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**STATE BOARD FOR COMMUNITY
AND TECHNICAL COLLEGES
OCTOBER 2022
PROGRAM PROPOSAL
BACHELOR OF APPLIED SCIENCE
CRAFT BEVERAGE MANAGEMENT
AND QUALITY ASSURANCE
*SOUTH PUGET SOUND COMMUNITY COLLEGE***

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Cover Page — Program Proposal

Program Information

Institution Name: South Puget Sound Community College

Degree Name: Bachelor of Applied Science in Craft Beverage Management and Quality Assurance

CIP Code: 01.1005 Zymology/Fermentation Science

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

Degree: AAS-T, Craft Brewing and Distilling

CIP Code: 01.0401

Year Began: 2018

Degree: AAS, Business Administration

CIP Code: 52.0201

Year Began: 1990

Proposed Start Implementation Date (i.e. Fall 2014): Fall 2023

Projected Enrollment (FTE) in Year One: 12 to 20

Projected Enrollment (FTE) by Year: Additional 20 FTE cohorts per year

Funding Source: State FTE

Mode of Delivery

Single Campus Delivery: Hybrid program offered at South Puget Sound Community College's Tumwater location (online with in person weekend labs)

Program Proposal

*Please see criteria and standard sheet. **Page Limit: 30 pages***

Contact Information (Academic Department Representative)

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Chief Academic Officer signature

The Program Proposal must be signed. To sign, double click on the signature line below.

A handwritten signature in blue ink, appearing to read "Michelle Audra", with a long horizontal flourish extending to the right.

8/9/2022

Criteria 1

Curriculum demonstrates baccalaureate level rigor.

The proposed Bachelor of Applied Sciences (BAS) in Craft Beverage Management and Quality Assurance demonstrates baccalaureate-level rigor through its program learning outcomes, program evaluation and continuous improvement processes, and course preparation required of entering students, as well as its general education and upper-division course work requirements.

Program Learning Outcomes

The proposed curriculum for the BAS is rigorous and is fully supported by South Puget Sound Community College's Instructional Council, the Advisory Committee for the current Associate in Applied Science - Transfer degree in Craft Brewing and Distilling, as well as the college's Board of Trustees.

Guided by extensive industry input, this degree has been designed to prepare students to enter the craft brewing and distilling industry as producers of beverages, but also with the business know-how to be managers well prepared to scale up and sustain growing businesses. Accordingly, the program learning outcomes for the four-year degree have been designed to address advanced production skills and quality assurance, as well as business management skills needed to establish and maintain a successful craft beverage enterprise.

At the completion of the Bachelor's in Applied Science in Craft Beverage Management and Quality Assurance, students will be able to:

- Recognize and adapt interpersonal behaviors, written communication, and oral communication styles to effectively collaborate in a multicultural world
- Work within and adhere to a complex regulatory environment related to the brewing, distilling, and cider making industry
- Demonstrate creativity and innovation in business practices related to brewing, distilling, and cider making
- Examine and implement ethical environmentally responsible business practices related to product sourcing and production
- Create and market craft beverages that appeal to a diverse multicultural audience
- Develop new beverages built on current trends and innovations in the craft beverage industry
- Manage product design including ideation and recipe design, through to production and marketing
- Evaluate safety and organoleptic properties of beverages utilizing analytical techniques and standard industry processes in order to interpret, and act upon, results of analysis
- Develop operational plans for a craft beverage business that incorporate adherence to industry regulations, ethical business practices, and sustainability principles and practices

These program outcomes are aligned with the South Puget Sound Community College institutional learning outcomes (college-wide abilities) and our strategic plan.

Program evaluation criteria and process

Upon approval, the new BAS program will be embedded into the existing robust program evaluation and continuous improvement processes for the college. South Puget Sound Community College uses a comprehensive approach to creating and assessing student learning. Our institutional level assessment

of student learning occurs through our Student Learning Assessment Committee (SLAC) process. This committee is a sub-committee of our campus-wide instructional council and is responsible for creating, implementing, reviewing and improving the student learning assessment process.

There are two major components of the campus-wide assessment process at South Puget Sound Community College: 1) Assessment of the College-Wide Abilities (CWAs) and 2) Assessment of disaggregated degree and course-level student completion data. Each program at South Puget Sound Community College intentionally links program level student learning outcomes to the institutional level College-Wide Abilities (CWAs). Within professional-technical programs, the CWAs are contextualized to ensure that we are addressing industry requirements in addition to the college level learning outcomes.

Every year, faculty collect data for the purpose of assessing student learning of our college-wide abilities. This process begins with faculty identifying the CWAs associated with their course learning outcomes. The SLAC committee has created a common rubric for each of the CWAs. Every quarter, faculty attach the outcome rubrics to assessments within their courses and complete the rubric for each student to indicate whether the student met competence, didn't meet competence, or didn't attempt the relevant assignment associated with each CWA.

In addition to the quarterly assessments of the college-wide abilities, faculty also complete a comprehensive program data reflection and analysis on a three-year cycle. This process has been recently updated and includes an opportunity for faculty to review student success and completion data in order to make program improvements. This comprehensive process includes the review of student data including demographics and student success data at the course and degree level; a review of program curriculum including scope and sequence, articulation agreements, and assessment; industry-specific analysis including labor market changes, industry relationships, certifications and any other industry shifts; and concludes with an action plan developed by faculty to address any identified gaps. All student data is disaggregated by variables such as part-time/full-time enrollment status, age, ethnicity, and gender. This allows faculty to do deeper analysis to identify any potential gaps in student success that need to be addressed.

Additional program evaluation processes include:

- Quarterly student course evaluations
- Graduate/Alumni surveys
- Program advisory committee meetings (three meetings per year)
- Quarterly review of syllabi

Course preparation needed for other technical associate degrees

Students will be eligible to apply to the BAS program according to the selection and admission process described in Criteria 3. Students transferring into the program without the SPSCC Craft Brewing and Distilling AAS-T degree must have earned an AAS or AAS-T in business or another closely related field such as viticulture or brewing.

General education component

The general education components of the BAS degree are shown below. These meet SBCTC's general education requirements for BAS degrees. In total, 65 general education credits are required. Approximately 25 of these will be earned as part of an associate degree (AAS or AAS-T), with the remainder being earned through the BAS program. Credits earned at other institutions with different

course number systems that are equivalent will be accepted pending the South Puget Sound Community College registrar's evaluation and approval.

Table 1 General Education Requirements in BAS in Craft Beverage Management

General Education Requirements in BAS in Craft Beverage Management			
Subject	Credit	Course Title	Typical Completion
Communication	5	ENGL& 101 - English Composition I	AA
	5	ENGL& 235 - Technical Writing	BAS
Quantitative	5	MATH& 107 - Math in Society OR MATH& 146 - Introduction to Statistics	AA
Humanities	5	PHIL 350 - Ethics in Business Management	BAS
	5	CMST& 230 - Small Group Communication: Diversity	BAS
Social Sciences	5	BUS& 201 - Business Law	AA
	5	HIST 260 - History of Fermentation: Diversity	AA
	5	BUS 340 - Logistics and Supply Chain	BAS
	5	BUS 350 - Advanced Product Marketing	BAS
	5	ECON& 201 - Micro Economics	BAS
	5	SOC 350 - Organizational Theory	BAS
Natural Sciences	5	CHEM 115 - Applied Science for the Craft Beverage Industry (with Lab)	BAS
	5	ENVS 301 - Business and Sustainability Principles and Practices	BAS

Course work needed at junior and senior levels in the baccalaureate program

A total of 60 upper-division (300 and 400 level) credits are required for completion of the BAS degree. Courses provided at the junior and senior level for the BAS are aligned with program outcomes, as well as the needs expressed by industry members. For students who begin with the craft beverage AAS-T at South Puget Sound Community College or a similar viticulture or brewing program elsewhere, the upper-division work will provide advanced instruction not only in beverage-making technologies, but also in the environmental, logistical, finance and personnel considerations that sustain a successful business. For students transferring from a business-oriented associate degree, the upper-division work will capitalize on that existing knowledge base, complementing it with a solid foundation in beverage-making science and the applications of business principles to that industry. Internships are an important element of the curriculum, providing students with opportunities for in-depth experiential learning in a working beverage-making enterprise. Depending on their background and experience, students can choose to focus on either the business aspect of the program or the advanced beverage making aspect of the program for their internship course. Each internship course is taught by a college faculty member. The faculty member and the student work to develop individual learning outcomes for the internship course. Each college credit earned equals 30 hours of work-based learning. The faculty member works in conjunction with the on-site supervisor to ensure that the student is assigned work-based tasks that will meet the specific learning outcome. The faculty member assigns the final grade for the course.

Table 2 Junior and Senior Level Courses- Presented in order they will be recommended to students

Junior and Senior Level Courses – Presented in the order they will be recommended to students	
Course Name and Credits	Learning Outcomes
ENVS 301 – Business and Sustainability Principles and Practices (5 credits)	<p>Describe multiple factors that influence the environmental impact of businesses</p> <p>Analyze the social, economic, and policy dynamics involved in both the emergence and the resolution of environmental issues related to business</p> <p>Apply sustainability frameworks to analyze interactions between business design and environmental impact</p>
BUS 340 – Logistics and Supply Chain Management (5 credits)	<p>Explain the primary differences between logistics and supply chain management</p> <p>Describe the impact supply chain decisions have on various business performance indicators</p> <p>Apply logistics and supply chain analytics techniques to a variety of business settings</p>
CBD 312 – Advanced Microbiology for the Beverage Industry (5 credits)	<p>Identify microorganisms commonly found in brewing and distilling processes</p> <p>Describe the major groups of spoilage organisms and their effects on finished craft beverages</p> <p>Demonstrate the use of appropriate equipment and materials to visualize and identify microorganisms</p> <p>Demonstrate appropriate techniques for the isolation and laboratory culture of yeasts and spoilage organisms including all appropriate safety measures</p>
ENGL& 235 – Technical Writing (5 credits)	<p>Identify main features and purposes of technical communication</p> <p>Format a variety of business documents used in professional fields</p> <p>Write in a technical form and style appropriate to audience and purpose</p> <p>Analyze the importance of interpersonal and intercultural communication within the workplace</p> <p>Analyze collaboration and problem-solving strategies for effective teamwork</p>
CBD 313 – QA/QC Instrumental Analysis (5 credits)	<p>Create and analyze data sets using a variety of methods</p> <p>Describe instruments and processes used in QA/QC for the craft beverage industry</p> <p>Perform analysis on samples using analytical instrumentation and equipment</p> <p>Interpret results from analysis and recommend plan for resolution of production issues</p>
CBD 315 – Advanced Equipment/Engineering (5 credits)	<p>Explain factors in the brewing and distilling production channels that affect product quality</p> <p>Analyze design documents to identify components that make up the craft beverage production system</p>

	<p>Apply fundamentals of equipment and engineering knowledge to design a layout, including equipment choice, for a specific space to be used for craft beverage production</p>
<p>CBD 420 – Capstone Planning & Proposal Development (5 credits)</p>	<p>Analyze current craft beverage industry trends, challenges, and opportunities</p> <p>Evaluate primary and secondary research and scholarship related to craft beverage industry businesses</p> <p>Design and present an original senior capstone project proposal that demonstrates the knowledge and skills learned while in the craft beverage program</p>
<p>CBD 410 – Craft Beverage Business Management (5 credits)</p>	<p>Explain fundamentals of craft beverage business management from planning through implementation</p> <p>Analyze production and operation needs based on planned product design</p> <p>Develop a comprehensive craft beverage business plan that incorporates legal, financial, production/safety, and human resource management information</p>
<p>BUS 360 – Advanced Product Marketing (5 credits)</p>	<p>Explain key concepts for marketing products from ideation to release</p> <p>Analyze various data sources related to consumer and business trends</p> <p>Build a marketing plan for a product or service</p>
<p>CBD 421 – Craft Beverage Capstone 1 (5 credits)</p>	<p>Document project implementation process by maintaining detailed project notes</p> <p>Use the appropriate equipment and techniques to conduct original project</p> <p>Collaborate with industry mentors to implement an original senior capstone project</p>
<p>CMST& 230 – Small Group Communication: Diversity (5 credits)</p>	<p>Perform interpersonal and intercultural skills necessary to communicate and collaborate in groups</p> <p>Use diverse cultural perspectives to address complex group conflicts</p> <p>Analyze the impact of culture and socialization on expressions of social position in small group decision making process</p> <p>Analyze how individual and structural factors contribute to inequity in professional and everyday life groups</p>
<p>ECON& 201 - Micro Economics (5 credits)</p>	<p>Identify economic principles and practices as they relate to the individual and business</p> <p>Explain the concept of scarcity</p> <p>Apply economic tools, such as demand, supply, marginal analysis and elasticity</p> <p>Analyze revenue, profit, and productivity of a business in the short run and the long run</p> <p>Analyze market competition and monopoly and the impact of government</p> <p>Explain and apply the marginal productivity theory of resource allocation</p>

	Identify and discuss market failures in our economic system
CBD 422 – Craft Beverage Capstone 2 (5 credits)	Document project implementation process by maintaining detailed project notes Use the appropriate equipment and techniques to conduct original project Collaborate with industry mentors to implement an original senior capstone project Present formal report and findings of the completed project
SOC 350 – Organizational Theory (5 credits)	Explain organizational theories Identify the major challenges in the designs of an effective organizational structure Analyze organizational structures to identify functions and dysfunctions based on existing organizational theories
PHIL 350 – Ethics in Business Management (5 credits)	Explain business ethics and corporate social responsibility Analyze ethical issues as they apply to business management Apply general ethical principles to particular cases or practices within specific business industries
<p>15 Credits of Electives will be required, allowing students to meet pre-requisites for the science courses as well as allowing them to customize their learning based on their own career ambitions.</p> <p>Electives will include:</p> <p>ACCT 234 – Accounting for Small Business Owners (5 credits)</p> <p>BUS 220 – Starting & Managing a Small Business (5 credits)</p> <p>*CBD 100 – Lab and Brew Floor Safety (2 credits)</p> <p>*CBD 105 – Survey of Raw Materials for Craft Beverage Industry (5 credits)</p> <p>CBD 130 – Sensory Evaluation (5 credits)</p> <p>*CHEM 115 – Applied Science for the Craft Beverage Industry (5 credits)</p> <p>HIST 260 – History of Fermentation: Diversity (5 credits)</p> <p>Any course designated as CBD or BUS</p> <p>*These courses are required for students that did not complete the Craft Brewing and Distilling AAS-T program at South Puget Sound Community College transferring into the BAS program from another college. These courses can be completed post-admissions.</p>	

Criteria 2

Qualified faculty.

The BAS program will build on the scientific expertise and industry experience of the current SPSCC Craft Brewing and Distilling AAS-T instructional staff. There, a five-person fulltime team – a director, an assistant director, a lead scientist and two instructional support technicians – form the program's foundation. In addition to teaching core subject matter, they provide leadership for the program's curriculum, delivery model, and adjunct instructors. Once the BAS program reaches capacity, South Puget Sound Community College plans to add a second fulltime faculty member to the core team.

Table 3 Core Instructional Team

Core Instructional Team			
Name	Degree(s) held	Industry experience	Primary role
F. Addeo	MS, microbiology MA, anthropology	Research brewer Brewery lab tech	Director, South Puget Sound Community College Craft Brewing & Distilling
C. Gustafson	Ph.D, chemistry		Faculty, applied biochemistry
FT faculty (year 3)	M.S. or higher	Brewing or distilling	To be determined

Thanks to the Craft Brewing and Distilling AAS-T program's strong community and industry support, South Puget Sound Community College has assembled a highly qualified cadre of adjunct instructional staff to teach craft beverage-making skills at both the lower- and upper-division levels. Rounding out the instructional team are scientists and business faculty who teach industry-specific chemistry/biochemistry and business applications.

Table 4 Craft Brewing and Distilling Skills

Craft Brewing and Distilling Skills			
Name	Degree(s) held	Industry experience	Primary role
A. Blonden	B,A.	Head brewer	Recipe development
A. Byers	B.A., plus certificate	Production manager	Raw materials (cidery)
M. Gardner	B.A. plus prof'l cert	Product developer	Product quality assurance
D. Hindman	M.Ed.	Brewery op. manager	Brewing skills
I. Mastrogiannis	B.A.	Distillery owner	Distilling skills
I. McLaughlin	M.S., food sciences	Quality control	Quality assurance
S. Phillips	B.A.	Quality control lead	Quality assurance
J. Richardson	B.A. plus prof'l cert	Barrelmaster	Product aging/finishing
Applied Chemistry and Biochemistry			
Name	Degree(s) held	Primary role	
J. Chen	Ph.D., chemistry	Beverage biochemistry	
E. Graham	Ph.D., zoology	Fermentation science	
M. Kirchmeier	Ph.D. biochemistry	Beverage biochemistry	
A. Napuli	Ph.D., biology	Fermentation science	
B. Valliere	M.S., food science and technology	Applied chemistry	
Business Applications			
Name	Degree(s) held	Industry experience	Primary role
L. Jean	MS, sport media	Distillery owner	Legal issues
K. Shumway	B.A., management	Brewery CFO	Business operations
A. Tenenbaum	J.D.	Food industry counsel	Legal issues
S. Welch	M.S., agribusiness	Accounts manager	Business operations

The remaining general education courses, both at the lower- and upper-division, will be developed and taught by fulltime and adjunct instructors from South Puget Sound Community College's Arts &

Communications, Cultural Studies, and Science, Engineering and Math pathways, all of whom hold master's degrees or higher.

Because the fulltime director and fulltime lead biochemist will continue to devote time to the AAS-T program, the upper-division offerings are expected to require an additional 1.33-1.66 FTEF adjunct instruction in Years 1 through 3. Once a second fulltime faculty line-item is added, the remaining adjunct effort will be contributed by the base budgets of the AAS-T program and other departments. All faculty and administrators in the core technical program meet certification requirements under applicable WACs.

Criteria 3

Admissions process

General-Responsibility for the admission to the college process rests with South Puget Sound Community College's Student Services Division. Program outreach and recruitment is a shared responsibility between the college's outreach and recruitment department and the instructional program. The baccalaureate program will not have a selective admission process. Instead students interested in this program will follow the same steps for admission to the college as follows: (1) Submit an application to South Puget Sound Community College using the Online Admissions Application Portal. (2) When the application has been processed, the students will receive an acceptance email with their ctcLink ID which will be used to activate two student accounts: a ctcLink account and a ClipperID.

Applications to the BAS program will be due no later than the last day of the quarter prior to the quarter the student wants to start the program. The program application will be available online.

The prerequisite academic credentials for admission are:

- AAS-T in Craft Brewing and Distilling from South Puget Sound Community College
- AAS or AAS-T in a related technical program such as viticulture or brewing
- An AAS or AAS-T in Business Administration (or comparable applied business program) or Associate in Business

Information Sessions

To ensure that students are fully apprised of the program's format and expectations, information sessions will be presented three times per year prior to the admission application due date (see above). The sessions will be facilitated by the instructional program's director in conjunction with a representative from South Puget Sound Community College's Advising, Career, and Transfer center to provide prospective students with a general overview of the Bachelor of Applied Science (BAS) in Craft Beverage Management and Quality Assurance. The program's weekend hybrid design, production floor and lab environments, and internship opportunities will be of particular focus.

Criteria 4

Appropriate student services plan

Both the instructional program staff and South Puget Sound Community College's Student Services Division will collaborate to support BAS students. Upper-division enrollees will have access to the

college-wide suite of student resources, along with the sense of community that comes with the program's hands-on environment, cohort design, and close interaction with faculty, staff, and industry professionals. The program budget provides a \$10-\$15,000 annual offset for additional hourly personnel in Student Services.

New Student Advising & Registration

Before new students can register for classes, they are required to complete the online Pathway Selection Survey (PaSS) and New Student Advising & Registration (NSAR) session.

In their NSAR, students will learn about campus resources, their Support Network, and how to get registered for classes.

Though BAS enrollees have already selected a career pathway, Educational & Career Planners are on staff to provide support on topics like academic planning, transitioning to upper-division work, and how to enhance college success skills. At the program site, faculty and staff provide assistance with choosing the right courses to fulfill prerequisites, meet general education requirements, secure internships, and stay on track for timely graduation.

Access Services

South Puget Sound Community College has an institutional commitment to provide equal educational opportunities for qualified students with disabilities in accordance with state and federal laws and regulations, including the Americans with Disabilities Act of 1990 (ADA), Section 504 of the Rehabilitation Act of 1973, and the Revised Code of Washington: Students with Disabilities – Core Services (RCW 28B.10.912), and Students with Disabilities – Accommodations (RCW 28B.10.914). Depending on the nature of the student's disability and how it impacts the educational experience, services and accommodations, provided on an individually determined basis may include textbooks in alternative format; note takers; readers and/or scribes for exams; braille text or e-text; use of tape recorders; large print text and handouts; extended time on exams; sign language interpreter; use of adaptive equipment/assistive technology; preferential seating (e.g. front of classroom, ergonomic chair); and real-time captioning.

Financial Aid

Although the specific financial aid needs of students in the BAS program may differ in some respects from the needs of students in traditional two-year degree programs, their needs will be handled within the Student Financial Services office. Student Financial Resources has developed easy-to-use, web-based applications for students, as well as moving the college's Emergency Funding application online. These changes will enhance the ability of the largely online BAS student population to easily access Financial Aid resources. Student Financial Resources staff will be provided with specialized training as required to help serve BAS students. South Puget Sound Community College's Student Services Division anticipates that current Student Financial Resources staff members will have the capacity to serve this population. However, staff will monitor this capacity carefully as student numbers increase over the first two years of the program's operation.

Worker Retraining

In addition to traditional aid, Worker Retraining funding will be available to BAS enrollees. Worker Retraining is a state-funded program to help recently unemployed or military discharged students retrain in a new field to re-enter the workforce. Student may qualify if they: are receiving unemployment; have exhausted unemployment within the past 48 months; have separated from the military within the past

48 months; received a lay-off notice; lost a main source of income due to spousal divorce, separation, death or disability; are out of work due to natural disaster. Students who qualify may be eligible to receive funding for up to one quarter to cover tuition and fees, books, transportation, childcare or tools. Program eligibility requires that students are enrolled in the BAS program and have one of the following circumstances: (a) currently receiving unemployment benefits (b) eligible to receive unemployment benefits (c) exhausted unemployment benefits within the past 48 months.

Counseling Services

Counseling Services are provided and available to all officially enrolled students at South Puget Sound Community College with the goal of helping students sustain their mental health, emotional well-being and resiliency. The Counseling Services program offers free, confidential services to current students, including scheduled appointments, walk-in sessions, crisis intervention services, classes and workshops. Counseling Services provides mental health counseling to support the emotional well-being and resiliency of our students. The department is staffed by licensed providers; their services are confidential and it is free-of-charge to current students. This includes scheduled appointments, walk-in sessions, crisis intervention services, and workshops.

Tutoring

Learning Support Services (LSS) supports, encourages, and empowers South Puget Sound Community College students to become independent, self-advocating, and resourceful learners through one-on-one and small group tutoring. LSS offers help with everything from general concepts to specific homework assignments. Given the BAS degree's weekend hybrid model, it is anticipated that most of its students will take advantage of tutoring, when needed, either online or with cohort peers onsite.

Diversity, Equity, and Inclusion

In shaping the BAS proposal, industry leaders stressed the need both to increase the diversity of beverage-making professionals and to promote equitable success for everyone who takes an interest in the field. At South Puget Sound Community College, the A. Barbara Clarkson Diversity, Equity & Inclusion Center (DEIC) is positioned to play a key role in meeting those objectives. The DEIC is committed to supporting the college mission to advance equity and embrace diversity. All students are welcome. Visitors to the have the opportunity to engage with a diverse group, be part of an inclusive culture, and get support for their own educational goals and development.

In support of the BAS initiative, the Diversity, Equity & Inclusion Center will be a strong advocate for diversity and inclusion. In addition to direct student support, the center will provide expertise and leadership on diversity and inclusion related matters, identify strategies to enhance inclusive experience of students, and provide resources and direction for infusing diversity into the curriculum.

Personal Support Center

South Puget Sound Community College's Personal Support Center (PSC) is a one-stop support space that connects students with both college and community resources that they may need. Such resources include: childcare & parent support; food; housing & basic needs; technology; and transportation. The PSC's services will be available to BAS students.

Library Resources

The primary mission of the South Puget Sound Community College Library is to support teaching and learning. In all its programs, services and collections, the library provides robust, relevant information resources, instruction and support for students, faculty, staff, administrators, and others to ensure quality teaching and learning. South Puget Sound Community College's librarians are active faculty members who regularly teach students information competency skills online and in the classroom. If approved, the craft beverage BAS will be the first baccalaureate degree at the college..

The college expects that a new BAS program will require additional library resources. Therefore, the budget proposes an additional \$7,000 added to the library budget on the first year of the BAS program and an additional \$5,000 in subsequent years to maintain library resources to support and sustain the program. The institution's librarians are ready to meet the NWCCU standards on libraries for BAS programs, as the following assessment makes clear:

Table 5 NWCCU BAS Degrees Library Services Rubric and Pierce College BAS-ABM

NWCCU BAS Degrees Library Services Rubric and Pierce College BAS-ABM	
Standard	Joint Library and BAS Strategies
NWCCU Standard 2.C.6: Faculty with teaching responsibilities, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.	BAS faculty work with librarians to identify, integrate, and scaffold appropriate library information resources in project-based learning assignments and other outcomes-based learning activities.
NWCCU Standard 2.E.1: Consistent with its mission and core themes, the institution holds or provides access to library and information resources with an appropriate level of currency, depth, and breadth to support the institution's mission, core themes, programs, and services, wherever offered and however delivered.	South Puget Sound Community College's libraries house approximately 27,000 print volumes and approximately 1,600 films on DVD, and offer over 90 online databases that feature eBooks, articles, and streaming media. BAS instructors work with librarians to identify and secure appropriate information resources to support upper division courses.
NWCCU Standard 2.E.2: Planning for library and information resources is guided by data that include feedback from affected users and appropriate library and information resources faculty, staff, and administrators.	Librarians regularly engage in data-driven review of library materials to provide current, secure, relevant, and accessible information resources that support appropriate levels of rigor across programs. The library will integrate the new BAS in these processes.
NWCCU Standard 2.E.3: Consistent with its mission and core themes, the institution provides appropriate instruction and support for students, faculty, staff, administrators, and others (as appropriate) to enhance their efficiency and effectiveness in obtaining, evaluating, and using library and information resources that support its programs and services, wherever offered and however delivered.	South Puget Sound Community College librarians support the current CBD program via scheduled-direct instruction and real-time support of effective, efficient, and responsible use of library and information resources. Librarians will work closely BAS instructors to select key databases to support bachelor-level curriculum as well as develop specialized Library Research Guides that provide relevant industry specific information.

NWCCU Standard 2.E.4: The institution regularly and systematically evaluates the quality, adequacy, utilization, and security of library and information resources and services, including those provided through cooperative arrangements, wherever offered and however delivered.	As good stewards of state funds, the library faculty regularly review cost and use statistics for all subscription services. The library faculty work with subject faculty such as those in BAS-CBD to determine when to retire or add a new subscription. In addition, our systems librarian and library technical services staff work in tandem with IT on the secure delivery of these subscription services. Non-subscription print materials are reviewed in a similar data-driven way to determine their value to the collection based on accuracy, age, and use.
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The library has carefully considered the BAS program's weekend hybrid design in its planning. As the following table illustrates, many – if not most – library services are available 24/7. Also, students can chat with a librarian after hours via a web portal.

Table 6 Key Databases available online and Research and Help Guides available online

Key Databases available online
<p>ProQuest Research Library or EBSCOhost Academic Search Complete for newspaper, magazine, and scholarly journal articles.</p> <p>CQ Researcher or Gale Opposing Viewpoints in Context for controversial issues or current events.</p> <p>Gale Virtual Reference Library or CREDO Reference for encyclopedia entries.</p> <p>WOIS for career research and planning.</p> <p>Films on Demand or Kanopy for educational videos</p> <p>EBSCO eBooks for eBooks you can read on your computer or mobile device.</p> <p>Global Road Warrior or ProQuest CultureGrams for country and culture information.</p> <p>EBSCOhost Business Source Complete or ProQuest ABI Inform: Trade & Industry for business and industry topics and news.</p>
Research and Help Guides available online
<p>Library research guides by subject, class, or area of research need</p> <p>Alphabetical list of more than 90 databases on a variety of subjects</p> <p>Get research help from librarians in person or online</p> <p>Cite sources in MLA or APA</p> <p>Finding and evaluating scholarly journals</p> <p>How to sign up for a free New York Times online subscription from the library</p>

Criteria 5

Commitment to build and sustain a high-quality program.

As noted above, the BAS program builds on the foundation of South Puget Sound Community College's well-established AAS-T in Craft Brewing and Distilling, which already enjoys substantial community and industry support.

At capacity, the BAS program will admit a new cohort of 20 upper-division students each year. South Puget Sound Community College's AAS-T experience suggests that a year-to-year retention rate of 90 percent is reasonable, yielding a combined enrollment projection of 38 third- and fourth-year students, total, at capacity. Projections for Years 1 through 3 are conservative, with cohort sizes expected to grow gradually from an initial 12 members to the target 20 over that period.

Those projections and their associated revenues appear in the following table:

Model Enrollment and Associated Revenue Projections					
<u>Anticipated cohort enrollments</u>					
	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Cohort 5					20
Cohort 4				20	18
Cohort 3			20	18	
Cohort 2		15	13		
Cohort 1	12	10			
	12	25	33	38	38
<u>Anticipated tuition and fee revenues</u>					
Tuition	6,965	7,104	7,246	7,391	7,539
SPSCC fees*	76	78	79	81	82
Program fees	300	306	312	318	325
	7,341	7,488	7,638	7,790	7,946
TOTAL	\$ 88,092	\$ 187,196	\$ 252,040	\$ 296,032	\$ 301,953

*South Puget Sound Community College local fees include technology (\$50), building (\$6), and matriculation (\$20).

Based on 2021-22 planning figures and assuming a 2% inflation rate, annual expenditures are expected to stabilize at just under \$300,000 by Year 4, with tuition and fees generating a modest surplus (< \$5,000) at that level.

The BAS start-up budget includes full funding of the lead biochemistry faculty position, as well as line items to offset impacts on student services staffing and library materials. From local reserves, the college has set aside a \$50,000 line-item to offset Year 1's anticipated deficit, with an additional \$50,000 held for contingencies. By Year 3, revenues will begin to fund an equipment reserve and a 5-percent indirect return to business operations. Year 4 anticipates a conversion of 1.0 FTEF from part-time faculty to a fulltime appointment.

The budget below provides detail on those projections. By way of context, the figures reflect only the added costs associated with delivery of the BAS curriculum. The AAS-T program's fulltime director, support personnel, and operating costs are already integrated into South Puget Sound Community College's base budget and, therefore, not included here.

Model Expenditure Budget and Anticipated Suprplus/Deficit					
F/T faculty	70,000	71,400	72,828	148,500	151,470
P/T faculty	-	35,000	55,000	-	-
StServcs staff	10,000	12,500	15,000	15,300	15,606
Supplies	20,000	30,000	40,000	45,000	45,000
Library mat'l	7,000	5,000	5,000	5,000	5,000
Equipment	-	-	10,000	15,000	17,500
F/T ben @33%	23,100	23,562	24,033	49,005	49,985
P/T ben @25%	-	8,750	13,750	-	-
Indirect @5%	-	-	12,602	14,802	15,098
TOTAL	\$ 130,100	\$ 186,212	\$ 248,213	\$ 292,607	\$ 299,659
SURP/DEF	\$ (42,008)	\$ 984	\$ 3,827	\$ 3,426	\$ 2,294

The BAS program will occupy South Puget Sound Community College's Craft Brewing and Distilling Center, a 10,903-square foot facility built with support from the Washington Department of Commerce, the City of Tumwater, and industry partners. Opened in 2020, the center was designed, constructed, and equipped to meet the most current standards for classrooms, science labs, and beverage-making facilities. The production-floor equipment, in particular, was selected for long-term durability. Even so, the college has earmarked its own beverage sales as a future revenue stream for eventual updating of lab and production infrastructure.

Criteria 6

Program specific accreditation.

South Puget Sound Community College will not seek specialized program accreditation for the BAS in Craft Beverage Management and Quality Assurance. The college has informed its Northwest Commission on Colleges and Universities (NWCCU) liaison of the BAS initiative and is prepared to submit the required Substantive Change request to NWCCU once SBCTC approval is obtained.

Criteria 7

Pathway options beyond baccalaureate degree.

Graduates will have access to Masters of Business Administration (MBA) programs at Whitworth University, City University, University of Phoenix, and Western Governor's University. As South Puget Sound Community College continues to grow the Bachelor of Applied Science (BAS) in Craft Beverage Management and Quality Assurance program, more opportunities of study at a master's level will be researched and shared with students as appropriate.

Criteria 8

External expert evaluation of program.

Generally, our reviewers' comments were complimentary and supportive of our proposal. Still, the program received useful, constructive criticism from the reviewers, both via the formal reviewer feedback rubric and from informal communication via letters and emails as part of the review process. One reviewer, in an earlier communication, requested more industry-specific language in one of the degree-learning outcomes so it would not be confused with a college-wide ability. The suggestion will be presented to the program's advisory committee when it meets next fall and, if approved, will go through the South Puget Sound Community College's program outcome approval process. Another suggestion was related to clarifying the goals and structure of the internship class required for program completion. As a result, the revised proposal incorporates details about that element of the program. Lastly, one of the reviewers commented that students need a clear tool to know which classes to enroll into each quarter; thus the program will develop a program pathway map to be used as an advising tool for our students and educational and career planners. This program pathway map will go through the internal approval process used by the college for all program pathway maps.

Please see Appendix A for documents submitted by the reviewers.

APPENDIX A

Applied Baccalaureate External Review Rubric

College Name:	South Puget Sound Community College	BAS Degree Title:	Craft Beverage Management and Quality Assurance
Reviewer Name/ Team Name:	Aaron Putzke	Institutional or Professional Affiliation:	Whitworth University
Professional License or Qualification, if any:	PhD, Biochemistry and Molecular Biology Program Director, Brewing Science and Operations	Relationship to Program, if any:	n/a
Please evaluate the following Specific Elements			
a) 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?		

	<p>Comment</p> <p>With the continued growth of craft brewing and distillation industry, even though the pandemic, combined with the success of the SPSCC AAS program in Craft Brewing and Distilling, the establishment of a BAS in this area is timely and relevant to the job market. The industry needs people who are trained in various aspects of fermentation and business so that they can relieve the pressure points at individual breweries and distilleries. Many business owners are frustrated by the typical timelines involved in training someone who gets hired with not experience. This program will allow alumni to feel confidence as they begin jobs in the industry and will give owners more flexibility to not just stabilize their business but expand without having to spend precious resources with long training cycles. The location in Thurston County, and close proximity to the craft brewing corridor between Seattle and Oregon will provide much needed talent with the proper skills to enter the industry. The program has been designed based on best practices (pedagogy and industry skills), including critical and continued program assessment to ensure sustainability into the future. Whether seeking to work in a large brewery or a smaller, craft brewery, students who complete this four-year degree will be competitive in landing the jobs they desire in the brewing and distillation industry.</p>
b) Degree Learning Outcomes	<p>Do the degree learning outcomes demonstrate appropriate baccalaureate degree rigor?</p> <p>Comment</p> <p>It is clear from the learning outcomes that this program is student centered – from the general education courses ranging from developing communication skills to giving historical context to fermentation, business development and the hands-on, evidence-based fermentation science courses. It is encouraging to see that students will be pushed into spaces of creativity and innovation – knowing that how they contribute to moving the industry forward will be important in helping the industry thrive. The learning outcomes that focus on the importance of understanding and complying with the complex regulatory nature of the industry – from safety to licensing.</p> <p>Importantly, ethical considerations are integrated into the curriculum at multiple points to ensure that students will be reflecting on their responsibilities from safety to workplace equity, from business practices to building community. The credit load and distribution of lower to upper division courses aligns this program well with the standards and expectations of a four-year degree. Overall, this program offers a well-rounded, rigorous pathway to understanding critical aspects of the craft beverage industry.</p>
c) Curriculum Alignment	<p>Does the curriculum align with the program's Statement of Needs Document?</p>

	<p>Comment</p> <p>The program curriculum clearly aligns with the criteria laid out in the Statement of Needs document. From student success to innovation and development – the courses offered in the curriculum are relevant and integrate well with the statewide goals for economic development. Another important aspect of the curriculum is the manner in which it springboards students from a technical program and moves them into advanced theory in both science and business. The Statement of Needs articulates the critical nature of complementing fermentation practices with application of management skills. So many brewers and distillers struggle early because they do not understand the complexities of running a business – from supply chain to regulatory policies to marketing. The curriculum in this program offers students layered exposure to relevant topics that will help them understand best practices – both in fermentation and business.</p> <p>The curriculum in the BAS proposal is also a combination of meeting the industry need while listening to what students want to do with their future. SPSCC saw a desire for a majority of students in the AAS program who wanted to continue on with their education in this area. The program has done an excellent job of assembling courses that are not only meeting Higher Education and Craft Beverage industry standards, but they have included courses that students know will be the most helpful as they move into the job market after finishing their degree.</p> <p>Finally, the intentionality of increasing diversity, equity and inclusion in meaningful ways is clear in the curriculum and value statements as they align with the Statement of Needs document. These are challenging issues that cannot be solved easily and take tremendous effort. The commitment to creating an inclusive environment for all students, while also educating them to do the same when they enter the workforce, shows that SPSCC wants to be part of creating a better society through its students – the future of the industry.</p>
d) Academic Relevance and Rigor	<p>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?</p>

Comment

The core courses, including those taken as part of the AAS at SPSCC or when transferring from another institution, are important foundational courses from two perspectives: 1) the fermentation-based courses educate students on concepts that are critical to success when progressing to upper division courses and 2) the General Education courses offer a range of introductory opportunities from improving communication skills to understanding the context of fermentation throughout human history, while also giving them basic understanding of economics, law and sustainability. These core courses meet the broader needs of employers in that skills such as communication, collaboration and understanding context are necessary in creating a successful work environment. General understanding of concepts, even when outside someone's specific job description, are helpful in building bridges that lead to higher levels of collaboration and success for the company.

The upper division courses are well organized to guide students through the main areas of fermentation science (including relevant laboratory and brewery operation skills) as well as giving them a deeper understanding of how to build a successful business model around a craft beverage – everything from creating the beverage to logistics of running a business to marketing the product. The relevance of exposing students to important areas such as quality control/assurance and equipment engineering is what employers in this industry want to see. Driving the outcomes through project-based learning is a valuable tool that shows students how to apply what they know – rather than just knowing facts.

The level of rigor offered through this program is evident in the range of courses that are informed by the learning outcomes. The expectations of consistently having students apply what they learn – either immediately in a course – or over time in a capstone project – is following the best practice that has shown repeatedly that students learn best when they are asked to use what they know rather than repeat what they have memorized. Because the program is based on this pedagogical strategy – employers will immediately see that students coming from this program will be able to manage projects and trouble shoot issues effectively – which is something that is highly valued in the craft beverage industry.

The fact that they have built meaningful and regular assessment into the program means that they will be able to adapt and improve, not just early on, but also over long periods of time. This will be an advantage to the program as those programs that are most adaptable are the ones that tend to be more successful over time.

Are the general education requirements suitable for a baccalaureate level program? Do the general education courses meet breadth and depth requirements?

e) General Education Requirements	<p>Comment</p> <p>Although addressed somewhat in the previous section, the General Education requirements for this program are appropriate for a baccalaureate level program in both breadth and depth. Ensuring that all students are up to speed regarding the communication, math and science concepts/skills is important for both success in upper division courses but also helping them understand the broader context for more challenging topics. Students often want to dive into what they see as transferable knowledge and skills, which, if allowed, merely trains people who are knowledgeable in a narrow scope but struggle with seeing the big picture. Showing them that it's important to understand the background information that led them to the more challenging topics is critical to success later on. Since the degree is has more technical and professional background (as opposed to a liberal arts context), the program shows its strength in maintaining breadth of topics while also keeping them well- connected and relevant to the learning outcomes for job placement goals post-graduation. It is the job of the program to help students connect the pieces together over time – and this program has done an excellent job with the General Education courses – both in range of topics and timing of when students take these courses during their time in the program.</p>
f) Preparation for Graduate Program Acceptance	<p>Do the degree concept, learning outcomes and curriculum prepare graduates to enter and undertake suitable graduate degree programs?</p> <p>Comment</p> <p>Since the program is organized around learning outcomes – with courses designed to meet those outcomes and train students in the most relevant topics for this field of study – students completing this degree program would be well suited to succeed in graduate level programs – whether more study in fermentation science or business. The flow of the curriculum follows a pattern that is common in baccalaureate programs that prepare students for graduate study. It seems clear that completion of this degree program would make alumni of this program very competitive for a variety of graduate programs, especially if combined with some industry work experience.</p>
g) Faculty	Do program faculty qualifications appear adequate to teach and continuously improve the curriculum?

	<p>Comment</p> <p>For a program this size, SPSCC has assembled a highly qualified list of faculty that will participate in fermentation science, brewing/distillation, and business. The combination of academic faculty trained at the graduate level with those who have deep industry experience, makes for a powerful instructional staff that will strive to meet the demands of the curriculum, students and employers. Another advantage of the combination of faculty is the ability of them to collaborate in how they teach concepts from hypothetical to real-world application. Moreover, because of the experience of the instructional staff, combined with the assessment plan for the BAS curriculum, the program will improve over time – partly due to assessment data – but also because of changes in the industry. This relates to the previous comment about a strength of the program being the built-in adaptability.</p>
h) Resources	<p>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?</p>

	<p>Comment</p> <p>The college has shown that they want this program to succeed as they have committed to resources that will translate to student success, both in the beginning and as the program grows.</p> <p>With the program director and biochemist instructors needing to contribute to both the AAS and BAS programs, the forethought of additional faculty required for the upper division courses in the BAS demonstrates commitment by the college and administration to this program regarding future growth. The fact that the college has already set aside funds for the first year, with contingency funds, understanding that it will take a few years to offset costs and begin seeing revenue further shows the commitment of the institution to the expansion into a four-year program that will be set up for long term success.</p> <p>Resources have also been allocated for general student success programs that students will have access to outside of this BAS program. This is critical to make sure that students feel supported during their time in the program – whether for academic or mental health support. The academic programs that will offer students extra help outside of classes (e.g., tutoring, peer mentoring, etc.) will create a community of learners that can support each other beyond the instructional staff. Building cohesion among the students in the program will increase retention and completion rates for the program and further help recruitment as program alumni highlight the reputation of the program in the industry.</p> <p>The program has been judicious in securing additional funds for library resources as well, which will be important for students to have access to the rich array of database information already assembled regarding the craft beverage industry. Additionally, more resources allow the library staff to create and enhance current information systems to specifically help students in the proposed BAS.</p>
i) Membership and Advisory Committee	<p>Has the program received approval from an Advisory Committee? Has the program responded appropriately to it?</p> <p>Advisory Committee's recommendations?</p> <p>Comment</p> <p>Although I cannot comment on recommendations or approval from the Advisory Committee as I have not seen those materials, the proposal shows that the program has set up an advisory committee that will review the program to make recommendations on a three times per year. This is an important step that will ensure the program is meeting the rigorous educational standards with opportunities to improve through constructive criticism from different angles – academics and industry. External reviews are a critical part of program success over time and especially important early in the life of a new program.</p>
	Please summarize your overall assessment of the program.

<p>j) Overall assessment and recommendations</p>	<p>Comment</p> <p>The SPSCC BAS in Craft Beverage Management and Quality Assurance is an outstanding model of a baccalaureate program that balances academic learning with real-world application to prepare students entering this industry. The fact that the program is organized around learning outcomes shows this program understands the value of effective learning strategies that result in students who will be more marketable while finding jobs after completion and will be more effective in the job once placed.</p> <p>The organization from lower division to upper division of general education courses strikes a meaningful balance of broad skills that employers seek while laying the foundation of knowledge that prepare students to succeed in upper division courses that will require deeper level thinking and higher-level application. The suggested order of courses for students clearly lays out a path guides students into synthesis with project development and problem solving through individual and collaborative work, both of which are critical for success in the craft beverage industry. The overall credit load for the program is in the accepted range for a four-year degree that provides the proper breadth and depth that prepares students for future study or work in that specific discipline.</p> <p>The combination of faculty from science to business, modern facilities for teaching brewing and distillation, as well as commitment to student support is remarkable for a campus that is still growing. The collaborative effort in developing this program as an extension of the successful AAS-T program shows the forethought and innovation it takes to succeed as more students are choosing non-traditional programs in higher education to prepare them for a wider variety of careers.</p> <p>One aspect that it would be helpful to have more detail about is the internship placements for the program. It is referred to in the description of student information sessions and registration. But there is no description of the requirement (how placements are made, how many hours are required, how students are evaluated during the internship by the site supervisor, etc.). It is clear that the program wants to align with academic and industry best practices by giving students experiences in the craft beverage industry, but more articulation on that would be useful in determining the effective integration of the internship into the overall BAS curriculum.</p> <p>Overall, this program has been designed with excellence in mind regarding pedagogical standards, assessment and student experience. By prioritizing students through learning outcomes and hands-on experience in the outstanding facilities, SPSCC is maximizing student success in learning and job placement upon completion of the program. The coursework, including laboratory experiences, are well aligned with industry expectations and needs regarding the preparation necessary to be competitive on the craft beverage job market. The college is</p>
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utilizing existing infrastructure with coursework, instructors and students support, while also dedicating funds for additional faculty and student success into the future. The commitment to the program's success is clear from top to bottom, with all aspects of program design and implementation being well developed – anticipating as much as possible to remain adaptable through periods of growth as the program gains momentum over time. This BAS program will be an excellent addition to the college, and an important expansion of the AAS-T program that has already seen success. The unique nature of the program, combined with a growing industry, will maximize enrollments due to demand and growth due to job placements and alumni success into the future.

One aspect that it would be helpful to have more detail about is the internship placements for the program. It is referred to in the description of student information sessions and registration. But there is no description of the requirement (how placements are made, how many hours are required, how students are evaluated during the internship by the site supervisor, etc.). It is clear that the program wants to align with academic and industry best practices by giving students experiences in the craft beverage industry, but more articulation on that would be useful in determining the effective integration of the internship into the overall BAS curriculum.

Overall, this program has been designed with excellence in mind regarding pedagogical standards, assessment and student experience. By prioritizing students through learning outcomes and hands-on experience in the outstanding facilities, SPSCC is maximizing student success in learning and job placement upon completion of the program. The coursework, including laboratory experiences, are well aligned with industry expectations and needs regarding the preparation necessary to be competitive on the craft beverage job market. The college is utilizing existing infrastructure with coursework, instructors and students support, while also dedicating funds for additional faculty and student success into the future. The commitment to the program's success is clear from top to bottom, with all aspects of program design and implementation being well developed – anticipating as much as possible to remain adaptable through periods of growth as the program gains momentum over time.

This BAS program will be an excellent addition to the college, and an important expansion of the AAS-T program that has already seen success. The unique nature of the program, combined with a growing industry, will maximize enrollments due to demand and growth due to job placements and alumni success into the future.

Reviewer Bio or Resume

Aaron Putzke has a BS in Chemistry from Pepperdine University, MS in Biochemistry from DePaul University, and a PhD in Biochemistry and Molecular Biology from the University of California at Santa Barbara. He was a post-doctoral fellow at the Fred Hutchinson Cancer Center in Seattle, WA. Before going to graduate school, he worked at a small start-up biotechnology company in southern California. He has been in academics for 13 years and is a Professor and Department Chair of Biology at Whitworth University (a primarily undergraduate institution in Spokane, WA), where his main focus is on molecular biology, genetics and biotechnology (co-teaching with faculty in the School of Business). He has been active in publishing grant funded research throughout his career working with undergraduate students.

Dr. Putzke is also the Director of the Brewing Science and Operations program at Whitworth which he designed in collaboration with local brewers to develop a learning outcomes-based curriculum combining fermentation science and business courses, hands-on experience through Whitworth's professional brewing facility, and a required internship to prepare students to enter the craft brewing industry. He is a member of the Master Brewers Association of the Americas (MBAA) and the American Society for Brewing Chemists (ASBC).

Dr. Putzke has extensive experience with external program reviews for small and large institutions of higher education and is the program review coordinator at the national level for the Council on Undergraduate Research. He has been the chair of multi-year, campus wide efforts in General Education curriculum redesign and implementation. Outside the university Dr. Putzke is currently the Board President for the non-profit organization, Northwest Association for Biomedical Research (NWABR) based in Seattle, WA.



Frank Addeo
Director of Craft Brewing and Distilling South Puget Sound Community College

Dear Mr. Addeo, July 7, 2022

I am writing to enthusiastically support your proposal to offer an accredited, four-year Bachelor of Applied Science degree in Craft Beverage Management and Quality Assurance. The excellent reputation that your two-year program Craft Brewing and Distilling has established in the Pacific Northwest, and the strength of your relationships with program partners, has set the stage for the expansion to a more comprehensive program.

A major strength of the program design is that it starts with students first. Using best practices in pedagogy to establish rigorous student learning outcomes followed by comprehensive assessment will start the degree program on the most effective track for students to succeed and allow room for refinement in the future. Utilizing your highly qualified faculty who understand the importance of student learning outcomes and assessment will enhance the long-term success of the four-year program.

Being at a comprehensive university that values the liberal arts, I appreciate that you have designed the curriculum for this degree to include not just fundamental knowledge in areas such as writing and math, but also philosophy and history. Providing students with a well-rounded, ethical framework helps put more applied knowledge into context, ultimately leading to well-educated people who make positive contributions in both business and society.

The second stage of the program provides a challenging and engaging pathway in upper division courses for students to build deeper knowledge and practical experience in a manner that will prepare them well for various aspects of the craft beverage industry. The integration of innovation and adaptation within the curriculum will also help students understand the importance of being lifelong learners regardless of whether they choose to use their degree in brewing or distillation, quality control, designing equipment or sales and marketing.

Although we do not offer graduate programs in areas such as Biology or Chemistry at Whitworth, students with a completed degree from an accredited program such as yours would be very competitive for our business-oriented graduate level programs such as the Master of Business Administration. As noted above, one of the reasons would be the rigorous, well-rounded approach in the curriculum design for the four-year program. Additionally, the balance of understanding processes from fermentation to manufacturing and supply chain (and more) is well suited to meet the educational standards for those pursuing careers in the craft beverage industry. Finally, the interdisciplinary aspect of the curriculum



offers an advantage over many four-year degree programs in that it clearly demonstrates the importance of interdependence on collaboration and communication in problem solving – skills highly sought by employers.

I am excited to see SPSCC proposing a four-year Bachelor of Applied Science degree in Craft Beverage Management and Quality Assurance. The rigorous curricular design, based on best practices in pedagogy, student learning outcomes and meaningful assessment, will present an excellent program that prepares students well for the expanding craft beverage industry, as well as potentially enrolling in graduate programs to further their career success.

Sincerely,

A handwritten signature in black ink, appearing to read "Aaron Putzke", with a stylized flourish at the end.

Aaron Putzke, Ph.D.
Professor and Chair, Department of Biology Director, Brewing Science and Operations Program
Whitworth University
aputzke@whitworth.edu 509-777-4822

Applied Baccalaureate External Review Rubric

College Name:	South Puget Sound Community College	BAS Degree Title:	Bachelor of Applied Science in Craft Beverage Management and Quality Assurance
Reviewer Name/ Team Name:	Emily Ritchie	Institutional or Professional Affiliation:	Northwest Cider Association Executive Director
Professional License or Qualification, if any:	Certified Cidermaker	Relationship to Program, if any:	None
Please evaluate the following Specific Elements			
a) 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?		
	Comment Yes the degree program is relevant to the Northwest cider industry and will lead to job placement.		
b) Degree Learning Outcomes	Do the degree learning outcomes demonstrate appropriate baccalaureate degree rigor?		
	Comment Yes		
	Does the curriculum align with the program's Statement of Needs Document?		
c) Curriculum Alignment	Comment It appears there is no Statement of Needs document included.		
d) 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?		

Applied Baccalaureate External Review Rubric

	<p>Comment</p> <p>This program looks like it sets up a student (very well) to own a business making craft beverages rather than geared towards an employee of a craft beverage business. I assume the practical making experience comes in the AAS courses. The upper level courses are relevant to the industry.</p>
e) General Education Requirements	<p>Are the general education requirements suitable for a baccalaureate level program? Do the general education courses meet breadth and depth requirements?</p> <p>Comment</p> <p>Yes. I would like to see a mentorship program included in this so that students can gain network contacts and learn about various beverage companies in the PNW.</p>
f) Preparation for Graduate Program Acceptance	<p>Do the degree concept, learning outcomes and curriculum prepare graduates to enter and undertake suitable graduate degree programs?</p> <p>Comment</p> <p>I do not know. I'm not sure who would need a graduate program after preparing to be a craft brewer. The application leaves this open with "TBD" ending sentences on this topic, except saying that an MBA is possible which I agree with.</p>
g) Faculty	<p>Do program faculty qualifications appear adequate to teach and continuously improve the curriculum?</p> <p>Comment</p> <p>Yes. I would like to see at least two faculty with cider industry knowledge. There is a strong need for well qualified cider professionals and this program could really fill this gap.</p>
h) Resources	<p>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?</p> <p>Comment</p> <p>The proposal explains that the current library does not have resources for the proposed program but has allocated \$12,000 for the additional library resources. I hope the college will consider purchasing data sets such as from Nielsen or IRI so students can understand the sales data for craft beverages in the area and learn to read the data. I anticipate this data will cost more than what is allotted so suggest an increase here.</p>

Applied Baccalaureate External Review Rubric

i) Membership and Advisory Committee	<p>Has the program received approval from an Advisory Committee? Has the program responded appropriately to it?</p> <p>Advisory Committee's recommendations?</p> <p>Comment</p> <p>yes</p>
j) Overall assessment and recommendations	<p>Please summarize your overall assessment of the program.</p> <p>Comment</p> <p>This program looks like it sets up a student very well to own a business making craft beverages. The NW Cider industry is lucky to have this program here in our region.</p>
<p>Reviewer Bio or Resume</p> <p>Evaluator, please insert a short bio here: Executive Director of the Northwest Cider Association (NWCA). Together with 90+ cideries in the Pacific Northwest, we're growing the category from niche to mainstream. NWCA has 3 specific goals to achieve our mission: a) Promote NW cider to increase demand, b) Empower cidery members and c) Encourage, provide training and support NW cideries' production of high quality cider. Emily is the visionary that makes this happen through strategy and hard work. Through Emily's efforts, NWCA envisions the Pacific Northwest is at the heart of the craft cider movement with a vibrant, collaborative industry where anyone can share in the success and joy of cider.</p>	

Applied Baccalaureate External Review Rubric

College Name:	South Puget Sound Community College	BAS Degree Title:	Craft Beverage Management and Quality Assurance
Reviewer Name/ Team Name:	Eric Graham	Institutional or Professional Affiliation:	Central Washington University
Professional License or Qualification, if any:	Director of Craft Brewing Program	Relationship to Program, if any:	Previous adjunct co-lecturer for one SPSCC course: CBD 206 Bev. Chem/Biochem (QC/QA) Winter 2020.
Please evaluate the following Specific Elements			
a) Concept and overview	<p>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?</p> <p>Comment</p> <p>Current demand for Craft Brewing professionals, and for those with knowledge of the field, continues to be strong and the field offers a diverse range of potential employment. Based on our own, recent CWU Craft Brewing graduates, nearly 100% found immediate placement in local or regional jobs in the craft brewing industry. It does not appear that our regional situation is different from the national demand. The concept of a BAS in Craft Beverage Management and Quality Assurance is both relevant and appropriate for such current demands and should be instrumental in placing individuals in brewing-related jobs.</p> <p>I am not familiar with the accepted academic standards for Management, but Quality Assurance jobs in the craft brewing industry require skills that would be obtained by students completing this BAS program (see my comments below).</p>		
	Do the degree learning outcomes demonstrate appropriate baccalaureate degree rigor?		

Applied Baccalaureate External Review Rubric

b) Degree Learning Outcomes	<p>Comment</p> <p>The proposed BAS clearly demonstrates baccalaureate-level rigor and should easily meet accreditation requirements. The proposed BAS learning outcomes appear solid and have been carefully designed to address advanced production skills and quality assurance, as well as business management skills. The learner outcomes associated with the Quality Assurance aspect of the degree align with similarly rigorous learner outcomes for the CWU 4-year BS degree in Craft Brewing. SPSCC has updated many of the BAS learner outcomes with much-needed ethical and environmentally responsible business practices along with sustainability principles and practices, which provides a model for our regional academic institutions.</p> <p>Although my area of expertise does not include Management, similar learner outcomes within the proposed BAS occur in the CWU Food and Agribusiness Management and Marketing Minor. The directors of these programs have collaborated with the Craft Brewing Program to provide these business- and management-focused classes, beyond the CWU 4-year Craft Brewing degree in order to address a need in the industry for such graduates.</p> <p>Thus, the proposed BAS learner outcomes associated with Management is on-par with similar, high-quality well-thought-out programs operating at CWU.</p>
c) Curriculum Alignment	<p>Does the curriculum align with the program's Statement of Needs Document?</p> <p>Comment</p> <p>One area of need, identified by the SPSCC Dean of Social Science and Business, is focused on the scientific testing (QA/QC) elements of the craft beverage industry. This BAS in Craft Beverage Management and Quality Assurance addresses this need and clearly spans a range of essential skills. Indeed, The BAS scientific center is firmly established in fermentation science, foundational to brewing, distilling, winemaking, and other food technologies. The proposed BAS should build on the technical skills that SPSCC students get within their Craft Brewing & Distilling Associate in Applied Science - T program and meet the identified need in the QA/QC realm.</p>
d) Academic Relevance and Rigor	<p>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?</p>

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	<p>Feedback from the employers of our own CWU graduates, and information gathered from meetings with regional industry experts (e.g., the 2022 Washington Excellence in Liquid Arts meeting) have indicated that student experience with laboratory techniques and advanced equipment and engineering are desirable in the industry and student with these skills are well-prepared for entering the workforce at advanced levels. As examples to which I can address, two classes within the proposed BAS specifically address such employer demands: CBD 312, Advanced Microbiology for the Beverage Industry, and CBD 315, Advanced Equipment/Engineering. These classes share similar student learner outcomes with CWU B.S. degree courses that have provided our CWU students the “academic edge” that continues to impress our industry employers. Working knowledge in the university laboratory with microorganisms commonly found in brewing and distilling processes and hands-on work with components that make up the craft beverage production systems are skills that translate directly to employment-related tasks. As such, the proposed BAS is clearly focused on providing rigorous academic training for students that are specifically relevant to desirable, and well-paying, aspects of employer needs and demands.</p>
e) General Education Requirements	<p>Are the general education requirements suitable for a baccalaureate level program? Do the general education courses meet breadth and depth requirements?</p> <p>Comment</p> <p>I am not an expert on general education requirements; however, the associated general education components of the proposed BAS align quite strongly with the CWU general education requirements for our Craft Brewing B.S. students. As such, it is my impression that the SPSCC BAS general education requirements are not only suitable for a baccalaureate level program but also meet the breadth and depth requirements of both the SPSCC and CWU programs.</p>
	<p>Do the degree concept, learning outcomes and curriculum prepare graduates to enter and undertake suitable graduate degree programs?</p>

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f) Preparation for Graduate Program Acceptance	<p>Comment</p> <p>There are few craft brewing graduate degree programs in the US and I am not familiar with their programs. Preparation for entering any graduate degree program, particularly in applied fields such as craft brewing and distilling, requires not just academically rigorous undergraduate courses, but extensive real-world experience. The first component, rigorous undergraduate courses, will be met by SPSCC within their proposed BAS program. The BAS should be sufficient to prepare students wishing to subsequently gain the required real-world experience needed before entering a Masters or Ph.D. program in the craft beverage industry.</p>
g) Faculty	<p>Do program faculty qualifications appear adequate to teach and continuously improve the curriculum?</p> <p>Comment</p>
	<p>I was fortunate to have been able to co-teach CBD 206, Beverage Chemistry/Biochem (QC/QA), at SPSCC during the Winter 2020. During this time, I was introduced to top-notch faculty, committed to teaching and improving upon SPSCC courses. The academically rigorous curricula that I was presented with, and the program faculty who I met and interacted with, were more than qualified to teach at SPSCC in the Craft Brewing & Distilling program. I have no doubts that other instructors and courses within the program and proposed BAS are as exceptionally suited for teaching and developing a well-thought-out and rigorous curriculum.</p>
h) Resources	<p>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?</p> <p>Comment</p> <p>I am not familiar with the SPSCC library system and cannot comment on their resources or student services.</p> <p>However, the other facilities that the SPSCC Craft Brewing and Distilling program have access to is arguably internationally enviable. Specifically, because the headquarters of the Craft Brewing & Distilling program is in the Tumwater Craft District, composed of local distilleries, cideries, and breweries, the program's location for access to the industries that its students serve could not be better. Their actual facility continues to grow towards what appears to be full commercial activity. The ability of having students train on commercial equipment and gain experience with Quality Assurance curricula in production-grade spaces is, what I believe to be, one of the best resources that any national craft brewing program has to offer. Without a doubt, the college has demonstrated more than adequate resources to sustain and advance the proposed BAS within its program.</p>

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i) Membership and Advisory Committee	Has the program received approval from an Advisory Committee? Has the program responded appropriately to it?
	<p>Comment</p> <p>I am not in a position to be aware of any Advisory Committee communications.</p>
j) Overall assessment and recommendations	<p>Please summarize your overall assessment of the program.</p> <p>The Director, staff, and faculty of the Craft Brewing & Distilling program at SPSCC have been tirelessly growing an excellent, student-focused curriculum. Their efforts, combined with local governmental and private support, have resulted in an incredible opportunity to serve their students, preparing them for a career in the brewing, cider-making, and distilling industries. The proposed BAS in Craft Beverage Management and Quality Assurance is one more indication that SPSCC is not only paying attention to the needs of the industry but doing their due diligence in responding to that need. Their proposed curricula, along with their faculty and facilities, are top-notch and more than adequate to fulfill the promise of serving their students a high-quality and relevant education. I have no reservations in providing the highest recommendation that this proposed BAS be implemented as outlined.</p>
<p>Reviewer Bio or Resume</p> <p>Evaluator, please insert a short bio here</p>	

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Eric A. Graham

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linkedin.com/in/egraham-sci

Education

- University of California, Los Angeles, Ph. D. Biology
- University of Washington, B. S. Zoology

Teaching and Management Positions

- Senior Lecturer of Biological Sciences, Director of the Craft Brewing Program, and special Graduate Faculty. Central Washington University. 2015 – present
 - Led more than 15 lower- and upper-division science courses; developed and implemented new course curricula; managed Program staff and budget; tripled student enrollment in Craft Brewing Program within 2 years.
- Lecturer with Laboratory. Developed and led undergraduate science courses.
 - Santa Monica College, Department of Biological Sciences. 2012 – 2014
 - Oregon State University, Department of Zoology. 2003 – 2004

Research Positions

- Chief Science Officer. Nexleaf Analytics. Developed, implemented, and published novel sensor methods and server-based algorithms; conducted international, field-based research on sensor-enabled mobile technology. 2012 – 2015
- Associate Development Engineer. Center for Embedded Networked Sensing, University of California, Los Angeles. Managed staff and collaboratively developed and led field-based research (U.S. and Latin America) using wireless and novel sensing platforms; published extensively in Ecological and CS journals. 2004 – 2013
- Associate Professor-Investigator and Postdoctoral Fellow. Developed and conducted independent research with undergrad and graduate teaching.
 - Centro de Investigación Científica de Yucatán, a center for graduate studies (Masters and Ph.D.) in biological sciences. 2001 – 2003
 - Smithsonian Tropical Research Institute, Panama, Republic of Panama. 1999 – 2001

Skills

- Decades of experience with real-world, scientific data collection, analysis, and evaluation with clear written and verbal communication of data in informal, academic, and instructional contexts.
- Extensive experience with small-team project management, classroom and lab management.
- Experience with R, Python, Java (Android), SQL, online data sets, presentation and worksheet software (Microsoft products). Working knowledge of JavaScript, PHP, HTML, CSS.
- Experience with inter-disciplinary, international, and cross-functional scientific fields; conversational Spanish.

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Dear Director Frank Addeo and Dean Amy Warren,

After examining the proposed SPSCC Bachelor of Applied Sciences (BAS) in Craft Beverage Management and Quality Assurance and comparing it our accredited CWU Bachelor of Science (BS) in Craft Brewing, I agree that the proposed SPSCC BAS demonstrates baccalaureate-level rigor and should easily meet accreditation requirements.

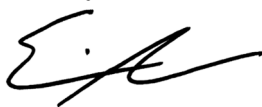
The two programs compare favorably and are similar in their design (see Table 1, below), both guided by industry input, to prepare students to enter the craft brewing industry. Significantly, the SPSCC program includes instruction in the distilling industry, an aspect that is beyond the scope of the current CWU Craft Brewing Program.

As would be expected in such a management- and quality assurance-focused program, the proposed BAS includes additional and extensive business-focused courses, beyond the CWU BS degree, and additional outcomes to prepare students to be managers and sustainable, responsible businesspeople. Accordingly, the proposed program learning outcomes for the four-year degree have been clearly and carefully designed to address advanced production skills and quality assurance, as well as business management skills needed to establish and maintain a successful craft beverage enterprise. It is appropriate, currently indispensable, and quite heartening to read of the inclusion of learner outcomes that include ethical and environmentally responsible business practices along with sustainability principles and practices. If CWU Craft Brewing students wished to include such business- and management-focused content, they would be required to take classes outside of the science-focused CWU program, extending their 4-year plan.

It may be useful to reword one of the proposed student learner outcomes to include more program-specific language, at least from a CWU Gen Ed-perspective. Not knowing much about the General Education outcomes at SPSCC, the proposed BAS learner outcome, "Recognize and adapt interpersonal behaviors, written communication, and oral communication styles to effectively collaborate in a multicultural world" may be too closely associated with SPSCC General Education outcomes. If the two SPSCC outcomes overlap sufficiently, it may be warranted to revisit the proposed BAS outcome and reword to focus on the business- or management-related content that the proposed BAS so clearly excels at.

I applaud the efforts of SPSCC to expand their courses of study to include a Bachelor of Applied Sciences in Craft Beverage Management and Quality Assurance. The outline of this new program is well-thought out, rigorous in content, and its focus addresses a much-needed gap in our regional educational offerings. This new program will serve our students well and I am certain will be popular and sustainable.

Sincerely,



Eric Graham, Ph.D. (he/him/his) Director of Craft Brewing
Sr. Lecturer, Department of Biology

Table 1. A comparison of the Student Learner Outcomes between the proposed SPSCC Bachelor of Applied Sciences (BAS) in Craft Beverage Management and Quality Assurance and the current, accredited CWU Bachelor of Science (BS) in Craft Brewing.

Proposed SPSCC Bachelor of Applied Sciences (BAS) in Craft Beverage Management and Quality Assurance	Current CWU Bachelor of Science (BS) in Craft Brewing and separate Programs that include CRBW classes
Currently not included in the proposed BAS but is instead included in the current SPSCC Craft Brewing and Distilling - Associate in Applied Science Transfer Degree	Explain the compositional features and biochemistry of the four essential brewing raw materials: malt, hops, water and yeast and how they transformed through the brewing process and contribute to beer styles.
Recognize and adapt interpersonal behaviors, written communication, and oral communication styles to effectively collaborate in a multicultural world	"The General Education program [at CWU] will cultivate curiosity, empower personal development, strengthen understanding of and respect for diverse perspectives, and build a foundation for life-long learning."
Work within and adhere to a complex regulatory environment related to the brewing, distilling, and cider making industry	Similar learner outcomes occur in the CWU Food and Agribusiness Management and Marketing Minor or Certificate, the directors of which have collaborated with the Craft Brewing Program to provide these business- and management-focused classes, beyond the 4-year Craft Brewing degree.
Demonstrate creativity and innovation in business practices related to brewing, distilling, and cider making	
Examine and implement ethical environmentally responsible business practices related to product sourcing and production	
Develop operational plans for a craft beverage business that incorporate adherence to industry regulations, ethical business practices, and sustainability principles and practices	Explain health and safety issues related to all aspects of brewing from machinery to the final product.
Create and market craft beverages that appeal to a diverse multicultural audience	Develop a branding, marketing and PR plan for a business in the brewing industry. Students will be able to demonstrate an understanding of financial issues, investments, management, global markets and distribution systems
Manage product design including ideation and recipe design, through to production and marketing	
Develop new beverages built on current trends and innovations in the craft beverage industry	Demonstrate the brewing process and use of equipment and calculate parameters for brewhouse efficiency.
Evaluate safety and organoleptic properties of beverages utilizing analytical techniques and standard industry processes in order to interpret, and act upon, results of analysis	Explain beer's quality attributes, such as foam, stability, color, aroma, attenuation and be able to interpret the reasons why a product deviates from expected performance.