



# Computer Science

Bachelor of Science

**Program Proposal**  
North Seattle College  
May 3-4, 2022

## Table of Contents

Form A: Cover Sheet, Program Proposal	3
Introduction to the degree	4
1. Curriculum demonstrates baccalaureate level rigor	6
2. Qualified faculty	18
3. Selective admissions process, consistent with an open-door institution	19
4. Appropriate student services plan	20
5. Commitment to build and sustain a high-quality program	23
6. Program-specific accreditation	26
7. Pathway options beyond baccalaureate degree	26
8. External expert evaluation of the program	27
<b>Appendices</b>	<b>28</b>
Appendix 1- Computer Science Program Advisory Board Members	29
Appendix 2 - Program Application	30
Appendix 3- Applicant Scoring Matrix	37
Appendix 4- Articulation and Marketing Agreements with Graduate Programs	38
Appendix 5- Applied Baccalaureate Program External Reviews	47

## Form A: Cover Sheet, Program Proposal

### Program Information

**Institution Name:** North Seattle College, in partnership with Seattle Central College and South Seattle College

**Program Name:** Computer Science

**Degree:** Bachelor's of Science in Computer science

**CIP Code:** 11-0701

**Name of existing technical associate degree(s) that will serve as the foundation for this program:**

**Degree:** Computer science DTA MRP      **CIP Code:** 11-0701      **Year Began:** unknown

**Proposed Start Implementation Date:** Fall 2022

**Projected Enrollment (FTES) in Year One:** 27      **at Full Enrollment by Year:** 4 (81 FTES)

**Funding Source:** State-Funded, Internally Self-Support

### Mode of Delivery

**Single Campus Delivery:** Teaching locations to be determined, Seattle, Washington

**Distance Learning:** Primarily online or hybrid instruction, general education classes may be either classroom-based, hybrid, or online.

### Contact Information

**Name:** Peter Lortz, MS

**Title:** Vice-President of Instruction

**Address:** 9600 College Way N., Seattle, WA 98103-3599

**Telephone:** (206) 934-3701

**Fax:** (206) 934-3606

**Email:** [peter.lortz@seattlecolleges.edu](mailto:peter.lortz@seattlecolleges.edu)



---

Pete H. Lortz, Chief Academic Officer, Vice-President of Instruction

Feb. 11, 2022  
Date

## Introduction to the Degree

North Seattle College (NSC), in partnership with Seattle Central College and South Seattle College, proposes to develop a Bachelor of Science (BS) degree in Computer Science to support businesses, public agencies, and non-profit organizations in all sectors of the economy in the central Puget Sound area. This would be the second information technology baccalaureate degree for North Seattle College and would address the area's long-standing unmet demand for computer science professionals. It would help diversify the field that is dominated by white and Asian males and reduce the need for importing talent from outside the state to meet demand.<sup>1</sup> The Seattle metropolitan area has the sixth highest concentration of information technology jobs in the nation.<sup>2</sup>

The Washington State Legislature passed SSB 5401 in 2021 authorizing community and technical colleges to offer Bachelor of Science in Computer Science degree programs. In the legislation's findings, the Legislature noted that Washington "imported four times as many computer science graduates than it produced in state." They noted that there were 24,000 job openings in the technology sector in the state, and only 1,883 computer science degree completions (in 2018-19), and very few of those degrees were awarded to African American, Hispanic, and native American students. The legislative findings concluded by noting, "the legislature finds that we need to expand access to the high-demand field of computer science, especially to students of color."

According to EMSI, Inc., half of the computer science majors in King County work in just one occupation—software developers. Other significant occupations include web developers, computer systems analysts, and computer systems managers (5% of the total or more). Software developers are concentrated in King County with nearly 86,000 jobs, well above the national norm for a region of this size of 15,500 jobs. Median earnings for software developers are \$144,000, much higher than the national median of \$110,000. Average monthly online job posting activity is nearly 20,000 unique software developer positions. This extraordinary job posting number is dominated by Amazon which accounts for over half of the total. The total number of software developer positions is projected to grow by 18 percent to 101,000 over the next 10 years, or an average of 1,500 new jobs per year.

North Seattle College proposes a Bachelor of Science degree in Computer Science that brings together theory and practice and prepares graduates to work effectively in positions that require computer science skills. The Seattle economy is dominated by information technology companies that are headquartered here like Amazon, Microsoft, and T-Mobile, and supports advanced manufacturing companies like Boeing. According to EMSI, Inc., King County has 154,000 computer and mathematical occupational cluster jobs. This is more than three times the expected number of jobs in this category (47,400) than would be expected based on the national average for a region of this size. There are more monthly job postings for computer and mathematical occupations (40,000) than any other major occupational cluster.

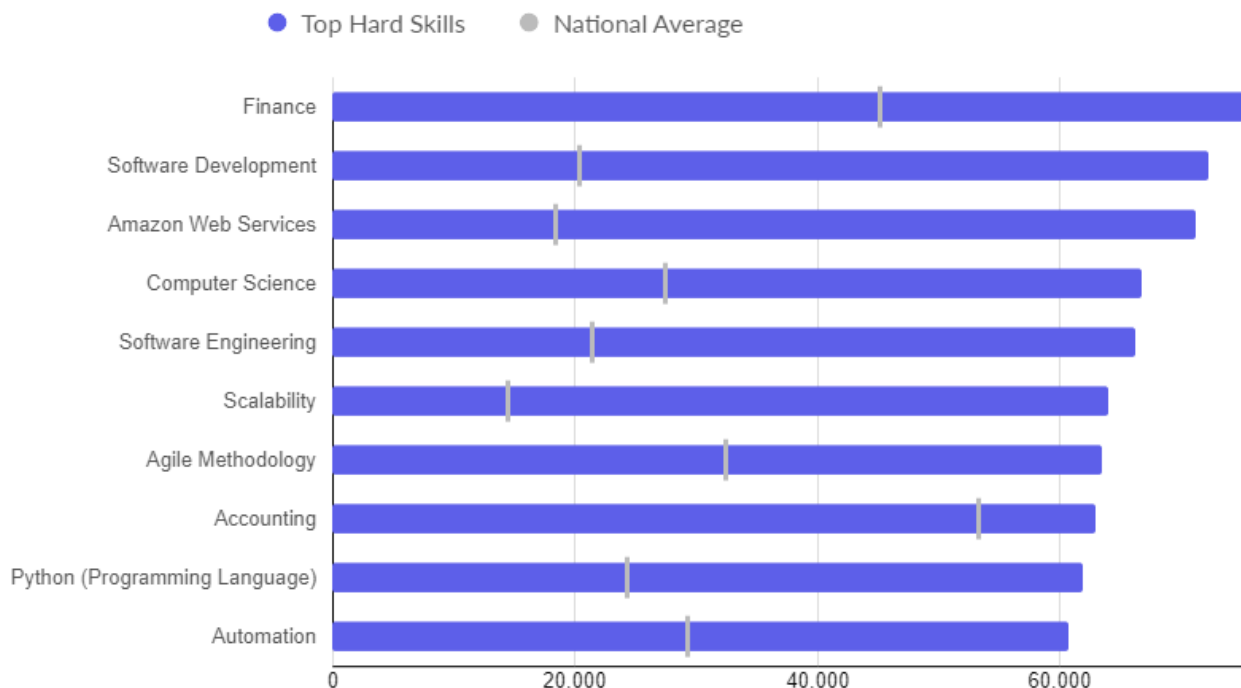
---

<sup>1</sup> Seattle Times, <https://www.seattletimes.com/business/amazon/new-amazon-data-shows-black-latino-and-female-employees-are-underrepresented-in-best-paid-jobs/>

<sup>2</sup> Puget Sound Business Journal, <https://www.bizjournals.com/seattle/news/2021/08/22/seattle-sixth-most-it-jobs-new-report.html>

Looking at hard skills in demand, after finance skills, most of the remaining top in-demand skills in King County are related to computer science:

### Top In-Demand Hard Skills in King County Online Job Postings, Aug 2019-Aug 2021



Source: EMSI Inc., *Analyst* data system.

The 2+2 program will be designed to build upon the existing computer science academic transfer pathways at the Seattle Colleges, providing students with a lower-cost option for completing a computer science baccalaureate degree. The primary lower division pathway will be the Associate of Science, Track 2 degree. Other transfer pathways include the Associate in Computer Science DTA/MRP degree. Students nearing completion of their associate degree will apply for admission into the BS degree program in a manner like other BAS degree programs offered by the Seattle Colleges. The program will be able to accept students from other area colleges interested in the BS in Computer Science option. With additional work experience, graduates of the BS program will be strongly positioned to enroll in several area Masters in Computer Science programs at Seattle University, UW-Seattle, UW-Bothell, Northeastern University, City University, and WGU (Information Technology Management).

The BS in Computer Science would begin admitting students in the fall of 2022. The following proposal demonstrates how the program supports the college's mission and goals; addresses the goals of the state's master plan for education; meets student and employer demand; addresses a skills gap; offers equitable opportunities for students; and provides general information on the new curriculum.

## **1. Curriculum demonstrates baccalaureate level rigor**

The curriculum for the BS in Computer Science degree has been developed with the input of many experts, both within Washington state professional/technical colleges, professionals in practice, and other education experts. Program learning outcomes were developed with the input of the Seattle Colleges' computer science and information technology faculty, and local technology professionals serving on the Program Advisory Board.

College staff spoke with regional colleges and universities offering four-year degrees in Computer Science and studied several bachelor's degree programs from across the nation to develop our course list. Local employers participated in the development of the courses and advised the college of how best to build a pathway that supports both the technology industry sector and the technology solutions using sectors (retail, health and personal services, finance).

NSC's Application Development BAS Program Advisory Board has been expanded and re-chartered to oversee both the BS in Computer Science and Application Development BAS programs and is now called the Computer Science and Application Development Program Advisory Board. This group has reviewed the BS in Computer Science program learning outcomes and course outlines to ensure that the program content covered all the required materials for successful entry into the target occupations. A list of current members is found in Appendix 1, and it is NSC's intention is to add to the list upon program approval.

### **Bachelor of Science in Computer Science Program Outcomes:**

Faculty and industry experts identified the following Program Learning Outcomes as essential for graduates upon completion:

1. Apply knowledge of mathematics to develop and analyze computing systems.
2. Identify and analyze a problem and define the computing requirements to creatively solve it.
3. Design, implement, evaluate, trouble-shoot and test a computer-based system process, component, or program to meet desired results.
4. Use current techniques, skills, and tools for computing practice.
5. Apply critical analytical skills to information issues.
6. Understand fundamental mathematical and programming tools for solving problems of information modeling, expression, and transformation.
7. Demonstrate success skills, including teamwork, leadership, communication, critical thinking, creative problem-solving, personal responsibility, and management skills.

8. Communicate and engage effectively with a wide range of audiences and stakeholders.
9. Describe the impact of computers on society.
10. Explain key ethical issues shaping the practice of computer science and information management.

North Seattle College currently has an extensive program review process that it will incorporate into its BS in Computer Science program evaluation. It is a three-year process that examines all aspects of the program. The evaluation includes the following components:

- Total state and contract funded enrollments for the program
- Student FTE
- Faculty FTE
- Student/faculty ratio
- Student demographics including ethnicity, gender, age
- Course-level student success (Course Completion Rates)
- Program-level student success rates including retention, progression, and completion rates across courses
- Employment outcomes/earnings and further education

Students will also be assessed for learning and skill competencies relating to the course outcomes, the program outcomes, and the college's Essential Learning Outcomes. The courses that make up the BS degree program map directly to the program outcomes and, as a group, cover all of them. A student completing all the required courses satisfactorily will be assessed for attainment of the course outcomes and the corresponding program outcomes. Each instructor will use an assessment method appropriate for the course outcome including exams, verbal questioning and class participation, practical demonstration of skills, expository writing, etc. The college will continuously work with the Program Advisory Board to ensure that they are engaged and supportive of the program and represent the range of local and regional technology industries and technology-using industries. The Program Advisory Board, in turn, will also assess the program based in part on the criteria stated above, but also on their own workforce needs and the needs of computer science professionals.

In addition, the program staff will work directly with area companies to ensure that there are internship and employment opportunities for students in the BS in Computer Science program, and for graduates. Program staff (Program Director, Program Advisor, and Internship Coordinator) will track wages upon hiring and advancement opportunities of graduates as well as on-the-job retention at six months and one year. A survey will be developed to gauge employer satisfaction with program graduates to see where the curriculum can be improved; a similar survey will be sent to employed graduates to determine their satisfaction with the program.

BS in Computer Science program staff and the NSC Instruction Division will assess the impact of the program on college transfer pathways and associate degree coursework in terms of quality,

resources, and campus climate and culture. Regularly scheduled division meetings will give BS faculty an opportunity to identify any recurring student issues or faculty support needs that are going unmet, so that remedial strategies can be developed and implemented.

Finally, program staff and the NSC Executive Dean for Career/Workforce Education will assess the cost effectiveness of the program on an annual basis.

### **Admissions Criteria and Prerequisites:**

The BS in Computer Science degree will become another computer science transfer option alongside other university-based computer science options. As a result, the main preparatory pathways will be the Associate of Science – Transfer, Track 2 and the Computer Science DTA/MRP degrees. As these options currently require higher level math and science (calculus and physics courses) than will be required for entry into the program, the Seattle Colleges pledge to develop an alternative Associate of Arts (DTA) pathway that better matches the program entry requirements.

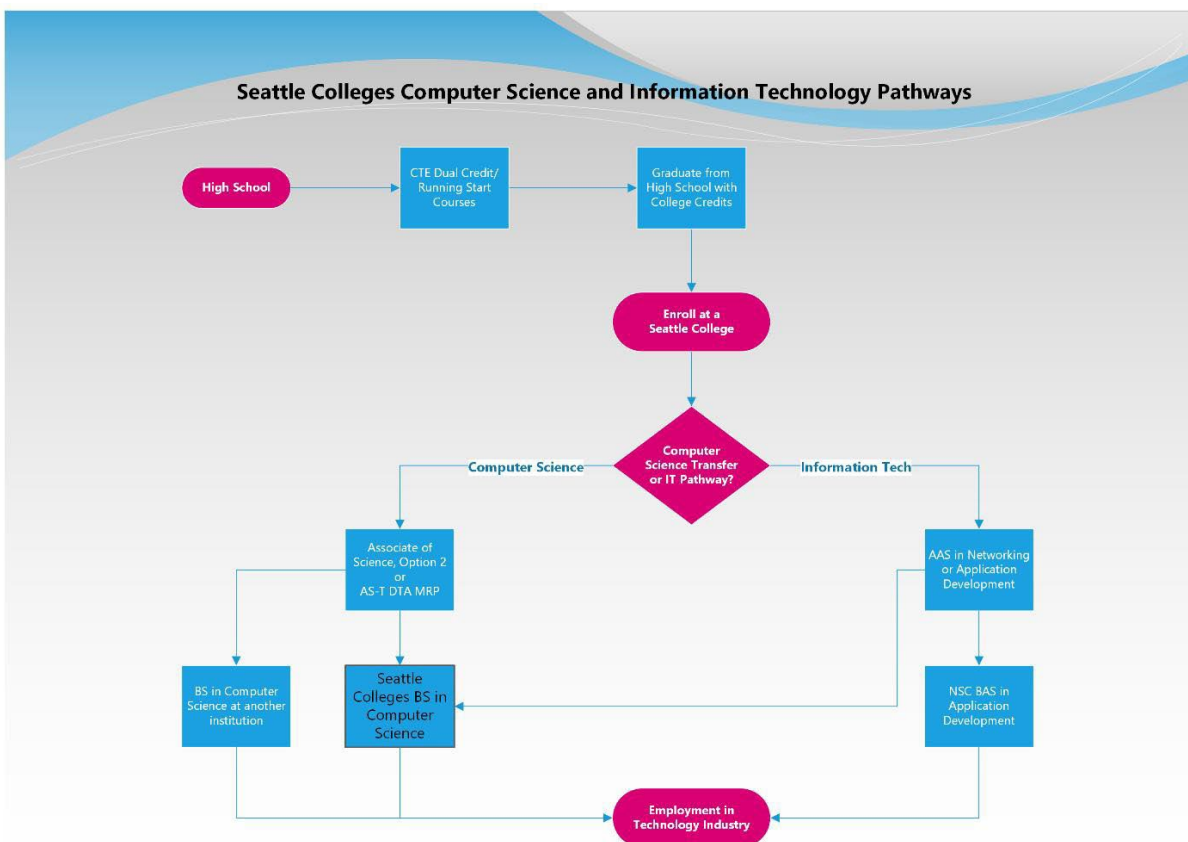
**Bachelor of Science in Computer Science Program Entry Prerequisites:** Students entering the BS in Computer Science program will, in general, need to have completed an associate degree (in which they will have satisfied their communication and quantitative reasoning requirements, and taken some general education classes) and have taken the following pre- requisite classes for entry (or their equivalent):

- ☐ ENGL&101 English Composition
- ☐ MATH&141 Pre-Calculus I (however, MATH&142 Pre-Calculus II and MATH&151 Calculus I are recommended)
- ☐ MATH&146 Introduction to Statistics
- ☐ CSC 110 Introduction to Computer Programming
- ☐ CSC 142 Computer Programming I
- ☐ CSC 143 Computer Programming II

Note that these are the same pre-requisite classes required for entry into NSC's Application Development BAS degree, a program that successfully targets most of the same occupations as the BS in Computer Science degree. Students taking these classes and completing an associate degree will be able to choose between either the Application Development or the Computer Science baccalaureate programs. Because this degree will not be a computer science engineering program but will instead focus on applied (rather than systems design) skills in the computer and information science field, physics will not be required. Students will need to take 10 credits of science, including a lab science course, to complete their associate degree.



The figure below shows the current pathways to and through the two related baccalaureate options, Application Development and Computer Science.



The Seattle Colleges is currently developing, with the Seattle Public Schools a CTE pathway to the Application Development BAS program. Since the required coursework for entry into the BS in Computer Science is the same, that CTE pathway will allow students a choice of baccalaureate degree options.

Students who are unsure how to choose between the two programs will be advised as they arrive at the Seattle Colleges. Advising materials will be developed. The table below summarizes the differences.

#### Major Differences Between BS in Computer Science and Application Development BAS

BS in Computer Science	Application Development BAS
Focus is on the interaction between software programs and computer hardware including theories, algorithms, data structures, and management of information systems.	Focus is on creating, testing, and maintaining software programs and applications with the end-user in mind.
Best pathway for information systems administration/management and artificial intelligence work.	Best pathway for creating and maintaining web, cloud, and mobile applications.
Generalist orientation (computer and information systems)	Specialist orientation (application development)

Best pathway toward chief information officer role.	Best pathway toward project development leader role.
Offers information science emphasis option.	Offers opportunities to work on web, cloud, and mobile projects and develop a portfolio of work

The Seattle Colleges will work to establish alternative pathways to the BS in Computer Science that do not include calculus and engineering physics but do include all the required pre-requisite courses.

Options include a special AA-DTA pathway and NSC's Application Development AAS-T program.

### Course Titles and Program Planning Sheet

Prerequisites: Many classes have prerequisites in addition to the pre-requisite courses required for program entry. Coursework earned at other institutions must be unofficially evaluated or approved by a program advisor before registering. Advanced placement testing, work experience, and transfer of credits may result in course waivers, credit transfer, and advanced placement.

Suggested Course Sequence: This program of study is outlined by quarter, and courses should be taken in the indicated sequence. The number of quarters listed here is minimal. Not all courses are offered every quarter. Individual student experiences, educational and training background, and personal schedules and demands all may affect the time it takes to finish this program. All courses with the CSB designation will be newly developed courses for this program. Applications Development and International Business courses are existing NSC upper division courses.

Course Number	Course Name	Credits
<b>Junior Fall</b>		
CSB301	Fundamentals of Computer Science I	5
CSB305	Logic and Problem Solving for Computer Science	5
	General Education Course	5
<b>Junior Winter</b>		
CSB302	Fundamental of Computer Science II	5
AD315	Discrete Math in Computer Programming	5
choose	CS/IS Pathway Elective	5
<b>Junior Spring</b>		
CSB325	Data Structures and Algorithms	5
CSB310	Programming Languages	5
choose	CS/IS Pathway Elective	5
<b>Senior Fall</b>		
AD400	Project Management in Software Development	5
AD350	Database Technology	5
	General Education Course	5
<b>Senior Winter</b>		
CSB430	Software Design and Implementation	5
choose	CS/IS Pathway Elective	5

	General Education Course	5
<b>Senior Spring</b> CSB440 or AD470/490 choose	Computer Science Practicum/Internship	5
	CS/IS Pathway Elective	5
	General Education Course	5
<b>Core Courses</b>	<b>Elective Courses</b>	<b>General Education</b>

Most students will come into the program with 90 credits and an associate degree. In addition to having taken the required courses for entry listed above, students should have 30 credits of general education courses. Most will have more. They can take an additional 20 general education classes in this schedule. If they need to take more, they can do so in the summer to reach a total of 60 general education credits to complete the BS degree.

Each student will complete 50 credits of upper division core courses and 20 credits of upper division electives to complete the BS degree. The electives comprise two emphasis options that students must choose from—computer science or information science. The elective courses are as follows:

### Computer Science and Information Science Elective Options

Computer Science Electives	Information Science Electives
AD320 Web Application Development	AD450 Data Science Development
AD420 Cloud Computing Software and Services	IBN330 Data Analytics in Business and Accounting
CSB340 Operating Systems	IBN402 Management of Information Systems
CSB410 Computer Network	One Computer Science emphasis elective course (AD320 or AD420 recommended)
CSB435 Secure Software Development	

The elective courses are more applied than the core courses. Students must select **either** the computer science **or** the information science emphasis. Additional elective options may be added as the program grows.

The chart below shows the suggested course pathway through the BS in Computer Science degree that makes up the 180-credit total. The two AS-T degrees are the current options. The Application Development AAS-T is a lower-barrier option (no calculus or engineering physics courses) that will prepare students for entry-level web or application developer positions or continuation into the BS in Computer Science degree. This program is offered at North Seattle College. Seattle Central College has AAS-T degree programs in Web Development and Programming that may also provide a similar pathway to the BS in Computer Science in the future, with some program course modifications.

North Seattle College is working with Shoreline and Everett Community Colleges to identify and develop pathways from those institutions into the BS in Computer Science program. This could help the program grow quickly if these efforts are successful.

## Lower and Upper Division Courses in the BS in Computer Science Pathway

Division	AS-T Track 2 (all Seattle Colleges)	AS-T DTA MRP (North & Seattle Central)	Application Development AAS-T (NSC Only)
Lower-Division Classes (90 Credits)	<p><b>General Education (60):</b>  ENGL&amp;101 Composition  ENGL&amp;102 or ENGL&amp;235 (5 cr.)  CMST&amp;230 Small Group Comm.  MATH&amp;141 Pre-Calculus I  MATH&amp;142 Pre-Calculus II  MATH&amp;151 Calculus I  MATH&amp;152 Calculus II  MATH&amp;146 Intro to Statistics  MATH&amp;163 Calculus III  200-level math or CHEM&amp;161 (5 cr.)  Ind, Cultures, Society course (5 cr.)  VLP course (5 cr.)</p> <p><b>Area of Study Courses (30)</b>  CSC110 Intro to Computer Prog.  CSC142 Comp. Programming I  CSC143 Comp. Programming II  PHYS&amp;221 Engineering Physics I  PHYS&amp;222 Engineering Physics II  PHYS&amp;223 Engineering Physics III</p>	<p><b>General Education (75):</b>  ENGL&amp;101 Composition  ENGL&amp;102 Composition II  CMST&amp;220 Public Speaking  CMST&amp;230 Small Group Comm.  HUM105 Intercultural Comm.  ECON100 Survey of Economics  MATH&amp;141 Pre-Calculus I  MATH&amp;142 Pre-Calculus II  MATH&amp;151 Calculus I  MATH&amp;152 Calculus II  MATH&amp;146 or MATH&amp;163  PHYS114 or lab science (5 cr.)  PHYS&amp;221 or lab science (5 cr.)  Ind, Cultures, Society course (10 cr.)</p> <p><b>Area of Study Courses (15)</b>  CSC110 Intro to Computer Prog.  CSC142 Comp. Programming I  CSC143 Comp. Programming II</p>	<p><b>General Education (30):</b>  ENGL&amp;101 Composition  MATH&amp;141 Pre-Calculus I  MATH&amp;146 Intro to Statistics  HUM105 Intercultural Communication  U.S. Cultures or Global Studies (5 cr.)  Natural World Lab Class (5 cr.)</p> <p><b>Area of Study Courses (60)</b>  CSC110 Intro to Computer Prog.  CSC142 Comp. Programming I  CSC143 Comp. Programming II  IT111 Programming Fundamentals  IT102 or 121 Intro to Prog. Or JavaScript  IT161 Web Authoring I  IT120 CompTIA Network+  IT125 Structured Query and SQL Server  IT115 Intro to Software Dev and Version  IT135 Introduction to Linux  IT112 Web Programming with Python  Related Elective class (5 cr.)</p>
BS Upper-Division Classes and General Education (90 Credits)	<p><b>General Education (20):</b>  Additional general education classes to  total 60 total credits including:  ENGL&amp;101 Composition  Comms. Class (ENGL&amp;235 recommend)  MATH&amp;141 or MATH&amp;146  VLP (10 credits)  ICS (10 credits)  Natural World (10 credits with lab class)</p> <p><i>Students who have completed this  requirement in the lower division can  take additional upper division electives.</i></p>	<p><b>BS in Computer Science Degree Courses (70):</b>  <b>Core Courses (50)</b>  CSB301 Fundamentals of Computer Science I  CSB302 Fundamentals of Computer Science II  CSB305 Logic and Problem Solving for Comp. Sci.  CSB310 Programming Languages  CSB430 Software Design and Implementation  AD315 Discrete Mathematics in Computer Sci.  AD325 Data Structures and Algorithms  AD350 Database Technology  AD400 Project Management in Software Dev.  CSB440 or AD470/AD490 Practicum/Internship</p> <p><b>Computer Science Electives (20)</b>  CSB340 Operating Systems  CSB410 Computer Networks  CSB435 Secure Software Development  AD320 Web Application Development  AD420 Cloud Computing Software &amp; Services</p> <p><b>Or</b>  <b>Information Science Electives (20)</b>  IBN330 Data Analytics in Business and Accounting  IBN402 Management of Information Systems  AD405 Data Science Development  Additional Computer Science Elective (5 cr.)</p>	
<b>Total Credits</b>	<b>180</b>	<b>180</b>	<b>180</b>

## Course Overviews

### BS in Computer Science Draft Course Descriptions

Number	Name and Description	Credits
<b>CSB 301</b>	<b>Fundamentals of Computer Science I</b>  Examines fundamentals of logic, set theory, induction, and algebraic structures with applications to computing; finite state machines; and limits of computability. Prerequisite: CSC143	5
<b>CSB 302</b>	<b>Fundamentals of Computer Science II</b>  Examines fundamentals of enumeration and discrete probability; applications of randomness to computing; polynomial-time versus NP; and NP-completeness. Prerequisite: CSB 301	5
<b>CSB 305</b>	<b>Logic and Problem Solving for Computer Science</b>  Provides the student with a thorough introduction to computational logic, covering in depth the topics of syntax, semantics, decision procedures, formal systems, and definability for both propositional and first-order logic. The material is taught from a computer-science perspective, with an emphasis on algorithms for automated reasoning. The goal is to prepare the students for using logic as a formal tool in computer science, in general, and artificial intelligence, in particular.	5
<b>CSB 310</b>	<b>Programming Languages</b>  This course is an introduction to the design and implementation of programming languages. The course explores organization and structure of programming languages, run time behavior and requirements of programs, and programming language specification. The course teaches the programming models underlying different programming paradigms such as functional, logic, scripting and object-oriented languages.	5
<b>CSB 340</b>	<b>Operating Systems</b>  This course explores the services operating systems provide to executing processes and their secure access. Topics include memory management, concurrent process management, resource management, system call implementation, file systems, and memory protection.	5

<b>CSB 410</b>	<b>Computer Networks</b>  The course teaches the fundamentals of computer networks, with emphasis on the Internet. The course covers basic concepts of computer networks, layered network architecture, protocols, network programming interfaces, and concept of network performance. The course also provides students with the opportunity to having a hands-on experience by network programming.	5
<b>CSB 430</b>	<b>Software Design and Implementation</b>  Explores concepts and techniques for design and construction of reliable and maintainable software systems in modern high-level languages; program structure and design; program-correctness approaches, including testing; and event-driven programming (e.g., graphical user interface). Includes substantial project and software-team experience. Prerequisite: CSB 310	5
<b>CSB 435</b>	<b>Secure Software Development</b>  Techniques, methodologies, and processes for development of robust, secure software. Security development process, threat modeling, common software vulnerabilities, web site vulnerabilities, defensive coding practices, security testing.	5
<b>CSB 440 or AD470/490</b>	<b>Practicum/Internship</b>  This cumulative capstone course provides students an opportunity to apply, integrate, and demonstrate their knowledge and skills throughout their undergraduate technology and computing education. The course assesses the student's ability to show mastery through practical examinations, oral presentations, and written work. Students must take this course in the last quarter of enrollment. May take another program requirement concurrently.	5
<b>AD 315</b>	<b>Discrete Mathematics in Computer Programming</b>  This course provides hands-on application of the (abstract) discrete structures that constitute the backbone of computer science. Topics shall include numerical representation and limitations for numerical methods, discretization, discrete probability, finite-state machines. Other topics may be included at instructor discretion. Topics shall be explored within the context of student-written application programs.	5

<b>AD 320</b>	<b>Web Application Development</b>  This course is an intermediate course in developing a database driven web application incorporating MVC patterns. The course will cover state maintenance, CRUD, & REST integration on both server & client side. Students will parse, cache, integrate API data achieved by third party providers into their application. Technologies can include as jQuery, CURL, AJAX & parsing JSON & XML.	5
<b>AD 325</b>	<b>Data Structures and Algorithms</b>  This course is an introduction to the fundamental concept of data structures. It explains how to organize and store data efficiently using data structures and how to select appropriate data structures. The course further focuses on understanding the fundamental algorithms and analyzing the time and space complexity of these algorithms. Design and implementation of hash tables, general trees, search trees, balanced trees and graphs. Comparison of sorting algorithms. Demonstration of the use of data structures in various applications. Evaluation of the best data structure for a particular task. Programming is required in implementation of concepts.	5
<b>AD 350</b>	<b>Database Technology</b>  An introduction to the underlying data models and theory of database systems and the design, implementation, and manipulation of relational databases.	5
<b>AD 400</b>	<b>Project Management in Software Development</b>  This course provides a comprehensive overview of current processes, practices & tools used to manage software development projects. Using a combination of case studies & projects, students apply best practices for planning, organizing, scheduling, & controlling software projects. Emphasizes legal & ethical issues that relate to project management.	5
<b>AD 420</b>	<b>Cloud Computing Software and Services</b>  Covers fundamentals & strategies for moving & developing apps & data storage in the cloud. Students will analyze cloud-based offerings & compare them for suitability to specific app & infrastructure needs. They will learn to deploy apps to the cloud, utilize cloud-based services, develop cloud specific apps, and explore legal and ethical issues specific to the cloud computing environment.	5
<b>AD 450</b>	<b>Data Science Development</b>  Fundamentals of data science course with topics that include data wrangling, visualization, exploratory data analysis, and machine learning. Students will gain hands-on data science experience with Python or R.	5

<b>IBN 330</b>	<b>Data Analytics in Business and Accounting</b>  Ongoing business operations require accountants to work with vast amounts of data generated daily. Data analytics helps businesses improve business intelligence, identify process improvements, and increase operational efficiency by uncovering valuable insights within their financial information. This course covers understanding and visualizing data, scientific decision making, and predictive data analysis.	5
<b>IBN 402</b>	<b>Management of Information Systems</b>  This course offers an overview of how businesses use information technologies and systems to achieve corporate objectives - including achieving operational excellence, developing new products/services, enhancing decision making, and achieving competitive advantage. Students will learn about a variety of issues facing organizations --infrastructure, security, business intelligence, networking, the Internet, telecom, wireless, enterprise applications, e-commerce, and ethics. Several case studies will be examined.	5

### **BS General Education Requirements (including Lower Division Classes)**

Communication Skills	10
Quantitative Reasoning	5
Humanities	10
Natural Sciences	10 (at least one lab class)
Social Sciences	10
Additional Gen. Ed.	15

### **Recommended BAS General Education Courses for This Program:**

**Communication Skills (10 credits):** ENGL&101 English Composition I and ENGL&102 English Composition II or ENGL&235 Technical Writing

**Social Sciences (10 credits):** Microeconomics ECON&201 and Macroeconomics ECON&202.

**Natural Sciences:** 10 credits—one class must be a lab class.

**Humanities (10 credits):** CMST&220 Public Speaking, CMST 205 Multicultural Communications, or HUM 105 Intercultural Communications.

This curriculum is demanding, especially for those who are holding down full-time jobs. Every effort will be made to ensure that the students have sufficient help available through tutoring and the early alert system that we are using for our associate degree students. In addition, the college will ensure that once a student is admitted the advising is comprehensive and all the student success resources are made available to the students. See Section 4 for more details on student support services.



## Applied Learning Opportunities

This degree includes work-based learning opportunities. The practicum/internship is designed to ensure real world, practical applications of the concepts and tools learned. Students taking the Computer Science electives option will take CSB440 Computer Science Practicum. Students taking the Information Science electives option will take either AD470 Data Science Practicum or AD490 Internship or Capstone. This will ensure that their work-based learning course relates to their pathway.

## Academic Credit for Prior Learning

North Seattle College will encourage BS students to apply for Prior Learning Assessment credits if their previous coursework, training, work experience, or military service warrants. Ideally, prior learning assessment would be done at the onset of their associate degree but if this hasn't been done it should be explored with their BAS advisor and then the faculty coordinator upon admittance to the program. The college recognizes the importance and relevance of prior learning assessment and has made strides in making this easily accessible for students.

- ☐ North Seattle College follows the recommendations made by the American Council on Education when evaluating military training and education records. The college's Veteran's Center will help active and veteran military personnel contact appropriate faculty to work with.
- ☐ Students may test out of specified courses by taking the final examination. This Credit- by-Exam method is widely used.
- ☐ Students may receive credit through the Prior Experiential Learning Portfolio (PELP) program. This method is appropriate for persons who have acquired knowledge and skills in ways that are not covered by "traditional" tests and transcripts. The college has made a special effort to assure that this process is publicized to students. While the review process for PELP is extensive, students will find faculty very helpful in completing the portfolio.

## Essential Learning Outcomes

In addition to the Program Outcomes above, BS in Computer Science students will achieve the same four Essential Learning Outcomes (ELO's) that North Seattle College fosters in all its students:

**Problem Solving** using critical and creative thinking, quantitative and qualitative reasoning, information literacy, and disciplinary and cross-disciplinary knowledge.

**Communication** in oral, written, and artistic modes of expression, individually and in collaboration with others.

**Inquiry** based on information accessed through ethical research.

**Responsibility** for developing intercultural knowledge and competence, practicing ethical reasoning and conduct, analyzing issues related to sustainability, and demonstrating respect for self and others.

These outcomes are achieved using current and emerging pedagogies and technologies, including integrative and applied learning. The ELO's are embedded in the upper- division courses that are part of the BS in Computer Science degree.

## 2. Qualified faculty

The program planners analyzed the faculty and staff needs of the program as well as their educational and professional qualifications. The number of instructors needed is based on the number of students to be enrolled and the number of courses offered per quarter during the school year. The college projects that there will be six 300-level core courses offered the first year. During the second year of the program, students will take three 400-level core courses.

The college anticipates hiring one full-time faculty member the first year. This full-time faculty member will have an advanced degree in Computer or Information Science or a related field. Experience teaching in higher education and advising students will be required. While faculty with doctoral degrees will be preferred, a candidate with a master's degree in computer science or related field and extensive professional and higher education teaching experience would be considered equally qualified. Every effort will be made to find the most qualified candidate who has the credentials, classroom experience, and work experience to be effective. The allocation of teaching assignments between full-time and part-time faculty will depend on the knowledge and expertise of each instructor. The college anticipates hiring additional faculty to teach the courses outlined above. If there is enough student interest to start a second cohort, hiring a second full time instructor will be considered. The same high standards for the hiring of full-time faculty will apply to any part-time faculty hired to teach upper division courses in the program.

Some of the key Seattle Colleges faculty who have been involved in the development of the program design to date, and who will remain involved going forward, include:

- **Bill Barry** is a full-time computer science instructor at North Seattle College who came to the Seattle Colleges from Microsoft in 2020. He teaches CSC142 and CSC143 as well as several Application Development BAS and Information Technology courses. The combination of his industry work and breadth of teaching experience makes him an invaluable team member for building the BS pathway.
- **Brenden West** is Principal Software Engineer at Accolade and part-time North Seattle College instructor in both the lower division Information Technology and the Application Development BAS degree programs. He has also served on the Application Development BAS Program Advisory Committee. He is a key asset for ensuring a strong linkage between NSC's programming to industry needs and a key advisor and instructor.

In December 2021, North Seattle College received funding from Amazon to hire a full-time lead instructor for the new BS in Computer Science program. Amazon has provided funding for this position for three years and a job announcement will be released soon so that the position can be filled in spring 2022. The new lead faculty member will be working full time on course development and program pathway development until instruction begins in the fall of 2022.

The program may also utilize the experience of North Seattle Colleges and the Seattle Colleges' existing faculty who have earned advanced degrees and have college teaching experience at the four-year level. Selected faculty will be a part of the advisory committees, curriculum development committees, and faculty recruitment committees as well as participate in team-teaching activities and guest lectures. The General Education requirements will be taught by North Seattle College's

current faculty who hold master's degrees and, in many cases, doctorates.

Funds will be made available for faculty to further increase their pedagogical skills to deliver curriculum that compels and reinforces student engagement. The Seattle Colleges' is in an advantageous position with North Seattle, Seattle Central, and South Seattle also offering BAS degrees in other fields: moreover, there exists a critical mass of faculty within the district who can meet on a periodic basis to share successes and challenges.

All faculty teaching the professional-technical courses will meet the professional-technical instruction certification requirements proscribed under the Washington Administrative Code. This includes the requirement that each instructor develop and keep current a professional development plan.

North Seattle College and the Seattle District are deeply committed to hiring diverse faculty. The college participates in national recruiting fairs specifically for faculty of color and advertises with higher education journals that focus on diversity hiring. Selected administrators and faculty from North Seattle College have been trained at Oregon State University in OSU's recruitment and retention of diverse faculty program, called Search Advocacy. North Seattle College plans to apply the principles learned at the training to its hiring practices.

### **3. Selective admissions process, consistent with an open-door institution**

Students will go through an online application process, with clearly defined minimum qualifications and prerequisites. Students will be expected to have completed an AAS, ATA, AAS-T, AAAS, or AB degree with a minimum 2.5 cumulative GPA. This is the same GPA that is required for entry into NSC's Application Development BAS program.

The applications will be reviewed and scored by a team of faculty, staff and advisors who know the program. A draft paper version of the online application has been completed and criteria have been set by a subcommittee of the BS Implementation Team (see Appendix 2). Cohorts are expected to initially have up to 30 students with a fall 2022 start. If there are more than 30 qualified applicants for fall 2022, the college will consider opening a second 30-student cohort. A summer transition quarter is planned for students who have not taken all the prerequisite classes for program entry or have less than 40 general education credits and need additional general education courses to complete the program on time. The summer quarter will be the student's opportunity to fill in any course gaps. The students will attend an orientation, and have a student handbook that outlines procedures, expectations, and requirements for continuation in good standing in the program.

In the event there are more applicants who meet all of the qualifications than there are slots available, and it is not feasible to set up additional classes, the college will admit students based on their application scores (see Appendix 3 for scoring rubric). A wait list, ranked by application scores, will be formed for the remaining qualified candidates. Although the cohort-based program is designed for students to take at least 10 credits of core/elective courses per quarter, every effort will be made to accommodate students who want to progress through the program on a reduced credit load basis.

This admissions process will be evaluated every year. Key factors relevant to the evaluating the process include student diversity, student retention, and academic achievement.

See Appendix 3 for the admission scoring matrix which includes the following scoring factors: completion of the application packet, completion of program prerequisite classes, completion of an associate degree (students who are close to completion will receive lower scores), the student's personal statement, and their cumulative GPA in lower division classes. The college's philosophy and goal with this BS program is to maintain as close to open admissions as possible, and to focus on screening for student motivation to complete, a record of academic success, and adequate academic preparation for entry. Applicants will be assessed using a wholistic approach. Historically, the college has not refused admission to any applicant who meets the minimum criteria for admission and works with students who have low GPAs to bring them up so they can be admitted. Every effort is made to ensure that the program will serve a diverse population. North Seattle College markets baccalaureate programs with and through Seattle Colleges (and high school) student groups to try to reach a diverse pool of applicants. Faculty and staff make presentations about the college's baccalaureate programs in relevant and appropriate lower-division classrooms. These outreach strategies have worked as the college's baccalaureate programs are among the largest and most diverse at NSC. While 26% of professional-technical students are historically under-represented students of color at NSC (black/AA, American Indian/Alaskan Native, Hispanic, Pacific Islander), 32% of BAS degree students are historically under-represented students of color.

North Seattle College and the Seattle Colleges are in an excellent position to ensure diversity. The Seattle Colleges enroll about 40,000 students annually and is second only to the University of Washington in student population in Washington State. It is a very diverse district, with North Seattle College enrolling 40% students of color out of a total of 6,500 students in fall 2014. Forty-nine percent of the Seattle District's students are students of color. Moreover, this diversity will strengthen the Computer Science BS program as it develops, and potentially the professions as well.

North Seattle College is also in a unique position to recruit diverse and low-income students because of the Opportunity Center for Employment and Education located on the campus. About 2,000 people come to the OCE&E monthly to seek services from DSHS, Employment Security, King County WorkSource, and the college's Workforce Education Offices. Because staff in the building have been cross-trained, those seeking advanced education will be referred to the college's Workforce Education office and BAS programs.

#### **4. Appropriate student services plan**

The North Seattle College Student Services division is in a very strong position to accommodate the changes that will occur with the new BS in Computer Science degree. Program staff are currently working on policies and procedures to prepare for the students who are pursuing the new degree. This is happening during major changes to the Student Services area based on implementation of Guided Pathways strategies and college reorganization, including deployment of the *Starfish* student success platform. The new BS in Computer Science students will be able to take advantage of this more-focused effort as well as build on the advising and retention strategies being used in the college's five existing BAS programs. Below is the planned headcount and subsequent FTES count for the program.

## Projected Enrollment Levels for BS in Computer Science Program

	2022-23	2023-24	2024-25	2025-26
Headcount	30	60	90	90
FTES	27	54	81	81

Using funding from Amazon, the college plans to hire a program coordinator/advisor to work with the BS in Computer Science students exclusively, working under the direction of the Director of Computer Science and Technology Bachelors Programs and in collaboration with a BAS advisor (funded with other resources). The director, program coordinator, and advisor will be able to give comprehensive advising regarding credential evaluations, scheduling, financial aid, academic support options, and other student services needs that may occur. The team members administering and supporting the program include:

- Full-time Faculty, BS in Computer Science
- Full-time Faculty, Application Development BAS
- Director of Computer Science and Technology Bachelors Programs
- Computer Science and Technology Program Manager
- Technical Employment Program Manager
- Baccalaureate Programs Student Advisor
- Baccalaureate Programs Financial Aid Specialist
- Academic Credentials Specialist

The program coordinator will complement the Student Services (SS) resources. In addition, the program coordinator and SS staff will adapt the BAS Student Handbook that has been developed for other BAS students. North Seattle College can draw on its six years' experience running BAS programs and the many years of BAS experience at South and Central Seattle Colleges to provide the very best in student support. The BS in Computer Science student handbook will include the following:

- Information about college including the goals and student learning outcomes of both the college and BS in Computer Science program specifically
- Procedures for getting started – admissions, advising, registration, financial aid, etc., as well as for finishing – graduation requirements.
- Program policies – leave of absence, satisfactory progress, etc.
- Course of study information – curriculum map, internships, access to instructional technology platforms
- Student services – veteran's services, bookstore, disability support, etc.
- Academic help – Student Learning Center (tutoring), library, computer labs, etc.

The college expects that most BS in Computer Science students will be eligible for and will want access to financial aid. North Seattle College has a full-time dedicated financial aid specialist who works with BAS students. The Student Financial Aid Office will dedicate time to work exclusively with the Computer Science students. This staff member is assigned to help students navigate Veterans Administration requirements, process FAFSA paperwork in a timely manner, and assist students in

completing scholarship applications offered both internally and externally. Based on the college's experience with BAS programs, this is an essential position. North Seattle College's Student Financial Aid Office will secure approval to offer third- and fourth-year funding from the U.S. Department of Education, so that students can be assured of their aid award prior to program enrollment.

This program plans for hybrid and online instruction and may include occasional (quarterly) in-person/virtual meetups that will be recorded for those students who are unable to attend. NSC has extensive experience offering hybrid and online instruction in its baccalaureate programs. The program coordinator and internship coordinator will be available to meet with students and provide support and advising in person or via video conferencing. In this manner, students will be able to access the student support they need, engage in academic planning, and get their questions answered without having to come to campus.

Another important resource for BS in Computer Science students is the Opportunity Center for Employment and Education on the North campus. As mentioned earlier, this "one-stop" center houses the college's Workforce Education offices, the Employment Security/WorkSource offices that can help with additional funding and job search assistance, DSHS offices that can help basic needs such as SNAP benefits (food stamps), cash assistance, medical benefits, and community-based organizations that can provide a variety of support to help students experiencing barriers to retention and completion.

The program will have dedicated internship coordination capacity to serve BS in Computer Science students. The internship coordinator will be a key support person in working with local businesses and advisory board members to set up the internships and matching student interests with employer needs. The Technical Employment Program Manager will also work to set up practicum exercises based on actual employer problems and needs. This system has been established to support the Application Development BAS program and will be extended to include the BS in Computer Science students.

Tutoring services are available at the Student Learning Center on campus. There, students will find tutoring services for science, English writing and language, and mathematics. Online tutoring is also available. The program coordinator can arrange for special tutoring needs on behalf of students, as appropriate. Program funds will support efforts to provide students with special tutoring resources, as needed.

While meaningful upfront advising and orientation are keys to student success, BS faculty and student support staff will focus on retention as well. Faculty will let the program staff know about students who are having trouble during the program through the *Starfish* system.

The BS in Computer Science degree will have a very positive impact on the student body at North and the District by providing a much greater opportunity for students to successfully transfer to a four-year program. In addition, these students will serve as role models for other students who are not in the program but may aspire to continue their education. North and the District will now be able to offer a significant career and educational ladder from AAS-T to BAS at a convenient location and low cost.

## **5. Commitment to build and sustain a high-quality program**

To have sufficient time to build out the curriculum and recruit the first cohort of students, North Seattle College is planning to enroll its first cohort of BS in Computer Science students in fall 2022. Spring and summer 2022 will be dedicated to gaining program approval from the Northwest Commission, program development, outreach, and recruitment.

Thanks to the \$1 million donation by Amazon to support the lead instructor and program coordinator positions as well as some start-up expenses, the program will roughly break even fiscally from inception. The Amazon donation will fund the Year 0 start-up costs and the two positions. Amazon support will cover only a portion of those positions in Year 3, but by then program revenues will be able to make up the balance.

The recurring program revenue sources will be funds collected from student tuition. Based on experience, the mix of upper- and lower-division courses in the students' schedules, prior learning credit, and low BAS student attrition rates, the college has been able to calculate an expected average annual upper division tuition revenue of \$5,200 per matriculated BAS student. This net tuition revenue figure is held constant in future budget years, though it may increase as tuition rates increase.

The Seattle College District has demonstrated the capacity and resources to build and sustain quality baccalaureate programs of study. This will be North Seattle's sixth BAS degree and the fourteenth baccalaureate degree for the Seattle Colleges. This record of accomplishment demonstrates that the college will ensure that adequate financial and human resources are available to make the program a success. The financial plan for the BS in Computer Science program proposal is provided below, including projections of all the costs, expenditures, and revenue streams to support the proposal. Moreover, the proposed budget is sufficient to fund the necessary activities to build and sustain an outstanding program that will meet or exceed accreditation standards.

North Seattle College projects the expenses to be \$197,000 for the Year 0 planning, marketing, and curriculum development phase of the program. Year 1 includes instruction and continued curriculum development costs, with a total of \$341,000 in expenses. Year 2 and 3 costs increase and level off with three cohorts of students totaling \$579,000 by year 3. The numbers show that continued outside support for the program will be required after year 3 to cover all the instructional and student support expenditures. We will be working with Amazon and our other employer partners to secure that ongoing support when it will be needed by year 4.

## Budget for BS in Computer Science Degree

### Expenses

Staff	2021-22 (0)	2022-23 (1)	2023-24 (2)	2024-25 (3)
PT - Faculty	\$0	\$0	\$0	\$48,000
FT Faculty-Lead	\$40,000	\$150,000	\$150,000	\$150,000
FT Faculty-Instructional			\$85,000	\$85,000
Faculty Curriculum revision/enhancement	\$0	\$3,000	\$3,000	\$3,000
Faculty Program Development Stipends (\$40*12*100 hrs)	\$48,000	\$0	\$0	\$0
Program Coordinator	\$25,410	\$77,000	\$77,000	\$77,000
Program Director (existing staff)	\$6,000	\$12,000	\$12,000	\$12,000
Technical Employment Program Manager (Existing staff)	\$4,000	\$8,000	\$8,000	\$8,000
Librarian (0.25 split with AD BAS)		\$0	\$9,000	\$9,000
Credentials Evaluator (0.25 split with AD BAS)		\$0	\$7,500	\$7,500
Financial Aid Assistant (0.25)	\$0	\$0	\$13,300	\$13,300
<b>Subtotal</b>	<b>\$123,410</b>	<b>\$250,000</b>	<b>\$364,800</b>	<b>\$412,800</b>
Benefits	\$33,799	\$83,470	\$123,750	\$131,910
Cost of Living@2.5%	\$0	\$8,337	\$20,551	\$34,168
<b>Total</b>	<b>\$157,209</b>	<b>\$341,807</b>	<b>\$509,101</b>	<b>\$578,878</b>

Item	Year 0	Year 1	Year 2	Year 3
Goods & Services - E	\$5,000	\$5,000	\$5,000	\$5,000
Travel (Professional Development) - G	\$2,000	\$2,500	\$2,500	\$2,500
Marketing - C	\$25,000	\$10,000	\$10,000	\$10,000
Library Materials (Start-up) - J	\$7,500	\$0	\$0	\$0
<b>Total</b>	<b>\$39,500</b>	<b>\$17,500</b>	<b>\$17,500</b>	<b>\$17,500</b>

<b>Total Expenditures</b>	<b>\$196,709</b>	<b>\$359,307</b>	<b>\$526,601</b>	<b>\$596,378</b>
---------------------------	------------------	------------------	------------------	------------------

### Revenues

Item	Year 0	Year 1	Year 2	Year 3
Resident Enrollments	0	30	60	90
Projected direct tuition revenue @ \$5,200 for 2022-23 and beyond	\$0	\$156,000	\$312,000	\$468,000
Amazon Donation	\$196,709	\$304,180	\$304,180	\$194,931
<b>Total Revenues</b>	<b>\$196,709</b>	<b>\$460,180</b>	<b>\$616,180</b>	<b>\$662,931</b>

<b>Net Revenue: Revenue less Expenses</b>	<b>\$0</b>	<b>\$100,873</b>	<b>\$89,580</b>	<b>\$66,553</b>
---	------------	------------------	-----------------	-----------------



## **Expenditures**

1. \$123,410 plus benefits will be allocated to staff and faculty for outreach, curriculum and pathway development, attendance at advisory committee meetings, etc. during the planning period (Year 0).
2. Personnel for instruction include salary and benefits full-time faculty and program coordinator in Year 1 of operation. Stipends for curriculum development and advisory committee coordination are included in this budget. An additional full-time instructor will be utilized beginning in Year 2, and part-time instructors in Year 3. The full-time faculty members will teach three courses and the remaining course sections will be taught by part-time faculty. It is expected that students will complete their general education requirements by enrolling in existing 100 and 200-level courses.
3. The current library staff will facilitate materials selection and acquisition associated with expansion of the library to support the baccalaureate degree as well work directly with the BS students. Funding for additional library materials is included in Year 0. A student fee is in place for supporting recurring subscription costs. Library materials include the acquisition of databases and magazines and other trade publications to support the increased emphasis on research.
4. The college will hire a program coordinator to manage the program under the direction of the Director for Computer Science and Technology Bachelors Programs, advise the students, coordinate marketing, outreach and program application and enrollment. This person will be hired in the first half of Year 0.
5. Funding for library, credentials evaluation, and financial aid staff dedicated to the BS students begins in Year 2 when there are two BS cohorts running and will continue on an ongoing basis.
6. Benefits rates vary by position, 34% for FT faculty, 40% for classified staff, and 17% for PT faculty and stipends.
7. Goods and services include desk supplies, and teaching and learning materials for the program.
8. Travel includes registration, hotel, and travel expenses to conferences for faculty/staff professional development and local travel for the program coordinator.
9. Marketing and outreach costs include brochures, college fairs, online advertising, etc.

## **Revenues**

1. The college forecasts ongoing enrollment at 30 students per cohort for a total of 90 students in the program beginning in year 3. A few students will inevitably drop out, additional students may enroll in winter and spring quarters to make up vacancies. For accuracy, however, the actual tuition revenue figure of \$5,200 per matriculated student in the budget is based on actual BAS experience at North Seattle College, considering typical student course-taking patterns and attrition rates.

2. In addition to the initial Amazon gift on \$1 million for start-up and personnel costs, BS in Computer Science program staff will work with the Seattle Colleges Foundation (Advancement Office) to raise additional funds for both scholarships and operations from industry and other stakeholder groups.

The college realizes that with any new endeavor there may be start-up problems. If enrollment does not reach the enrollment targets listed here, or the attrition rate is higher than anticipated, the college will underwrite the program until such time that the enrollment and retention have reached satisfactory numbers.

## 6. Program-specific accreditation

The college will be submitting *The Prospectus for Minor Change* to the Northwest Commission on Colleges and Universities by April 2022. In July 2016, after completing the college's seven-year accreditation review, North Seattle College received notification from the Northwest Commission that the college is officially designated a baccalaureate degree granting institution. The college is expecting approval from the Commission for this degree once the minor change process is completed by the end of May 2022, at which time program marketing will begin.

[ABET](#) is the primary accreditation organization worldwide for computer science programs. With the lower than typical math and science requirement, it may be difficult to receive ABET accreditation. However, an initial review of their guidelines indicates that the program meets their mathematics and science criteria, and it may be possible. If so, it would be North Seattle College's intention to seek accreditation from one of these two organizations after we have graduated at least two classes of students, so the earliest we could apply would be after June 2025.

## 7. Pathway options beyond baccalaureate degree

There are multiple potential pathways for students who have completed this BS degree, including graduate work in computer science, information and data science, and technology management. Several years ago, the Seattle Colleges signed a memorandum of understanding and a program-specific articulation agreement with City University to help move students seamlessly between BAS programs and master's level programs at City University such as their Master's programs in Computer Science, Cybersecurity, and Data Science. The articulation agreement is attached in Appendix 4, and it is NSC's intention to modify the agreement to enable students who complete the BS in Computer Science to have met all the required prerequisites for entry into City University's programs.

Similarly, a master partnership agreement has been signed recently with Western Governors University–Washington stating that graduates of all Seattle Colleges BAS degree programs meet the entry requirements for all WGU-W's Master's-level programs, except the Master's in Nursing program which requires a BSN for entry. The agreement also covers efforts to jointly market the articulated pathways. BS in Computer Science graduates are also eligible for 5 percent tuition discount at WGU as part of the partnership. WGU Washington offers masters programs in cybersecurity and information assurance, data analytics, and information technology management.

North Seattle College has a joint marketing and articulation agreement with Central Washington University allowing Application Development BAS students to enter CWU's online Master's of

Science in Information Technology and Administrative Management (ITAM) program. CWU waives the application fee for these students. North Seattle College intends to extend this agreement to BS in Computer Science students.

Finally, North Seattle College signed a tuition reduction agreement with Lynn University, a regionally accredited, not-for-profit institution (like City U.) in southern Florida which offers many online masters and business administration program options. Graduates of the NSC's BAS programs may receive a 10 percent tuition reduction for enrollment in an MBA program at Lynn University, under the agreement. LU also has programs in Web Development Management and Entrepreneurial Management.

## 8. External expert evaluation of the program

External reviewers were sought from faculty of baccalaureate Computer and Information Technology programs and employer education and training experts. Two reviewers will be reading the proposal and provided feedback on the quality of the program design through a rubric. The review rubrics and reviewer findings are summarized in the Appendix 5. Also included are North Seattle College responses to specific concerns and suggestions raised by the reviewers.

External reviews were completed by:

- **Mr. Eric Lloyd, MSCS**, professor at Seattle University at the Albers School of Business and Economics. Mr. Lloyd holds a Master of Science in Computer Science from Florida Atlantic University and is a Ph.D. candidate in Computer Science at the same institution. Mr. Lloyd worked in the data science industry for Cequent, Inc. for six years, and during that time spent three years as adjunct faculty teaching computer science for Palm Beach State College and North Seattle College. In 2019, Mr. Lloyd became a full-time instructor at Seattle University teaching business analytics and information systems. Mr. Lloyd has a passion for computer science and machine learning, and his research revolves around human-in-the-loop systems integrated with machine learning and reinforcement learning techniques.
- **Mr. Jason Panzer, BAS** representing local industry. Jason has recently served on the NSC Application Development Program Advisory Board and as a part-time web development instructor for the program. Jason is currently Senior Site Reliability Engineer at Klaviyo, an e-commerce marketing automation software company. Previously, he worked for several years as a software engineer at Nordstrom, and as the Manager of Mobile Services at FrontStream.

The outside reviewer comments were generally positive and supportive of our direction. Neither outside reviewer raised any concerns about the most controversial aspect of the program design, the absence of required calculus and physics coursework.

The most concrete suggestion for improving the program received was regarding the Computer Science elective courses. The reviewer thought that the two application development options were less relevant to a computer science program than the computer science electives. Based on the reviewer comment, we will be advising students to take the three computer science elective courses and one of the two application development courses to total the required 20 credits of electives. Over time as the program grows, we may offer additional computer science elective classes.

## **Appendices**

1. Computer Science and Application Development Program Advisory Board Members
2. Draft Program Application (paper version)
3. Application Scoring Matrix
4. Commitment Letters from Master's Programs
5. Applied Baccalaureate Program External Reviews

## Appendix 1: Computer Science and Application Development Program Advisory Initial Board Members

Name	Title	Company
<b>External Members</b>		
Jeffrey Martinez	Senior Engineering Manager	Scribd
Tobias Gierk	Senior Manager Software Development	Amazon
Brenden West	Lead Software Engineer	CBRE Build
Toddy Mladenov	Senior Program Manager	Microsoft
Jaime Lopez	Manager, Developer Advocate Team	Jack Henry & Associates
Ksenia Ivantsova	Senior DevOps Engineer	Aveva
Ian Peters	Senior Software Engineer	Blink Health
Todd Bello	Software Development Engineer	Microsoft
Bob McHenry	Senior Quality Engineer	Slalom Consulting
Melanie Kong	co-founder and CEO	Floop
Chloe Dolese Mandeville	Assistant Director for Diversity & Access at Paul G. Allen School	UW
Jason Panzer	Software Engineer	Nordstrom
Zak Brinlee	Consultant - Technology Enablement	Slalom
Kevin Costello	Software Development Engineer	Amazon
Samuel No	Software Engineer	T-Mobile
Kyle Bastien	Lead Software Engineer	DocuSign
Joe Hueffed	IT Program Manager	Savers
Linh Luong	Scrum Master	Elyon International
Eric Lloyd	Instructor at Alber's School of Business and Economics	Seattle University
Avi Herbstman	Software Development Engineer	Expedia Group, Inc.
<b>Internal Members</b>		
Michelle Melero	Director, Comp. Sci and IT Programs	North Seattle College
Steve Balo	Technical Employment Manager	North Seattle College
Aaron Korngiebel	Dean Workforce Instruction	North Seattle College
Bill Barry	Computer Science Faculty	North Seattle College
Bob Bunge	IT Faculty	North Seattle College

Additional faculty from Seattle Central College and South Seattle College will be added to the Board.

## Appendix 2: Program Application

# Computer Science BS



## DRAFT APPLICATION PACKET



This is an application for admission to the Bachelor of Science (B.S.) in Computer Science program for fall 2022 enrollment. If you have questions or concerns, please contact us at any time.

**Contact Name:** Michelle Melero, Math & Sciences Division

**Phone:** (206) 934-7025

**Email:** [Michelle.Melero@seattlecolleges.edu](mailto:Michelle.Melero@seattlecolleges.edu)

---

### **NORTH SEATTLE COLLEGE**

One of the Seattle Colleges, North Seattle College does not discriminate on the basis of race or ethnicity, color, age, national origin, religion, marital status, gender, gender identity, sexual orientation, status as a veteran or disabled veteran, political affiliation or belief, citizenship/status as a lawfully admitted immigrant or disability.

## APPLICATION CHECKLIST

Admission to the program is competitive. Meeting minimum requirements does not guarantee admission, as the number of qualified applicants may exceed the number of available enrollment spaces.

- ☐ **Apply for a Student Identification (SID) Number** – If you have never attended North Seattle College
  - o Go to <https://northseattle.edu/admissions/steps> and apply for admission to North Seattle College online. Once you apply to the College, you will be emailed a SID number to use on your BAS application form.
- ☐ **Submit a completed application form** for the Computer Science Bachelor of Science (pages 3-4) Note: Please make sure you have all elements to the application packet before sending to the Math/Science Division Office.
- ☐ **A completed Application for Evaluation of Incoming Credits form (page 5).** This form allows the credentials evaluator to assess which prior credits will transfer through towards the BAS degree. This process normally takes 6-8 weeks. Official transcripts must be turned in prior to credentials reviewing incoming credits.
- ☐ **A non-refundable check for \$35.00**, payable to “North Seattle College AD BAS Program” (*This fee covers your application to NSC, transcript evaluation and your individualized program plan*). Include your SID number on the check. This check needs to be turned in to the cashier’s office prior to turning in the completed application to the Math & Sciences division (see page 7) or included in the application.
- ☐ **Unofficial or official transcripts** from a regionally accredited college demonstrating completion of an Associate degree or higher.
  - o *Note: Upon acceptance, you will need to provide official transcripts, opened official transcripts will not be accepted. Students who have attended NSC, SSC, or SSC do not need to order official transcripts from Seattle District colleges.*
  - o *Note: If you are submitting an international transcript, you must also submit an agency evaluation; for more information go to the following internet address: <https://northseattle.edu/credentials/international-credits>*
- ☐ **Résumé** describing your relevant work experience and skills. If relevant work experience does not exist, please include any skills, activities, or project work to show your interest or involvement in this field. This is also an opportunity to highlight any internship, work study, volunteer experience, or other applicable activities in which you have participated.
- ☐ **A personal statement** (maximum of 600 words) The personal statement should help to answer the questions: **Why do you want to complete this degree? What unique qualifications help make you likely to succeed in this program? What specific experience, training, or certification contributes to your awareness and skills for this field?** The essay’s content as well as spelling, grammar, and punctuation will be evaluated.
- ☐ **Review** the financial aid website at <http://northseattle.edu/financial> to get information about the application process and important deadlines. Financial aid applicants need to fill out the Free Application for Federal Student Aid (FAFSA) online at <http://www.fafsa.ed.gov> and submit a North Seattle College Data Sheet to the financial aid office for each academic year.

The priority application deadline for the 2022-23 academic year is June 15th, 2022. All applicants must have a valid Student Aid Report (SAR) and a completed NSC Data Sheet on file to meet this deadline. The 2022-23 academic year starts fall 2022. If you have any questions, please call the office at (206) 934-3688 or email at [nscfinancialaid@seattlecolleges.edu](mailto:nscfinancialaid@seattlecolleges.edu).

All application materials must be addressed to:  
Computer Science BS  
Attn: Workforce Instruction Division – Michelle Melero  
North Seattle College  
9600 College Way North Seattle, Washington 98103-3599

# BACHELOR OF APPLIED SCIENCE APPLICATION DEVELOPMENT APPLICATION FORM

## IMPORTANT NOTES:

- Please type or print legibly with a black or blue pen
- Enclose the application fee of \$35.00. Checks should be made payable to *North Seattle College, BS Program* (do not mail cash)

## SECTION 1 - PERSONAL INFORMATION

First Name		Middle Initial	Last Name	
Address, including apartment number			City	State Zip Code
Day Phone	Cell Phone		Evening Phone	
Date of Birth (mm/dd/yyyy)			Gender	
E-mail Address			Previous Names 1. 2.	
Student identification Number (SID)  -- --		Are you an International Student (here on a student visa)? Yes <input type="checkbox"/> No <input type="checkbox"/> Visa Type: Have you been granted Deferred Action for Childhood Arrivals (DACA)? Yes <input type="checkbox"/> No <input type="checkbox"/>		
If you do not already have an SID number, go to <a href="https://northseattle.edu/admissions/steps">https://northseattle.edu/admissions/steps</a> and apply online. Once you finish the online application, you will be given an SID number.				

## SECTION 2 - COLLEGE ENROLLMENT HISTORY, COURSE PLANS, WORK EXPERIENCE (chronological order)

Year and quarter you plan to start: FALL QUARTER, 20__	Are you the first generation in your family to attend college? <input type="checkbox"/> Yes <input type="checkbox"/> No		
College, vocational, or technical school attended/Degree in Progress	City and State	Years attended (YY) From: To:	Did you graduate/or will graduate? <input type="checkbox"/> Yes, Year _____ <input type="checkbox"/> No, Month/Year
College, vocational, or technical school attended	City and State	Years attended (YY) From: To:	Did you graduate? <input type="checkbox"/> Yes, Year _____ <input type="checkbox"/> No
College, vocational, or technical school attended	City and State	Years attended (YY) From: To:	Did you graduate? <input type="checkbox"/> Yes, Year _____ <input type="checkbox"/> No

List any additional colleges and vocational/technical schools on a separate sheet of paper and attach. Please have official transcripts sent to NSC as directed in the application checklist.

Current degree(s) held, certification(s), and <i>briefly</i> list work experience List any additional degrees, certificates, or positions on a separate sheet of paper and attach.		
Degree / Certificate / Position	Granting institution or organization / Place of employment	Date degree or certificate received / Dates of employment

## SECTION 3 - STATE EMPLOYEE TUITION EXEMPTION POLICY

<input type="checkbox"/> I am applying as a Washington state employee and intend to use the Washington state employee tuition waiver. Please note that your application will be evaluated in a different applicant pool if you check this box. It is highly recommended that you meet with the AD BAS program manager to discuss the special conditions of this tuition waiver and how it will work in the AD BAS program.
--



#### SECTION 4 - RESIDENCY INFORMATION

Please read this notice before responding to the questions in this section:

Effective July 1, 2003, Washington State law changed the definition of "resident student." The law makes certain students, who are not permanent residents or citizens of the United States, eligible for resident student status - and eligible to pay resident tuition rates - when they attend public colleges and universities in this state. *The law does not make these students eligible to receive need-based state or federal financial aid.* To qualify for resident tuition, students must complete an affidavit/declaration/certification if they are not currently a permanent resident or citizen of the United States but intend to apply and have met one of the following conditions:

**Condition One:** (a.) Resided in Washington State for three years immediately prior to receiving a high school diploma, and (b.) Completed the full senior year at a Washington high school, and (c.) Continuously resided in the state since earning the high school diploma.

**Condition Two:** (a.) Completed the equivalent of a high school diploma, and (b.) Resided in Washington State for the three years immediately before receiving the equivalent of the diploma, and (c.) Continuously resided in the State since earning the equivalent of a high school diploma.

**NOTE: If you meet one of the above conditions and would like to pay resident tuition rates, contact North Seattle College, and request a copy of the 1079 residency affidavit.**

##### Residency Questions for Tuition Purposes:

1. Have you lived continuously in the State of Washington for the past 12 months? ☐ Yes ☐ No

If no, how long have you lived continuously in the state of Washington?

\_\_\_\_\_months

2. Were you claimed for federal income tax purposes by your mother, father, or your legal guardian in the current calendar year? ☐ Yes ☐ No

In the past calendar year? ☐ Yes ☐ No

If YES, has your parent or legal guardian lived continuously in the Washington State for the past 12 months? ☐ Yes

☐ No

3. Will a public or private non-federal agency/institution outside the state of Washington provide you with financial assistance to attend college? (answer yes only if your eligibility for this assistance is based on being a resident of that state)

☐ Yes ☐ No

4. Are you active duty military stationed in Washington or an active member of the Washington National Guard? ☐ Yes ☐ No

Are you the spouse or dependent of either (a) an active duty military person stationed in Washington, or (b) an active member of the Washington National Guard?

☐ Yes (COPY OF ORDERS TO WASHINGTON & MILITARY ID REQUIRED)

☐ No

#### SECTION 5 - RACE/ETHNICITY INFORMATION

Providing this information is voluntary

1. Which race or ethnicity do you consider yourself to be? Check all that apply:

☐ African American (872)

☐ Alaska Native (015)

☐ American Indian (597)

☐ Native Hawaiian (653)

☐ Chinese (605)

☐ Filipino (608)

☐ Japanese (611)

☐ Vietnamese (619)

☐ White (800)

☐ Other Pacific Islander (681)

☐ Other Asian (621)

☐ Other Race (specify): \_\_\_\_\_

2. Are you of Spanish/Hispanic/Latino ethnicity? ☐ No

☐ Yes, Mexican, Mexican American, Chicano (722)

☐ Yes, Puerto Rican (727)

☐ Yes, Cuban (709)

☐ Yes, other Spanish, Hispanic, or Latino (Please specify): \_\_\_\_\_

#### SECTION 6 - OTHER

Check all that apply

1. How did you hear about the Bachelor of Applied Science in International Business program at North Seattle Community College?

☐ Family / Friend ☐ Radio ☐ College Schedule ☐ Mobile Advertisement ☐ College Advisor ☐ Instructor

☐ NSCC Website ☐ Search Engine (google, bing, yahoo, etc) ☐ Other

I certify to the best of my knowledge that all statements on this form are true.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

North Seattle College

## BACHELOR OF SCIENCE DEGREE

### Application for Evaluation of Incoming Credits



ARRC STAFF

Student I.D. Number \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_

Last Name \_\_\_\_\_ First Name \_\_\_\_\_ Birth Date \_\_\_\_\_

Please list all colleges, universities, military transcripts, international baccalaureate exam scores, or advanced placement exam scores to be evaluated. ARRC must have official transcript on file.

*\*Official transcripts do not need to be provided for Seattle Central College or South Seattle College.*

- |          |          |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

International college transcripts must be translated into English and must also include a sealed official agency evaluation.

At this time, North Seattle College does not accept transcripts via email. Electronic transcript options are only available from other WSCTC schools. Speak with Admissions staff if you have questions prior to ordering your transcripts.

#### By submitting this application, I agree:

- ☐ I have verified that \*official transcripts from each college listed above have been received by North Seattle College. Check Degree Audit Notes: <https://northseattle.edu/online-services/degree-audit>
- ☐ I am admitted to North Seattle College or have been an actively enrolled student within 4 years. Returning students after 4 years or longer must submit an updated admissions application.
- ☐ Official credit evaluations may take 6-8 weeks to complete. Credentials cannot provide *unofficial* evaluations to students. Course review for entry codes, class placement, or academic planning purposes may be completed with unofficial transcripts taken to academic advising or BAS Program Manager.
- ☐ My contact information is up to date. Check the Student Services online portal. An email will be sent to me once my evaluation is complete with my results and a link to my updated Degree Audit.
- ☐ Any changes of program of study, additional/updated transcripts, or re-evaluation of a previous official evaluation done 2 years or more will require a NEW application.
- ☐ If requirements are not complete, I will be requested to submit a NEW application.

#### SELECT (Required)

- ☐ Computer Science
- ☐

I agree to have my official transcripts from the above colleges evaluated for incoming credits.

STUDENT SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_



The Seattle Colleges do not discriminate on the basis of race or ethnicity, color, age, national origin, religion, marital status, sex, gender, sexual orientation, gender identity, veteran or disabled veteran status, political affiliation or belief, citizenship/status as a lawfully admitted immigrant, or disability.

## Tuition Rates for Upper Division Courses

Credits	BAS Resident	BAS Non-Resident	Non-Resident International
1	\$226.53	\$241.75	\$637.35
2	\$453.06	\$483.50	\$1,274.70
3	\$679.59	\$725.25	\$1,912.05
4	\$906.12	\$967.00	\$2,549.40
5	\$1,132.65	\$1,208.75	\$3,186.75
6	\$1,359.18	\$1,450.50	\$3,824.10
7	\$1,585.71	\$1,692.25	\$4,461.45
8	\$1,812.24	\$1,934.00	\$5,098.80
9	\$2,038.77	\$2,175.75	\$5,736.15
10	\$2,265.30	\$2,417.50	\$6,373.50
11	\$2,276.60	\$2,429.60	\$6,385.60
12	\$2,287.90	\$2,441.70	\$6,397.70
13	\$2,299.20	\$2,453.80	\$6,409.80
14	\$2,310.50	\$2,465.90	\$6,421.90
15	\$2,321.80	\$2,478.00	\$6,434.00
16	\$2,333.10	\$2,490.10	\$6,446.10
17	\$2,344.40	\$2,502.20	\$6,458.20
18	\$2,355.70	\$2,514.30	\$6,470.30
19	\$2,570.30	\$2,728.90	\$7,095.72
20	\$2,784.90	\$2,943.50	\$7,721.14
21	\$2,999.50	\$3,158.10	\$8,346.56
22	\$3,214.10	\$3,372.70	\$8,971.98
23	\$3,428.70	\$3,587.30	\$9,597.40
24	\$3,643.30	\$3,801.90	\$10,222.82
25	\$3,857.90	\$4,016.50	\$10,848.24

## **Invoice for Application Fee**

Complete and deliver to cashier's office with \$35.00 payment or include a \$35.00 check within the application to be turned in.

**TO:** CASHIER  
**FROM:** BS, Computer Science  
**BUDGET NUMBER:** xxx  
**CODE:** xx

**DATE:** \_\_\_\_\_

Cashier: Please charge the appropriate fees as follows:

**CUSTOMER NAME:** \_\_\_\_\_  
**SID:** \_\_\_\_\_

**BS APPLICATION:** **FEE** \$35.00

Subtotal: \$35.00

Total: \$35.00

### Appendix 3: Application Scoring Matrix

BS IN COMPUTER SCIENCE APPLICATIONS		
Element/Weight	Score	Max possible points
Prerequisites complete? (20%)	None 0 Some 1 All but 2 2 All but 1 3 All 4	20
Credits completed toward relevant associates degree (20%)	<60 0 60-69 1 70-79 2 80-89 3 Yes/90+ 4	20
Personal Statement (20%)	No indication of reason for interest 0 Shows some interest/motivation 1 Shows interest/motivation 2 Motivated and interested 3 Highly motivated and interested 4	20
Overall GPA (2.5 minimum required (10%))	2-2.49 0 2.5-2.99 1 3-3.49 2 3.5-3.74 3 3.75-4 4	10
Technical Course GPA (2.5 minimum required (30%))	2.5-2.99 0 3-3.24 1 3.25-3.49 2 3.5-3.74 3 3.75-4 4	30
<b>Total Points</b>		<b>100</b>

## Appendix 4: Articulation and Marketing Agreements with Graduate Programs

### City University

#### Seattle Colleges Articulation to City University of Seattle Graduate Degrees

The following Seattle Colleges Bachelor of Applied Science degrees may directly articulate to meet admissions requirements as specified to City University of Seattle's (CityU) Graduate degrees.

All Seattle Colleges students must meet the bachelor degree completion requirements of a 2.0 minimum GPA and completed any required authorizations/fees for the program completion at the bachelor awarding school. Students must formally apply to City University of Seattle and send an official transcript showing the conferred bachelor's degree, which will meet admission requirements for the CityU plans specified below.

*Some programs require subject matter specific prerequisites or credentials/GPA requirements, interviews with the program, and supplementary admission documents. Please see current admission requirements by visiting [www.cityu.edu](http://www.cityu.edu) current catalog for additional information.*

#### **Programs offered at the Seattle Colleges eligible for entry to CityU graduate programs:**

- Bachelor of Applied Science in Workforce and Trades Leadership
- Bachelor of Applied Science in IT Networking
- Bachelor of Science in Nursing
- Bachelor of Applied Science in Property Management
- Bachelor of Applied Science in Allied Health
- Bachelor of Applied Science in Application Development
- Bachelor of Applied Science in Applied Behavior Science
- Bachelor of Applied Science in Early Childhood Education
- Bachelor of Applied Science in Hospitality Management
- Bachelor of Applied Science in International Business
- Bachelor of Applied Science in Professional Technical Teacher Education
- Bachelor of Applied Science in Sustainable Building Science Technology

#### **Master Programs offered at City University of Seattle:**

Seattle Colleges students who complete any of the above listed Bachelor of Applied Sciences degrees will be eligible for enrollment in any of the CityU master's degree listed below. In a few cases, the programs have entrance requirements; these are clearly specified where they apply. If no entrance requirements are specified, then only the completion of the BAS degree is necessary for program admission.

### School of Applied Leadership

- Master of Arts Leadership (36 qtr credits)
- Master of Arts Leadership Nonprofit Leadership (36 qtr credits)
- Master of Education in Adult Education (36 qtr credits)
- Master of Education in Adult Education TESOL (47 qtr credits)

### Division of Arts and Sciences

The Division of Arts and Sciences requires each graduate student to have the bachelor degree final cumulative GPA of 2.75 minimum for program entry.

Both programs below require the candidate to submit writing samples/essays, CV/resume, background check, and an interview with the program director prior to program admission.

- Master of Arts Counseling Clinical Mental Health Counseling (90 qtr credits)
- Master of Arts Counseling Marriage, Couple and Family Counseling (90 qtr credits)

### School of Management

- Master of Business Administration (48 qtr credits)
  - Students who do not have an undergraduate degree in a business related topic or who do not have five or more years of business experience will need to complete a prerequisite for this program. The prerequisite of MBA 11 – MBA Common Professional Components covers the depth needed to support continued success in the MBA.
    - This prerequisite is considered met, for Seattle Colleges students who have completed the **Bachelor of Applied Science International Business**, the **Bachelor of Applied Science in Property Management** or a similar program that covers sufficient business skills.
  - Additional available emphasis areas for the Master of Business Administration
    - Accounting
    - Change Leadership
    - Entrepreneurship
    - Finance
    - Global Management
    - Global Marketing
    - Human Resource Management
    - Project Management
    - Sustainable Business
    - Technology Management

- Master of Science Healthcare Administration (45 qtr credits)
- Master of Science Information Security (48 qtr credits)
- Master of Science Project Management (45 qtr credits)
- Master of Science Integrated Supply Chain Management (45 qtr credits)
- Master of Science Technology Management (45 qtr credits)
- Master of Science Computer Science (45 qtr credits)
  - This program requires that the following areas are met prior to graduate level course enrollment: 10 qtr credit hours of intermediate programming (in the same language); 5 qtr credits in networking; 5 qtr credits in database management; 5 qtr credits in operating systems. The candidate must also submit a CV/resume
    - Seattle Colleges students who complete the **Bachelor of Applied Science Degree in Application Development** will have met the following program prerequisites for this program through completion of the bachelor degree:
      - Programming
      - Database management

#### Gordon Albright School of Education

The Gordon Albright School of Education requires each graduate student to have the bachelor degree final cumulative GPA of 2.75 minimum for program entry.

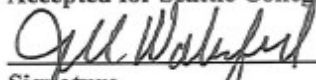
- Master of Education Guidance and Counseling (49 qtr credits)
- Master of Education Guidance and Counseling with ESA (54 qtr credits)
- Master of Education in Curriculum and Instruction (45 qtr credits)
  - Additional available emphasis areas for the Master of Education in Curriculum and Instruction
    - Autism
    - Specialized Study
    - Technology
- Master of Education Leadership (45 qtr credits)
- Master of Education Reading and Literacy (45 qtr credits)
- Master of Education Special Education (48 qtr credits)
- Master of Education Administrator Certification (45 qtr credits)
  - Candidates must also provide proof of ESA certification, "Verification of Prerequisite Teaching or ESA Experience" form, CV/resume, complete the "Educational Leadership program: Writing Assessment" form, provide 3 professional references. Please contact the program for specific reference requirements.



All Master in Teaching program admission requirements in compliance with state regulations, for up-to-date information please visit [www.cityu.edu](http://www.cityu.edu). This information includes required entrance exams (such as the WEST-B or ACT/SAT) and in program required exams:

- Master in Teaching -Elementary Education and Special Education (69 qtr credits) *Washington*
- Master in Teaching Elementary Education (51 qtr credits) *Washington*
- Master in Teaching Elementary Education and English Language Learner (66 qtr credits) *Washington*
- Master in Teaching Elementary Education and Culturally and Linguistic Diverse Learners (49 qtr credits) *Washington Alternative Route program*
- Master in Teaching Elementary Education and Reading (58 qtr credits) *Washington*
- Master in Teaching Elementary Education and Special Education Low Incidence Disabilities (49 qtr credits) *Washington Alternative Route program*

Accepted for Seattle Colleges by:

  
Signature

Chancellor  
Title

6/27/2016  
Date

Accepted for City University of Seattle by:

  
Signature

Provost  
Title

7/14/16  
Date



# WGU WASHINGTON®

20435 72<sup>nd</sup> Ave. S. Suite, 301, Kent WA 98032, (206) 673-8560

Malcolm Grothe PhD  
Associate Vice Chancellor  
Seattle Colleges

May 31, 2016

Western Governors University Washington (WGU WA) is delighted to engage in a partnership with the Seattle Colleges (Colleges) to facilitate student transfer at the bachelor's and master's level.

WGU WA offers transfer pathways for students receiving an associate's degree from one of the Seattle Colleges (Seattle Central, North Seattle, and South Seattle colleges) according to the master agreement between the Washington State Board for Community and Technical Colleges and Western Governors University.

In addition, WGU has found the applied baccalaureate degree programs offered by the Colleges satisfy the bachelor degree requirement for admission into any of WGU's master's programs, with the exception of the Masters of Science in Nursing (MSN), where only students with Bachelors of Science in Nursing (BSN) are eligible to apply.

It is the intention of the Colleges and WGU that the partnership outlined in this letter agreement will inform and encourage the College's graduates to earn degrees to advance their personal and professional goals.

As your partner University, WGU Washington will offer your graduates a five percent (5%) tuition discount for up to four (4) academic terms. We will also modify your unique URL ([http://washington.wgu.edu/admissions/cc\\_transfer](http://washington.wgu.edu/admissions/cc_transfer)) for each of your colleges as well as the general URL ([http://washington.wgu.edu/admissions/cc\\_transfer](http://washington.wgu.edu/admissions/cc_transfer)) to include recognition of your bachelor programs as a pathway to our master's program.

In return, we request that you promote this opportunity by

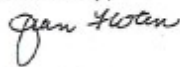
- Including WGU WA and its degree programs to your list of active transfer universities,
- Linking the above websites to your advising pages and including them in printed and social-media materials concerning degree pathways,
- Informing your graduating students about the Seattle Colleges/WGU partnership, and
- Highlighting the partnership and education benefits through your standard internal communication channels (such as advising centers, with program faculty, and emails to graduating bachelor's students).

WGU Washington staff will be available to participate in any local education or transfer fairs, prospective student information seminars, and "lunch and learn" presentations that you may desire. We ask for you to inform us of these opportunities.

These understandings serve as the basis of the Seattle Colleges/WGU partnership and may be modified by mutual written consent or terminated by either party upon thirty (30) days prior written notice. In the unlikely event the partnership is terminated, we agree that the Colleges' graduates then receiving any educational benefit described in this letter agreement will receive the full value of that benefit towards their studies as long as they remain in good academic standing at WGU.

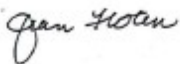
WGU is pleased to partner with the Colleges in providing these pathways. If this letter agreement accurately reflects your understanding of the partnership we discussed, please sign below and return a signed copy to me at [jfloten@wgu.edu](mailto:jfloten@wgu.edu). Your contact person at WGU is Jeanie Belcher, [jeanie.belcher@wgu.edu](mailto:jeanie.belcher@wgu.edu).

Sincerely,



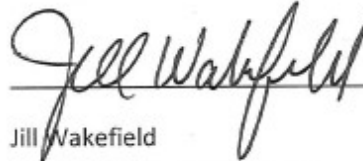
Jean Floten  
Chancellor

Signatures of agreement:



Jean Floten  
Chancellor, WGU Washington  
Date: June 7, 2016

C: Jeanie Belcher, CRM, WGU Washington



Jill Wakefield  
Chancellor, Seattle Colleges  
Date: 6/27/2016

20435 72<sup>nd</sup> Ave. S. Suite, 301, Kent WA 98032, (206) 673-8560



## Memorandum of Understanding for Institution Tuition Agreement

This MOU for Institution Tuition Agreement ("AGREEMENT") is entered into by and between **Lynn University, Inc.**, a Florida not-for-profit corporation, with its principal place of business located at 3601 N. Military Trail, Boca Raton, FL 33431 (hereinafter referred to as "UNIVERSITY") and **North Seattle College**, with a primary business address of 9600 College Way N., Seattle, WA 98103 (hereinafter referred to as "INSTITUTION").

### General Terms and Conditions:

1. The purpose of AGREEMENT is to provide reduced tuition to full-time employees, graduating students, alumni and adult immediate family members of employees of INSTITUTION, for non-competing graduate and online programs. Lynn accepts transfer students from Council for Higher Education Accreditation (chea.org) approved institutions for online undergraduate and graduate education. Benefits of AGREEMENT are defined under "Tuition Rates".
2. AGREEMENT becomes effective upon execution by both parties. Either party may terminate AGREEMENT upon thirty (30) days prior written notice. Notwithstanding, UNIVERSITY may terminate AGREEMENT immediately upon written notice to INSTITUTION in the event UNIVERSITY deems AGREEMENT in violation of any law or regulation, adversely affects its accreditation, or any license or exemption issued by a Federal or State educational board or commission.
3. AGREEMENT does not create any rights, title, or interest, or any entity other than UNIVERSITY and INSTITUTION. There is no charge by UNIVERSITY to INSTITUTION to provide this benefit.
4. Each party agrees to abide by all applicable Federal and State Laws. AGREEMENT shall be governed by and construed in accordance with the laws of the State of Florida.
5. Both the UNIVERSITY and the INSTITUTION may use the other's name verbally for reference purposes only. Subject to its prior review and written approval, in each instance, the UNIVERSITY and the INSTITUTION may use the other's name and logo in writing for reference purposes. Both the UNIVERSITY and the INSTITUTION reserves the right to revoke said approval at any time, for any or no reason, upon written notice to the other.
6. UNIVERSITY will be invited to provide informational materials at INSTITUTION locations during scheduled events. INSTITUTION will forward periodic UNIVERSITY announcements to employees, graduating students or alumni, including but not limited to UNIVERSITY Open House Events.
7. UNIVERSITY offers advanced education in several fields of study. INSTITUTION will post UNIVERSITY's logo and link to UNIVERSITY website on relevant location of INSTITUTION web portal.
8. Each party acknowledges and agrees that they will comply with the Family Educational Rights and Privacy Act (FERPA), as amended, and will not disclose any information protected by FERPA to any unauthorized third parties. To that end, transcripts/grade reports for employees or alumni of INSTITUTION who are students of UNIVERSITY are not available to INSTITUTION unless UNIVERSITY receives written authorization from the student to release transcripts/grade reports.
9. Each party acknowledges and agrees that each party is an independent contractor and nothing in this AGREEMENT will be construed to create a business partnership, joint venture, or agency relationship between the Parties.
10. UNIVERSITY will provide a distinct internet landing page for INSTITUTION, titled: [www.lynn.edu/](http://www.lynn.edu/) INSTITUTION. Page will contain INSTITUTION logo and education program information.





## Memorandum of Understanding for Institution Tuition Agreement

Communication pieces from UNIVERSITY to INSTITUTION for distribution to employees, graduating students or alumni, of INSTITUTION will provide direct link to landing page.

11. All educational and administrative student services will be governed by UNIVERSITY Policies and Procedures found on the website at: [www.lynn.edu/about-lynn/university-policies](http://www.lynn.edu/about-lynn/university-policies).

### Tuition Rates, Fees, and Billing:

1. UNIVERSITY tuition rate is set by UNIVERSITY Board of Trustees each year. UNIVERSITY will provide the following tuition reduction per credit hour for those who meet UNIVERSITY admission criteria, and who enroll in a degree program:

#### For full-time employees of INSTITUTION:

- a. For master's and doctoral courses a **twenty (20) percent tuition reduction**
- b. For Online undergraduate degree courses a **five (5) percent tuition reduction**

#### For alumni, graduating students or adult immediate family members of employees of INSTITUTION:

- c. For master's and doctoral courses a **ten (10) percent tuition reduction**
- d. For Online undergraduate degree courses a **five (5) percent tuition reduction**

2. Application fee will be waived for eligible students. Tuition reduction will apply against the then current tuition price in effect for each credit. Reduction applies to course tuition only. All other fees (for labs, books, materials, CLEP exams) and other charges will be billed at full rate to the student as applicable. UNIVERSITY reserves the right to make changes in fees, costs, tuition, program, curriculum, regulations, program dates and to make additional charges for special features and services whenever such actions are deemed advisable.
3. No other UNIVERSITY discounts are applicable to students who enroll under AGREEMENT.
4. Upon termination of AGREEMENT, UNIVERSITY will, as a benefit to currently enrolled students, continue to provide the tuition reduction for the program in which the student is currently enrolled provided the student remains enrolled in their degree program.
5. UNIVERSITY will provide a four (4) week deferment at the commencement of each term for each student who enroll under AGREEMENT in the term.
6. UNIVERSITY will bill a \$500 per course deposit to the enrolled student at the mid-point of the term. At the end of the term, the remaining tuition for the term will be billed to the student.
7. UNIVERSITY will bill students directly. At no time shall INSTITUTION be responsible or liable for any deposits, fees or charges owed to the UNIVERSITY by any students of INSTITUTION. UNIVERSITY agrees to look solely to said students individually for any and all payments which may be due.

[Signature page follows]



## Memorandum of Understanding for Institution Tuition Agreement

North Seattle College

By: [Signature]

Printed Name: ANDREA S. JOHNSON

Title: VP ADM. SERVICES

Date: 6/4/19

Lynn UNIVERSITY, Inc.

By: [Signature]

Printed Name: Laurie Levine

Title: VP for Business & Finance

Date: 6/10/19

### University contact information:

#### Admission Contact:

Steve Pruitt  
Director, Graduate and iLynn Admission  
Office of Admission  
[spruitt@lynn.edu](mailto:spruitt@lynn.edu)  
561-237-7834

#### Billing Contact:

Judy Kaczmarek  
Director  
Student Financial Services  
[jkaczmarek@lynn.edu](mailto:jkaczmarek@lynn.edu)  
561-237-7192

### Institution contact information:

#### BAS Program Contact:

Jesse Cooley  
Director, BAS Programs  
North Seattle College  
[jesse.cooley@seattlecolleges.edu](mailto:jesse.cooley@seattlecolleges.edu)  
(206) 934-6131

## **Appendix 5: Applied Baccalaureate External Reviews**

*The purpose of document is to capture comments received through external review of the BAS proposal. This review should be completed by an independent, third-party evaluation by a person or team with subject/discipline expertise. The goal of the review is to verify credibility, design, relevance, baccalaureate rigor, and effectiveness of BS proposals, as well as validate congruency and consistency of program and curriculum with current research and academic thinking. This document also provides important feedback, and an opportunity for NSC to address potential concerns/issues/criticisms prior to final submission.*

External Reviewers:

**Eric Lloyd, MSCS**

Professor, Computer Science

Seattle University

[Faculty profile and contact information.](#)

And

**Janson Panzer**

Board Member and Part-Time Instructor, NSC Application Development BAS Program

Senior Site Reliability Engineer, Klaviyo

Jason.Panzer@seattlecolleges.edu

# **Proposed Bachelor of Science in Computer Science Program at North Seattle College**

*Review Completed February 2022*

*1) Concept and overview: Is the overall concept of the degree program relevant and appropriate to current employer demands as well as to accepted academic standards? Will the program lead to job placement?*

**Mr. Lloyd:** Yes, I do believe it will lead to job placement and meets current standards. The curriculum includes not only technology-based work but work around interacting in a modern tech culture.

**Mr. Panzer:** It is comparable to the basic elements of other CS degrees.

*2) Degree Learning Outcomes: Do the degree learning outcomes demonstrate appropriate baccalaureate degree rigor?*

**Mr. Lloyd:** Yes. The outcome around communicating and engaging with a wide range of audiences and stakeholders is an uncommon learning objective for a pure CS program and helps to distinguish this program from others.

**Mr. Panzer:** Yes.

*3) Curriculum Alignment: Does the curriculum align with the program's Statement of Needs Document?*

**Mr. Lloyd:** Yes. The curriculum clearly defines shaping a qualified software developer for a competitive market in Seattle and that is what is outlined as necessary in the Statement of Need.

**Mr. Panzer:** [No comment.]

*4) Academic Relevance and Rigor: Do the core and elective courses align with employer needs and demands? Are the upper-level courses, in particular, relevant to industry? Do the upper-level courses demonstrate standard academic rigor for baccalaureate degrees?*

**Mr. Lloyd:** Yes, they seem to. As long as version control is included somewhere in one of the courses, I feel it does. I would suggest including it in Software Design and Implementation.

**Mr. Panzer:** Students must be exposed to the basics of using file systems and computers, and this is a critical weakness of the existing AD program that must be addressed in the CS offering.



**NSC Response:** We will include version control in the Software Design and Implementation course. File systems is covered in the Operating Systems class.

*5) General Education Requirements: Are the general education requirements suitable for a baccalaureate level program? Do the general education courses meet breadth and depth requirements?*

**Mr. Lloyd:** I do not know what the “breadth and depth requirements” are. I am surprised to see no statistics course in General Education.

**Mr. Panzer:** The optional electives in Web, Mobile and Cloud development for the CS degree should be replaced with content relevant to a more formal CS program, such as algorithmic efficiency, operating system construction, or if more focused, practical work is necessary, cybersecurity.

**NSC Response:** Mr. Lloyd may not be aware that MATH&146 Introduction to Statistics is required for program entry. Mr. Panzer’s comment was not responsive to the question, but we will advise students to take the three CSB electives where the topics mentioned will be covered. They can choose the web or cloud course as their fourth elective. As the program grows, NSC may develop additional CSB elective course options.

*6) Preparation for Graduate Program Acceptance: Do the degree concept, learning outcomes and curriculum prepare graduates to enter and undertake suitable graduate degree programs?*

**Mr. Lloyd:** Really, this depends on the graduate program. For example, a graduate program at UW would require more technical writing experience for thesis development while one at SU would be project based. I do believe this program prepares a student for a project-based graduate program.

**Mr. Panzer:** I suspect most graduate programs would expect more CS depth, as mentioned above.

**NSC Response:** We will encourage students to take ENGL&235 Technical Writing in one of the general education slots. As mentioned above, the curriculum as drafted will enable graduates to enroll in relevant graduate programs at the three institutions where we currently have agreements in place, as well as others. Some students may have to take additional courses to qualify for admission to some graduate programs.

*7) Faculty: Do program faculty qualifications appear adequate to teach and continuously improve the curriculum?*

**Mr. Lloyd:** Yes. I have worked previously with both faculty and am aware personally of their qualifications.

**Mr. Panzer:** [No response].

*8) Resources: Does the college demonstrate adequate resources to sustain and advance the program, including those necessary to support student and library services as well as facilities?*

**Mr. Lloyd:** Yes. I have worked at the college before and been aware of the resources available. This program should have the resources it needs.

**Mr. Panzer:** Again, I have to stress that basic command line usage, developer skills and file- and

operating-system basics have to be included to ensure student success.

**NSC Response.** Mr. Panzer's comment was not responsive to the question and has been addressed above.

*9) Membership and Advisory Committee: Has the program received approval from an Advisory Committee? Has the program responded appropriately to it Advisory Committee's recommendations?*

**Mr. Lloyd:** Yes. From what I've been told it has.

**Mr. Panzer:** [No response].

*10) Overall assessment and recommendations: Please summarize your overall assessment of the program.*

**Mr. Lloyd:** I believe this is a great step for NSC in the further development of computer science programs. It offers a competitive program to existing computer science BS degrees in this area and will be an asset to the college.

**Mr. Panzer:** [No response].

**NSC Response:** NSC views these outside reviewer comments as generally positive and supportive of our direction. None of the outside reviewers raised any concerns about the most controversial aspect of the program design, the absence of required calculus and physics coursework.

[This page intentionally blank]

## **Addendum to the BS-CSC Proposal for North Seattle College**

This document is meant to serve as an addendum to the BS-CSC proposal submitted by North Seattle College to the SBCTC. North will directly respond to several comments and questions submitted by evaluators using the evaluative rubric.

### **Area of Evaluation: Qualified Faculty**

- Evaluator Comment: “a PhD in this field would be desirable for future faculty members”
- College Response: North agrees that the ideal candidate meets all the desirable qualifications, but also believes that the need to find faculty who have a demonstrated commitment to the equity focus of the program is slightly more important. North does not want to unnecessarily limit the candidate pool by preventing any equity-focused MS candidates from applying. The approach North is taking in this program overall is innovative, and the future faculty need to fit that mold. Ideally, those future faculty have both the equity focus and the PhD level credentials.

### **Area of Evaluation: Selective admission process if used for the program, consistent with an open-door institution**

- Evaluator Comment: “Section would be improved with info that explains how non-white, non-Asian males are targets for recruitment into this particular program (given the data shared in the opening section). The comparison info provided should be the other IT focused BAS at North Seattle, not all BASs”
- College Response:
  - North will use the processes and lessons learned from the selective admission processes from all BASs as is noted in the evaluator’s comments, but in particular the success of the implementation of this process in BAS in Applications Development will be followed most closely. This will not only be evident in the process, but also in the actual staff members involved. North is intentionally sharing employees between these two programs in order to tap the best from the BAS AD to the BS CSC.
  - Several important quotes (all found on page 20) from the proposal are relevant to this evaluator’s comment (highlights added for this addendum):
    - “Key factors relevant to the evaluating the process include student diversity, student retention, and academic achievement.”
    - “The college’s philosophy and goal with this BS program is to maintain as close to open admissions as possible.”
    - “North Seattle College markets baccalaureate programs with and through Seattle Colleges (and high school) student groups to try to reach a diverse pool of applicants.”
  - The current success in recruiting and enrolling diverse students is evident in the diversity of North’s existing BAS degree programs.
  - Additionally, North, South, and Central are increasing the focus on achievement of under-represented students in the feeder programs making those students more competitive for the BS CSC selective process. As is mentioned in the proposal, North

and the Seattle Colleges enroll a very diverse student base and a focus on this group as well as outreach to diverse potential student groups will ensure diverse BS CSC cohorts.

**Area of Evaluation:** Appropriate student services plan

- Evaluator Comment: “Staffing list is impressive. Please clarify if that is just for this program or for multiple BASs, and if multiple, what is the current and projected caseload with this addition.”
- College Response: The staffing for the program is a mix of new positions and positions shared with other BAS programs. As North has grown its number of Bachelor’s programs, the efficiency and effectiveness of shared positions has been evident. The only position fully devoted to the BS CSC is the Full-time Faculty position. All other positions will be shared with the existing BAS AD program. North will address the added workload by increasing the number of employees and people hours devoted to both programs. Using several sources of funding, North will be adding capacity in the forms of the faculty position, part-time faculty positions, the Director of Computer Science and Technology, the Technical Employment Program Manager, and additional ¼ workloads for Student Advisor, Financial Aid Specialist, and Credentials Specialist. North has implemented a successful practice of using BAS funds to increase capacity in key areas whenever a new Bachelor’s program is brought onboard. Logistically this occurs by setting aside funding for additional ¼ positions in these areas with each Bachelor’s program.