

SPARC – Service Areas

Service and Program Area Review - Comprehensive Template and Instructions

Program Name: Mathematics

Degrees and Certificates offered within Program:

N/A

Statement of Collaboration

The program faculty listed below collaborated in an open and forthright dialogue to prepare this Program Review. Statements included herein accurately reflect the conclusions and opinions of the program faculty.

Participants in the review:

Marge Burak, Mathematics Alison Williams, Mathematics

Authorization:

After the document is complete, it must be signed by the Department Faculty and Chief Academic Officer prior to submission to the Instructional Leadership Team and the Assessment Task Force.

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Signatures of Department Faculty

Signature of Chief Academic Officer

Marge Burah

Date of Submission: 8/28/2019

1 | Mission and Goals

1.1 Briefly describe the relationship of your program to the college's Mission, Vision, and Core Themes.

Program Description

The Math Department has the goal of motivating and inspiring our students in an environment that nurtures self-esteem, promotes the curiosity to ask questions, and fosters the ability to learn. We desire to equip our students with the skills necessary to be successful throughout the duration of their college classes, as well as carry those skills into their professional lives.

<u>College Mission:</u> At Oregon Coast Community College we equip students for success by providing educational pathways and supports in response to the diverse needs of our community. Through accessible and engaging programs, we enrich the economic and civic vitality of Lincoln County and beyond.

In line with the college mission, we as a department over the past few years have implemented two distinct educational pathways for students who are interested in seeking careers in STEM fields versus non-STEM fields. This will allow students to receive a math education more specific to the career field a student is interested in. We realized how important it is to communicate effectively these pathways to our students. To do this, we created a comprehensive handout regarding those math pathways offered at OCCC in Fall 2018. We received extensive feedback from student services and after making the recommended suggestions, we then distributed it to all counselors and members of Student Services, to be used to help students clearly see which pathway is more appropriate for their educational goal, as well as making them aware of the sequence of math classes they will need to achieve that goal.

<u>College Vision:</u> Shaping the future through learning.

As with all departments dedicated to undergraduate or developmental education, our program strives to stay as relevant as possible in order to bridge learning in a math class to tangible skills students will use in their professional lives. Some examples of this include getting rid of the graphing calculator requirements in our classes and instead using free online graphing websites and Microsoft Excel. By making this change we are enabling students to use items that will be available to them in their professional lives. In particular, using Excel in our classes better acquaints our students with the power of data collection and analysis through a popular and widely used computer program, which in turn make them a more desirable candidate to future employers. Another example is the Math Department is committed to having students work collaboratively on both group work during the class and on projects

outside the class. This example is again a desirable quality for future employment, since our students can tout their ability to work well with other colleagues to achieve a desired result. As a department, we make an effort to share our materials with each other through a shared drive. Doing this gives all our faculty access to dozens of group activities for each class which ensures they have ample options for activities, as well as making certain our part-time faculty do not have to create group activities from scratch if their time is limited. In order to make that shared drive accessible to our part-time faculty, we have transferred all of our files to Google Drive which will allow any faculty to access the drive from any computer, not just the ones on our campus server. In addition, we promote the ORMATYC conference as an opportunity for all our math faculty to attend in order to gain even more collaborative in-class activities as well as keeping our math faculty current with relevant trends in teaching that promote equity, access, and empowerment to our students.

Core Themes

OCCC will improve post-secondary educational attainment across Lincoln County and close achievement gaps for underserved populations in our community.

Over this last year our FTE is down. This could be for a variety of reasons but likely is due to the implementation of student placement using multiple measures rather than by a placement exam. By using GPA and success in high school/other college math classes as a way of placing students into our courses, we have minimized the number of students who actually need to start in a lower math classes, which means we have less students populating our below-level transfer classes and instead are able to place into transfer-level (college-level) math courses. We have also worked closely with the counselors to help with students who are more difficult to place. In addition, the Math Department developed *RU Ready For*, which is reviewing material that prepares students for classes in our STEM sequence. The counselors use this extensively when trying to help a student determine which math class is most appropriate for them to take. Because it is used so frequently, we have recently updated them and have developed one for our first non-STEM, transfer-level math class.

As a department we are committed to our Dual Credit program. We have had a long-standing relationship with Taft High School (Lincoln City). We have also expanded to include Toledo High School and restarted the program at Waldport High School in Fall 2018. This partnership allows us to maintain a positive relationship with differing schools in the county. We work closely to offer classes that benefit the schools at appropriate times because of these strong relationships.

The Math Department began offering hybrid courses in 2018, which included a combination of lecture and online work. This style of class led the way for us to

successfully offer our first ever online math class, math 111 in Spring 2019. The successful completion rate in the course (90%) matched that of our past math 111 classes (91%). In addition, the course was offered using an open resource program and an open resource textbook. In fact, as a department we are actively looking to use open resource textbooks in as many of our math classes as possible in an attempt to lower the cost to our students. At this point, we have actively been using an OER textbook for some of our math classes: math 60, math 65, math 111, math 112, and math 243/244.

OCCC will offer rigorous and engaging academic programs and educational options comprised of clear pathways to transfer, employment and self-development that enrich individual lives and promote the economic and civic vitality of Lincoln County and beyond.

One indicator we look at in this core theme is whether students are able to successfully get through our starting math course (math 20), which is considered a universal prerequisite. Math 20 is also the class that has the lowest pass rate; so ideally, we want students placed into classes above that class to ensure they are able to get through the math pathway as quickly as possible. The percentage of students successfully completing math 20, or those who were placed above that class, rose steadily over the past three years from 79% (2016-2017) to 90% in 2017-2018 to finally 93% (2018-2019). We can attribute the increase in students placing above math 20 to the college's implementation of multiple measures.

Though almost all students are placed above or have passed our universal prerequisite of math 20, the number of transfer students that have successfully completed a college-level math class within their first year is very low. Over the last 3 years, that number decreased from 33% (2016-1017) to 26% (2017-2018) to a new low of 22% (2018-2019). Student retention is something we are struggling with. In Fall 2016, in order to make certain more students had access to complete their college-level math within their first year, math 105 and 111 (gateway courses) were offered every quarter. The data at that time indicated that part-time students had lower success rates than full-time students, and students located in North County had lower success rates as well. To help, another full-time math instructor was hired, so that the department had two full-time math instructors. Additionally, the department began offering live-stream classes in math 105 which gave more opportunity for students to take the class at our North Campus. But even with these changes, our numbers continued to drop.

2 | Program Data and Trends Analysis

2.1 For each data point listed below, summarize the trend. (Attach three year longitudinal data to appendix.)

Program Name: Mathematics

Data Point	Table (see Appendix)	Trend	Highest Year
Enrollment	2.1.a	After a small 3% increase, we saw a 20% decrease in enrollment in our math classes	2017-2018
Number Program Majors	2.1.b.1-6	N/A	N/A
Total FTE	2.1.c	Similar to our enrollment numbers, our FTE saw a small increase and then a decrease of about 20%	2017-2018
Number Sections Offered	2.1.d	We increased our section numbers from the first to second	2017-2018 and
		academic year and then held those number the same into the third year	2018-2019
FTEF	2.1.e	Our FTEF increased 16%-20% over the last 3 years	2018-2019
Fill Rate	2.1.f	The first couple of years our fill rate was constant and then dropped, which makes sense since our enrollment dropped but he still offered the same number of sections.	2016-2017
WSCH/FTEF	2.1.g	Our instructional efficiency has dropped over the last three years, staring with a small 8% decrease then to a little more than double that the following year	2016-2017

% Students Retained from Fall to Fall	2.1.h.1-4	*The trend had shown we typically had ~50% retained, but in Fall of 2018 there was a drop. This however was consistent with what happened across the college.	2016-2017
Successful Completion Rate	2.1.i	Overwhelmingly our completion rates are high. Our lowest class is Math 20 with a 63% rate to our highest Math 244 with 100%.	N/A (Data is cumulative)

^{*}Note: This data is not math specific but rather applies to all courses in the transfer program.

2.2 Program Peer Comparison

How does your program compare with peers? (Peers include similar programs at the college or programs at peer institutions as identified by the Office of Institutional Research)

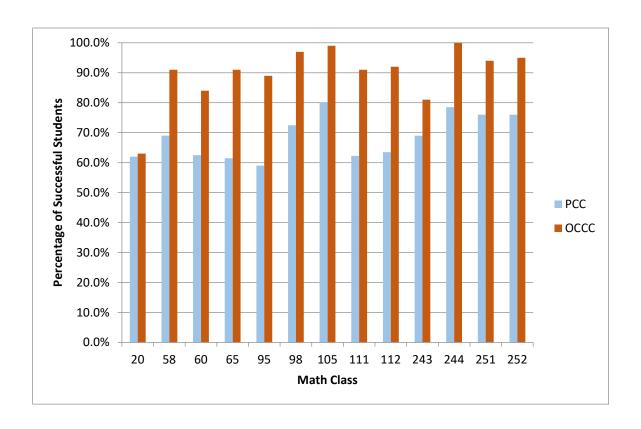
Program Name: OCCC versus PCC Mathematics

Analysis:

Unfortunately, we were unable to obtain the numbers regarding PCC's Math SAC fill rate and number of sections offered. However, they do mention in their recent program review that they have not been hiring as many new faculty due to lower enrollment, so it's possible they had a drop in fill rate and possibly even the number of sections they offered.

What was indicated in their program review, FTE was down in PCC's math courses as well. They also attributed this to multiple measures. It would be useful to look at the overall enrollment for the colleges as well to determine if a drop in enrollment in our classes also connected to that.

A direct head to head comparison with PCC shows that our successful completion rate is significantly higher for each math course we offer in all classes except Math 20.



Note: Successful Completion Rate means a student received A, B, C, or P in their class.

Note 2: Data for PCC is based on 2014-2018 where data for OCCC is based on 2016-2019

2.3 Student Enrollment and Achievement by Gender and Race/Ethnicity

Analyze the achievement levels for each of the groups listed below. Are there differences in achievement levels across groups? Are there strategies you can implement to provide more support for these populations?

(Attach to Appendix or provide below the Retention and Completion Rates by Gender and Race/Ethnicity as identified by the Office of Institutional Research)

Program Name: Mathematics

Group	Number of	% Students	Successful
	Students	Retained from	Completion
	Enrolled	Fall to Fall	Rate
Males	Unknown	47%	Unknown
Females	Unknown	47%	Unknown
Asian-American	Unknown	50%	Unknown

African-American	Unknown	67%	Unknown
Hispanic	Unknown	45%	Unknown
Native American	Unknown	38%	Unknown
Pacific Islander	Unknown	50%	Unknown
White	Unknown	48%	Unknown
Unknown	Unknown	33%	Unknown

Analysis:

Percent Retained from Fall to Fall:

This data is highly flawed because it is not math specific. It is the numbers for all students who are listed as transfer students. In addition, average cohort size for minority students ranged from a low of 1 in Pacific Islander category to a high of 14 for Hispanic with no way of knowing if a 0% meant that a minority student completed the program and we had no new students the next term, or if that meant they did not continue with the program.

2.5 Other Data

Please include any other data (internal or external) that may be relevant to student achievement, learning, and trends within your Basic Skills, CTE, or Transfer Education program.

Analysis

The PLC known as Math Maniacs, established in the fall of 2013, is comprised of full and part time math faculty, college advisors, representatives of student services, Dean of students, Dean of Academic and Workforce and various OCCC faculty as relative to the agenda. This PLC meets once a month to use current data to identify, communicate about, and solve problems, taking action to increase student success in mathematics at all levels.

Together, the members have created a successful math placement process using multiple measures (2015), generated the current math lab to assist students with academics (2014), created and supported the math literacy pathway for non-STEM students (2015), and strengthened the STEM pathway by recruiting students to take calculus (2015).

The Mathematics Department, an area in which the college is unable to exercise curricular control due to the OCCC-PCC Educational Services Agreement, supported a college-wide shift to Multiple Measures Placement in the academic year

2016-2017. Using Math Maniacs as a platform for discussion of data, an analysis of the data showed that, on average, students placed higher in the Math sequence with little impact on course success rates. This affirmed the department's use of this placement device.

To continue to make certain our placement via multiple measures has been appropriate, we collaborated with Student Services to write and distribute a survey to our math students regarding their placement in the math sequence. We found that the data indicated that the overwhelming majority felt they were placed appropriately (89%), with 76% of respondents indicating for the question "knowing what you now know" (about the class), they would take a class equal to the one they were registered in, with 12% saying they would take a class more challenging, and 12% saying they would take a class less challenging.

These numbers indicate that placement using our multiple measures seem to be having a positive effect, in that students are being placed appropriately. The only data that came out of the survey that was surprising was that 24% of students did not know which math track they were on, but that might be due to the wording of the choices. This survey was distributed the sixth week of Fall 2018.

In 2016, after reviewing data regarding the withdraw rate in our math 20 and math 60 courses, we began to include "growth mindset" activities and discussions into all math classrooms so that students were taught how to be resilient problem solvers. We also began actively using the college's early alert system to contact students who are struggling to be successful very early on in the quarter. The goal has been to intervene quickly with resources the students can use that are on campus, such as the Math Center, so that those students don't fall so far behind that they withdraw from the class.

Math Maniacs also has become a vehicle for discussing successful teaching strategies specific to courses. An example of this is in 2016, a math instructor shared her use of quiz retaking as a way of getting students to actively complete the homework. Students were required to retake a failed a quiz in order for their homework to be accepted. In other words, failing to pass a quiz meant their homework would not be accepted, so they could retake the quiz in order to change that. She found this policy increased her student retention and success. After sharing this, other instructors began using this technique to improve retention and success in their courses.

2.6 Strengths, Weaknesses, Opportunities, Challenges (SWOC)

2.6.1: What are the strengths of your program as indicated in the supplied data?

Our completion success rates are very good. The students who stay in the classes are overwhelmingly passing them. Compared to PCC, we clearly have an advantage being a smaller college with smaller class sizes. We are able to give our students more attention from the very start of a class. Our commitment to minimizing lectures and maximizing group activities/labs, gives us opportunities to analyze issues students are having with the material. We are therefore able to help students with material they are struggling with before taking an exam, rather than finding out they were struggling with the material post-exam.

2.6.2: What are the weaknesses of your program as indicated in the supplied data?

It is hard to adequately judge by our Fall to Fall data, but the data given under the second core theme clearly shows that our department is having trouble getting students to persist through the math sequence in an adequate amount of time. A continuous decline over the last three-years, despite numerous interventions, means we need to seriously examine where we are losing students in regards to math classes with higher withdraw rates. We need to also know how many students give up after not successfully attempting a math class.

2.6.3: What are the opportunities for your program as indicated in the supplied data?

If we can address the weakness in our program regarding retention, combining that with our completion success rates, means that we can truly brag about our students and the math program here at OCCC. Going forward, we will be focusing a great deal of energy and research into retention, including disseminating this data to all of our math faculty in order to make everyone aware of our current results. From there we will be able to create actionable items that our department can begin to work towards.

2.6.4: What challenges exist for your program based on the supplied data?

We have two major challenges at this time. First, since we are not accredited and under PCC Math SAC, we cannot make any curriculum or textbook changes until we become independent. Once that happens, we will be able to start considering those kinds of changes and begin to distinguish OCCC's math department. Our second major challenge is that we are going into this next year without two full-time math faculty. We have a large number of part-time math faculty. In fact, we will be working with the most part-time faculty we have ever worked with in the upcoming 2019-2020 academic calendar year.

3 | Student Learning Outcomes Assessment

3.1 How has assessment of course level SLOs led to improvements in student learning and achievement?

This past academic calendar year, 2018-2019, was the first time the Math Department did any sort of course assessment using the course assessment map template. This upcoming year will be the first opportunity we will have to thoroughly discuss the results of these assessments. However, once we become accredited we will be able to make tangible improvements for our students. At this point we have Course Outcomes Assessed for the following courses:

Course	Embedded Questions Written	Assessment Completed
20	X	Winter 2019
58	X	Winter 2019
60	X	
65	X	
95	X	Fall 2018
98		
105		
111	X	Fall 2018
112	X	Winter 2019
211		
243		
244	X	Spring 2019
251	X	Spring 2019
252		

3.2 How has assessment of program-level SLOs led to improvements in transfer or certificate/degree awards?

At this point we have not done a program assessment.

3.3 What challenges remain to make course and program level Student Learning Outcome Assessment more effective for your program?

We have yet to run a full course outcome assessment for math classes, which is something we look forward to completing in 2019-2020. Since we have completed some assessment, this next year will afford us the opportunity to see how our initial data looks against the data we will be collecting and will allow us to start making changes due to assessment.

4 | Evaluation of Progress Toward Achievement of Previous Program Plans (Section 4.0 N/A 2017-18)

4.1 Evaluate steps taken to achieve plans established in the last program review.

This is our first program review

4.2 In cases where resources were allocated toward goals, evaluate the efficacy of that spending.

This is our first program review

5 | Program Plans

5.1 Short-term Plans (four year cycle)

5.1.1: Based on the above data and analyses, identify 2 or more concrete plans, measurable outcomes, and activities that you would anticipate resulting in improvements to the program in the next four year cycle.

Improve retention

Based on the data discussed in this review, it seems necessary to go forward with trying to improve the numbers for retention. Here are the action items:

- 1. Obtain data regarding withdraw rates in our math classes for the last three academic years. This might mean looking at raw data and compiling it. More likely the data will show that we are losing students in our STEM pathway. Since it is the longer of the two pathways, there are more exit points for students. Also, depending on placement into the pathway, it might not be possible for someone to reach a college-level math course within their first year.
- 2. We will need to research ways of improving the pathways. Some possibilities are removing some current math classes, creating new math classes, creating support courses for our existing classes, and looking at accelerated models.
- 3. Decide on what possibilities work best for our program and work to create that curriculum.
- 4. Look at other areas of impact outside the Math Department that could improve our retention. An example might be working with the high schools in Lincoln County to better prepare incoming high school graduates for the math courses. Another example might be working with the Counseling Department and the Navigate program to improve student awareness regarding the demands of the math pathways, such as prioritizing math, which means they need to schedule their classes and work accordingly for that.

The Math Center Improvements

One resource we have available but can be more powerful is the Math Center. Here are the action items:

- 1. Formalize tutor training so that all persons working in the center don't just do homework problems for students, but in fact help students to find the answers so that they are able to do it for themselves. (Should be done Fall of 2019)
- 2. Collect data on students who use the Math Center. Questions we might ask would be: How well are they doing in the class as compared to other students? What are there retention rates? Does the number of hours spent utilizing the center make a difference in student success rates?
- 3. Make the Math Center more visible to students.
 - Have the math instructors inform students of the hours of operation.

- Advertise it on the monitor in the Common Area.
- Make bigger posters and place them around the campus.
- Move to a more visible location. (Should be done Fall of 2019)
- 4. Expand hours if the data shows an increase in student success.
- 5. Hold study groups in the center during hours when it is not being used for tutoring.
- 6. Hold teacher-led student success seminars in the center during the hours it is not being used for tutoring.

5.1.2: What specific aspects of these plans can be accomplished without additional financial resources? (See 5.1.1 above)

The first three action items for improving retention can be done without additional costs. The fourth item might not be too difficult if we can use curriculum completed by another community college with some editing for ourselves. If we have to write it from scratch, that will take an extensive amount of time that should be compensated.

The first three action items and the fifth item for the Math Center shouldn't require (too much) extra expense since they are very small scale. The fourth item starts to increase the Math Center budget only if it proves it can help with our student success rates and can be gradually scaled up based on available funding. The fifth item would an expense if we choose to hold study sessions led by a trained tutor. The sixth item would require compensation of time for faculty. Perhaps it can be a set stipend amount that would include developing the seminar and running it (maybe more than once.)

5.2 Long-term Plans (eight year cycle)

5.2.1: Based on the above data and analyses, identify two or more concrete plans, measurable outcomes, and activities that you would anticipate resulting in improvements to the program in the next eight years.

Dual Credit Expansion

Our dual credit program is a wonderful opportunity for us to gain FTE, develop good relationships with the local high schools, and have possible part-time faculty members from the current high school instructors. It would be most ideal if we could expand our program to Newport High School. Here are the action items:

 Reach out to other IBS schools that have successfully set up a dual credit program with a local college and create a plan of action to approach Newport High School.

- 2. Present the plan to Newport High School and recruit math faculty to participate.
- 3. Possibly sponsor any faculty who are not qualified.

Online Math Program

A solid online math program makes us more marketable to the people of Lincoln County who might be interested in pursuing a degree part-time but cannot attend a physical class on a regular basis. It also seems more marketable if the program had a free textbook and computer program associated to it. It does however need to be taught by faculty who are trained in doing online courses.

- 1. Determine based on need what classes would be ideal for online.
- 2. Set up online template courses for the identified math classes so they line up with our current curriculum.
- 3. Train additional faculty to run online courses.
- 4. Monitor the data with regards to our online program to make certain it is as successful as our physical classes.

5.2.2: What specific aspects of these plans can be accomplished without additional financial resources?

The first two and fourth action item for the math online program can be done with no additional cost.

6 | Requests for Resources

For any specific aspect of a plan listed in 5.0 that would require additional financial resources, complete the form below. If you are aware of a potential funding source other than college general funds, identify the potential source below.

Type of Resource	Requested Amount	Potential Funding Source
Personnel	Curriculum Development – 30- 90 hours special project pay	
	2. Tutor Hours – 10-20 hours/week at tutor rate	
	3. Dual Credit Work – Depends on whether sponsor is necessary	
	4. Stipends for Instructor-led Seminars - \$50-\$100	
Facilities		
Equipment		
Supplies		
Computer Hardware		
Computer Software		
Training	5. Training Instructors to teach online – 1 credit/unit of release time or Pay a company	
Other (promotion)		
Total Requested Amount		

6.1 Describe the resource request.

1. Curriculum development to improve our pathway retention. Data will be collected to see if there are any improvements in our current numbers.

- 2. Funding more hours in our Math Canter if we have the data to show it improves student success rates.
- 3. Funding for *potential* dual credit sponsorships.
- 4. Stipends for Instructor-led workshops through the Math Center.
- 5. Training new math instructors how to effectively teach online courses. This can be done in-house (faculty release time to teach it) or we can search for possible outside companies who have a training course.

6.2 What measurable outcome(s) will result from filling this resource request?

- 1. Data will be measured afterward to see if there is any significant improvement in our success rates.
- Data for students who use the Math Center will be collected to measure their rates of successful completion compared to the entire program. We look for trends in increased success across the board as the center expands it's student participants.
- 3. Data will be collected for our student completion rates and FTE earned.
- 4. Surveys will be issued for students who attended to see what skills and techniques they have learned.
- 5. Data will be collected comparing our online math course success rates to the traditional course success rates.

6.3 How does this request further college fulfillment of the college mission and its Core Theme objectives?

Improving retention in our math pathways has direct connection to improved retention for OCCC. We need to continue to push for students to complete their math requirements in their first year in order to for those students to achieve certificates/degrees/transfer.

Monitoring and expanded programs to support students should translate to better success rates and retention. By improving our Math Center, we are investing time and money into giving our students the additional support they need to achieve their goals.

Our dual credit program is a wonderful opportunity for us to gain FTE, develop good relationships with the local high schools, and have possible part-time faculty members from the current high school instructors.

A solid online math program makes us more marketable to the people of Lincoln County who might be interested in pursuing a degree part-time but cannot attend a physical class on a regular basis.

9 | Executive Summary

Chief Academic Officer Program Review Summary Page

Data Definitions:

Student headcount – Student headcount is an unduplicated count of students. It is actual number of individual students enrolled. Students may enroll in one more courses in a term, but they are counted only once for the term.

Student Enrollment – Student enrollment is a duplicated count of students. Students may be enrolled in more than one course and would be counted in each course for the term.

Full-Time Equivalent Student (FTE) – FTE is a standard statewide measure of student enrollment at an academic department, or an institution. FTE is a key performance indicator, productivity measure, and funding rate. FTE represents neither student headcount nor student enrollment, but it is a conceptual measure of student enrollment. The formula to calculate FTE is expressed by the equation below:

FTES = (Census enrollment X Weekly student contact hours X Term Length Multiplier) / 510 where TLM = 11

Example: FTE for a 4 credit class that meets 6 hours/week with 30 students enrolled at census FTE = $(30 \times 6 \text{ hours/week} \times 11 \text{ weeks/semester}) / 510 = 3.88$

Full-Time Equivalent Faculty (FTEF) – In a FTEF, a faculty member's actual workload is standardized against the teaching load. Thus, FTEF does not represent an actual number of faculty members; it is a conceptual measure workload at an academic department, or an institution. The formula to calculate FTEF is expressed by the equation below:

FTEF = WFCH / Contract teaching load of the discipline where WFCH = standard course hours Example: 3/15 = 0.20

Weekly Student Contact Hours (WSCH) – WSCH is acronym for weekly student contact hours. It presents a total number of hours faculty contacted students weekly in an academic department or an institution. WSCH = census enrollment x class hours per week

Instructional Efficiency (WSCH/FTEF) – WSCH is a proxy for revenue generated by the class. FTEF is a proxy for instructional cost. The ratio, WSCH per FTEF could be interpreted in terms of cost-efficiency or instructional quality.

Average Class Size (ACS) – ACS is a measure of the enrollment per faculty contact hour. The District has established 34 as the college-wide target for average class size. The formula to calculate ACS is expressed as follows:

ACS = WSCH / WFCH or ACS = (WSCH/FTEF) / Teaching load

Success Rate - The percentage of students who received a passing grade of A, B, C, P at the end of the semester.

Success rate = (A,B,C,P)/(A,B,C,D,F,P,N,W,I)

Retention Rate - The percentage of students retained in a class at the end of the semester.

Retention rate = (A,B,C,D,F,N,P,I)/(A,B,C,D,F,P,N,I,W)

Fall to Winter Persistence Rate – The percentage of students enrolled in winter term out of students who first enrolled at the college in the fall term.

Fall to Winter Persistence rate = (number of students with at least one course in next term) / (number of students with at least one course in the first term)

Fall to Fall Persistence Rate – The percentage of students enrolled in the subsequent fall term out of students who first enrolled at the college in the preceding fall term.

Fall to Fall Persistence rate = (number of students with at least one course in next term) / (number of students with at least one course in the first term)

Graduation Rate – The percentage of entering fall students who complete the requirements for a degree or certificate within 150% of time.