAS IS

Course Description	Credits
General Education (shows only BAS-level—see Table II for more detail)	35
CMST& 230 Small Group Communications	5
BUS 215 Business Statistics	5
Natural Science Lab Course	5
SOC 319 Sociology in a Digital World	5
OLRM 320 Business and Leadership in a Digital Economy	5
IS 390 Reading and Research	5
IS 415 Informatics and Analytics	5
IS Core Courses	55
IS 300 IT Foundations	10
IS 305 Scripting for Automation	5
IS 330 Databases and Data Analysis	5
IS 337 Information Assurance I	5
IS 346 LAN Admin IV	5
IS 350 Project Management I	5
IS 438 Information Assurance II	5
IS 450 Project Management II	5
IS 470 Enterprise Systems Practicum	5

IS 490 Senior Project	5
Total Credits	90
Note: The total degree is 180 credits. Students will transfer in 90 Associate-level credits of which 25 will occur in general education. See table II for more details on program general education requirements.	

Table VI shows a sample student schedule based on the program’s full-time cohort model. The table assumes 15 credit hours per quarter and 6 - 8 quarters for a two-year completion.

TABLE VI: SAMPLE STUDENT SCHEDULE

Fall – Year 1	Winter – Year 1	Spring – Year 1	Summer – Year 1
IS 300 Foundations in IT (10 cr)	IS 337 Information Assurance I (5 cr)	IS 438 Information Assurance II (5cr)	General ed, if needed
	IS 346 LAN Admin IV (5 cr)	IS 390 Research and Reading (5 cr)	Certificate course options
CMST& 230 Small Group Communications (5 cr)	BUS 215 Business Statistics (5 cr)	OLRM 320 Business and Leadership in a Digital Economy (5 cr)	
Total: 15 credits	Total: 15 credits	Total: 15 credits	
Fall – Year 2	Winter – Year 2	Spring – Year 2	Summer – Year 2
IS 330 Databases & Data Analysis (5 cr)	IS 305 Scripting for Automation (5 cr)	IS 470 Enterprise Systems Practicum (5 cr)	General ed, if needed
IS 350 Project Management I (5 cr)	IS 450 Project Management II (5 cr)	IS 490 Senior Project (5 cr)	Certificate course options
SOC 319 Sociology in a Digital World (5 cr)	IS 415 Informatics/Analytics (5 cr)	Natural Science Lab course (5 cr)	
Total: 15 credits	Total: 15 credits	Total: 15 credits	

CRITERION 2: QUALIFIED FACULTY

Olympic College’s Computer Information Systems (CIS) and general education faculty are well-qualified to teach in the BAS Information Systems program. CIS faculty combine highly technical skills with industry knowledge and certifications, and all faculty bring extensive experience that integrates formal education, subject matter expertise, and cutting-edge content delivery. Collectively, the faculty have the breadth and depth to cover all curricular areas of the program.

Faculty members have prepared intensively for the design and launch of the new program by participating in targeted professional development activities that add quality and value to the degree. For instance, faculty members earned additional industry certifications, attended the IT Futures Summit and 2013 Northwest Educators' Conference, and completed Applying the Quality Matters Rubric (APPQM) and Instructure's Canvas learning management system training courses.

Faculty members have also continued to explore relationships with K-12 educators, a hallmark of the STEM Applied Baccalaureate grant OC received in August 2013. The department has reached out to area superintendents, CTE directors, and teachers to initiate a review of pathways from secondary schools to the associates and through to the BAS. As part of the review, OC faculty and secondary CTE directors and teachers met on November 19, 2013, for a local IT summit entitled *Sharing the Pathways Vision*. This event began an ongoing conversation between faculty and secondary educators, one that will include a thorough evaluation in spring 2014 of all current, lapsed, and potential articulation agreements that align with OC's AAS-T Information Systems Specialist degree.

Faculty Commitment to the BAS Program

Olympic College projects 20 FTE enrollments in 2014 – 2015, the first year the BAS in Information Systems is offered. In year two (2015 - 2016) the program plans to enroll a cohort of 25, and in year three (2016 - 2017) and each subsequent year a cohort of 30 will be admitted. To support these cohorts, OC expects to allocate one (1) FTE faculty to the program in 2014 – 2015 and two (2) faculty FTES each year thereafter.

The Computer Information System (CIS) department currently has five (5) full-time faculty positions at the associates-level, including one associates-level CIS position to be filled this year (2013-2014). Although some of these associates-level faculty will likely teach in the BAS program as well, OC also plans to hire one (1) new full-time BAS faculty member in 2014 – 2015 and proposes the addition of a second new full-time BAS faculty member in 2015 – 2016.

Faculty teaching general education courses within the BAS program will do so as part of their normal load, so no additional faculty are anticipated in departments outside CIS.

Faculty Credentials

All BAS faculty and administrative personnel responsible for technical coursework will meet certification requirements for professional and technical administrators and instructors in the Washington Administrative Code (WAC). Furthermore, in keeping with WAC specifications, most full- and part-time faculty who teach in the BAS program will be expected to hold a master's degree or higher in a field related to the course content they teach. In the case of highly technical courses for which a master's degree is unusual, a bachelor's degree and additional training, certifications, and/or professional experience may be considered sufficient.

Table VII outlines current faculty qualified to teach BAS IS courses and 300- or 400-level general education components.

TABLE VII: QUALIFIED CURRENT FACULTY

Full-time Faculty	Educational Credentials	300- or 400- Level Course(s) Qualified to Teach
Pam Bilodeau	M.S., Information Systems Management, University of Phoenix	IS 330 Databases and Data Analysis IS 350 Project Management I IS 390 Reading and Research IS 450 IS Project Management II
Kevin Blackwell	M.I.T., Information Technology, American InterContinental University	IS 337 Information Systems Security II IS 346 LAN Administration IV IS 438 Information Systems Security III IS 470 Enterprise Systems Practicum
Dondi Hanson	B.S., Computer Science, American College of Computer and Information Sciences	IS 300 BAS Foundations
Mark Westlund	M.B.A., Information Systems, City University	IS 300 BAS Foundations IS 305 Scripting for Automation IS 415 Informatics and Analytics IS 490 Senior Project
Current associates-level open faculty position	Master's degree in Information Technology-related area	
Mirelle Cohen	Ph.D, Sociology, University of British Columbia	SOC 319 Social Implications in a Digital World
Amy Herman	M.L.I.S., Library and Information Science, San Jose State University	IS 390 Reading and Research
Philip Mathew	Ph.D, Leadership Studies, Gonzaga University	OLRM 320 Business and Leadership in a Digital Economy
Victoria Newsom	Ph.D, Communication Studies, Bowling Green State University	CMST& 230 Small Group Communications
Jessica Thompson	M.A., Interdisciplinary Studies, University of Washington	SOC 319 Social Implications in a Digital World
Part-time Faculty	Educational Credentials	300- or 400- Level Course(s) Qualified to Teach

Theresa Brooks	M.S.E. Biology, Old Dominion University	IS 330 Databases and Data Analysis IS 415 Informatics and Analytics
Jay Hawkins	M.S. Information Technology (in progress), Western Governors University	IS 337 Information Systems Security II IS 346 Lan Administration IV IS 438 Information Systems Security III
Linda Parrish	M.S. Environmental Science, State University of New York	IS 300 BAS Foundations
Leon Stevens	Ph.D. Information Technology, Nova Southeastern University	IS 330 Databases and Data Analysis IS 415 Informatics and Analytics

CRITERION 3: SELECTIVE ADMISSIONS POLICY CONSISTENT WITH AN OPEN DOOR INSTITUTION

The Bachelor of Applied Science in Information Systems (BAS IS) is designed to provide maximum access to the degree and at the same time ensure student success and retention at the baccalaureate level. Designed for place-bound students interested in developing expertise and enriching their credentials, this degree will be delivered in a hybrid model to offer these and all students schedule flexibility as well as significant on-campus resources close to home or work. In order to accommodate as many qualified students as possible, Olympic College will award credit for prior learning, and a part-time option may be added to assist students whose commitments do not permit full-time enrollment.

The entry requirements of the BAS IS program as previously outlined (Table II) and reprinted here (Table VIII) establish minimum qualifications to ensure prospective students possess foundational knowledge in general education and technical skills before entry.

TABLE VIII: ENTRY REQUIREMENTS FOR BAS IS

Prerequisite	Specifications
IT-related technical associates degree or equivalent credits	90 credits from a regionally- or nationally-accredited institution
2.0 cumulative GPA	
2.0 GPA or higher in all general education courses which meet program entry requirements	25 credits; see Table II
2.5 GPA or higher in all IT-related courses which meet program entry requirements	35 credits; see Table III

Admission to the BAS IS program at Olympic College will be selective, as the number of enrollment spaces is limited to 20 the first year (2014 - 2015), 25 the second year (2015 - 2016), and 30 each year thereafter. To be considered, applicants must meet the minimum qualifications and satisfy all application processes, including the submission of transcripts for evaluation and a “letter of intent” narrative that addresses student goals for success in the program. OC plans to use an online “Entry Point” process to streamline admissions procedures, coordinate all student application materials, and allow students to monitor their application status.

Information for applying to the program will be available on the Olympic College website. Per OC’s open door policy, all applicants who meet the minimum qualifications and have successfully completed the application process will be considered for the program.

If qualified applicants exceed openings in any given year, OC will follow established guidelines for priority consideration: Priority consideration will first be given to students who meet the application deadline. Among students who meet the deadline, priority will be given to students who show superior academic performance as indicated by overall grade point average and who also hold information technology- based industry certifications and/or demonstrate relevant and in-depth experience in the field.

The SBCTC outlines very clear guidelines for prior learning assessment (PLA). Using these guidelines, along with current OC institutional policies, the BAS IS program is developing a clear process and appropriate range of strategies to assess demonstrated student skills. BAS IS faculty will work with the Registration and Records Office in order to produce transparent, consistent, equitable procedures for PLA.

Commitment to Equal Opportunity and a Diverse Student Body

Olympic College is committed to providing educational opportunities to persons of diverse cultures and backgrounds in order to assist all students in achieving their academic and professional goals.

Like all Washington state system colleges, OC is an Equal Opportunity College providing equal educational opportunities for all students and expressly forbidding discrimination. Moreover, among the core values of Olympic College are a respect for diversity (Value 3) and appreciation for difference (Value 3b). The Bachelor of Applied Science in Information Systems (BAS IS) Guiding Principles also state that the program “welcomes a diverse student body.”

The college’s Diversity Advisory Council (DAC) advises the President and the Executive Leadership Team on enhancing diversity, multiculturalism and equal opportunity in all aspects of the college’s mission. The DAC represents all of the college’s mission areas and student, staff, and faculty groups. Working together, DAC members facilitate communication and collaboration across OC’s campuses and departments. One of the DAC’s upcoming events, the first of its kind at OC, is a conference entitled “Are Your Roots Showing?” The conference, held in June 2014, will offer campus participants the opportunity to build community and network while enhancing their understanding and skills in the areas of diversity, inclusion, multiculturalism, and social justice.

Olympic College also has established multiple programs to ensure that education is accessible to all students. The college has offices and centers for multicultural, veteran, international, disabled, and other populations that assist students with academic and campus life, financial aid, and job placement.

In addition, OC received a community college Mathematics, Engineering, and Science Achievement (MESA) grant that provides resources to attract and retain underrepresented minorities who intend to pursue 4-year degrees in the Sciences, Engineering, and Mathematics (SEM).

MESA resources include academic support through tutoring and small group study sessions, financial support in the form of scholarships, work stipends and textbook/calculator loans, skill-building workshops, opportunities for community service and career preparation, and transfer advising and support. MESA also has existing relationships with employers interested in students graduating with bachelor's degrees in IT-related fields.

CRITERION 4: APPROPRIATE STUDENT SERVICES PLAN

OC maintains a full range of support services to increase success. Although Bachelor of Applied Science in Information Systems (BAS IS) classes will be delivered in a hybrid format with on-campus instruction limited to one or two days per week, BAS IS students will receive the same high-quality support services available to all OC students.

Program Support and Advising

As reflected in its guiding principles, the BAS IS program is dedicated to ensuring students have clear, reliable access to services that will assist them as they complete their educational goals. The BAS IS program director will be these students' one-stop point of access, a "go-to" person from the first stages of the admissions process through degree completion and, for those who wish to continue, into transition to graduate school. The program director will coordinate program outreach and student enrollment, liaison with student services like financial aid, counseling, and advising, support faculty to strengthen student achievement, and facilitate work-based learning and employment opportunities in conjunction with the OC's Career Center. In addition, the program director will be a reassuring, physical presence in the BAS IS program, available for student appointments when students are actually on campus.

Students will meet regularly with the faculty lead and/or individual faculty members for academic advising in the program.

Financial Aid

The Olympic College Financial Aid office offers students multiple services as part of a comprehensive education plan, including one-on-one consultations, scheduled group presentations, a quarterly newsletter, and a wealth of online information (such as a financial aid FAQ). In addition, students may receive assistance in filling out FAFSA and other required forms and may monitor their financial aid status via the Student Financial Aid Portal.

BAS students are eligible for numerous sources of assistance. Students may receive Federal, State, and/or institutional support in the form of grants, loans, and scholarships. Institutional support may be based on need, merit, or both. For example, the Olympic College Foundation has scholarships available to students on the basis of need and merit, and the Foundation offers targeted scholarships to specific groups, such as students in STEM-related fields, minority students, and female students. The

Foundation is always exploring new opportunities to provide students with additional funding. Other students may be eligible for aid through offices like Veterans Services and MESA.

All-Hours Access

Many of Olympic College's support services, including open labs and student tutoring, are also offered in late afternoon/evening and on weekends as well as across OC's three campuses (Bremerton, Poulsbo, and Shelton), and the college has steadily increased student access to online support resources. For example, the catalog, class schedule planner, degree planning worksheets, and student handbook are all available online. Students may register online using OC's online schedule planner and may also take advantage of e-tutoring, 24/7 cooperative reference library service, e-books and electronic databases, instructor websites, and other Web services and support tools.

College Resources

A complete list of all college resources is available in OC's catalog and student handbook, available in print and online, as well as on the college's website. Among the services BAS IS students may use most frequently:

Access Services for Students with Disabilities: Students with a permanent or temporary disability may contact the office of Access Services to discuss appropriate accommodations and facilitate individual educational opportunities to receive the benefits, rights, and privileges of college programs and activities.

Adaptive Technology: OC offers adaptive technology for students with disabilities and provides instruction in a variety of specialized computer programs and devices to facilitate equal access to computing resources. Adaptive technology course offerings include voice recognition, voice output, screen magnification, Braille translation and printing, and one-handed keyboarding.

Bookstore: The campus bookstore offers course materials, school supplies, and computer accessories. Books and merchandise may also be purchased online.

Career Center: OC's Career Center provides a wide range of career and employment planning services to assist students in developing self-directed job search skills. Services include resume and cover letter writing, interview practice, and career development workshops. The Career Center also offers on- and off-campus student employment and work-study opportunities.

Child Care and Early Learning: The Sophia Bremer Child Development Center provides high-quality early care and learning experiences for children 12 months to 5 years of age from OC-affiliated families. Rates for students' children are discounted below the cost of care; many student families qualify for child care assistance.

Counseling Services: Counselors provide a variety of services designed to help students address issues that impact college success. Services include assistance with career-planning and decision-making as well as personal counseling.

Multicultural Services: The Multicultural Services Center (MSC) focuses on supporting the academic success and retention of diverse student populations. In addition to direct student services such as tutoring, leadership development, library resources, and event programming, MSC partners with community agencies and collaborates within the institution to enhance learning.

Libraries: The Haselwood Library at OC's Bremerton campus offers outstanding learning, study, and research opportunities for students. Resources include permanent and e-collections, interlibrary loan, electronic databases, group and individual study spaces, and an open computer lab. Library resources are also available at Poulsbo and Shelton campuses.

Open Computer Labs: Although the BAS IS program will have its own Mac lab at the Bremerton campus, program students may also utilize open labs at all OC campuses. OC open labs are first-come, first-served and offer evening and weekend hours for maximum access.

Registration and Records: Many in-person and online enrollment services are available through the Registration and Records office, including course registration, credential evaluation, and degree audits. As the “go-to” point of contact for BAS IS students, the program director will work directly with the Registration and Records and Admissions offices to adhere to all policies and procedures and ensure students receive excellent enrollment, credentials, and transfer credit/credit for prior learning support.

Students in Need Group: The Students in Need Group (SING) provides information and referral services to help students overcome barriers to educational success, such as financial hardship, hunger, and emergency problems.

Veterans Services: OC is among the top military-friendly colleges and universities in the United States. Veterans Services at OC helps students determine eligibility for veterans' educational benefits and assists with application forms, benefits clarification, and degree options. In addition, the Veteran and Military Support Center (VMSC) offers targeted support to connect students with local community resources, financial aid, and benefits. The Center also sponsors fellowship activities and promotes a calm environment for study and relaxation.

CRITERION 5: COMMITMENT TO BUILD AND SUSTAIN A HIGH-QUALITY PROGRAM

Olympic College is committed to building and sustaining a high quality Bachelor of Applied Science in Information Systems (BAS IS) program. The college recognizes that appropriate facilities, equipment, personnel, and support resources are required to create an engaging, student-focused learning environment that will ensure student success.

The BAS IS program funding model will be self-support. By the program's third year (2016 - 2017), revenue is expected to cover all operational costs. Program development and start-up has been assisted by a \$200,000 SBCTC STEM Applied Baccalaureate grant, which generously funded curriculum development, outreach, K-12 pathways enhancement, and a portion of equipment needs. The college will provide the remainder of required start-up costs until the program is fully self-supporting.

Students will pay the tuition set for state-funded upper division courses, currently, \$245.45 per credit. They will pay the same fees as lower division students, including a \$1.00 per credit student services fee (maximum \$10.00/quarter), a \$3.50 per credit technology fee (maximum \$35.00/quarter), and a \$20 security enhancement fee. Students will also pay a \$150 lab fee for each 5 credit technical course.

As illustrated in Table IX, the estimated program revenue is based on enrollment projections and conservative retention rates. Instructional delivery will be a hybrid model with full-time students moving through the program in cohorts. A part-time option may be added once the program is underway if there is significant student demand for this pathway. For revenue and budget projection purposes, students will be full-time (15 credits) and enrolled three quarters a year for two years. Anticipated enrollment is 20 students in the first year's cohort (2014 - 2015), 25 students in year two (2015 - 2016), and 30 in each subsequent cohort. Projected retention rates are 75% for the first cohort and 80% thereafter.

TABLE IX: ESTIMATED PROGRAM REVENUE

	Year 1	Year 2	Year 3	Year 4	Year 5
Headcount	20	40	50	54	54
FTES Each Quarter (all students 15 cr/quarter)	20	40	50	54	54
Tuition	130,538	261,077	332,873	366,693	370,360
IT Course Lab Fees	18,000	38,250	48,000	52,200	52,200
Total Program Revenue	148,538	299,327	380,873	418,893	422,560

Notes: Tuition revenue is calculated at .8689 of tuition schedule to deduct S&A, building, loan fund and innovation fees. Tuition revenue assumes 2% increase Year 3 and Year 4, and 1% in Year 5. Lab fee revenue is calculated at \$150 per 5-credit IS course.

Appropriate Staff, Faculty and Administration

The new BAS IS program will be part of the Business and Technology Division, led by Dean Norma Whitacre. Ms. Whitacre has a master's degree in educational leadership from the University of Puget Sound and 20 years of successful community college leadership experience.

As detailed in Table X, new program faculty and staff positions will be hired to provide BAS IS students with excellent instruction, wrap-around support, and strong program leadership. A full-time faculty member will be hired the first year and a second will be hired in year two. One of these full-time faculty members will act as faculty lead and receive 1/3 release time to provide program oversight. A full-time, exempt program director will be the "go-to" person for students, and an instructional and classroom support technician will join the team to provide students with assistance when they are working in the labs.

The main duties of the faculty lead and program director are noted below.

Faculty Lead

- Advise students
- Coordinate equipment and software purchases
- Coordinate curriculum enhancements
- Recruit and mentor part-time faculty
- Lead program assessment
- Facilitate streamlined student pathways from high schools to college, including articulation agreements with high schools, other community colleges and colleges and universities

Program Director

- Coordinate program outreach and student enrollment
- Liaison with student services like financial aid, advising, counseling and veteran services
- Maintain program statistics and reports
- Support work-based learning and employment opportunities
- Provide program administrative support

Campus Facilities

Key to student retention and success for a hybrid delivery, cohort model, are welcoming, engaging physical and virtual spaces. These spaces will be learner-centered to encourage collaboration and dynamic interaction between students and faculty. Students will meet together both in-person and online: face-to-face courses held several times each quarter will provide students access to advanced lab technology and resources; online, students will access rich course sites created by experienced faculty to facilitate content delivery, discussion, and research.

Students will have access to campus technology in a variety of venues. The college has existing computer labs and classrooms that will be utilized by baccalaureate students. Also, upon entry into the program, each student will be required to purchase a portable device with specifications to be defined and updated regularly. Finally, a specialized Mac Pro lab (see Table X) will be designed especially for BAS IS students. It will be operational when the program launches and will provide students the opportunity to work on state of the art, extremely powerful systems that can virtualize any modern operating environment.

The Macintosh platform and personal computer desktop interface will provide support for a high-level of virtualization for studying multiple system technologies integral to program- and course-level outcomes. This powerful, modern, versatile platform allows the greatest potential for cross-collaboration and relevant technology experiences for BAS IS students. State-of-the-art software and hardware, a high degree of scalability, cutting edge performance, and one of the world's most sophisticated hypervisors allows a single unit to meet the needs of students requiring access to web development, multimedia creation, program development, information and storage management, local area network administration, information assurance, and study of the modern cloud-based services, such as SaaS, PaaS, IaaS, DaaS, ITaaS, and SLaaS. This one system allows students to use and practice with virtualization in all three popular platforms, Mac, PC and Linux.

As part of OC's existing facilities plan, the college expects to build a new active learning classroom that will be available to BAS IS students. The classroom will be designed to provide a comfortable, engaging, high-tech place equipped with touch screen smart boards, printers, small tables for group work, and infrastructure that accommodates use of personal devices. The area will provide collaborative learning spaces for activities like group projects, problem-solving exercises and, case studies.

TABLE X: ESTIMATED PROGRAM BUDGET

	Year 0 Start up	Year 1	Year 2	Year 3	Year 4	Year 5
Part-time Pathways Specialist	14,941					
Program Director Salary		50,000	51,500	53,045	54,636	56,275
Fulltime Faculty Salaries (1 FTE year 1; 2 FTE year 2-5)		60,000	123,600	127,308	131,128	135,062

Part-time Faculty Salaries		13,109	21,812	21,812	21,812	21,812
Part-time Instructional Classroom Support Tech.		10,500	10,500	10,500	10,500	10,500
Curriculum Development Stipends and Release Time	51,500	2,000	2,000	2,000	2,000	2,000
Benefits	21,088	46,999	72,583	74,448	76,369	78,348
Professional Development and Travel	10,971	5,000	6,000	6,000	6,000	6,000
Personal Services Curriculum Designer	25,000					
Goods and Services (Including marketing)	5,500	12,900	12,900	12,900	12,900	12,900
Library		10,000	10,000	10,000	10,000	10,000
Computers and furniture for new lab and new employees	302,430	12,453				
Computer Replacements			29,649	27,278	53,370	48,849
College Overhead (9%)		20,067	30,649	31,076	34,084	34,357
SBCTC STEM Funds	(200,000)					
Total	231,430	243,028	371,193	376,367	412,799	416,103

Notes: Estimated 3% increase each year in full-time salaries and benefits. The full-time faculty hired Year 1 will be the lead program faculty and will receive 1/3 release time each quarter.

Faculty, staff and administrators are prepared to launch and maintain a program that utilizes state-of-the-art technology, provides comprehensive services, and focuses on student learning and success. Table XI below summarizes a sustainable financial plan.

TABLE XI: SUMMARY OF PROGRAM REVENUE AND EXPENSES

	Year 0 Startup	Year 1	Year 2	Year 3	Year 4	Year 5
FTES Each Quarter		20	40	50	54	54
Total Program Revenue		148,538	299,327	380,873	418,893	422,560
Startup Investment	431,430	94,490	71,866			
SBCTC STEM Funds	(200,000)					
Total OC Budget	231,430	243,028	371,193	376,367	412,799	416,103
Balance				4,506	6,094	6,457

CRITERION 6: PROGRAM-SPECIFIC ACCREDITATION

No program-specific accreditation for the Bachelor of Applied Science in Information Systems (BAS IS) is expected at this time.

The national accrediting body for bachelor's degrees in information technology is the Accreditation Board for Engineering and Technology (ABET), a nonprofit, non-governmental organization, through its Computing Accreditation Commission (CAC). In addition to accreditation, ABET offers excellent general recommendations for IS programs, as well as additional resources for program development and assessment. Olympic College reviewed these resources closely in the development of the BAS IS program.

Although ABET accreditation is common in computer science programs, only 38 bachelor's degrees in information systems are currently accredited by ABET nationwide, and each of these programs is located at a four-year college or university. None of these accredited programs are in Washington State, and none are applied baccalaureate degrees.

CRITERION 7: PATHWAY OPTIONS BEYOND THE BACCALAUREATE DEGREE

Students who wish to continue their education in graduate school after completing the Bachelor of Applied Science in Information Systems (BAS IS) degree will have several local options. The Olympic College BAS IS program development team has had preliminary discussions with representatives from four universities regarding specific master's programs that will provide smooth pathways for graduates. Program graduates are expected to possess a wide range of knowledge, skills, and abilities, as well as academic and career goals; for these reasons, a variety of master's programs may be of interest to them.

Jennifer Perryman, Site Director at Brandman University's Bangor Naval Base Kitsap campus, suggested a pathway to the Master of Arts in Organizational Leadership. Designed to prepare graduates for leadership positions, the curriculum is interdisciplinary and tailored to the mid-career professional. Students can select to enroll in courses offered face-to-face at Bangor Naval Base Kitsap, fully online or in a hybrid schedule.

Western Governors University (WGU) offers several fully online master's programs that could provide excellent education pathways for BAS IS graduates. Dr. Leo Irakliotis, National Director of Western Governors' College of Information Technology, notes that potential pathways for graduates include the Master of Science in Information Technology, Network Management; the Master of Science in Information Security and Assurance; and with careful planning for prerequisites, the Master of Business Administration in Information Technology Management. All WGU master's programs are offered fully online.

Old Dominion University has a presence on Olympic College's Bremerton Campus and can provide excellent and convenient pathways for BAS IS graduates. Site Director Dr. Robert Hoffman is interested in exploring articulations to their Master of Business Administration program, planned for a Summer 2014 launch, and their Master of Education degree. Pursuing an education pathway could provide a new and rewarding option for BAS IS graduates.

The Master of Science in Cybersecurity and Leadership at the University of Washington Tacoma could provide a pathway for BAS IS graduates. Conversations with UW-T about articulations are in their initial stages.

Olympic College is committed to developing clear, streamlined, articulated pathways for BAS IS graduates. Once these are fully developed, faculty and staff will promote them to entering program students so students can begin plan and prepare early for next steps upon completing their BAS IS program.

CRITERION 8: EXTERNAL EXPERT EVALUATION OF THE PROGRAM

Dr. Sam Chung, Endowed Chair and Professor of Information Systems and Information Security at the University of Washington Tacoma Institute of Technology, and Dr. Leo Irakliotis, Dean of the College of Information Technology at Western Governors University, provided external expert evaluation of Olympic College's Bachelor of Applied Science in Information Systems (BAS IS) program.

Dr. Chung's overall response to the BAS IS program was very positive. In his written evaluation (see Appendix II), Dr. Chung remarked that OC's BAS IS program "made a good impression on [him]," and he noted the uniqueness of the program's combination of technical and business skills. He went on to laud the program's "attainable flow," assessment plan, and well-prepared faculty, and he pointed to the information assurance and project management course sequences as examples of maximizing knowledge, skills, and abilities in the program's upper-level classes.

Dr. Chung correctly asserted that the BAS IS program should be tied to industry demand; although Form D does not detail this demand, OC did demonstrate industry need for the degree in its Form B Statement of Need. In the future, OC will provide external experts with Form B so they, too, can see the evidence for the BAS degree.

Dr. Chung also asked about the "relationship between [the] BAS IS and ACM/AIS 2010." The ACM/AIS 2010 is the Association for Computing Machinery and Association for Information Systems' guidelines for undergraduate information systems curriculum. Although OC is confident in its proposed curriculum based on thorough internal and external review detailed in Form D, BAS IS faculty will analyze the ACM/AIS 2010 report to assure close alignment with the report's recommendations.

In his comments on the BAS IS course design, Dr. Chung pointed out that study of Web development is limited to the associates-level CIS 155 Web Development I course. Based on Dr. Chung's observation, the BAS IS curriculum was revised to include server-side Web development in IS 300 Information Systems Integration. He noted further that CIS 205 Introduction to XML and IS 330 Database and Data Analysis may progress in reverse order. This concern has been addressed by adding XML to the KSAs for IS 330. Dr. Chung and OC's curriculum development team independently questioned an applied physics course that was originally included in the BAS IS course of study as the mandatory natural science lab to meet the general education requirement. This proposed course was expunged in revisions and no longer appears in the program or proposal.

Additionally, Dr. Chung felt concerned that the BAS IS program director was not "a faculty member with administrative duty." Olympic College shares Dr. Chung's desire to see faculty leadership in the program. Although the program director is a full-time, exempt administrator rather than faculty (consistent with other BAS models), one of the program's faculty members will serve as faculty lead and receive 1/3 release time for critical administrative oversight.

Dr. Chung questioned the BAS IS program’s apparent Mac-focus, to the exclusion of Windows and Linux platforms. To address this valid critique, a line was added in Criterion 5 that explains how the Mac Pro computers allow for virtualization of all of these platforms—not only the Mac OS.

Finally, Dr. Chung observed that professional development funds budgeted for BAS IS program faculty seemed too low. Indeed, alone, these funds are insufficient for comprehensive full-time and part-time professional development plans. However, these funds are in addition to—not in place of—current institutional sources of development money. Moreover, OC will continue to research additional sources of funds to reserve for this purpose.

In his review of OC’s BAS IS proposal, external expert Dr. Leo Irakliotis, Dean of the College of Information Technology at Western Governors University, endorsed the “robust and promising” program.

Dr. Irakliotis mentioned that his “few remarks and suggestions” for the degree were minor and would not “affect the momentum and direction of the proposal.” Dr. Irakliotis plans to forward these suggestions soon. When he does, OC will review them carefully for potential implementation in the program.

APPENDICES

Appendix I: Bachelor of Applied Science in Information Systems (BAS IS) Course Descriptions and Learning Outcomes

BAS Courses:

- IS 300 Information Systems Integration (10 credits)
- IS 305 Scripting for Automation
- IS 330 Database and Data Analysis
- IS 337 Information Assurance I
- IS 346 LAN Administration IV
- IS 350 Project Management I
- IS 390 Reading and Research
- IS 415 Informatics and Analytics
- IS 438 Information Assurance II
- IS 450 Project Management II
- IS 470 Enterprise Systems Practicum
- IS 490 Senior Project
- CMST 230 Small Group Communications
- BUS 215 Business Statistics
- A Natural Science Lab
- SOC 319 Sociology in a Digital World
- OLRM 320 Business and Leadership in a Digital Economy

Core program-level outcomes pertaining to essential knowledge, skills and, abilities (KSAs) have been carefully reflected throughout the BAS-IS curriculum. These include the areas of ethics, critical thinking, and more. Some KSAs, such as security, are concentrated in an entire course. IS 337 and IS 438

(Information Assurance I and II) are examples of this. All KSAs repeat throughout the curriculum and will appear as one or more course-level outcomes for each of the courses indicated. The following chart details essential knowledge, skills and abilities defined at the program level, and lists the courses identified as covering a particular KSA in their respective course-level outcomes.

TABLE I: BAS Knowledge, Skills, and Abilities (KSAs)

Essential Skills Across the Curriculum in the BAS IS	
Communication-speaking	IS470, IS490, CMST 230
Communication-writing	SOC319, IS330, IS350, IS390, IS438, IS450, IS415, IS470, IS490, CMST 230
Critical thinking	IS330, IS415, CMST 230
Ethics	OLRM320, IS350, IS438, IS470
Life-long learning	SOC319, IS390, IS490, CMST 230
Problem-solving	BUS215, IS300, IS305, IS330, IS350, IS438, IS450, IS415, IS470, CMST 230
Security	IS330, IS337, IS346, IS438, IS470
Team-work/Leadership	IS300, OLRM320, IS346, IS350, IS438, IS450, IS470, IS490, CMST 230

IS 300 Information Systems Integration (10 credits)

Students work collaboratively using divergent technologies to create a secure, self-hosted, database-driven website as a means to develop and hone skills, showcase incoming talents, and construct a working community for future projects used throughout the BAS program. SQL, server-side Web development, Programming, and Networking are covered. Portfolio is introduced.

IS 305 Scripting for Automation

In this course, students apply scripting languages to automate tasks, including those performed by applications, Web pages, operating system shells, and embedded systems. General purpose and popular languages, such as PHP, Perl, Python, Ruby, Visual Basic for Applications, JavaScript, PowerShell, and Windows/Unix Shells are explored and practiced. Students will create wrapper programs, create custom commands for the command shell, perform networking tasks, such as traversing the directory tree, and perform unified queries, to name a few.

IS 330 Database and Data Analysis

Students learn to design relational databases, and to mine and analyze data using Structured Query Language (SQL) with real-world applications. Topics covered include: data modeling, data normalization and integrity, advanced queries to extract data from multiple databases, data manipulation techniques using XML, data analytics techniques and functions, and tabular and graphical representation of analysis findings. The course gives an overview of practical applications of data analytics in the context of information systems development and management, including issues of privacy and security. An introduction to NoSQL databases will also be included.

IS 337 Information Assurance I

The student will develop and apply knowledge and skill in planning, designing and evaluating the structural components and procedures of organizational security and information assurance.

IS 346 LAN Administration IV

Students will focus on upper-administrator planning tasks for Windows Server 2008, choose the appropriate Windows Server solution for a design requirement, and perform domain- or forest-wide server administration tasks.

IS 350 Project Management I

Students learn the main phases, strategies and tools that support effective project management processes. The course covers all the stages of the project life cycle: including selecting projects, project planning, and risk assessment through execution, monitoring and control. Through case studies students have the opportunity to assess apply best project management practices in the context of real-world scenarios.

IS 390 Reading and Research

Independently or in small teams, and mentored by a faculty member, students do intensive and self-directed research that results in an original scholarly paper or other product that can be formally presented. Students set goals and objectives that help form their own professional development strategy, and that clearly define the research project, reflect original research question(s), and deepen technical knowledge in specific area of interest.

IS 415 Informatics and Analytics

Students gain an understanding of the roles of informatics and analytics in today's business environment and explore the trends that are related to "big data". The focus is on using data to support effective decision-making process in a wide range of business contexts. Topics include research methods in informatics; big data management and analytics; predictive analytics; recognizing data patterns and trends; and information ethics, law and policy. Through the use of case studies, students collaborate to research and present data-driven solutions to real-world problems.

IS 438 Information Assurance II

In this course students will explore current issues and advanced topics in network security and digital forensics.

IS 450 Project Management II

Students learn to apply project management strategies to information systems development and implementation projects. The course covers computer systems life cycle management: including requirement identification and analysis, proposal evaluation and development, project planning, management and control, cost and risk analysis, project documentation and legal and licensing requirements. Also includes discussions of current IS project management practices and trends and the role of the development team and its internal and external stakeholders and partners.

IS 470 Enterprise Systems Practicum

Students form work-based teams to apply significant knowledge, skills and abilities in developing an enterprise-level environment, taking on roles as network admins, software developers, web database designers and project managers. Teams produce professional documentation to include auditable

security plans, policies, procedural manuals, network diagrams, and wireframe schematics. Throughout the course, each team works closely with a faculty to ensure that their project yields high quality results.

IS 490 Senior Project

This course provides for selection and completion of an advanced-level project or goal. Students work closely with faculty mentor individually or in small teams to apply skills and knowledge that demonstrate achievement of core program learning outcomes and mastery of targeted skill sets. They will also complete their professional portfolio to prepare for presentation. Students will prepare formal written proposals of their topics that may include one of the following: pursuit of one or more industry certifications; design, analysis and implementation of an advanced system; selection, investigation and report on selected topic; internship or co-operative work experience.

Prerequisites: This is a capstone class. Students must bring well-developed and sharpened skills in team organization, time management, self-discipline, and technical writing. Students must have completed all prior quarter courses and have maintained an overall 2.5 GPA in the program to enter this course.

CMST 230 Small Group Communications

Students will explore, examine, and practice the dynamics within in organizational small groups including diversity, leadership, conflict management, decision making, and strategic thinking.

Prerequisites: ENGL& 101 with 2.0 or better

BUS 215 Business Statistics

Application of statistics in the fields of economics and business; descriptive statistics, inferential statistics, linear correlation and regression, probability, sampling, the Normal Distribution, confidence intervals, hypothesis testing.

SOC 319 Sociology in a Digital World

This course explores the social impacts of digital technology, online networks, and online communities. Topics include virtual identity development, online interaction, cyber communities, the digital divide, as well as social change and problems related to digital technology.

OLRM 320 Business and Leadership in a Digital Economy

Students explore the impact of digital technologies on business processes to provide a foundation for understanding their role in the context of various organizations and professional-technical fields. Students research and analyze how converging technologies, including mobile devices, cloud services, social media, search engine optimization and the emerging Internet of things, shape business functions such as customer and vendor relationships, marketing, process monitoring and optimization, and virtual collaboration. Topics also include discussions of how leadership skills and practices can support the implementation of new digital technologies in various business contexts, and how leadership, digital technologies and innovation intersect in the evolving business environment. In the capstone project students will explore how business and leadership contingencies will impact and be impacted by technology in his or her chosen field.