Lower Columbia College Mid-Cycle Evaluation

Submitted to the NWCCU

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LCC was established in 1934 as Lower Columbia Junior College. First time students registered for classes at a music store in downtown Longview, a hardware store in Castle Rock, and a furniture store in Kelso. Accounts of the number of students who enrolled that first year vary from 42 to 55, and the first seven graduates received associate degrees in 1936.

After holding classes in borrowed space for a number of years, the College purchased 26 acres in 1942. In 1948, the College received its first accreditation from the Northwest Commission on Colleges and Universities. Construction on the first building began in 1950.

In 1967, LCC joined the state-supported community college system and dropped the "junior" from its name. Today, LCC maintains 26 buildings on 38.75 acres, employs over 400 faculty and staff, and enrolls about 5,000 students each year. We confer high school diplomas, certificates, associate degrees, and applied baccalaureate degrees.

We are looking forward to changing our campus footprint again in the near future. During the 2021 legislative session, LCC was approved to begin designing a new vocational building to house our Industrial Trades, Information Technology and Transitional Studies programs. As part of the project, three of the oldest buildings on campus will be demolished.

Lower Columbia College is located at 1600 Maple Street in historic downtown Longview, Washington.

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Mission Fulfillment

Lower Columbia College's (LCC's) institutional effectiveness framework consists of three components: institutional monitoring, curriculum and program review, and global skills assessment.

Institutional Monitoring

LCC's Board of Trustees adopted Policy Governance in 1999, establishing the college's first set of institutional objectives and Key Performance Indicators (KPIs). Staying true to the Board's original intent, today's framework reflects over 20 years of progress and improvements.

As defined in the LCC Strategic Plan, the current structure is organized into five mission areas, four of which directly represent the student lifecycle. The fifth area reflects the organization and surrounding community. Each mission area has a corresponding monitoring report, which goes through an extensive internal review process before being presented to the Board of Trustees in five separate meetings throughout the year.

Each of the five monitoring reports has its own review team, consisting of about 20-25 people. Just under half of the review team members are instructors, representing over 50% of LCC's full-time faculty population. Student representatives typically also participate. In 2021-22, we will be adding community representatives from the LCC Foundation Board of Directors to each team. The teams review the data and conduct a SWOT[1] analysis annually. They also participate in annual strategic and operational planning with the LCC President. Collectively, the five teams comprise the college's Strategic Planning Committee.

In addition to objectives and indicators, each monitoring report also documents actions taken to improve outcomes in that area. Reports dating back to 1999 are posted on the LCC website, and help document continuous improvement efforts across the college. The reports are part of the college's official historical archive.

Many of the updates to LCC's structure in recent years reflect the college's commitment to student success and reducing equity gaps. Wherever and whenever it is available, disaggregated data is provided for KPIs. Demographic breakouts included in the reports are sex, race/ethnicity, economic disadvantage, full- or part-time attendance, and disability, veteran and/or first generation status. Beginning in 2021-22, age breakouts will also be included.

Mission fulfillment and stretch goals for each KPI, many of which contain multiple parts, are set by the board based on recommendations from the review teams. In addition to the monitoring reports, a dashboard summary of target goal attainment is provided to the board once a year. The dashboard is also available on the LCC website.

[1] Strengths, Weaknesses, Opportunities and Threats

Table 1: LCC Mission Areas, Objectives and Indicators

Mission Areas	Objectives	Indicators
Workforce and Economic Development	1. Provide quality professional/technical education for employment, skills enhancement, and career development. 2. Partner with business, community groups, and other educational entities to provide workforce development and customized programs and services.	a. Student performance b. Demonstration of program competencies c. College level math and English attainment in first year d. Completion e. Licensure/certification rates f. Success after completion (placement rate in the workforce) g. Client assessment of programs and services
Preparation for College Level Studies	1. Ensure that learners who are under-prepared for college level studies have access to developmental coursework and bridge opportunities to college level work.	a. Basic Skills achievement b. Preparation of incoming students c. Academic performance of developmental education students
Academic Transfer	1. Offer courses and support for students to meet the requirements for transfer from Lower Columbia College. 2. Provide the support for transfer students to successfully transition to upper division college and university programs.	a. Student performance b. Transfer readiness c. Demonstration of General Education Outcomes (Global Skills) d. College level math and English in first year e. Completion and academic transfer rate f. Success after completion/transfer
Student Access, Support and Completion	1. Offer a full array of educational programs and support services to meet the diverse needs of Cowlitz and Wahkiakum counties. 2. Provide students with the support needed to pursue and achieve their educational goals.	a. Participation rates in service district b. Enrollment c. Student persistence (overall) d. Completion (overall) e. Student satisfaction with support services f. Faculty-student engagement g. Student satisfaction with instruction
Institutional Excellence and Community Enrichment	1. Demonstrate our commitment to institutional integrity by investing in our campus, students and employees. 2. Uphold our reputation for high quality and contribute to the value of the community by promoting excellence in our programs, services and activities.	a. Employee satisfaction and morale b. Condition of infrastructure c. External perceptions/satisfaction with LCC

Curriculum and Program Review

All instructional programs participate in regular Curriculum and Program Review according to an established instrument and timeline. The instrument consists of 42 questions categorized into the following sections: A. Data and Equity; B. Outcomes; C. Curriculum; D. Environment; E. Resources; and F. Action Plans.

All programs work on the same section of the instrument at the same time, according to a master timeline. The full review cycle takes two years to complete. The majority of the work occurs on designated "assessment days," which are contract days for faculty without scheduled classes. Most assessment days consist of an organized activity followed by some free time to work on the assigned section for that particular quarter. The synchronized timeline allows us to provide dedicated and timely support for faculty, such as hands-on data labs or other training.

Global Skills Assessment

In 2006, LCC Faculty formally adopted a set of Global Skills, also known as General Education Outcomes, for all credential seeking students. Several improvements have been made over the last 15 years to the outcomes and rubrics. LCC's Global Skills are Communication, Critical Thinking, Interpersonal Relations, and Quantitative Literacy. Global Skills are posted on the LCC website, available in publications such as the catalog, and displayed in poster form in classrooms across the campus.

Global Skills for academic transfer programs are assessed through an annual summer assessment institute focusing on one outcome per year. The full cycle takes four years to complete. Each year, a team of ten faculty participants are selected for the institute through a competitive application process. After training, participants read and score a randomly selected sample of student artifacts collected throughout the academic year. Scores are analyzed and aggregated, and form the basis for discussion and professional development activities held during LCC's designated assessment days.

Until 2019, all programs were assessed through the summer institute process. In 2019, we decided that our professional/technical programs would conduct their own discipline-specific assessment of Global Skills rather than participate in the summer institute. Relevant professional development activities, based on the Global Skill slated for assessment in any given year, are provided to all members of the faculty on designated assessment days.

We were forced to cancel our 2020 summer assessment institute due to the pandemic since we were unable to meet in person. In order to facilitate fully remote institutes, we purchased and implemented a Canvas plug-in technology tool called "Portfolium" in spring 2021 and conducted our first virtual institute in August 2021.

Global Skills assessment and Curriculum and Program Review are largely faculty driven, with leadership provided by the Instructional Assessment Committee. Logistical support for the

work, including data dashboards designed specifically for faculty, comes from Effectiveness and College Relations and the Office of Instruction.

Student Achievement

Mission Areas

The mission of Lower Columbia College is to "**ensure each learner's personal and professional success**, and influence lives in ways that are local, global, traditional, and innovative." Four of LCC's five mission areas—each with a corresponding institutional monitoring report and interdisciplinary review team—are exclusively focused on the student lifecycle.

Table 2: Key Performance Indicators (KPIs) by Student Lifecycle

Student Lifecycle Milestone	Workforce and Economic Development	Preparation for College Level Studies	Academic Transfer	Student Access, Support and Completion
Enrollment/ participation	Informational	1 KPI Informational	Informational	2 KPIs
Progression	5 KPIs	2 KPIs	4 KPIs	4 KPIs
Completion/ transfer	1 KPI	Included with enrollment	1 KPI	1 KPI
Post-completion	1 KPI	Included with progression	1 KPI	Broken out in Workforce and Academic Transfer reports

Benchmarking

Comparing our performance to other institutions is an underlying principle of LCC's culture of evidence. We have invested considerable time and resources over the years to increase our access to the benchmarking resources that are most useful for our institution.

For example, LCC joined the Achieving the Dream network in 2011, and formally adopted Guided Pathways in 2018 to increase our focus on student success. Data is a critical component of both initiatives. We also regularly participate in surveys such as the Community College Survey of Student Engagement (CCSSE) and the Personal Assessment of Campus Environment (PACE) in order to access comparative national data for our students and employees.

LCC is very fortunate to be one of the 34 colleges that make up the Washington community and technical college system. Washington has been heralded as one of the top three or four community college systems in the country, due at least in part to the availability of phenomenal comparative data tools. Because LCC is very strong in both academic transfer and workforce

areas, we find comparisons to system data incredibly useful. In many cases, our mission fulfillment and stretch goals for our KPIs are pegged to system performance. Using statewide data has the additional advantage of being easily understood by a wide variety of internal and external constituents.

Disaggregation

A number of improvements have been made to LCC's institutional effectiveness structure in recent years that reflect the college's commitment to student success and reduction of equity gaps. Much of the formalization of this work began when we joined Achieving the Dream in 2011. In 2019-20, we formally updated our KPI structure to include available demographic details. In 2020-21, we added mission fulfillment and stretch goals for our disaggregated data.

Demographic breakouts currently included in LCC's monitoring reports include sex, race/ethnicity, economic disadvantage, full- or part-time attendance, disability, veteran and first generation status. Beginning in 2021-22, age breakouts will also be included. Although access to first generation status is somewhat limited right now, we will add it to all relevant KPIs as the information populates in our enterprise system, called ctcLink.[2]

Student Achievement Data

The following is a sampling of student achievement indicators from LCC's institutional monitoring reports. A complete history of LCC's monitoring reports is available to the public on LCC's website. Although we focus much of our efforts on monitoring KPI data due to the central role it plays in our strategic and operational planning, we also share many other data points in our annual Fact Book and "Student Right to Know" webpages.

Persistence

First- to second-year (fall-to-fall) persistence rates are reported in our *Student Access, Support and Completion* report by sex, full- and part-time status, economic disadvantage (eligibility for need-based aid), and race and ethnicity. Beginning in 2021-22, persistence rates will also include age breakouts, and we will add first generation status as soon as it's available for this indicator. We will also add first- to second-term persistence to this indicator beginning in 2021-22. The data is split into two tables for easier readability.

Table 3: Fall-to-Fall Persistence Rates for First-Time Degree-Seeking Students

Demographic	Fall 2014-Fall 2015	Fall 2015-Fall 2016	Fall 2016-Fall 2017	Fall 2017-Fall 2018	Fall 2018-Fall 2019
LCC Rate: Overall	**51% (n = 1,002)**	**52% (n = 953)**	**58% (n = 896)**	**52% (n = 981)**	**54% (n = 880)**
Full-time	58% (n = 635)	60% (n = 592)	66% (n = 555)	60% (n = 626)	61% (n = 560)
Part-time	39% (n = 367)	39% (n = 361)	46% (n = 341)	39% (n = 355)	43% (n = 320)

[2]LCC began collecting first-generation data with the implementation of a new enterprise system in March 2020.

Male	51% (n = 390)	50% (n = 351)	58% (n = 320)	51% (n = 353)	52% (n = 291)
Female	51% (n = 604)	53% (n = 590)	58% (n = 558)	52% (n = 616)	55% (n = 573)
Need-Based Aid*	48% (n = 394)	47% (n = 350)	52% (n = 336)	43% (n = 361)	47% (n = 298)
System Rate: Overall	53% (n = 51,119)	53% (n = 50,291)	54% (n = 50,870)	53% (n = 54,096)	54% (n = 52,121)
Full-time	59% (n = 30,950)	60% (n = 29,981)	61% (n = 30,625)	60% (n = 32,369)	61% (n = 32,030)
Part-time	43% (n = 20,169)	43% (n = 20,310)	44% (n = 20,245)	43% (n = 21,727)	44% (n = 20,091)
Male	51% (n = 22,968)	52% (n = 22,536)	52% (n = 21,766)	52% (n = 23,116)	53% (n = 22,223)
Female	54% (n = 27,757)	54% (n = 27,227)	56% (n = 26,947)	55% (n = 28,678)	56% (n = 28,552)
Need-Based Aid*	51% (n = 15,199)	52% (n = 12,978)	51% (n = 13,264)	52% (n = 13,164)	53% (n = 13,005)

Source: SBCTC First-Time Entering Student Outcomes Dashboard, located at https://www.sbctc.edu/colleges-staff/collegeaccess/research-data/first-time-entering-student-outcomes-dashboard.aspx. Retention View (All cohorts, Transfer & Prof/Tech students).
*Students who received need-based aid.

Table 4: Fall-to-Fall Persistence Rates for First-Time Degree-Seeking Students by Race/Ethnicity

Demographic	Fall 2014-Fall 2015	Fall 2015-Fall 2016	Fall 2016-Fall 2017	Fall 2017-Fall 2018	Fall 2018-Fall 2019
LCC Rate: Overall	**51% (n = 1,002)**	**52% (n = 953)**	**58% (n = 896)**	**52% (n = 981)**	**54% (n = 880)**
American Indian or Alaska Native	41% (n = 37)	41% (n = 44)	49% (n = 49)	56% (n = 43)	51% (n = 49)
Asian	53% (n = 32)	46% (n = 48)	66% (n = 32)	49% (n = 37)	58% (n = 43)
Black or African American	33% (n = 27)	28% (n = 36)	67% (n = 18)	35% (n = 40)	56% (n = 32)
Hispanic or Latino	54% (n = 79)	58% (n = 91)	69% (n = 78)	58% (n = 92)	56% (n = 86)
Native Hawaiian or other Pacific Islander	*	58% (n =12)	*	25% (n = 12)	55% (n = 11)
White	51% (n = 822)	53% (n = 778)	58% (n = 761)	53% (n = 811)	55% (n = 722)
System Rate: Overall	53% (n = 51,119)	53% (n = 50,291)	54% (n = 50,870)	53% (n = 54,096)	54% (n = 52,121)
American Indian or Alaska Native	47% (n = 1,673)	45% (n = 1,652)	45% (n = 1,719)	46% (n = 1,782)	50% (n = 1,759)
Asian	58% (n = 5,051)	58% (n = 5,541)	59% (n = 5,491)	57% (n = 6,664)	60% (n = 6,386)
Black or African American	42% (n = 3,892)	43% (n = 3,939)	44% (n = 4,069)	44% (n = 4,340)	47% (n = 4,409)
Hispanic or Latino	53% (n = 6,674)	53% (n = 6,745)	54% (n = 7,293)	53% (n = 8,022)	55% (n = 8,474)

Native Hawaiian or other Pacific Islander	47% (n = 734)	52% (n = 772)	50% (n = 845)	49% (n = 927)	51% (n = 1,000)
White	53% (n = 33,850)	54% (n= 32,998)	55% (n = 32,333)	54% (n = 33,698)	55% (n = 32,319)

Source: SBCTC First-Time Entering Student Outcomes Dashboard, located at https://www.sbctc.edu/colleges-staff/collegeaccess/research-data/first-time-entering-student-outcomes-dashboard.aspx. Retention View (All cohorts, Transfer & Prof/Tech students). *Less than 10 students; redacted to protect student privacy.

Completion

Overall completion rates are reported in our *Student Access, Support and Completion* report and are broken out by sex, economic disadvantage (based on eligibility for need-based aid), full- and part-time status, and race/ethnicity. Beginning in 2021-22, we will add age breakouts. When the data is available, we will also add first generation status. Also beginning in 2021-22, we will break out completion rates for academic transfer and workforce students in their respective monitoring reports in addition to reporting the overall rate.

Table 5: Student Four-year Completion Rates

Demographic	2016 (2012 cohort)	2017 (2013 cohort)	2018 (2014 cohort)	2019 (2015 cohort)	2020 (2016 cohort)
LCC Rate: Overall	**34%**	**38%**	**37%**	**38%**	**42%**
Full-time	34%	42%	41%	43%	46%
Part-time	33%	32%	31%	28%	35%
Male	27%	31%	33%	34%	33%
Female	40%	42%	40%	40%	47%
Need-Based Aid*	31%	33%	31%	29%	34%
System Rate: Overall	33%	33%	34%	35%	35%
Full-time	39%	40%	41%	42%	42%
Part-time	23%	22%	23%	24%	24%
Male	31%	30%	32%	33%	32%
Female	34%	35%	36%	37%	37%
Need-Based Aid*	34%	33%	34%	35%	35%

Source: SBCTC First-Time Entering Student Outcomes Dashboard, located at https://www.sbctc.edu/colleges-staff/collegeaccess/research-data/first-time-entering-student-outcomes-dashboard.aspx. Completion View (All cohorts, Transfer & Prof/Tech students, summer/fall entry quarter). *Students who received need-based aid.

Table 6: Student Four-year Completion Rates by Race/Ethnicity

Demographic	2016 (2012 cohort)	2017 (2013 cohort)	2018 (2014 cohort)	2019 (2015 cohort)	2020 (2016 cohort)
LCC Rate: Overall	**34%**	**38%**	**37%**	**38%**	**42%**
American Indian or Alaska Native	34%	13%	35%	14%	31%
Asian	48%	47%	47%	46%	59%
Black or African American	20%	24%	19%	28%	39%
Hispanic or Latino	32%	37%	30%	45%	46%
Native Hawaiian or other Pacific Islander	*	*	*	17%	*
White	34%	37%	38%	37%	42%
System Rate: Overall	33%	33%	34%	35%	35%
American Indian or Alaska Native	25%	24%	28%	29%	28%
Asian	35%	35%	36%	38%	38%
Black or African American	23%	22%	25%	25%	24%
Hispanic or Latino	31%	32%	33%	34%	33%
Native Hawaiian or other Pacific Islander	25%	28%	26%	29%	28%
White	33%	33%	35%	36%	35%

Source: SBCTC First-Time Entering Student Outcomes Dashboard, located at https://www.sbctc.edu/colleges-staff/collegeaccess/research-data/first-time-entering-student-outcomes-dashboard.aspx. Completion View (All cohorts, Transfer & Prof/Tech students, summer/fall entry quarter). *Less than 10 students; redacted to protect student privacy.

Student Engagement

It's been well established that student engagement is a critical component of student achievement. LCC uses results from the Community College Survey of Student Engagement (CCSSE) to track our progress in this area, and we compare ourselves to national peers in a variety of ways. We disaggregate our CCSSE data by sex, race/ethnicity (in aggregate), and first generation status. Below is a representative data sample from our *Student Access, Support and Completion* report.

Table 7: Support for Learners Benchmark Category (Mean Score)

Demographic	2006-07	2009-10	2012-13	2015-16	2018-19
LCC	**51.5**	**50.6**	**52.7**	**49.6**	**57.2**
National Cohort	50.0	50.0	50.0	50.0	50.0
Male	*	*	*	47.0	55.3
Female	*	*	*	52.4	57.6
Other	*	*	*	*	61.1

Gender not reported	*	*	*	*	66.9
Students of Color	*	*	*	*	60.2
White	*	*	52.1	49.4	56.0
Race not reported	*	*	*	*	57.9
First Generation	*	*	54.8	50.1	58.4
Not First Generation	*	*	49.3	50.6	56.5

Source: CCSSE website/Benchmark Report
*Data not available.

Table 8: Faculty-Student Engagement Benchmark Category (Mean Score)

Demographic	2006-07	2009-10	2012-13	2015-16	2018-19
LCC	**56.8**	**50.7**	**56.0**	**52.5**	**55.1**
National Cohort	50.0	50.0	50.0	50.0	50.0
Male	*	*	*	50.2	53.1
Female	*	*	*	54.2	56.4
Other	*	*	*	*	45.8
Gender not reported	*	*	*	*	50.2
Students of Color	*	*	*	*	55.9
White	*	*	56.0	50.8	54.8
Race not reported	*	*	*	*	52.5
First Generation	*	*	60.8	50.1	60.4
Not First Generation	*	*	53.0	54.5	51.8

Source: CCSSE website/Benchmark Report
*Data not available.

Student Performance

We have separate KPIs for student performance in our academic transfer and workforce areas. The information is disaggregated by sex, students of color (in the aggregate), and economic disadvantage. We will begin including an age breakout in 2021-22 as well, and first-generation status when it is available. These high level indicators are supplemented by much more intensive work at the Curriculum and Program Review level. In Section A: Data and Equity in LCC's Curriculum and Program Review instrument, faculty are required to review course success data for their areas, identify potential equity gaps, and formulate action plans based on the identified gaps. We intentionally included two phases to this section of the instrument in order to ensure annual data review as it relates to equity.

Table 9: Transfer students achieving satisfactory performance in transfer courses

Demographic	2015-16	2016-17	2017-18	2018-19	2019-20
Proportion of students receiving grades of C or better in academic transfer classes numbered 100 and above.	83.4%	84.3%	82.6%	81.1%	80.3%
Male	82.3%	83.9%	81.4%	77.4%	78.2%
Female	84.3%	85.0%	83.7%	83.1%	81.5%
Students of Color	80.3%	83.3%	82.8%	76.4%	76.0%
Economically Disadvantaged	81.5%	80.5%	81.2%	77.6%	78.0%

Source: Fact book; Select Kind of Student = T from Student Table, link to Transcripts for relevant year where grades not like I, N, R, V, X or NA; select dept_div, course num, gr, item and yrq; link to Class table using item and yrq to select INSTIT_INTENT_RECAT = "A" (Academic Courses) from Class table. Note: as of 2017-18, P grades included as successful grade.

Table 10: Workforce students achieving satisfactory performance in workforce courses

Demographic	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
Proportion of students receiving grades of C or better in workforce classes numbered 100 and above.	84.3%	85.7%	86.4%	87.3%	88.7%
Male	82.9%	85.9%	83.1%	80.5%	84.3%
Female	87.7%	88.8%	90.0%	89.4%	90.7%
Students of Color	84.6%	85.5%	87.1%	85.7%	85.0%
Economically Disadvantaged	83.6%	85.2%	85.4%	85.1%	86.4%

Source: Select Kind of Student = W from Student Table, link to Transcripts for relevant year where grades not like I, N, R, V, X or NA; select dept_div, course num is >=100, gr, gr_dec, item and yrq; link to Class table using item and yrq to select INSTIT_INTENT_RECAT = "V" (Workforce Courses) from Class table. Note: as of 2017-18, P grades included as successful grade.

Attainment of General Education Outcomes (Global Skills)

LCC has identified four institutional Global Skills, also known as General Education Outcomes: Communication, Critical Thinking, Interpersonal Relations, and Quantitative Literacy. Until 2019, academic transfer and workforce programs were assessed together in an annual summer assessment institute. In 2019, we decided that workforce programs would individually assess Global Skills, and the summer institute would focus on transfer programs. The aggregated data below comes from our Academic Transfer report.

Please note that more detailed reports are provided to the faculty and addressed at quarterly assessment days, occurring on contract days during which no classes are held. The detailed reports are available on LCC's Global Skills webpage.

Due to the pandemic, we were unable to hold an assessment institute in summer 2020. In spring 2021, we purchased a new Canvas plug-in called "Portfolium" to enable virtual assessment institutes. Our first virtual institute occurred in August, 2021.

Artifacts are assessed based on established rubrics on a scale of 1 (low) to 5 (high). Note: we repeated Quantitative Literacy in 2018-19 while transitioning to a new rubric and set of outcomes.

We do not disaggregate this data source because the artifacts we assess during the summer institute process are de-identified.

Table 11: Average Scores, General Education Outcomes (Global Skills)

Demographic	2014-15	2015-16	2016-17	2017-18	2018-19
Communication	N/A	N/A	2.9	N/A	N/A
Critical Thinking	N/A	3.1	N/A	N/A	N/A
Interpersonal Relations	2.9	N/A	N/A	N/A	N/A
Quantitative Literacy	N/A	N/A	N/A	3.1	3.1

Academic Transfer Rate and Graduation Rate from Four-Year Institutions

LCC tracks the proportion of students who transfer to four-year institutions and the graduation rate from transfer institutions in the *Academic Transfer* report. The transfer rate data is disaggregated in a variety of ways. We will add age breakouts in 2021-22 and first-generation status when it is available. Demographics are not available for the information in Table 13.

Table 12: Transfer Students who Transfer to a 4-Year Institution (Four Years after Start)

Cohort year	2012-13	2013-14	2014-15	2015-16	2016-17
LCC Rate: Overall	**32%**	**38%**	**36%**	**38%**	**40%**
System Rate^: Overall	36%	37%	38%	39%	39%
LCC Rate: Female	33%	39%	39%	40%	45%
System Rate^: Female	37%	39%	40%	41%	41%
LCC Rate: Male	31%	37%	31%	35%	31%
System Rate^: Male	35%	36%	36%	37%	36%
LCC Rate: Students of Color	33%	31%	35%	41%	46%
System Rate^: Students of Color	34%	34%	36%	37%	36%
LCC Rate: Received Need-Based Aid	16%	26%	22%	25%	24%
System Rate^: Received Need-Based Aid	25%	26%	26%	27%	26%

Source: SBCTC First-Time Entering Student Outcomes Dashboard, Post-College view, Year 4 – Transfer 4yr College. Includes all student cohort groups, transfer only students, summer/fall entry quarters.
*percentage points. ^All Other Colleges.

Table 13: Transfer Students who Graduate from 4-Year Institutions (Eight Years after Start at LCC)

Grad Year	2016-17	2017-18	2018-19	2019-20
Grad Rate of LCC transfer students at transfer institutions	51.0%	62.9%	62.0%	67.3%

Source: SBCTC First-Time Entering Student Cohorts (FTEC) for student cohorts (All cohorts, summer/fall start, transfer students), and National Student Clearinghouse for graduate information.

College Level Math and English in First Year

Completion of the first college level math and English course in the First Year is a critical metric for the Washington Community and Technical College system's Guided Pathways initiative. We report the information for both academic transfer and workforce student populations, disaggregated in a variety of ways (academic transfer is provided here as a representative sample). We will add age categories beginning in 2021-22, and first generation status when it is available. Note: the tables for both math and English completion rates are split into two sections for easier readability.

Table 14: College Level English Completion in First Year

Demographic	2015-16	2016-17	2017-18	2018-19	2019-20
LCC Rate: Overall	**73%**	**69%**	**64%**	**66%**	**69%**
Full-time	79%	78%	71%	71%	76%
Part-time	59%	49%	46%	54%	45%
Male	68%	65%	63%	61%	67%
Female	76%	72%	64%	68%	71%
Need-Based Aid*	60%	51%	43%	46%	59%
System Rate^: Overall	59%	60%	57%	61%	62%
Full-time	69%	70%	68%	71%	72%
Part-time	44%	45%	42%	46%	46%
Male	57%	58%	55%	59%	60%
Female	61%	63%	59%	63%	64%
Need-Based Aid*	53%	52%	50%	51%	50%

Source: SBCTC First-Time Entering Student Outcomes Dashboard, located at https://www.sbctc.edu/colleges-staff/collegeaccess/research-data/first-time-entering-student-outcomes-dashboard.aspx. Credit Milestones View (All cohorts, Transfer students, summer/fall start). See dashboard for "n" size, college access only. *Students who received need-based aid. ^All Other Colleges.

Table 15: College Level English Completion in First Year by Race/Ethnicity

Demographic	2015-16	2016-17	2017-18	2018-19	2019-20
LCC Rate: Overall	**73%**	**69%**	**64%**	**66%**	**69%**
American Indian or Alaska Native	57%	50%	50%	56%	66%
Asian	85%	83%	62%	54%	46%
Black or African American	75%	42%	48%	46%	80%
Hispanic or Latino	73%	89%	67%	65%	78%
Native Hawaiian or other Pacific Islander	*	*	*	*	*
White	74%	68%	66%	67%	70%
System Rate^: Overall	59%	60%	57%	61%	62%
American Indian or Alaska Native	50%	51%	50%	54%	52%
Asian	63%	66%	60%	65%	68%
Black or African American	50%	52%	49%	54%	56%
Hispanic or Latino	57%	58%	56%	59%	60%
Native Hawaiian or other Pacific Islander	59%	55%	56%	58%	58%
White	60%	61%	59%	62%	63%

Source: SBCTC First-Time Entering Student Outcomes Dashboard, located at https://www.sbctc.edu/colleges-staff/collegeaccess/research-data/first-time-entering-student-outcomes-dashboard.aspx. Credit Milestones View (All cohorts, Transfer students, summer/fall start). See dashboard for "n" size, college access only. *Less than 10 students; redacted to protect student privacy. ^All Other Colleges.

Table 16: College Level Math Completion in First Year

Demographic	2015-16	2016-17	2017-18	2018-19	2019-20
LCC Rate: Overall	**29%**	**31%**	**29%**	**29%**	**33%**
Full-time	34%	38%	35%	34%	37%
Part-time	19%	16%	15%	16%	21%
Male	32%	35%	31%	28%	41%
Female	27%	28%	28%	29%	28%
Need-Based Aid*	19%	22%	26%	23%	27%
System Rate^: Overall	32%	32%	33%	34%	36%
Full-time	38%	39%	40%	41%	43%
Part-time	22%	22%	23%	23%	23%
Male	35%	35%	36%	37%	39%
Female	30%	31%	31%	32%	33%
Need-Based Aid*	27%	27%	29%	30%	32%

Source: SBCTC First-Time Entering Student Outcomes Dashboard, located at https://www.sbctc.edu/colleges-staff/collegeaccess/research-data/first-time-entering-student-outcomes-dashboard.aspx. Credit Milestones View (All cohorts, Transfer students, summer/fall start). See dashboard for "n" size, college access only. *Students who received need-based aid. ^All Other Colleges.

Table 17: College Level Math Completion in First Year by Race/Ethnicity

Demographic	2015-16	2016-17	2017-18	2018-19	2019-20
LCC Rate: Overall	**29%**	**31%**	**29%**	**29%**	**33%**
American Indian or Alaska Native	18%	25%	32%	24%	31%
Asian	41%	56%	33%	43%	21%
Black or African American	10%	42%	17%	17%	27%
Hispanic or Latino	24%	32%	21%	17%	35%
Native Hawaiian or other Pacific Islander	*	*	*	*	*
White	29%	30%	30%	29%	33%
System Rate^: Overall	32%	32%	33%	34%	36%
American Indian or Alaska Native	23%	22%	24%	30%	29%
Asian	44%	44%	45%	47%	48%
Black or African American	23%	23%	22%	25%	26%
Hispanic or Latino	24%	25%	27%	28%	29%
Native Hawaiian or other Pacific Islander	27%	30%	27%	27%	29%
White	32%	33%	34%	34%	36%

Source: SBCTC First-Time Entering Student Outcomes Dashboard, located at https://www.sbctc.edu/colleges-staff/collegeaccess/research-data/first-time-entering-student-outcomes-dashboard.aspx. Credit Milestones View (All cohorts, Transfer students, summer/fall start). See dashboard for "n" size, college access only. *Less than 10 students; redacted to protect student privacy. ^All Other Colleges.

Licensure and Placement Rates

Two important KPIs in our workforce area are licensure rates for the programs that require them, and placement (employment) rates in the workforce. The Washington State Board for Community and Technical Colleges coordinates annually with the Employment Security Department to match records of employed students to determine employment (placement) rates. Students who continue their education in the Washington system are excluded from the calculations. This information is reported in our *Workforce and Economic Development* report. Disaggregation of licensure and placement (employment) rate data is problematic due to small "n" sizes.

Table 18: Licensure Rates for Nursing, Welding, and Medical Assisting

Program	2016	2017	2018	2019	2020
NCLEX (National Council of State Boards of Nursing) – first time pass rate					
Registered Nurse	89%* (116/130)	85%* (77/91)	82%* (94/114)	95%* (95/100)	90% (113/126)
WABO (Washington Association of Building Officials) – first time pass rate beginning in 2018					
Welding (LCC students only)	100% (n=9)	100% (n=11)	96% (n=25)	88% (n=26)	81% (n=37)

MAERB (Medical Assisting Education Review Board) – pass rate					
Medical Assistant	100% (n = 13)	89% (n = 16)	92% (n = 12)	83% (n = 11)	**

Source: Nursing and Welding Departments. *Numbers updated from previous monitoring reports, as of 2021 using DOH NCLEX® School Reports. Notes: NCLEX and WABO rates are by calendar year; MAERB rates are by admission year. **data not yet available

Table 19: Employment Rates for Lower Columbia College

Location	2015-16	2016-17	2017-18	2018-19	2019-20
LCC	79%	80%	74%	86%	76%
System Average	77%	77%	76%	77%	77%

Source: SBCTC After College Outcomes Dashboard, Prof/Tech Placement View, located at sbctc.edu/colleges-staff/research/data-public/after-college-outcomes-dashboard.aspx. Excludes those who are self-employed and work out of state.

Programmatic Assessment

As noted in the Mission Fulfillment section of this report, all instructional programs engage in systematic Curriculum and Program Review according to an established instrument and timeline. Below please find highlights from LCC's English, Machine Trades and Chemistry programs.

English

Housed within LCC's Language & Literature department, English faculty increased their engagement with curriculum reform when the college joined the Achieving the Dream network in 2011. Their efforts continued, and perhaps even ramped up, when we launched our Guided Pathways initiative in 2018. The department's extensive use of data, above and beyond what is required for the Curriculum and Program Review process, supports evidenced-based decision making to promote student success and outcomes achievement.

The following summary includes highlights from the English department's Curriculum and Program Review (C&PR) instrument. Please note that the Instructional Assessment Committee intentionally developed two parts to the data and equity section of the C&PR to ensure that faculty engage with disaggregated data once a year at a minimum (since the full review cycle is two years). Please see the Appendix for their full report.

A. Data and Equity

Following the required analysis of enrollment and course success using disaggregated data in part one of this section, faculty identified that success rates had declined for male students of color in English 101. They subsequently discovered an increase in the number of international

students enrolling in their courses, and identified a need for professional development in regard to serving this unique student population.

In part two, faculty identified that online success rates for students of color declined significantly as the age of the students increased. They determined that older students of color, in particular, need additional training in soft skills such as time management, since a lack of those skills can imperil opportunities for students. They identified that faculty teaching English 101 need to do more targeted student outreach to encourage development of soft skills.

B. Outcomes and C. Curriculum

English faculty have developed aligned, sequential outcomes for their composition courses, and are in the process of aligning their literature course outcomes as well. The work they've done with composition course alignment corresponds with the Guided Pathways imperative to get more students through college level English in their first year, one of the college's Key Performance Indicators. In support of this goal, English faculty also developed a co-requisite model called English 101+ that pairs a 'Critical Reading and Writing Skills for College English' course with English 101.

During the most recent C&PR cycle, English faculty used a locally developed rubric ("English 101 Assessment Rubric") to score a set of randomly selected essays. The goal for this activity was to create a baseline for future assessments, and identify two areas of strength and two areas of weakness that faculty can use to focus any teaching, curriculum, or professional development changes.

Table 20: Results of English 101 Essay Analysis

Quarter	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Outcome 5
Fall 2019	1.40	1.54	1.51	1.56	1.52

Indicators marked as not meeting the outcome were marked as "1," those meeting the outcome marked "2," and those exceeding the outcome marked "3." Overall aggregate scores ranged from 1.4 – 1.56. The outcome "Support an assertive thesis statement with adequate and relevant sub-points, source information, analysis, logical reasoning and explanations, and/or other appropriate evidence" received the lowest score. Please see the "English Department Assessment Report" in the appendix for extended data and a more detailed analysis. The activity is part of a five year assessment plan, also included in the appendix, intended to ensure consistency in assessment across all sections of English 101 and 102.

D. Environment

As part of the college's C&PR process, faculty are asked to research prospective career pathways for students majoring in their respective disciplines, using existing public data

sources. While this is traditional for professional/technical programs, it is less common for academic transfer programs.

During their winter 2021 session, English faculty identified three primary career pathways: English Education, Management/Office Administrative Support, and Writers/Authors/Editors. The example below illustrates the type of information faculty are required to research, from the English C&PR report.

Table 21: Labor Market Data for English Educators

Education Level	Required Education	Median Salary National	Median Salary WA State	Job Outlook National Growth (2019-2029)	Job Outlook WA State Growth (2016-2021)	Job Outlook Cowlitz County Growth (2021)
Post-secondary Teacher	Master's degree or Doctoral degree	$79,540	$60,380	Faster than average growth (9%)	1.9%	Balanced Demand
Secondary Teacher	Bachelor's Degree	$61,660	$64,760	Average Growth (4%)	1.9%	Balanced Demand
Elementary Teacher	Bachelor's degree	$59,420	$62,580	Average Growth (4%)	1.8%	Balanced Demand

In addition to researching labor market data, faculty are also prompted to investigate what other colleges are doing in their respective disciplines. In their most recent analysis, English faculty at LCC looked at three other community colleges in the Washington system: Centralia College, South Puget Sound Community College, and Clark College.

E. Resources

In this section, faculty are asked to respond to the following prompt: *Are the resources for the courses in your discipline poor, adequate, good, or excellent? Consider their impact on meeting student needs. What recommendations do you have for enhancing these support resources/facilities? Library resources, electronic resources, technology, Supplemental Instruction services, classroom/lab facilities, staffing, other.*

English faculty identified the following in the most recent C&PR reporting cycle.

- Our department space in Applied Arts is "good." We benefit from having designated classrooms nearby (especially AAR 129 and AAR 130) and designated meeting/workspaces (AAR 143 and AAR 142). We will benefit from the continued ability

to control the schedule of these rooms. We benefit from whiteboards, markers, document cameras, minimal and mobile furniture, and spaces that allow for elbow room and collaborative, active learning.

- We would benefit from converting AAR 128 from a computer lab to the kind of classroom described above.
- Computers are the tools specific to composition, like welding machines are used for welding. We would benefit from accessing a centralized space (AAR 135) for storing two classroom sets of Chromebooks for department use, in addition to the sets that the library has available for instructor checkout. If the college requires and/or supplies a Chromebook for every student, this would also fulfill this need.
- Designated, active learning classroom spaces with mobile furniture configured into four person "pods" and potentially additional white boards installed in AAR 130, AAR 129, AAR 128, and AAR 123. We want to ensure that these classrooms are not overcrowded with furniture and that English classes get priority scheduling in these areas.
- We need an English faculty member to provide mandatory, discipline-specific, regular training and support to the tutors that we have, but in order to give that training and support, we need to give our faculty tutor liaison release time/compensation. Our students would benefit from returning to the model of keeping some professional writing tutors on staff in the Learning Commons, both for the support such tutors would provide for the peer tutors and for the consistency they would bring to tutoring in multiple disciplines. We will continue conversations with the Tutor Coordinator and try to connect with the overseeing dean, as well, in order to align our vision for writing tutoring going forward.
- Faculty Development. We appreciate and need ongoing remuneration to support current adjunct faculty to attend crucial department activities, including assessment, curriculum development, and professional development. The college, working with the department, needs to set up a system whereby all new faculty would automatically receive a current packet of informational materials about the college and the courses they will teach. The packet would include, at a minimum, appropriate course plans, sample syllabi, sample course-specific calendars, sample assignments, and other department-specific documents. The professional partner program should be adjusted to facilitate the above process. Part of this adjustment would be an earlier initial meeting between faculty and his/her professional partner (before the quarter starts). We need to provide more consistent orientation and ongoing professional development for all new faculty regardless of employment category (tenured or adjunct). We need funding to send the department to attend a teaching-related conference at least every other year if not every year.
- We are often told that our courses may not transfer to universities, but we are unsure of the processes we should go through in order to ensure they do and how. We need professional oversight of the transferability of courses, including people who can do the work of applying transferability of our courses.
- We would benefit from Blu-ray players in these AAR classrooms (123, 128, 129, 130) and from other video-playing options that don't involve calling IT every time we need to play

a video. Netflix (a college account) or Chromecast were technologies that were discussed.
- Wi-fi issues impact the ability for us to utilize mobile technologies, such as Chromebooks, when teaching in different classrooms across campus.

F. Action Plans

In this section, faculty are required to respond to a number of prompts.

According to the findings of this review, what are the needs for future course development? Include anticipated timeline.

- As an exploratory course for future English majors, we plan to begin offering English 108 (Introduction to Literature) to students. We anticipate beginning to revive this course no later than the 2022-2023 academic year.

Other than developing new courses, how will you enhance the curriculum of your program?

- The support course for 101+ will be offered as a college-level course (105) beginning in fall of 2021 which will ease access to the course.
- To better use composition courses to support the various pathways, we propose that integrated studies classes featuring English 101, English 102, or English 110 paired with courses from the various career pathways, using the current integrated studies committee processes, be investigated and offered.
- The department will reflect on how assignments might facilitate student exploration of their chosen pathways.
- We have made significant progress in developing a shared rubric for our composition courses, which helps clarify outcomes and alignment. After significant progress on the rubric, the next step would be to update the outcomes on the relevant courses, based on the insights that we have achieved thus far. A stretch goal, that would be best accomplished in line with a return to face-to-face meetings, would be to continue progress on completing the rubrics.

What professional development activities have you participated in over the last two years that you have found most useful?

- Over the course of a year or more, a small group of faculty met regularly to develop, co-teach, and reflect on the design of English 101+. Part of this development included accessing, reading, and presenting recent research on this model and touring/interviewing nearby colleges that have implemented this model, in addition to attending multiple conferences specific to this model, and networked with other schools currently teaching in this model.
- Our department acquired grants to pay our adjunct faculty to attend regular norming sessions in order to maintain our alignment for English 101 and English 102 outcomes and how we assess them.
- Our department has found the conference-style professional development offered during in-service week to be especially effective, as it allows us to access professional development targeted to our specific, timely needs.

- The professional development that our eLearning department has been providing, especially in the time of the pandemic-enforced shift to online education, to be excellent.

Over the course of the most recent two-year review cycle, what gaps were identified that could be addressed through professional development?

- Much of our professional development has centered around composition offerings. As a department, we commit to diversifying our professional development endeavors to also focus on literature, creative writing, publishing, tech writing, etc.
- Students of color are not succeeding at the same rate as white students, specifically in online courses. Professional development in how to work on closing this gap is also a goal that our department has.
- IESL: With the International Program in effect, we would like the college to research and recommend appropriate professional development, college wide, so that we are prepared to serve the needs of a changing student body.
- Continued technological support and training for technology or tools that will help with our instruction and our assessment work.
- Continued support and training on best practices for using the tools in our digital academic advising systems (such as Navigate and ctcLink).

What actions will you take during the next two years to increase student success (i.e. outcome attainment)?

- Continue to advocate for workload balance and lowered composition course class caps, in line with what research indicates is the ideal student/faculty ratio, in order to maximize student success.
- Alignment work (see above).
- Shared rubric (see above).
- Continue to develop strategies to strengthen rapport with online students in order to help them feel more connected with the course and the instructor in order to increase both retention and success
- English 101+ (see above).
- Follow a plan for assessment work to more accurately identify projects for increasing student success, including the completion of the cross-composition sequence rubric (emphasis on grammar).
- We will work with administration to investigate and solve workload issues that negatively impact student success, especially related to composition courses.
- Our department will share research paper prompts from our English 102 classes as needed and desired (with each other) in order to inspire prompt ideas that allow for research that is open enough to align with a student's chosen pathway.

Machine Trades

One of several disciplines in LCC's industrial trades' area, the Machine Trades pathway includes two certificates and a degree. The following summary includes highlights from the program's Curriculum and Program Review report. The complete report is included in the appendix.

A. Data and Equity

As noted above, faculty are required to engage with data dashboards in this section of the report and identify potential action plans that relate to their findings. Perhaps not unsurprisingly given the demographics of LCC's service district, the majority of students enrolled in Machine Trades identify as white and male (more than 90%). Over 80% are considered economically disadvantaged, which refers to eligibility for need-based financial aid. Although faculty did identify a course success gap with non-white students, they felt the relatively small "n" size was insufficient to draw conclusions from the data (and in some cases, the small "n" size resulted in data being redacted from their dashboards altogether). Small "n" sizes definitely pose challenges for smaller colleges, and smaller programs that historically don't have substantial diversity either in terms of sex or race/ethnicity.

B. Outcomes and C. Curriculum

In this section, faculty are asked to identify their program outcomes, and the course or courses that are most critical for the attainment of those outcomes. In addition, they are asked to provide evidence demonstrating how their students have performed in recent years. Because outcomes are closely aligned with courses and grading practices in this program, Machine Trades believe they can accurately measure student outcomes achievement by assessing the proportion of students successfully completing critical foundational courses. Course success is defined as receiving a "C" or better. The evidence cited is the proportion of students achieving course success.

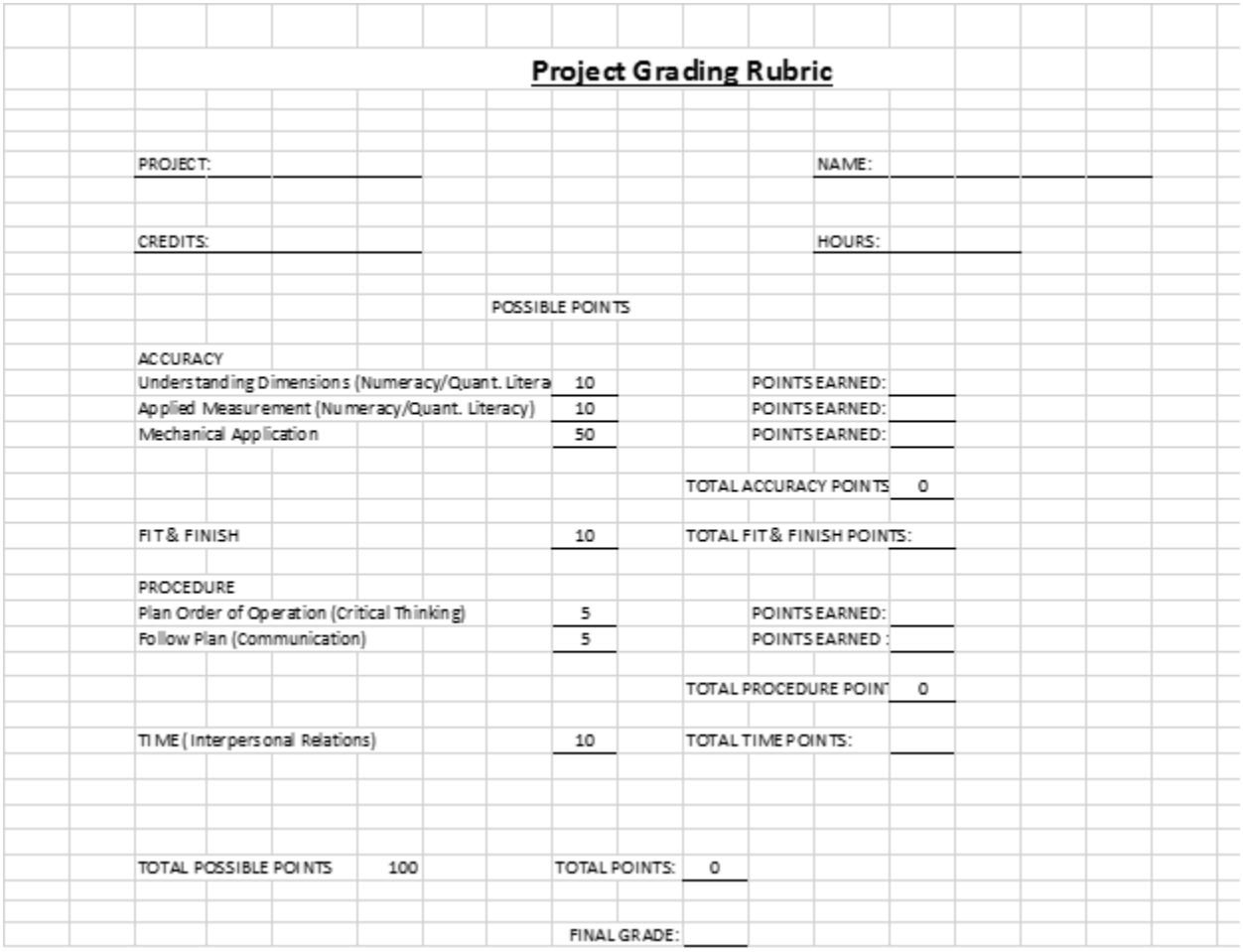
Table 22: Student Receiving a "C" or better in key Machine Trades courses

Course Title	Number	2016-17	2017-18	2018-19	*2019-20*	*2020-21*
Machine Shop I	MASP 111	88%	100%	100%	93%	94%
Machine Shop II	MASP 112	100%	83%	100%	81%	100%
Machine Shop III	MASP 113	100%	86%	100%	88%	100%
CNC Machine Fundamentals	MASP 204	100%	100%	86%	86%	100%
CNC Turning Fundamentals	MASP 205	100%	92%	83%	100%	100%
CNC Milling	MASP 221	100%	80%	100%	100%	100%
CNC Turning	MASP 222	100%	100%	100%	100%	100%
Advanced CNC Processes	MASP 223	100%	100%	100%	100%	100%
Blueprint Reading for Machinists	BLPT 150	100%	100%	100%	89%	88%

Course Title	Number	2016-17	2017-18	2018-19	*2019-20*	*2020-21*
Computer Integrated Manufacturing	MFG 230	94%	80%	90%	100%	100%

In addition to program outcomes, professional/technical (workforce) programs are also responsible for assessing general education outcomes in "Related Instruction," or what LCC refers to as "Global Skills." Machine Trades faculty have incorporated this assessment into their final project, which they capture using the grading rubric, below.

Figure 23: Machine Trades Project Grading Rubric



Project Grading Rubric

PROJECT:		NAME:	
CREDITS:		HOURS:	
	POSSIBLE POINTS		
ACCURACY			
Understanding Dimensions (Numeracy/Quant. Litera	10	POINTS EARNED:	
Applied Measurement (Numeracy/Quant. Literacy)	10	POINTS EARNED:	
Mechanical Application	50	POINTS EARNED:	
		TOTAL ACCURACY POINTS	0
FIT & FINISH	10	TOTAL FIT & FINISH POINTS:	
PROCEDURE			
Plan Order of Operation (Critical Thinking)	5	POINTS EARNED:	
Follow Plan (Communication)	5	POINTS EARNED :	
		TOTAL PROCEDURE POINT	0
TIME (Interpersonal Relations)	10	TOTAL TIME POINTS:	
TOTAL POSSIBLE POINTS 100	TOTAL POINTS:	0	
	FINAL GRADE:		

D. Environment

In the environment section, faculty are required to respond to a series of prompts.

What does the labor market look like for your program or discipline/career pathway?

- Bureau of Labor Statistics: Job Outlook, 2019-29 3% (as fast as average).

- Washington Career Bridge shows 2,251 job openings this year under employment outlook.
- Employment Security Department shows an estimate of 170 Machinist jobs in Longview, WA.

Spend some time looking at nearby or similar institutions in the Washington CTC system (see the "Explore our Colleges" page on the SBCTC website for a complete list with website links). What similarities and/or differences did you notice between your courses/program and what's offered elsewhere?

- Lower Columbia College is the only one offering Machine Trades at this time. Clark has recently closed its program and Lewis (Centralia College) hasn't had one for decades.

Are there best practices, industry standards or specialized accreditations defined for your program or discipline? If so, please describe.

- Yes, we listen closely to our advisory committee to ensure our students are meeting their demands.

What feedback have you received from your program's technical advisory committee?

- They desperately want to hire more LCC graduates.

Are your graduates finding employment? Are the median wages in the range you expect?

- The LCC Facts & Figures Report shows the median pay to be $16.72. I would like to see data on what the wages are after the first 12 months of employment. I would expect to see rapid growth.

E. Resources

In this section, faculty are prompted with the following question: *Are the resources for the courses in your discipline poor, adequate, good, or excellent? Consider their impact on meeting student needs. What recommendations do you have for enhancing these support resources/facilities? Library resources, electronic resources, technology, Supplemental Instruction services, classroom/lab facilities, staffing, other.*

- I would rate the Lower Columbia College Machine Trades resources as adequate to good. Our equipment is kept in safe working order but keeping up with the advancing technology of CNC machines is one area we could improve upon.
- The Lower Columbia College Vocational building is another example of something that could be improved. For the last five years several classrooms have had water leaks after hard rains. There has been no effort to fix the leaky roof. [*Editor's note: Campus Services has addressed the roof leaks. Because we are in the design phase for a replacement building, major structural repairs at this point would not be cost effective.*]

F. Action Plans

Faculty are required to identify action plans, as a final step in the two-year review process.

According to the findings of this review, what are the needs for future course development? Include anticipated timeline.

- As indicated by our advisory committee, we need to attract more students.
- We need a new CNC turning center to replace our old one that is from the mid 90's.

Other than developing new courses, how will you enhance the curriculum of your program?

- The Machine Trades program is constantly modifying student projects in order to stay current with machining industry trends.

What professional development activities have you participated in over the last two years that you have found most useful?

- Attending the annual NWAMI conferences in the fall.

Over the course of the most recent two-year review cycle, what gaps were identified that could be addressed through professional development?

- I could attend more Machine Trade shows to stay up to date with current technology.

What actions will you take during the next two years to increase student success (i.e. outcome attainment)?

- I will use Navigate to send out early warnings if I notice a student is having trouble.

Chemistry

A. Data and Equity

As noted elsewhere in this report, all faculty are required to engage with their data at least once per year. LCC has several degree pathways related to Chemistry, and faculty looked at a number of different programs and courses to analyze data and identify potential equity gaps. The following observations were noted.

- Diversity in the Chemistry & Bio Engineering/Chemical Engineering programs is generally higher than the campus averages. No action plan identified.
- CHEM& 161: As was expected the success level for CHEM 161 is much lower than the other quarters, more tutorial/supplemental support would be useful.
- CH110A: Seek to consult for a list of supplemental help available for economically disadvantaged students to augment the support they have during that time.
- Expanding the visibility of diverse scientists in introductory classes may help students feel comfortable with and see themselves in STEM pathways. Improving the availability/linking to LCC's support services may be helpful - that is, when a student is

struggling outside of class, if they see a flier (or note in Canvas) while in class, it might make it easier for the students to seek and obtain help with outside-of-class problems.

- When students are having trouble with the learning outcomes, that's when they look to drop, or (of course) earn lower grades. The same efforts to find support for students with poorer resources and working to help the students see themselves as successful scientists by encountering examples of people from similar backgrounds should help students feel comfortable and have less stress which can allow them to succeed.

B. Outcomes and C. Curriculum

In this section, faculty identify learning outcomes, provide evidence that the outcomes are being met, and add any notes or observations about the program or discipline.

This example involves the first outcome identified in the table below, in reference to Organic Chemistry students.

Table 24: Chemistry Program Outcomes – Organic Chemistry

LCC Chemistry students...

#	Outcome	Assessment
1.	will have foundations in the fundamentals and application of current chemical and scientific theories.	OChem ACS Item Analysis
2.	are able to design, carry out, record and analyze the results of chemical experiments.	Map with CADA (complete 4/17/18)
3.	are able to use modern instrumentation and classical techniques to design experiments, and to properly record the results of their experiment.	Map with CADA
4.	are skilled in problem solving, critical thinking and analytical reasoning.	Map with CADA
5.	completing a Chemistry AS-T degree will be prepared for transfer to a chemistry programs at 4-year colleges and universities.	• OChem ACS • Would like to have data from graduates.
6.	shall exhibit appropriated progress toward 4-year chemistry outcomes such as: applying scientific principles, appropriate technology and mathematics to the solution of chemistry problems; understanding experimental processes and understanding of chemical content.	Evaluate Chemistry Program & Resources
7.	will show evidence of ability in college-wide outcomes: numeracy, critical reasoning, communication, and interpersonal skills.	Refer to participation in Gen Ed assessment.

In order to assess this outcome, Chemistry faculty mapped outcomes and collected data in the college's Organic Chemistry sequence using the rubric, below.

Table 25: Organic Chemistry Rubric (for Outcome #1)

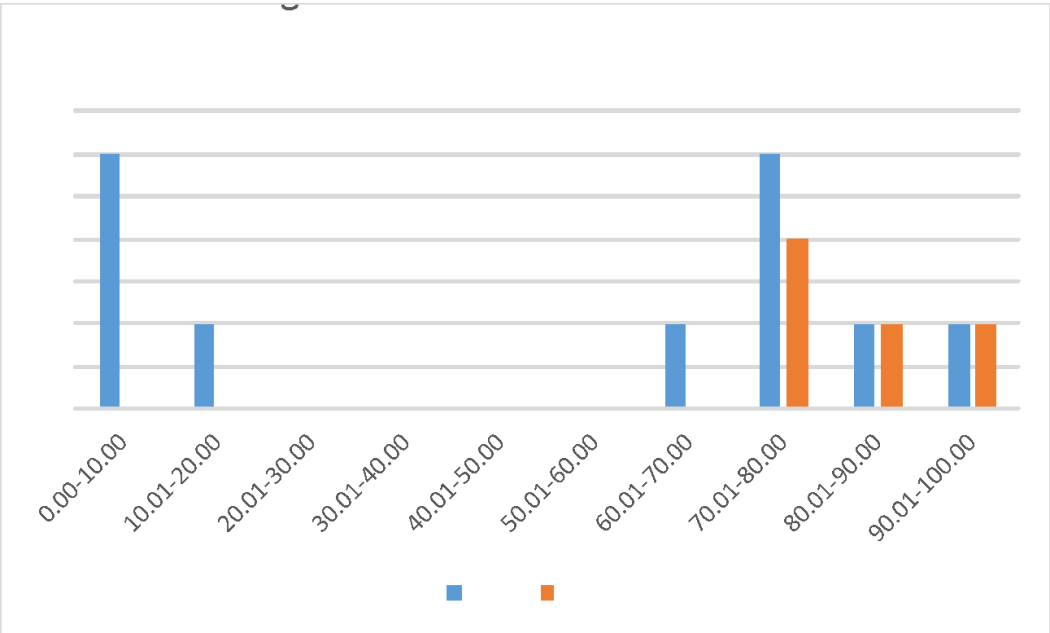
Success	Title	Ratings: 10	Ratings: 8	Ratings: 6	Ratings: 4	Ratings: 2	0
7	Mechanism Discussion. (Chromic Acid Kinetics)	10: Clearly identify classes of ROH, indicate how they affect each of the 3 possible rate limiting step structures, compare mechanistic prediction to class data, drawing conclusion about mechanism. Work is supported by correct mechanistic analysis and use of experimental evidence. Includes evaluation of data quality (but not as an excuse for skipping analysis.)	8: Good discussion but missing either a clear conclusion., evaluation of data quality, or mechanistic discussion. Using experimental evidence.	6: Good discussion but not addressing all alcohols.	4: Clear mechanistic discussion and conclusions but not using experimental evidence.	2: Only addressing 2-4 of the alcohols.	0: No Marks

Table 26: Assessment Results (for Outcome #1)

Outcome	Count	Average (%)	Successful (%)	Count Non-zero	Average Non-Zero(%)	Successful Non-Zero(%)
ChemDept1a:	14	62.1	71.4	11	79.1	90.9

Outcome	Count	Average(%)	Successful(%)	Count Non-zero	Average Non-Zero(%)	Successful Non-Zero(%)	Quarter
ChemDept1a:	10	52.0	60.0	7	74.3	85.7	W17
ChemDept1a:	4	87.5	100.0	4	87.5	100.0	W18

Figure 27: Distribution of Scores for Outcome #1



Chemistry faculty provided the following summary of their assessment of this outcome.

- While the "n" is much lower on this assignment, student performance is very strong. In 2017, three students did not attempt the item so the non-zero data is appropriate to look at. Students averaged 79.1% on this item with over 90% meeting the success criteria.
- The histogram indicates that most students met or exceeded the criteria:
    - "8: Good discussion but missing either a clear conclusion, evaluation of data quality, or mechanistic discussion. Using experimental evidence."
    - That is, students demonstrated 4 out of 5 of these skills in their written discussion.
- Strong performance on this task indicates that the organic chemistry sequence is providing opportunity for students to demonstrate Outcome #1 skills. Future work will include identifying and enhancing items from the beginning of Fall quarter, end of Fall quarter, and end of Spring quarter to tease out a progression of skills for this outcome.

D. Environment

In the environment section, faculty are required to explore career options for students in their pathway. Chemistry faculty made the following observations, in response to the required prompts.

What does the labor market look like for your program or discipline/career pathway? For example, what is the current job outlook?

- Chemistry is primarily a service program at this level for Engineering, Chemistry, Biology, Pre-Med and related fields. For this specific section we will focus on Chemistry, Chemical Engineering, and Bioengineering. This comprises the Chemistry AST and Chemical Engineering + Bioengineering MRP.
- Possible Occupations in the Washington Employment Security Division include: Chemical Engineers, Chemists, Chemical Technicians, and Postsecondary Chemistry Teachers. Chemical Plant and System Operators and Chemical Equipment Operators and Tenders fields were investigated but seem to require just a high school degree.
- Washington Career Bridge data for {Chemists (BS), Chemical Engineers (BS), Chemical Technicians (AA), Chemistry Teachers, Postsecondary (MS), lists 411 job openings per year with 1-2% growth. Average salaries from $49k - $104k.

For academic transfer programs, faculty are also prompted to look at similar programs at peer colleges. In this case, faculty reviewed Clark College, Centralia College, South Puget Sound Community College, and Grays Harbor College (other colleges in our region).

Spend some time looking at nearby or similar institutions in the Washington CTC system. What similarities and/or differences did you notice between your courses/program and what's offered elsewhere?

- Noted that most offer separate preparatory skills classes for 121/161, using the Chem&139 and another course number instead of Chem&100.
- Most offer a specialized research class of some sort.

In addition to looking at what other colleges are doing, faculty are also encouraged to look to industry standards or other external best practices. Please note that the items below represent multiple Curriculum and Program Review cycles, included to provide some historical context for this work.

Are there best practices, industry standards or specialized accreditations defined for your program or discipline? If so, please describe.

- 2021 - 2015 is still the most recent version of the ACS guidelines. Regarding inclusion of research, before COVID, we had active research activities in the "Bee Project" as well as multiple other projects of students working on MPAES, GC-MS, FTIR, AFM, and SIA instrumentation. Instrument projects typically involve working developing on potential student lab curriculum for other courses.
- 2017 - The 2015 version of the ACS guidelines have not been updated. In spring 2016, one student participated in individual research through an independent study course. A poster of this student’s work hangs in the hallway. In spring 2017, LCC chemistry students will participate as an independent lab in validation of an EPA standard method.

Expected to include approximately 20hrs of work, this project may include independent student credits for some of the students.

- 2015 - The American Chemical Society has published guidelines for 2-Year colleges, located at the following url: http://portal.acs.org/portal/PublicWebSite/education/policies/twoyearcollege/CSTA_015380. We have reviewed our program against the guidelines on pages 11-15 and note that LCC's chemistry program is aligned to them. One area we would like to focus on improving is the Student Research component listed on page 15-16. The new Science building facilities with enhanced instrumentation areas, lab space, and the projects room will improve our students' ability to conduct research.

Please refer to the “Chemistry - Detailed Environment Report” in the appendix for more analysis.

E. Resources and F. Action Plans

During this Curriculum and Program Review round, Chemistry faculty did not identify any needed resources. It should be noted that LCC has a relatively new Health and Science Building, opened in 2014, which houses all of the lab sciences in addition to Nursing and Medical Assisting. The college received a sizable grant from the Economic Development Administration, matched by the LCC Foundation following a significant fundraising campaign, to equip the building.

Please refer to the “Organic Chemistry Assessment Report” in the appendix for action plan examples.

Reflections - Moving Forward

Although LCC has considerable longevity in terms of assessing institutional and student performance, we are constantly evaluating and adjusting our processes. In addition, we have been extremely engaged in a variety of student success initiatives over the past decade.

A number of issues surfaced as we prepared for our Mid-Cycle Evaluation report and visit.

1. Although we have made considerable progress with disaggregating our Key Performance Indicator (KPI) data, we still need to incorporate age categories. This poses a challenge in order to keep the data presentation manageable.
2. With our conversion to a new computer system in March of 2020, we began systematically collecting first generation data for the first time. Once we have sufficient data collected on our incoming students, we will be able to start including it in our disaggregated metrics.
3. In 2019, we divided assessment of Global Skills into separate processes for academic transfer and workforce programs. Although we created a mechanism to capture the information for workforce programs, it is not systematized in the same way as our

academic transfer programs. Planning for this was somewhat interrupted by the pandemic, but we need to revisit it when our operations hopefully return to a more normal state in 2021-22. On a related note, we also need to consider whether to add a corresponding KPI for assessment of Related Instruction in our Workforce and Economic Development Monitoring Report. This is on the 2021-22 workplan for the Instructional Assessment Committee, and has been placed on the agenda for our fall 2021 faculty assessment day.

4. We are not yet fully satisfied with our assessment of Interpersonal Relations. This is also on the 2021-22 workplan for the Instructional Assessment Committee, and has been placed on the agenda for our fall 2021 assessment day. One option we are considering is switching to the American Association of Community Colleges' (AAC&U's) Teamwork rubric as a replacement. We previously evaluated and subsequently substituted the AAC&U's Quantitative Literacy rubric in place of our locally developed Numeracy outcomes. We will likely review the AAC&U's rubrics for our other Global Skills as well for the sake of consistency.
5. Although the pandemic disrupted this, we had intended to work on improving our "closing the loop" activities for the end of our Curriculum and Program Review cycle during the 2020-21 academic year. We intend to revisit this in the next cycle, and have placed this topic on the workplan for our Instructional Assessment Committee. It will also be on the agenda for our fall 2021 faculty assessment day. We have already incorporated the "closing the loop" activity into our instructional assessment timeline (see list of attachments).
6. LCC has done a good job of systematizing the Curriculum and Program Review process, including shifting everyone to be on the same schedule to increase clarity and support, and providing dedicated work time on quarterly assessment days. We have not, however, developed a consistent process for monitoring completion of the reports (participation in assessment activities themselves is monitored). There is considerable variation in the quality and completeness of the reports. The instructional leadership team is working on this issue, particularly in terms of more specifically defining the role of the instructional deans. As part of this process, over the past academic year the instructional leadership team revised the faculty annual progress meeting document to include "Curriculum and Program Review and Development" as a category and discussion point. As part of this process, faculty complete a self-assessment form each year which is used during the annual meeting with the dean. Formally integrating Curriculum and Program Review into the process is the first step to developing a more consistent process for monitoring completion of assessment reports and closing the communication loop, in an effort to better integrate the action items into the broader scope of academic planning.
7. LCC formally adopted the Guided Pathways model in 2018, and is engaged in significant and ongoing reform. Our Guided Pathways work supports accreditation priorities in a number of different ways, most directly in regard to reducing equity gaps and increasing student success. Although too numerous to list them all here, we are engaging in a variety of initiatives, including:

a. Pathways (Meta Majors), Programs of Study, and Program Maps
b. Outcomes Alignment
c. Structured Exploratory Experiences
d. Gateway Courses
e. Math Pathways
f. Scheduling
g. Intake
h. Placement
i. Equity Competent Educational Planning
j. Degree Math and College Level English within One Year
k. Progress Monitoring
l. Engaging Students in Support of Completion
m. Classroom Environment and Course Design

8. Related to Guided Pathways and our intention to decrease equity gaps and increase overall student success, we are also engaging in a separate, collaborative "Equity First" project with Highline College and equityworksNW. The purpose of the 18-month project, which kicks off in fall 2021, is to help us build our understanding of equity language, terms and theories and how they are embedded in educational systems and attainment gaps; build our campus team's knowledge of how root cause dynamics play out in the life cycle of students; identify and demonstrate innovative practices to address and mitigate those root causes; and develop a sustainable community of practice.
9. We also intend to begin a new strategic planning cycle in fall 2022 to address a word of interest in our mission statement ("ensure," as in "The mission of Lower Columbia College is to *ensure* each learner's personal and professional success…"), and to review our values statement in light of our ongoing student success and equity work.

Addendums

Lower Columbia College currently has no outstanding recommendations.

List of Attachments

In addition to the LCC Academic Catalog and signed certification form, the following attachments are included for reference.

A. Strategic Plan
B. Monitoring Reports
C. Monitoring Report Review Team membership
D. KPI Dashboard
E. Curriculum and Program Review Instrument
F. Master Instructional Assessment Timeline
G. Academic Calendar
H. Communication rubric
I. Critical Thinking rubric
J. Interpersonal Relations rubric
K. Quantitative Literacy rubric
L. Summer Assessment Institute reports
M. Faculty Assessment Handbook
N. Academic Policies and Records
O. Curriculum and Program Review_English
P. English 101 Assessment Rubric
Q. English Department Assessment Report
R. English Department Five-Year Assessment Plan
S. Curriculum and Program Review_Machine Trades
T. Curriculum and Program Review_Chemistry
U. Chemistry - Detailed Environment Report
V. Organic Chemistry Assessment Results
W. Faculty Annual Progress Meeting document
X. Portfolium – Sample Assessment Report