Bachelor of Applied Science Degree

IT NETWORKING

Beginning fall 2017!

Whatcom Community College's nationally acclaimed computer information systems program will begin offering a bachelor of applied science (BAS) degree in IT networking in fall 2017.* The degree will include courses infused with security topics and embedded certificates of proficiency in Cloud Technologies, Industrial Control Systems (SCADA), and Mobile Technologies.

The BAS in IT networking curriculum aligns with specific focus areas defined by the National Security Agency / Department of Homeland Security as part of their Center of Academic Excellence (CAE) program. Additionally, curriculum builds off of the National Initiative for Cybersecurity Education's (NICE) Cybersecurity Workforce Framework and the Department of Labor's (DOL) Cybersecurity Competency Model. As such, the program will help meet the national shortage of cybersecurity professionals.

WCC is a National Center of Academic Excellence in Information Assurance 2-Year Education (CAE2Y) and the lead institution for CyberWatch West – a National Science Foundation regional center for cybersecurity education. These unique resources and expertise have been used in developing this upper division degree and embedded certificates of proficiency.

*The specific schedule has not yet been set for academic year 2017-18; however, fall quarter begins in September.

Learning outcomes

Graduates from WCC's BAS degree in IT Networking will be able to:

1. Apply network design principles to meet client needs.
2. Perform the basics of computer and network security.
3. Communicate professionally with customers and co-workers.
4. Install and configure network devices.
5. Manage information in a variety of ways.
6. Use scripting or programming languages to automate tasks.
7. Explain network topologies, including protocols, ports, addressing schemes, routing, and wireless communication standards.

Program eligibility

Individuals must have:

- An associate's degree in an information technology related field from a regionally accredited institution within the past five years **or** any prior degree plus relevant industry experience, personal statement and current resume
- Cumulative minimum 2.0 GPA in associate's degree **and** minimum 2.0 GPA in all IT-related coursework

Application process

Admission to the BAS degree in IT networking is by selective entry application. For preferred consideration for acceptance to this program, prospective students must be enrolled at WCC with an active student identification number and submit the following by the application deadline (March 1, 2017*):

- Completed BAS degree in IT Networking application form
- Nonrefundable application fee of $50
- Proof of recent (within five years) associate's degree in IT related field from a Washington state community or technical college** **or** any prior degree plus relevant industry experience, personal statement and current resume
- Official transcripts from all previously attended colleges where student earned credits that may apply to the BAS degree (WCC official transcripts are not required)
- Proof of current Cisco CCENT **or** CompTia Network+ certification
- Proof of current CompTia Security+ certification
- Two letters of professional reference (e.g., current or former supervisors or instructors)
- WCC advisor's signature to verify that student attended a WCC BAS information session or contacted a WCC advisor to review application requirements

* Application form available April 30, 2016.

**IT-related associate's degrees granted from other institutions will be reviewed to verify suitable preparation for success in the BAS program.

Admission to any of the upper division certificates of proficiency without also applying and being accepted to the BAS degree in IT networking will be by special approval of the program coordinator.

Additional requirements during/after course of study

Students must maintain at least a "C" (2.0) grade in all CIS courses and demonstrate professional work behavior exhibited through good class attendance, punctuality and timely completion of class assignments, in order to remain in the program. While not a requirement for the BAS degree in IT networking, students should be aware that there are special employment conditions in this career field that may include criminal background checks.

Visit whatcom.edu/cis for the most current information.

BACHELOR OF APPLIED SCIENCE

IT Networking

The Computer Information Systems BAS degree prepares students for common networking administration challenges as well as those that occur in key industry sectors that require specific focused expertise. Graduates will be prepared to enter the workforce as network administrators and related job categories, such as computer and information systems manager or computer network architect.

Course requirements

PREREQUISITIES	Credits

Washington State community or technical college IT-related associate's degree		90
CORE REQUIREMENTS		**Credits**
CIS 301	Database Management Systems	5
CIS 305	Cloud Computing I	5
CIS 306	Enterprise Linux	5
CIS 308	Mobile and Wireless Technologies	5
CIS 316	Embedded Systems	5
CIS 320	Web Development	5
CIS 405	Cloud Computing II	5
CIS 406	Supply Chain	5
CIS 416	ICS Architecture	5
CIS 499	Capstone	5
	**Sub-Total Units ..... **	**50**

GENERAL EDUCATION REQUIREMENTS/RELATED INSTRUCTION		**Credits**
BUS 302	Project Management	5
BUS 303	Compliance and Auditing	5
PHIL 301	Professional Ethics	5
Students can apply up to 20 credits from associate's degree to the following general education requirements if applicable:		
CMST 145	Introduction to Organizational Communication	0 to 5
CS 140	Computer Programming Fundamentals I	0 to 5
ENGL& 101	English Composition I	0 to 5
ENGL& 230	Technical Writing	0 to 5
MATH& 146	Introduction to Statistics	0 to 5
Humanities		0 to 5
Natural Sciences – At least 5 credits in physical, biological and/or earth sciences. Shall include at least one laboratory course.		0 to 10
Social Sciences		0 to 5
	**Sub-Total Units ..... **	**40-60**
	**Total Units ..... **	**180-200**

CERTIFICATES OF PROFICIENCY

Cloud Computing

Students will learn to design and implement a cloud infrastructure and manage storage services. Topics include: cloud based storage, virtualization, service oriented architecture (SOA), high availability, scaling, mobile devices, and the role of open source cloud software such as Hadoop and OpenStack.

CORE REQUIREMENTS		**Credits**
CIS 305	Cloud Computing I	5
CIS 405	Cloud Computing II	5
	**Sub-Total Units ..... **	**10**

	Total Units	**10**

Industrial Control Systems – SCADA

Students will learn how to evaluate and configure cyber physical systems including embedded architectures; design, plan, and implement an industrial control systems network; and analyze and mitigate security issues in an ICS network.

CORE REQUIREMENTS		**Credits**
CIS 316	Embedded Systems	5
CIS 416	ICS Architecture	5
	Sub-Total Units	**10**
	Total Units	**10**

Mobile Technologies

Students will learn to evaluate the hardware, communications, management, and programming environments associated with mobile technologies, and to design a supply chain including all of the supply chain components. Students will learn about security issues unique to these types of networks and how to mitigate risk.

CORE REQUIREMENTS		**Credits**
CIS 308	Mobile and Wireless Technologies	5
CIS 406	Supply Chain	5
	Sub-Total Units	**10**
	Total Units	**10**

FACULTY

Name	**Credentials:**
Corrinne Sande (Director of CIS and CS)	Master of Liberal Studies in Information Networking and Telecommunications; Certifications: SANS GIAC Certified Incident Handler (GCIH); CompTia Security + Certified Professional; Cisco Certified Network Professional (CCNP); Cisco Certified Academic Instructor (CCNA and CCNP); Cisco Certified Network Associate (CCNA); CompTia A+ Certification
Travis McEwen	Bachelor of Science, IT – Security Emphasis; master's degree in progress; Certifications: CompTia A+, Network+, and Security+ Certifications; Cisco CCNA Security Certification; Cisco CCENT Certification; Cisco CNSS 4011 Certification; Cisco CCNA and Cisco CCAI (Cisco Certified Academic Instructor); CIW Database Design Specialist Certification; CIW JavaScript Specialist Certification
Christy Saunders	Bachelor of Science, IT – Security Emphasis; master's degree in progress; Certifications: CCAI, Cisco Certified Academic Instructor; CompTia Linux +; LPIC – 1; CompTia Security + ce; SUSE Certified Linux Administrator (SUSE CLA); CIW Web Design Specialist; Cisco Certified Entry Networking Technician (CCENT); Project +; CIW Database Design Specialist

Gary O'Dell	Bachelor of Arts – Interdisciplinary Studies; Associate of Science – Computer Information Systems; Certification: CompTia A+ Certification
Tom Burke	Bachelor of Science in Law; Master of Business Administration; Juris Doctor; Doctorate of Business Administration
Fred Tabor	Bachelor of Art in Philosophy and Psychology; Master of Art in American Studies/English; Master of Science in Philosophy
Kumar Ramesh	Bachelor of Technology in Electrical Engineering; Master of Business Administration in Computer and Energy Management; Master in Information Systems
New FT Faculty 1	Master's degree and relevant certifications, with relevant industry experience and doctorate degree preferred
New FT Faculty 2	Master's degree and relevant certifications, with relevant industry experience and doctorate degree preferred
New FT Faculty 3	Master's degree and relevant certifications, with relevant industry experience and doctorate degree preferred
Adjunct Faculty	Bachelor's degree and relevant certifications; master's degree and relevant industry experience preferred

LOCATION

Whatcom's BAS in IT networking degree will be taught on its campus at: 237 West Kellogg Road, Bellingham, WA, 98226.

PRIOR CREDIT

In order to receive this degree from Whatcom Community College, students must earn a minimum of 25 college level credits (100 or above) that count toward the degree at WCC.

ACCREDITATION

In December 2015, Whatcom Community College was granted *candidacy status* at the baccalaureate level by the Northwest Commission on Colleges and Universities.