COVER SHEET
NEW DEGREE PROGRAM PROPOSAL

Program Information

Program Name:	Operations Management
Institution Name:	Bellingham Technical College
Degree:	Bachelor of Applied Science in Operations Management
Level:	Bachelor
Type:	Applied Science
CIP Code:	52.0205

Contact Information

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Vice President for Instruction

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Introduction

Bellingham Technical College (BTC) has designed a Bachelor of Applied Science in Operations Management (BASOPS) degree to meet the needs of students who want to advance their careers into supervisory and management roles in industries such as manufacturing, IT, transportation, and retail/wholesale. During the BASOPS degree, students will learn about operations management tools and techniques, develop their business skills, and apply them to solve practical problems in their chosen industry.

The delivery model for this degree has been designed to meet the educational needs of the working adults who are expected to be the largest group of students. It is based on a combination of asynchronous and synchronous web-based instruction with face-to-face meetings at times convenient to students. Mentored "focused study" courses and individual and group capstones will be used to develop students' independent thought and critical thinking skills to the level expected in a baccalaureate degree and as required for a successful career in an operations management role. Online options will also be provided for students whose circumstances prevent them from attending the face-to-face sessions.

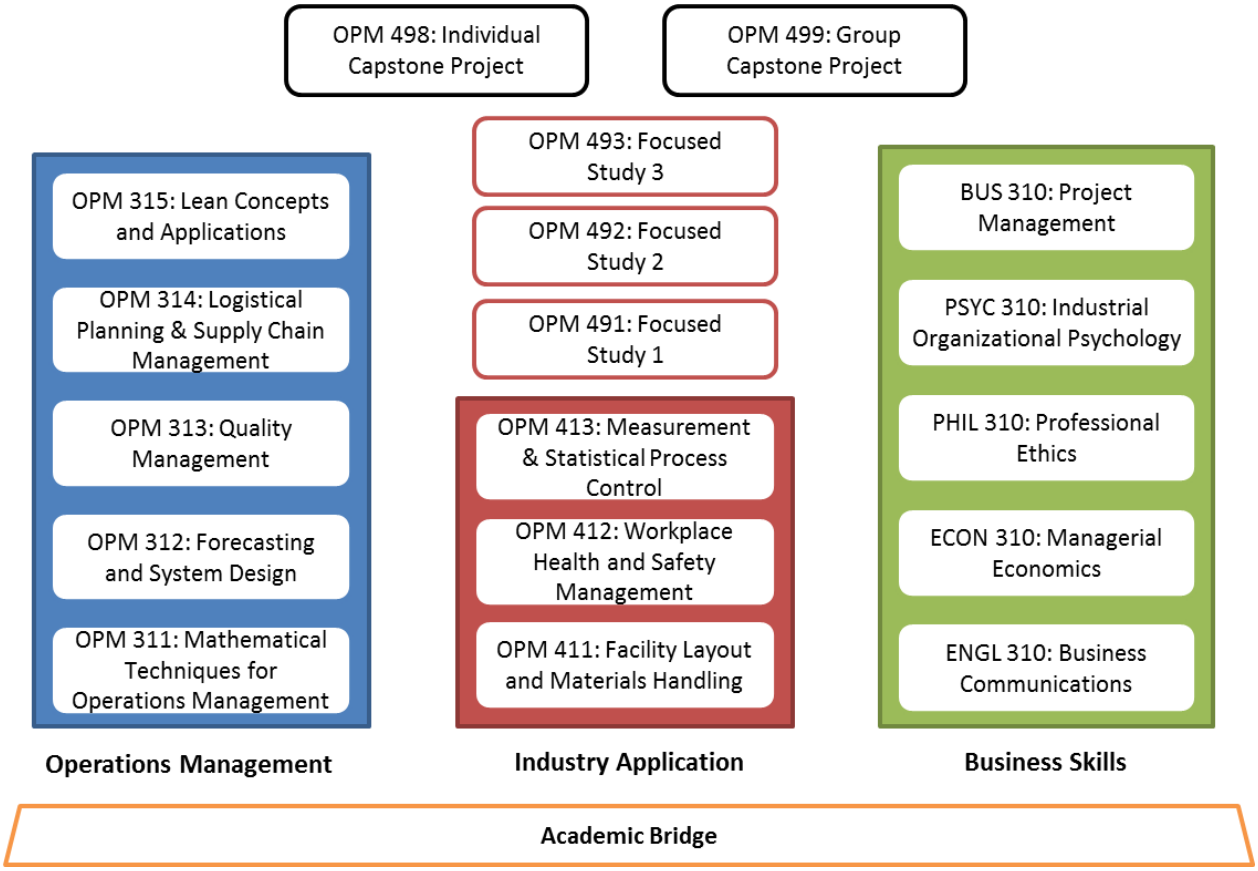

Figure 1 - BTC Bachelor of Applied Science in Operations Management (Manufacturing Emphasis Shown)

Collaboration with Clover Park Technical College

BTC's BASOPS degree is based on the BAS Manufacturing Operations[1] (BASMO) degree successfully launched in Fall 2014 by Clover Park Technical College (CPTC). BTC's new program takes advantage of the industry and academic feedback received during the development of CPTC's degree, and the lessons learned through their first year of implementation, and extends the curriculum to other industry areas.

Bellingham Technical College is grateful to Clover Park Technical College for the help provided in developing the new BAS Operations Management degree and, in the future, the two colleges plan to collaborate on the development and refinement of curriculum relating to operations management, recruitment and retention of faculty to teach shared courses, and marketing of the programs. A Memorandum of Understanding to this effect is included as Appendix A of this document.

[1] http://www.cptc.edu/programs/basmo

1. Curriculum

Program Learning Outcomes

The curriculum for the BASOPS degree is aligned with CIP Code 52.0205 - Operations Management and Supervision:

> *A program that prepares individuals to manage and direct the physical and/or technical functions of a firm or organization, particularly those relating to development, production, and manufacturing. Includes instruction in principles of general management, manufacturing and production systems, plant management, equipment maintenance management, production control, industrial labor relations and skilled trades supervision, strategic manufacturing policy, systems analysis, productivity analysis and cost control, and materials planning.*[2]

Graduates of the BASOPS program will be able to:

1. Demonstrate a mastery of the mathematical tools required for operations management.
2. Apply qualitative and quantitative forecasting techniques to the selection of processes and facility layouts that will optimize production and/or service delivery.
3. Plan a comprehensive quality management program for use within an organization.
4. Apply mathematical approaches to solve typical make/buy and outsourcing problems.
5. Assess the value of Lean concepts, including Value Stream Mapping, Workplace Organization and Standardization, 5-S and Cellular Flow, Kan Ban and Total Production Maintenance to operations management.
6. Demonstrate the application of project management techniques to develop realistic and comprehensive project plans; identify risk areas; monitor the plans; and deal with problems.
7. Develop clear and coherent technical reports, proposals, memoranda, and e-mails; and deliver presentations to groups.
8. Analyze projects, compare alternatives, and make business decisions based on economic principles such as time value of money, internal rate of return, and cost-benefit ratios.
9. Demonstrate the ability to identify and then develop acceptable resolution of ethical dilemmas that might occur in the workplace.
10. Analyze how leadership skills, recruitment and retention practices, motivation and team building, the management of change, and conflict resolution affect the behavior and interaction of people at work.
11. Demonstrate a level of critical thinking, teamwork, communication, and technical and information literacy commensurate with an operations management position.

Program learning outcomes were developed by faculty members and have been reviewed by industry experts at a broad range of organizations including the Society of Manufacturing Engineers, Impact Washington, the Center for Advanced Manufacturing Puget Sound, Amazon, Boeing, AIM Aerospace, TTF Aerospace, Ops Savvy LLC, and McGladrey LLP.

[2] http://nces.ed.gov/ipeds/cipcode/

Curriculum Structure

The design of the BASOPS program follows the well-established "management capstone" model for applied baccalaureate degrees, where a technical associate degree is supplemented with business and management-focused coursework at the upper division[3].

The curriculum consists of four tiers which progressively increase the degree of independent thought and critical thinking required by the students to the level expected in a baccalaureate degree.

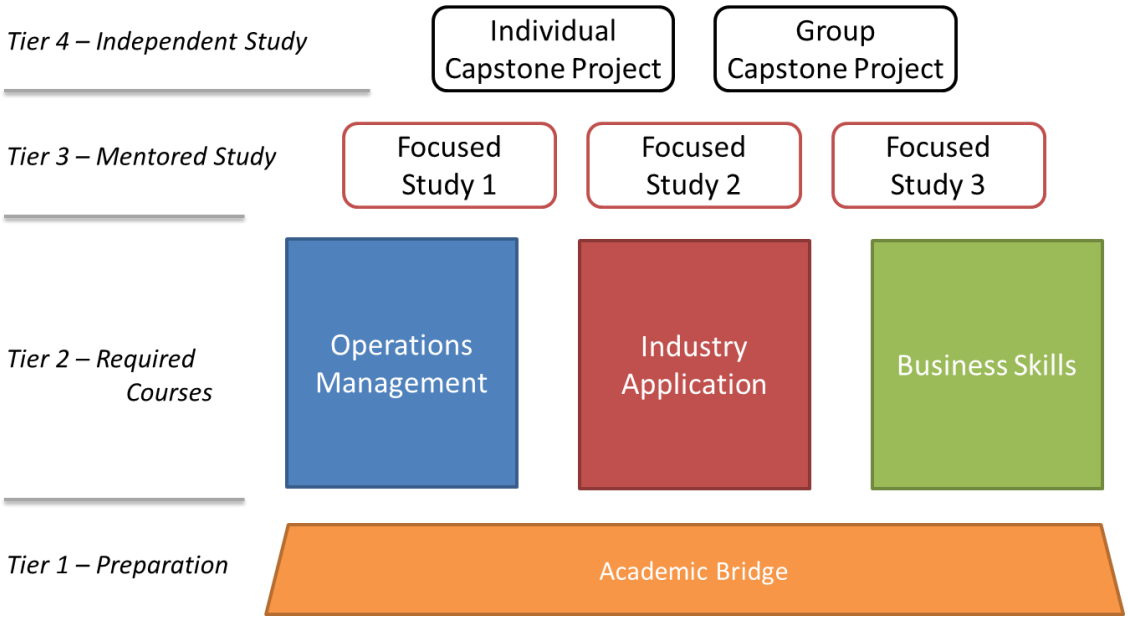

Figure 2 - Structure of the BASOPS Curriculum

1) In keeping with SBCTC's aims for applied baccalaureate degrees[4], the BASOPS program has been designed to accept students with a broad range of educational backgrounds, and to facilitate students re-joining the educational system after time in the workforce. An Academic Bridge is therefore included as Tier 1 of the program to allow students from "traditionally terminal" associates' degrees to take any additional General Education courses needed to enter the junior year of the BASOPS program.

2) Tier 2 consists of required courses in three areas:
   a. Operations Management
   b. Business Skills
   c. Industry Application (Emphasis)

[3] http://occrl.illinois.edu/applied_baccalaureate/ab_models/

[4] "Increase educational pathways for professional and technical associate graduates who have been limited in their ability to apply credits toward a bachelor degree."
Ref: http://www.sbctc.ctc.edu/college/e_appliedbaccalaureates.aspx

Initially, the program will focus on two industries, manufacturing and IT, as discussed in the Statement of Need submitted to SBCTC. However, other areas of industry emphasis may be added subject to employer and student demand.

3) Tier 3 consists of three focused study courses which provide students with opportunities to explore areas of professional interest under the direction of faculty members and/or industry mentors.

4) In Tier 4, two capstone projects – one individual, and one as a group – are used to demonstrate students' capacity for independent study, research and application. With faculty permission, an internship can be substituted for the individual capstone if this is beneficial to the student.

Tier 1 – The Academic Bridge

The "Academic Bridge" is designed to facilitate entry of students from diverse academic backgrounds into the program by addressing some of the preparatory General Education requirements that might not have been covered during students' associate degrees without compromising the academic rigor of the degree. Table 1 shows the minimum general education requirements for admission to the program (discussed in more detail in Section 3) and for entry to the junior year.

Table 1 - General Education Requirements and the Academic Bridge

	Minimum required to enter the BASOPS program	Courses to be taken if requirements for entry to the Junior Year are not already satisfied by the applicant	Minimum required at entry to the Junior Year
Communications	5 credits ENGL& 101 or equivalent	(none required)	5 credits
Quantitative/ Symbolic Reasoning	Intermediate Algebra or higher (minimum 2.5 GPA) or equivalent COMPASS math scores (within the past 2 years)	5 credits of a college-level math class with Intermediate Algebra as a prerequisite - Finite Math preferred.	5 credits
Humanities and Social Science	5 credits	10 credits	15 credits – at least 5 credits each of Social Science and Humanities
Natural Sciences	(none required)	10 credits including MATH& 146 + 1 lab class	10 credits

To be admitted to the BASOPS program, students must have a minimum of 10 credits of generally-transferable General Education including ENGL& 101 (or equivalent) and 5 credits of Social Science or Humanities. At the end of the Academic Bridge, before students enter the junior year of the BASOPS degree, they must have at least 35 credits of General Education. This will therefore involve them taking between 0 and 25 credits of coursework depending on the General Education component of the student's associate degree.

Tier 2 – Upper Division – Required Courses

The second tier of the BASOPS curriculum is a set of 13 required courses (5 credits each, 65 credits in total) that provides students with a solid foundational knowledge of operations management concepts, tools, and techniques; enhances their business skills to a level commensurate with managers in industry and business; and demonstrates the application of these knowledge skills and abilities to the student's chosen industry sector. Detailed course descriptions are included in Appendix B.

Operations Management

OPM 311	Mathematical Techniques for Operations Management
OPM 312	Forecasting and System Design
OPM 313	Quality Management
OPM 314	Logistical Planning & Supply Chain Management
OPM 315	Lean Concepts and Applications

Operations Management can be defined as "… the management of systems or processes that create goods and/or provide services"[5] and encompasses topics such as:

- Forecasting and Capacity Planning
- Process Selection and Facility Layout
- Work Design and Measurement
- Location Planning
- Quality Management
- Scheduling, MRP and ERP
- Inventory & Supply Chain Management
- JIT and Lean Operations

This set of five courses is designed to cover the essential tools and techniques that would be needed to plan and operate a manufacturing or service organization. OPM 311 is designed to provide the foundational mathematical tools that the other courses in the operations management sequence will require. OPM 312, 313 and 314 cover classical operations management topics. OPM 312 introduces students to forecasting and capacity planning tools for manufacturing and service organizations. OPM 313 is designed to equip students with the managerial concepts and quantitative tools used in the management of quality in manufacturing and service organizations. OPM 314 introduces students to the complexities of domestic and global supply chains, including consideration of make/buy and outsourcing decisions. Finally, OPM 315 is a detailed examination of "Lean" concepts that are being applied in many manufacturing and service organizations around the world.

Business Skills

ENGL 310	Business Communications
ECON 310	Managerial Economics
PHIL 310	Professional Ethics
PSYC 310	Industrial Organizational Psychology
BUS 310	Project Management

[5] Stevenson, W.J. (2009) *Operations Management*. McGraw-Hill Education

Students transitioning from a technical role to a supervisory/management role need to acquire a set of core business skills in order to be equipped to take on supervisory and management roles immediately on graduation. The five courses in the Business Skills group are designed to provide some of the knowledge, skills and abilities that they will need to do this, and include instruction on both soft skills (communication skills, ethics, and organizational psychology) and hard skills (project management and managerial economics). ENGL 310 focuses on audience-oriented communication in the business environment and covers both written and oral presentation skills. ECON 310 focuses on forecasting and estimating techniques and on tools used to analyze projects, compare alternatives, and make sound business decisions. PHIL 310 examines ethical dilemmas that might occur at work, and shows how such issues can be resolved by management analysis and decision-making. PSYC 310 examines how people behave and interact with each other at work with an emphasis on the way that these interactions affect job performance. BUS 310 teaches students some of the techniques necessary to develop realistic and comprehensive project plans, identify risk areas, monitor the plans, and deal with problems.

Industry Application – Manufacturing Emphasis

OPM 411	Facility Layout and Materials Handling
OPM 412	Workplace Health and Safety Management
OPM 413	Measurement and Statistical Process Control

This group of courses extends the material covered in the earlier courses and looks at their applications to three specific areas of the manufacturing industry. In OPM 411, students will learn how to apply the principles learned in earlier courses to the layout of manufacturing facilities, including consideration of emerging advanced manufacturing approaches such as Flexible Manufacturing Cells. Operational management often requires taking responsibility for workplace health and safety management. So, in OPM 412, students will learn about regulatory requirements, and how to set up and maintain a workplace health and safety program. Finally, OPM 413 will cover the use of advanced measurement techniques and statistical methods to monitor and control production activities, and will also discuss how the calibration of equipment should be managed in the context of a Total Quality Management system.

Industry Application – Information Technology Emphasis

OPM 421	IT Strategy, Management and Delivery
OPM 422	Business Continuity and Disaster Recovery
OPM 423	Managing Vendors and Contracts

This group of courses extends the material covered in the earlier courses and looks at its application to the information technology (IT) industry. In OPM 421, students will examine the strategic role of IT within an organization, learn how to assess the impact of emerging technologies, and design information infrastructure and systems to support organizational structures. In OPM 422, students will learn how to identify and quantify business risk and impact; recognize mission-critical systems; and create, test and implement business continuity plans. Finally, OPM 423 covers strategies and methodologies for selecting and managing vendors, including types of contracts, vendor selection processes, and contract management.

Tier 3 – Upper Division – Mentored Study

In order to extend students' understanding of the subject and help them develop the research and critical thinking skills necessary for their future success, the curriculum includes three Focused Study courses (15 credits in total). Each student, in conjunction with program faculty, will choose three areas of personal professional interest and carry out guided study and applied research under the direction of a faculty member and/or industry mentor. They will present their results in a written report and an oral presentation to further hone their business communications skills. Mentored study courses will be overseen by the BASOPS program teaching faculty.

Table 2 shows some of the topics that may be appropriate for these courses depending on the professional interests of the students and on the availability of faculty and/or qualified industry mentors with specialized knowledge.

Table 2 – Upper Division Focused Study – Suggested Topics

Manufacturing Emphasis

- Information Technology for Manufacturing Facilities
- ERP Planning and Implementation
- Product Data Management
- Computer Integrated Manufacturing
- Flexible Manufacturing Cells
- Purchasing
- Warehousing
- International Shipping and Logistics
- Labor Management in the Unionized Workplace
- Small Business Financing for Manufacturing
- Rules & Regulations: Aerospace Manufacturing
- Rules & Regulations: Biomedical Device Manufacturing
- Rules & Regulations: Food Processing

Information Technology Emphasis

- IT Risk Analysis
- Computer Forensics
- Managing Call Centers
- Managing Data Centers
- Data Analytics
- Operations in the Cloud
- Developing an IT Policy Framework
- Rules & Regulations Applying to the IT Industry
- Starting a New IT Business

Tier 4 – Upper Division – Independent Study

In the fourth tier of the curriculum, two capstone projects – an individual project, and a group project – will be used to demonstrate students' research and problem-solving skills, and to demonstrate how students can synthesize the individual subjects that they've studied. Capstone projects will be overseen by the BASOPS program teaching faculty.

An Internship can be substituted for the individual capstone project if this is beneficial to the student (subject to approval by the Program Director).

Upper Division – General Education

As noted earlier, students will have at least 35 credits of General Education at the beginning of the junior year. The remaining 25 credits needed to meet the requirements for an Applied Baccalaureate degree[6] are satisfied by five of the upper division courses, as shown in Table 3.

Table 3 – General Education Requirements Satisfied by Upper Division Courses

	Min. Credits at Entry to Junior Year	Upper Division Course(s)	Minimum Credits at End of BASOPS Degree	Min Required Credits for a BAS Degree
Communications	5	ENGL 310 – Business Communication	10	10
Quantitative/ Symbolic Reasoning	5	OPM 311 – Mathematical Techniques for Operations Management	10	5
Humanities	5	PHIL 310 – Professional Ethics	10	10
Social Sciences	10	PSYC 310 – Industrial Organizational Psychology ECON 310 – Managerial Economics	20	10
Natural Sciences	10		10	10
Any of the Above	--		--	15
TOTAL	**35**		**60**	**60**

[6] http://www.sbctc.ctc.edu/college/studentsvcs/RecommendationforGenEdRequirementsforBASJuly2015.pdf

Credit Budget

Table 4 shows the total credit load for the BASOPS degree including credits from the student's associates degree (or equivalent).

Table 4 – Credit Budget

	Lower Division	*Upper Division*
From Student's Associates Degree (or Equivalent)	90+	
BAS Operations Management		
Academic Bridge	0 to 25*	
Operations Management Courses		25
Business Skills Courses		25
Industry/Business Application Courses		40
TOTAL	90+	90

** As needed to meet the requirements for entry to the Junior Year of the program.*

Teaching Model

It is anticipated that the majority of students who enroll in the program will be working adults, and the hybrid delivery model for the BASOPS program has been designed to meet their needs.

The majority of the instruction will be provided online – either in asynchronous formats, or through synchronous sessions scheduled at times convenient to the students.

Students and faculty will also meet on campus on three Saturdays: at the start, middle and end of each quarter. The end-of-quarter meeting will be an all-program meeting which will include presentations by students and one or more faculty and/or industry speakers. This will also be a valuable opportunity for students to connect with their peers and other operations professionals working in the area, helping them develop the business networks that will support their future success. These meetings will be coordinated by the Program Director.

Experience with similar programs confirms that this teaching model best suits the needs of students who often have time restrictions due to work and/or family obligations. It also reflects the increasing use of web-based communications tools in today's business environment, while still recognizing the need for students to develop the interpersonal skills needed to deal with coworkers, clients, and others in the workplace.

Online Option

An online option will be available to students should it be needed. This is **not** the preferred teaching model, but it will allow for students to complete their degree without interruption should their life circumstances prevent them from attending the face-to-face sessions.

Program Evaluation Criteria and Process

BTC's Policy and Procedures Manual requires that formal review of programs be conducted on a four-year basis. BTC also employs a variety of additional methods in order to gather feedback and recommendations from a diversity of stakeholders.

Because the BASOPS degree is new to the college, and because it also means that BTC is becoming a baccalaureate-awarding institution, additional reviews and assessments will be implemented during the early stages of the program to ensure quality, and to help make any changes necessary for program and student success.

Formal Program Reviews

During the first three years of its operation, the BASOPS program will undergo formal reviews annually. These reviews will provide early feedback on the success of the program and/or indications of problems that might need to be fixed.

In addition to looking at the instructional process, these reviews will also examine the wrap-around services provided by Students Services to potential students, students, and alumni in order to ensure that they are successfully supporting students during the entire process from initial inquiry to job placement and beyond.

After 3 years of successful operation, the program will move to BTC's regular 4-year program review cycle.

Other Reviews and Assessments

The BASOPS program will also benefit from the following reviews and assessments that will provide information for the program reviews as well as operational data for the program director and faculty.

- *Program Advisory Committee:* A committee comprised of industry experts and educators will provide perspective, evaluation, and feedback on the program.

- *Administrative Review:* The Program Director will develop assessment criteria, including qualitative and quantitative measurements. Administrative review will be done no less often than annually, and on a quarterly basis during the first two years.

- *Student Surveys:* Upon graduating from or leaving the program, students will be surveyed as to what they perceived to be the strengths and weaknesses of all aspects of their experience, including classroom activities, pedagogical techniques, the relevance of specific courses, and other criteria, as appropriate.

- *Employers Survey*: Students will be tracked after graduation, and the employers of those hired will be surveyed as to their impressions of how well the program prepared these students for the real-life workplace.

- *Faculty Evaluations:* On a regular basis, the program faculty will meet as a team to discuss the program and its current curricula, and how they might be improved. The faculty will also meet with the Advisory Committee at least annually to ensure that the curriculum meets current industry needs.

- *Course Evaluations:* To provide specific feedback from the students' perspective, surveys of student assessments on course and instructor effectiveness will be distributed at the end of each quarter and monitored by the Program Director.

- *Internship and Capstone Projects:* Reviews of internship and capstone projects will be coordinated by the Program Director. These reviews will incorporate feedback from students, instructors, staff and (where appropriate) employers.

- *Wage Progression and Employment Status:* The Program Director, working with BTC's Institutional Research staff, will develop reporting processes for graduates of the BASOPS program that are consistent with BTC practices.

2. Faculty and Staff

Projected Student and Teaching Faculty Numbers

The number of teaching faculty needed for the BASOPS program is based on the number of students to be enrolled in the program and a target student/faculty ratio of 25:1 when the program is fully operational.

Table 5 – Projected Student and Teaching Faculty Numbers

	AY 16/17	AY 17/18	AY 18/19	AY 19/20	AY 20/21
Students Admitted to the Program (FTE)	25	27	28	30	30
Total Enrolled Students* (FTE)	25	49.5	52.3	55.2	57
Student/Teaching Faculty Ratio	13:1	25:1	26:1	28:1	29:1
Teaching Faculty – BASOPS (FTE)	1.5	1.5	1.5	1.5	1.5
Teaching Faculty – Other (FTE)	0.5	0.5	0.5	0.5	0.5
Teaching Faculty – Total (FTE)	**2.0**	**2.0**	**2.0**	**2.0**	**2.0**

* Allowing for 10% attrition per year

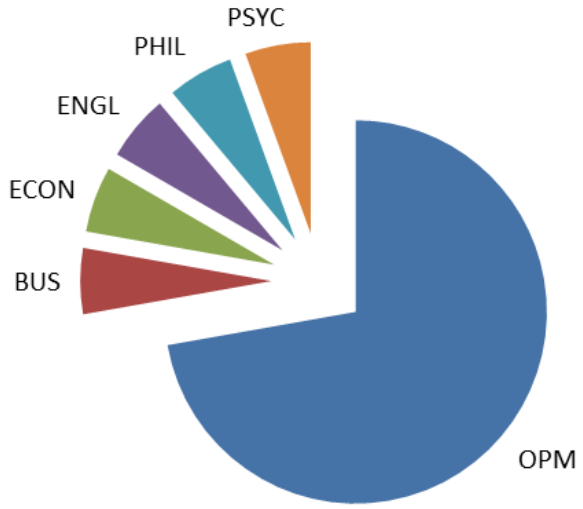

Figure 3 - Distribution of Upper Division Courses by Discipline

Once the program is in full operation in AY 17/18, 2.0 FTE of teaching faculty will be required to maintain the student to faculty ratio at the desired level. The majority of the upper division courses (13 of 18; or 72%) fall into the category of Operations Management (OPM) and will be taught by faculty assigned specifically to the BASOPS program. This will require 1.5 FTE of teaching faculty. Fifty percent of the Program Director's time will be dedicated to teaching, and 1 FTE of additional faculty time will be dedicated to this program.

The other 5 courses:

- BUS 310 – Project Management
- ECON 310 – Managerial Economics
- ENGL 310 – Business Communications
- PHIL 310 – Professional Ethics
- PSYC 310 – Industrial Organizational Psychology

will be taught either by suitably-qualified BTC faculty and/or by adjunct faculty with specialized knowledge of the subjects. This will require 0.5 FTE teaching faculty.

Lower division courses that are required by students during the Academic Bridge will be taught by existing faculty at BTC.

Teaching Faculty

All faculty teaching core courses in the BASOPS program – including the Program Director – will have a minimum of a Master's degree (Doctorate preferred) in a relevant field with at least five years of teaching and/or business experience. Teaching experience at the bachelor's degree level or higher and experience in advising students will be preferred.

Key faculty members identified to date are listed below.

- Dr. Mel Oyler — PhD Business, University of Washington
- Dr. Steve Addison — PhD Engineering, Cambridge University
- Tiffany Windmeyer — MS Industrial Organizational Psychology, Walden University; Lean Six Sigma Green Belt, University of Washington, Tacoma
- Tanya Sorenson — MDiv, Seattle University; MEd, Heritage College
- Larry Price — MBA, Columbia College

The primary instructors for the core operations management courses will be Dr. Oyler and Dr. Addison.

Additional faculty may be added as new areas of emphasis are identified, or if student enrollments exceed the currently anticipated numbers. The faculty and administrators responsible for technical courses will meet certification requirements for professional and technical administrators and instructors in the Washington Administrative Code WAC 131-16-094.

A full list of the courses that faculty would teach is included as Appendix C.

The Program Director

The Program Director will have administrative responsibilities which will include:

- Development, implementation, and quality control of the curriculum
- Class scheduling and staffing
- Supervision of program faculty and program support staff
- Development of the program budget, and financial management
- Maintenance of accreditation and industry standards for the program
- Development and monitoring of best practices to support student success
- Recruitment and admissions
- Oversight of capstone projects and internships

Once the program is in full operation (AY 17/18), it is anticipated that the Program Director's time will be split 50:50 between teaching and program-related administrative responsibilities. However, during the early stages of the program launch, the Program Director's teaching load will be significantly lower allowing for time to be devoted to establishing and building the program.

The Program Director will be required to have:

1) A minimum of a Master's degree (preferably a Doctorate) in Business, Industrial Technology, Engineering, or a related field
2) Teaching experience at the baccalaureate level or higher
3) Considerable experience (at least five years) business/industry experience in an operations role
4) Contacts within local industries and businesses able to help with curriculum design, student recruitment, and student placement.

Student Services

Specialized support may need to be provided to BASOPS students, particularly relating to the selective admission process which will be new to some applicants. This will result in a heavier workload for Student Services personnel. BTC will provide an additional 1 FTE of resources within BTC's Student Services departments to support the new program. The person providing this support will report directly to the Vice President of Student Services with a dotted line reporting path to the BASOPS Program Director, and will act as the primary point of contact for the program within the Student Services organization.

Because of the scheduling required to accommodate working adults, faculty and student services personnel will be available to work with students outside normal college hours.

Library and Information Commons

The BTC Library provides a variety of print, media, and online digital resources to students, faculty, and staff. The collection of books, reference materials, journals, and multi-media resources focuses on supporting BTC's instructional programs. All of the digital resources, including specialized online reference databases, a large collection of eBooks, and digital journals, are available from any computer

on campus or through remote access. Professional library staff members provide research and reference assistance either in the library or online.

BTC's Information Commons, the open computer lab on campus, is located in the library and includes over 40 different computer applications, Internet access, and a variety of assistive technologies. The library staff provides all of the student technical support. There is an Information and Digital Literacy classroom and eight media-enhanced small group study rooms.

In order to support the specialized research needs of BASOPS students, the plan provides for 0.3 FTE of additional librarian support throughout the program together with additional funding to allow the library to add specialized data resources and subscriptions.

Table 6 – Summary of New Faculty and Staff Requirements

	AY 15/16*	AY 16/17	AY 17/18	AY 18/19	AY 19/20	AY 20/21
Program Director (FTE)	1.0	1.0	1.0	1.0	1.0	1.0
Teaching Faculty - BASOPS (FTE)		1.0	1.0	1.0	1.0	1.0
Teaching Faculty - Other (FTE)		0.5	0.5	0.5	0.5	0.5
Student Services (FTE)	1.0	1.0	1.0	1.0	1.0	1.0
Librarian (FTE)		0.3	0.3	0.3	0.3	0.3

* Spring Quarter Only

3. Admissions Process

BTC adheres to the open access mission and values of the State Board of Community and Technical Colleges, documented in Chapter Three of the SBCTC Policy Manual. Admission requirements are flexible to allow for broad participation, but selective enough to recruit students with the greatest likelihood of success.

Program Admission Requirements

Admission to the BASOPS program is open to students who meet all of the following requirements:

1. An earned associate degree (or equivalent) from a regionally-accredited institution with a minimum of 90 quarter credits, and minimum cumulative GPA for all college coursework of 2.5.

2. Intermediate Algebra or higher with a minimum 2.5 GPA, or equivalent ACCUPLACER math score within the past 2 years

3. Completion of at least 10 credits of college-level General Education with a minimum of a 2.5 GPA in each class as follows:
    - English Composition (ENGL&101 or equivalent) - 5 credits
    - Social Science or Humanities - 5 credits

Credit may be awarded for military experience, as demonstrated through a student's military transcript, based upon guidelines from the American Council of Education. Credit for prior learning and experiential competencies gained through work will be assessed on an individual basis, according to institutional guidelines described in BTC's Policies and Procedures Manual.

Applicants must also submit:

a) A formal resume.
b) A one-to-two page admission essay describing the candidate's interest in the degree, his or her background and experience, how completion of this degree meets his or her personal education and employment goals, his or her understanding of the commitment that will be required to complete the program, and any other information that may support entry to the program.
c) Two sealed letters of recommendation attesting to the student's ability to succeed at the baccalaureate level, preferably one from an instructor and one from an employer or supervisor.
d) $50 non-refundable application fee.

An applicant who is not a student at BTC at the time of application must also apply for admission to the college through the Web Admissions Center for Washington State Community and Technical Colleges.

Selection Criteria

Complete application packets will be reviewed by an Admissions Committee chaired by the Program Director. Applicants will be considered based on the quality and completeness of their materials. The Admissions Committee will establish a minimum quality score. GPA will be the most heavily-weighted

criteria, followed by resume, admission essay and recommendation letters (Table 7). Prior to reviewing applicants, the Admissions Committee will design comprehensive rubrics for evaluating the resume, admission essay and references. These rubrics will ensure that a consistent and rigorous method is applied to each application, and is consistent with the process used in a number of other SBCTC colleges awarding applied baccalaureate degrees.

Table 7 – Weighted Quality Score for Program Admission

Application Requirements	Max. Pts	Notes
Cumulative College Level Associate Degree GPA	**60**	Multiply cumulative GPA by 15 to determine total points
Resume	**10**	Based on evaluation rubric
Essay	**10**	Based on evaluation rubric
Recommendations	**20**	10 points for each recommendation, based on evaluation rubric
TOTAL	**100**	

Applicants who submit complete packets and meet the minimum quality score will be admitted to the program on the basis of first-received, first-admitted.

The BASOPS program has been designed to be highly scalable, and additional sections of the courses can be added should demand merit it. In the unlikely event that sufficient capacity cannot be added, qualified students will be placed on a waiting list, again in the order of the dates on which their completed application packets were received. This waiting list will be carefully monitored to ensure that places are assigned on an equitable basis, and that due attention is paid to maintaining a diverse student population.

Marketing

Potential students for the BASOPS degree are most likely to be found in two places:

- those currently employed in business/industry
- those currently enrolled as students at BTC or another local college

Therefore, in addition to general broadcast advertising and promotion, special attention will be paid to these two areas.

Potential Students Working in Industry and Business

BTC plans to reach out to the owners and HR managers at local businesses in the industry sectors being targeted for the degree (initially manufacturing and IT) in order to identify if they have staff who would benefit from enrolling in the program.

Particular emphasis will be placed on identifying minority-owned and/or managed businesses in order to help develop a diverse student population in the program.

We will also be working with industry groups such as CAMPS (Center for Advanced Manufacturing Puget Sound) to raise awareness of the program in industry and business.

Because working adults are often unable to attend an on-campus information session during the day, a comprehensive online informational presentation will be developed to provide them with the information they need.

Potential Students Enrolled in Programs at BTC

We plan to approach the programs at BTC that support the industry sectors being targeted for the degree in order to address students in these program before they graduate.

Where the information is available, we will also contact alumni of the BTC programs who may now be working in industry or business to gauge their interest in enrolling in the BASOPS program.

General Considerations

The marketing materials for the program will be developed by BTC's marketing department in conjunction with program faculty, and will be reviewed on an ongoing basis to ensure that they appeal to a diverse group of potential students.

Encouraging Diversity

In addition to ongoing work at the college level, the following measures will be adopted in the BASOPS program to encourage diversity.

- As noted above, recruitment materials and strategies for the BASOPS program will be designed to appeal to all ages and genders, as well as to students of color.
- Because the BASOPS program will use selective admission, the Program Director will carefully monitor diversity in student enrollment in the program to determine the extent to which it represents the local community and to determine if action needs to be taken to change the recruitment or selection processes.
- Efforts will be made to ensure representatives from industry partners represent a variety of backgrounds, and speakers invited to campus will be selected to encourage diversity.
- The program's online delivery option will allow BTC to include students who would not be able to attend the Saturday face-to-face meetings due to factors including physical disability, religious conviction, family commitments, or geography.

4. Student Services Plan

Generally Available Services

BTC's Student Services organization is aware and totally supportive of the BASOPS program, and is preparing to provide full wrap-around services to potential students, students, and alumni.

Students in the BASOPS program will have access to all of the support, advising, and counseling services generally available to students at BTC. These services include:

- Admissions & Recruitment
- Advising & Career Services
- Accessibility Resources
- Assessment Center
- Counseling & Multicultural Services
- Financial Aid
- Registration & Enrollment
- Workforce Funding & Student Support

In particular:

- BTC has a Veterans Coordinator and Veterans Club as well as a dedicated Veterans Center space.
- Students in the BASOPS program will pay the services and activities fee, and will benefit from the leadership and the services provided by ASBTC.

More information can be found at
http://www.btc.edu/CurrentStudents/StudentResources/indexStudentResources.aspx

Program-Specific Services

Additional Resources

The financial plan shown in Section 5 below provides for 1 FTE of additional resources within BTC's Student Services department throughout the program to provide specialized support to BASOPS students – particularly through the admission process. It is planned to hire this new person in Spring 2016 so that there is sufficient time to establish formal processes before recruitment to the program begins in Summer 2016. The position will report to the Vice President of Student Services, with a "dotted line" reporting link to the BASOPS Program Director, and will be the primary point of contact for all questions relating to the BASOPS degree.

Financial Aid

Although the specific financial aid needs of students in the BASOPS program may differ in some respects from the needs of students in traditional Associates' programs, it is not planned to have a separate group dealing with this. Instead, existing Financial Aid staff will be provided with training as required to understand any differences that may exist.

Program and Career Advising

Advising is the formal responsibility of Student Services staff. All students are enrolled in BTC's case management system on starting a program, and assigned to an Academic and Career Advisor specializing in that program.

It is inevitable that questions will arise that need input from program faculty. At the request of BTC's Student Services department, the BASOPS program director and/or faculty teaching in the BASOPS program will be available to advise students on course choice, discuss student progress, direct students to needed resources, and assist with other program-related issues or problems.

The BASOPS program director and faculty will also work with Student Services staff to establish links with businesses who may hire BASOPS program graduates.

Prior Learning Assessment

Students in the BASOPS program will be able to apply credit for prior learning in accordance with BTC's Non-Traditional Credit - Prior Learning Assessment policy[7]. Assessment of work submitted to gain credit for prior learning will be the responsibility of qualified program faculty.

Tutoring Center

BTC's Tutoring Center is a free service which helps students achieve success in math, accounting, chemistry, biology, writing, English, and many other courses. Tutors are recruited for whatever subject is requested by BTC students.

Since this is BTC's first BAS degree, BASOPS program faculty will work with the Tutoring Center staff to help them understand the requirements of the program and the standards that students are expected to achieve to be successful. As part of this collaborative approach, program faculty will provide Tutoring Center staff with exemplars of documents (reports, PowerPoint presentations, Excel spreadsheets) so that they can help students achieve the expected standards.

Staff from the Tutoring Center will also provide technology orientations for BASOPS students at the first Saturday session of each quarter, and will be available on request on other Saturdays to provide academic support, if needed.

[7] http://www.btc.edu/General/Publications/Policies/Non-Traditional%20Credit%20and%20Prior%20Learning%20Assessment.pdf

5. College Commitment and Financial Plan

Financial Plan

The financial plan assumes the following:

1) Student enrollment is shown in this table:

AY 16/17	AY 17/18	AY 18/19	AY 19/20	AY 20/21
25	27	28	30	30

   The numbers projected here are slightly higher than those included in the Statement of Need previously reviewed by SBCTC because of the significant interest that has been shown by potential students – especially those within BTC's programs.

2) The attrition rate is assumed to be 10% for each of cohort.
3) In Spring 2016, the Program Director will be hired and 1 FTE of Admissions/Student Services resources will be assigned to the program to recruit students into the program, develop and formalize the admissions processes, and start development of the instructional resources.
4) In Summer 2016, an additional full-time faculty member will be hired to work on detailed lesson planning and further development of instructional resources.
5) Library support (0.3 FTE) for the program will be provided starting in Summer 2016.
6) Benefits for faculty and staff are assumed to be 35% of gross salary.
7) An annual COLA of 1% has been included in the salary + benefit numbers.
8) Tuition has been assumed to be $2,131 per student per quarter based on the FY2015-16 Resident rate[8] and assuming that students take a 15 credit load each quarter.
9) A student fee of $145 per course will be charged.
10) Teaching will occur in Fall, Winter and Spring quarters.

Table 8 shows the financial plan for Spring 2016 and the first 5 full years of the BASOPS program.

Facilities, Equipment and Instructional Resources

The BASOPS program is a hybrid (online and classroom) program that requires no additional facilities and equipment beyond existing classrooms, instructional equipment, and computer laboratories at BTC.

The primary instructional resources that will be needed are library materials. These funds will provide digital and print library collections that reflect the best and most recent scholarship in their fields at the baccalaureate level and provide support for research conducted by faculty and students.

[8] http://www.sbctc.edu/resources/documents/colleges-staff/programs-services/tuition-fees/tuition-fees-community-technical-college-2015-2016.pdf

In order to support the anticipated needs and demands of the BASOPS program, the annual program budget includes additional funds to be used for targeted collection and resource development. The choice of specific data and reference sources to be used will be informed by the lesson planning process, but our library staff believes that the funding included in this budget will be sufficient to meet the needs of the program.

College Commitment

BTC's Business Office has reviewed the proposed budget and confirmed that the college is fully committed to funding the costs associated with the launch of the program through payments from college reserves and/or other sources. Excluding fees associated with the NWCCU approval process, the launch costs are currently estimated to be as follows:

AY 15/16	$	55,703
AY 16/17	$	168,588
Total	$	224,291

Table 8 – Program Costs and Funding

	AY 15/16	*AY 16/17*	*AY 17/18*	*AY 18/19*	*AY 19/20*	*AY 20/21*
Program Director	18,820	75,278	76,031	76,791	77,559	78,335
Teaching Faculty - BASOPS	-	67,056	67,727	68,404	69,088	69,779
Teaching Faculty - Other	-	31,270	31,583	31,899	32,218	32,540
Student Services	11,331	45,324	45,777	46,235	46,697	47,164
Librarian	-	15,163	15,315	15,468	15,623	15,779
Faculty & Staff Salaries	30,151	234,091	236,432	238,796	241,184	243,596
Benefits	10,553	81,932	82,751	83,579	84,415	85,259
FACULTY & STAFF COSTS	40,703	316,023	319,183	322,375	325,599	328,855
Goods & Services	5,000	5,000	5,000	5,000	5,000	5,000
Professional Development	-	5,000	10,000	10,000	10,000	10,000
Equipment & Software	5,000	5,000	5,000	5,000	5,000	5,000
Marketing & Outreach	5,000	15,000	15,000	10,000	10,000	10,000
Library Resources	-	15,000	15,000	10,000	10,000	10,000
OTHER COSTS	15,000	45,000	50,000	40,000	40,000	40,000
Tuition	-	159,810	316,424	334,323	352,860	364,367
Student Fees	-	32,625	64,598	68,252	72,036	74,385
From State Allocation	-	-	-	-	-	-
College Support	55,703	168,588	-	-	-	-
TOTAL FUNDING	55,703	361,023	381,021	402,574	424,896	438,752
TOTAL COSTS	55,703	361,023	369,183	362,375	365,599	368,855
TOTAL FUNDING	55,703	361,023	381,021	402,574	424,896	438,752
BALANCE	-	-	11,838	40,199	59,298	69,897

Note: AY 15/16 is Spring Quarter Only

6. Program-Specific Accreditation

Program-specific accreditation is not required for BASOPS graduates to be employed.

Because of the unique and innovative nature of the applied baccalaureate program in Operations Management, there is no professional or technical education association that provides direct and comprehensive accrediting oversight. The Program Director and faculty will review and reassess options for appropriate accreditation as the program evolves.

Upon SBCTC approval of the Operations Management degree, BTC will immediately file a Major Substantive Change Proposal with the Northwest Commission on Colleges and Universities.

7. Pathway Options

A number of potential post-baccalaureate pathways for BASOPS graduates have been identified, including (but not limited to) those shown in Table 9.

Table 9 – Potential Post-Baccalaureate Pathways

Western Washington University	Master of Business Administration
City University of Seattle	Master of Business Administration Master of Science in Project Management
Western Governors University	Master of Business Administration*
Northeastern University	Master of Business Administration*
Colorado Technical University	Master of Business Administration* Master of Science in Management*
University of Phoenix	Master of Business Administration*

** = Online Degrees*

Many of these organizations have been contacted directly – here are their responses.

Western Washington University: Michael Barr, Associate Dean of the Graduate School

"Articulation" is kind of among the nomenclature of undergraduate transfer admissions – there really is no articulation to a graduate program. If the BAS is regionally accredited, it will meet our minimum admissions requirement of having a Bachelor's from a regionally accredited institution just as we've recently seen from Bellevue College, Peninsula College, and others. How students fare in the program-level admissions process will depend greatly on their own credentials – the quality of their academic work and research, GRE/GMAT scores, and potential for success in their respective program. That decision lies with the graduate faculty. The content of the BAS could certainly have implications for prerequisites prior to enrollment, but that is all case-by-case and determined by the Graduate faculty.

Central Washington University: Dr. Carlo Smith, Chair, Department of Finance & Supply Chain Management; Chair, Department of Economics

As part of his review of the BASOPS program, Dr. Smith was asked to answer the following question:

"Do you believe that the degree will prepare students for acceptance into graduate programs?"

Dr. Smith replied:

"I am comfortable that this program, combined with other typical graduate entry requirements whether they involve examinations, extent of experience and personal statements, will be sufficient to enter in to many types of graduate programs."

City University of Seattle: Lana Lee, Regional Director of Campus Operations

"I have received word from Dr. Kurt Kirstein [Provost and VP of Academic Affairs for City University of Seattle], we will gladly accept the BAS Operations Management into our MBA program and other Masters programs."

University of Phoenix: Lori Silverman, National Advisor - Community College Partnerships

"Because the college is regionally accredited, we will accept the completion of an approved bachelor program as part of our admissions requirements for a UoPX Master's Degree. So yes, there is potential for the program to feed into our MBA once accredited."

Other Academic Pathways

As well as the graduate degrees listed in Table 9, BTC is looking into potential education pathways for BASOPS graduates in fields such as Supply Chain Management, Logistics Management, Finance, Industrial Psychology, and International Business. We have already established that fully-online options exist in these fields at both the Masters and/or graduate certificate level. Once the BASOPS program is approved, we will approach the institutions offering these programs to establish pathways for graduates.

Industry Associations

As detailed program and lesson planning progresses during 2016, BTC will also seek to work with industry associations such as:

- Association for Operations Management (APICS) – http://www.apics.org
- Production and Operations Management Society (POMS) – http://www.poms.org
- The Society of Manufacturing Engineers (SME) – http://www.sme.org

to align the BASOPS curriculum with industry-specific certifications which would further students' careers.

8. External Expert Evaluations

As noted previously, the BTC BAS Operations Management (BASOPS) program is based on the CPTC BAS Manufacturing Operations (BASMO) curriculum, which was approved by SBCTC and NWCCU in 2014.

During the development of the CPTC program, the curriculum and program design was extensively reviewed by industry experts at a range of organizations, including (but not limited to) the Center of Excellence for Aerospace and Advanced Manufacturing, Impact Washington, the Center for Advanced Manufacturing Puget Sound, Boeing, AIM Aerospace, TTF Aerospace, Ops Savvy LLC, and McGladrey LLP.

Two external reviewers were also consulted for their detailed opinion on the CPTC program design as part of the formal approval process:

- **Professor Thomas Ball, MBA** – Assistant Professor and Department Chair of the Industrial Engineering Technology Department at Southern Polytechnic State University in Marietta, GA – a university that also offers an applied baccalaureate degree in Manufacturing Operations.

- **Mr. Edward Halloran, PE CMfgE** – a senior executive in with an extensive background in manufacturing operations management, and a member of the Society of Manufacturing Engineers International Board of Directors.

To supplement these earlier reviews of the curriculum, and to cover the extension of the program to areas other than manufacturing operations, BTC has asked two additional experts to review the program design for the BAS Operations Management degree:

- **Professor Carlo Smith** – Associate Professor of Supply Chain Management; Chair, Department of Finance & Supply Chain Management; Chair, Department of Economics; and Director of the CWU Supply Chain Institute - Central Washington University

- **Dr. Douglas Gurr** – currently President, Amazon China; formerly Global Vice President, Amazon; Executive Development Director, Asda-Walmart; CEO, Blueheath; Partner, McKinsey & Company.

The full text of their reviews, together with each reviewer's professional vitae and BTC's response to their recommendations, will be provided in a supplementary document.

Appendix A – BTC/CPTC Memorandum of Understanding

Memorandum of Understanding between
Bellingham Technical College and Clover Park Technical College
for the Development of Academic Cooperation
in the Field of Operations Management

The objective of this Memorandum of Understanding (MOU) is to stimulate and facilitate the development of collaborative and mutually beneficial programs to serve the students at each institution, specifically in the field of Operations Management. Thus, Bellingham Technical College (BTC) and Clover Park Technical College (CPTC) have agreed that the two educational Institutions will:

a) work collaboratively to develop curriculum, lesson plans, and instructional materials;
b) establish and facilitate processes so that students at one institution can enroll in courses at the other and receive appropriate credit;
c) collaboratively promote and market their programs in the field of Operations Management; and
d) share best practices in the development, delivery and administration of these programs.

In the implementation of specific cooperative programs, a written agreement covering all relevant aspects including funding and the obligations to be undertaken by each party will be negotiated, mutually agreed and formalized in writing, prior to the commencement of the program.

This MOU will take effect from the date of its signing and shall be valid for an unlimited period from that date unless sooner terminated, revoked or modified by mutual written agreement between the parties, and may be extended by mutual written agreement.

Either party may terminate the MOU at any time during the term by the provision of three months written notice to the other party.

SIGNATURES

For and on behalf of
Bellingham Technical College

Dr. Frank Powers
Vice President of Instruction

Date: 12-1-2015

For and on behalf of
Clover Park Technical College

Dr. Joyce Loveday
Vice President for Student Learning

Date: 12-1-2015

Appendix B – Course Descriptions

Note: The following course descriptions do not include lower division courses that might be taken during the Academic Bridge in order to meet general education requirements. All courses listed here are 5 credits.

Operations Management

OPM 311: Mathematical Techniques for Operations Management
This course provides students with the foundational mathematical tools required for operations management including acceptance sampling; decision theory including its application under uncertain conditions; the application of probability theory to determine the reliability of systems; solution of linear programming problems using graphical and computational methods; and the application of learning curves for planning and scheduling. These techniques are introduced in this course and then exercised and practiced through repeated application to real problems in other courses.

OPM 312: Forecasting and System Design
This course introduces students to forecasting and capacity planning tools for manufacturing and service organizations. Qualitative and quantitative techniques are discussed, and the pros and cons of each are identified. The selection of appropriate processes and facility layouts, and the design of work systems to optimize production are discussed; and the impact of good product design on production operations is highlighted. Maintenance planning is discussed including the differences between breakdown (reactive) and preventative (planned) maintenance. Techniques for job design such as methods analysis and time study methods are demonstrated. Both graphical and computational (spreadsheet) techniques are used throughout the course to solve a range of typical problems.

OPM 313: Quality Management
This course is designed to equip students with the managerial concepts and quantitative tools used in effective and efficient management of quality in manufacturing and service organizations. The course begins with the quality management concepts espoused by Deming and discusses some of the resulting approaches such as Total Quality Management (TQM), Six Sigma, ISO 9000 and AS 9100. Quality requirements specific to regulated industries such as biomedical devices and aerospace will also be surveyed. Students will learn how to plan, implement and manage a comprehensive quality management program within an organization with special emphasis on process documentation, staff training, and communication of results to management and auditors.

OPM 314: Logistical Planning & Supply Chain Management
A supply chain is a sequence of organizations involved in the production and delivery of a product or service. Supply chain management is the coordination of those organizations, and logistics is the management of the flow of resources e.g. goods, materials, information; between the organizations. This course will students will introduce students to the complexities of domestic and global supply chains including consideration of make/buy and outsourcing decisions. The importance of the procurement function is explored, and inventory management techniques are presented including the

application of mathematical approaches to solve typical problems. Finally, the use of materials resource planning (MRP), manufacturing resource planning (MRPII) and enterprise resource planning (ERP) systems in operations management is examined.

OPM 315: Lean Concepts and Applications
Lean production is a modern management practice applicable to both manufacturing and service industries that considers the expenditure of resources for any goal other than the creation of value for the end customer to be wasteful and thus a target for elimination. This course introduces students to the theory behind Lean including concepts such as Value Stream Mapping, Workplace Organization and Standardization, 5-S and Cellular Flow. Terminology, including Kan Ban and Total Production Maintenance, and tools such as Gap Analysis, 5 Why's, root cause analysis, Pareto charts, and cause effect diagrams are covered. The importance of workforce development and ongoing training to Lean implementation is stressed, and students will learn about the how to apply Lean techniques to both industrial and service operations.

Business Skills

ENGL 310: Business Communications
This course focuses on audience-oriented communication in the business environment. Course content includes writing reports, proposals, memoranda, and e-mails; graphical presentation of data using Excel; and developing and delivering presentations using PowerPoint and other visual aids. Students will develop and demonstrate these communication skills individually, in smaller groups, and in presentations to larger audiences.

ECON 310: Managerial Economics
This course focuses on forecasting and estimating techniques; and on tools used to analyze projects, compare alternatives, and make sound business decisions based on economic principles such as time value of money, internal rate of return, and cost-benefit ratios. The course includes the use of Excel as a tool for analysis and decision making.

PHIL 310: Professional Ethics
This course aims to raise students' awareness of ethical dilemmas that might occur at work, to show how such ethical issues are subject to management analysis and decision-making action, and to provide students with the conceptual tools necessary to identify and then develop an acceptable resolution of these dilemmas. The course will include the presentation of ethical arguments to groups, and debate on their merits.

PSYC 310: Organizational Psychology
This course examines how people behave and interact with each other at work with an emphasis on the way that this affects job performance. Topics covered in this course include the development of leadership skills; recruitment and retention; motivation and team building; managing change; and conflict resolution. Group work is used to build and practice the interpersonal skills critical for workplace management.

BUS 310: Project Management
Coordination of projects involving multiple tasks and resources, and the resolution of the conflicts that arise is a critical skill in business. This course teaches students some of the techniques necessary to develop realistic and comprehensive project plans; identify risk areas; monitor the plans; and deal with problems. The course will also cover management of the procurement process, and communication with project stakeholders. The course includes the use of Microsoft Project to develop and manage project plans.

Industry Application – Manufacturing Emphasis

OPM 411: Facility Layout and Materials Handling
This course covers the design and optimal layout of industrial facilities, materials handling systems, and warehousing for the most efficient flow of raw materials, work-in-process, and completed product. Students, working in groups, will be required to develop a written proposal for a newly designed or modified facility including a financial justification for the project, and carry out a verbal presentation of their results.

OPM 412: Workplace Health and Safety Management
This course provides a foundation for students to take on responsibility for the management of health and safety in the workplace. Students will learn about OSHA and the inspection process, identification of safety hazards and implementation of preventative measures, and developing a formal health and safety training program. The course will also cover work design and ergonomics aimed at increasing operator effectiveness and reducing production costs.

OPM 413: Measurement and Statistical Process Control
Statistical process control (SPC) is a quality control technique which employs statistical methods to monitor and control a process to ensure that it operates at its full potential, and that the finished products meet specified criteria. In this course, students will be introduced to key tools used in SPC include control charts, continuous improvement, acceptance sampling, and the design of experiments. Students will also be taught about fundamental metrology principles including error measurement and analysis, the impact of temperature and pressure on precision measurement; equipment calibration; and advanced test and measurement techniques.

Industry Application – IT Emphasis

OPM 421: IT Strategy, Management and Delivery
This course examines the strategic role of IT within an organization. Students will learn how to assess the impact of emerging technologies, and then design information infrastructure and systems to support organizational structures.

OPM 422: Business Continuity and Disaster Recovery
This course looks at how to identify business risk and impact; recognize mission-critical systems; and create, test and implement business continuity plans.

OPM 423: Managing Vendors and Contracts
This course covers strategies and methodologies for selecting and managing vendors including types of contracts, vendor selection processes, and contract management.

Focused Study and Capstones

OPM 491: Focused Study 1
OPM 492: Focused Study 2
OPM 493: Focused Study 3
These three courses provide students with opportunities to explore areas of professional interest and to develop a greater understanding of those areas through focused study and applied research under the direction of a faculty member and/or industry mentor. Topics to be studied will be agreed in conjunction with program faculty and approved by the program director; and each course will require both a written report and an oral presentation of the research findings.

OPM 495: Internship
This course provides students with practical on-the-job experience, and offers students a way to combine classroom study with related work experience under the supervision of an employer. Work experience must be related to the student's educational and career objectives in the field of Manufacturing Operations. Students must submit, at or before registration, a description of the proposed internship, signed by the employer, the instructor and the student. This course can be substituted for OPM 498 – Individual Capstone Project.

OPM 498: Individual Capstone Project
This course involves the self-directed execution of a project in the field of operations management employing elements from many of the courses the student has already taken linked together in a methodical, systematic way. The topic to be studied will be agreed in conjunction with program faculty and approved by the program director; and a faculty member or industry mentor will be available throughout the course to act as an advisor. However, it is expected that the student demonstrates independent thought and self-direction during the project. The project may be carried out with an industry partner/employer. The course requires both a written report and an oral presentation of the project results.

OPM 499: Group Capstone Project
This course involves working as a team on a project in the field of operations management. The topic to be studied will be chosen by the group, agreed in conjunction with program faculty, and approved by the program director. A faculty member or industry mentor will be available throughout the course to act as an advisor. However, it is expected that the group is self-directing, and that individuals in the group demonstrate the ability to work with other team members during the project. The project may be carried out with an industry partner/employer. The course requires both a written project report and an oral presentation of the project results by the group, and individual summary reports by each student.

Appendix C – Anticipated Faculty Teaching Assignments

The following table indicates the primary courses that faculty would be expected to teach.

	Steve Addison	Mel Oyler	Tiffany Windmeyer	Larry Price	Tanya Sorenson
Operations Management Tools					
OPM 311 – Mathematical Techniques for Ops Management	✓	✓			
OPM 312 – Forecasting and System Design	✓	✓			
OPM 313 – Quality Management	✓	✓			
OPM 314 – Logistical Planning & Supply Chain Management	✓	✓			
OPM 315 – Lean Concepts and Applications			✓		
Manufacturing Emphasis					
OPM 411 – Facility Layout and Materials Handling				✓	
OPM 412 – Workplace Health and Safety Management				✓	
OPM 413 – Measurement and Statistical Process Control		✓			
IT Emphasis					
OPM 421 – IT Strategy, Management and Delivery	✓				
OPM 422 – Business Continuity and Disaster Recovery	✓				
OPM 423 – Managing Vendors and Contracts	✓				
Business Skills					
ENGL 310 – Business Communications					✓
ECON 310 – Managerial Economics		✓			
PHIL 310 – Professional Ethics			✓		✓
PSYC 310 – Industrial Organizational Psychology			✓		
BUS 310 – Project Management	✓	✓			

Note: Faculty will be chosen to supervise the Focused Study and Capstone courses (OPM 491-499) based on their area of expertise, and on the subjects chosen by the students.