PROGRAM REVIEW
MATHEMATICS
2018-22

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1. Overview of the Program

a)   Provide a brief narrative description of the current program, including the program's mission statement and the students it serves.

Our goal in the mathematics program is to provide the foundation in mathematics that our students will need, regardless of their background in mathematics, to pursue their program of study, be it academic or vocational.

Our mathematics program addresses core competencies that all students studying mathematics must acquire, namely: content knowledge, critical, creative and analytical thinking, communication and comprehension, professional and personal growth, community and collaboration, and information and technology literacy.

Program's Strengths and Weaknesses

Strengths

• Transfer-level courses are well-articulated with both CSU and UC.

• Faculty shares a commitment to strong academic standards. We are a responsive team who work together cooperatively in accomplishing our mission. SLO assessments are done on time and with full participation by faculty teaching the particular course.

• The class schedule meets the needs of many students. Courses are offered from early morning to evening and on weekends.

• Instructors are eager to adjust instructional methods to improve student learning and success.

• SLOs are assessed on a regular basis. SLO assessments provide a window into how we are progressing in accomplishing our instructional objectives.

Weaknesses

• Support for student-centered classrooms to needs to be greater. Specific needs are outlined in the recommendations.

• Equipment that is approved is very slow in arriving. There needs to be greater responsiveness to classroom needs.

• Support for and participation in professional development in the context of AB 705 needs to be greater.

Program Opportunities and Challenges

• AB 705 has created new challenges for the department. We have created co-requisite courses for Math 73, 80, 130, 170, and 180. These co-requisite courses will provide our students, who may have otherwise been placed one or more levels below transfer level, with the support they need to complete a transfer level course within one year.

• Providing instructors with the professional development to implement an effective teaching pedagogy needed in a co-requisite model will be essential in our success.

• A modified Supplemental Instruction (SI) program will need to be implemented to positively impact the success of those students who make use of this program. More SI coaches need to be hired to cover more transfer-level courses.

• Keeping pace with technology and the latest technological tools available in delivering instruction, as well as for student use, presents an ongoing budgetary challenge for both the institution and the student.

Evaluation of Program's Performance

SLOs have been written for all courses and programs in the department. All the math courses that are offered at Compton College have conducted at least one assessment. These assessments shine a light on our performance, as they tell us what is working and what needs improvement.

Program's 3-5 Year Strategic Directions

• Maintain SLO assessment cycles as a routine part of departmental practice.
• Modify the SI program to fit the new co-requisite model.
• Build bridges with our feeder high schools in regards to curriculum.
• Provide our instructors with professional development and training in pedagogy and technological tools to help our students succeed.

Successful completion of courses in mathematics at Compton College enables students to satisfy the mathematics requirements for their basic skills, transfer, or vocational program.

Students are initially placed in the appropriate level of mathematics based on an evaluation of their transcript or by taking a placement test. However, we are starting to use multiple measures to place students into the appropriate math course.

Multiple Measures Rubric for Math Placement:

High School Performance Metric for Statistics/Liberal Arts Mathematics	Recommended AB 705 Placement for Statistics/Liberal Arts Mathematics
HSGPA ≥ 3.0 Success rate = 75%	**Transfer-Level Statistics/Liberal Arts Mathematics** No additional academic or concurrent support required for students
HSGPA from 2.3 to 2.9 Success rate = 50%	**Transfer-Level Statistics/Liberal Arts Mathematics** Additional academic and concurrent support recommended for students
HSGPA < 2.3 Success rate of 29%	**One Level Below Transfer Level Mathematics** Recommend students take one level below Math course, Math 65/67 is one level below for Stats. Math 120 transfer level if English, Coms, or Liberal Arts major.

High School Performance Metric BSTEM Mathematics[1]	Recommended AB 705 Placement for BSTEM Mathematics
HSGPA ≥ 3.4 **OR**	**Transfer-Level BSTEM Mathematics** No additional academic or concurrent support required for students

HSGPA ≥ 2.6 AND enrolled in a HS Calculus course Success rate = 75%	
HSGPA ≥2.6 or Enrolled in HS Precalculus Success rate = 53%	**Transfer-Level BSTEM Mathematics** Additional academic and concurrent support recommended for students
HSGPA ≤ 2.6 and no Precalculus Success rate = 28%	**One Level Below Transfer Level Mathematics** Recommend students take one level below Math course, Math 80/170 for calculus-based STEM majors. Math 80 if business majors.

b)   Describe the degrees and/or certificates offered by the program.

Mathematics A. S. Degree

The degree is designed for students planning to transfer with a major in mathematics. The student will acquire the ability to apply the principles of differential and integral calculus of one and several variables, differential equations, and linear algebra. Competencies will be assessed through problem solving involving limits; derivatives and integrals of real- and vector- valued functions of one and several variables; areas and volumes; line, surface, and volume integrals; numerical methods; sequences and series; ordinary differential equations; power series solutions; Laplace transforms; eigenvectors; vector spaces; and application problems. Students will have the ability to utilize computer algebra systems in problem solving.

Liberal Studies (Elementary Teaching) Major:
Students with this major should complete Mathematics 110 and/or 111, 115 and 116.

Preparation for the Transfer Major:
For information on specific university major requirements, a student should obtain a transfer curriculum guide sheet in the Counseling Services Center, consult with a counselor, or visit the Transfer Center. The transfer major requirements may be used to help fulfill associate degree requirements.

Mathematics General A. A. Degree

The program is designed as a terminal degree in general mathematics. The student will acquire the ability to apply the principles of analytic geometry and differential and integral calculus of

one variable. Competencies will be assessed through problem solving involving limits, derivatives and integrals of functions of one variable, areas and volumes, and application problems. Students will have the ability to utilize computer algebra systems in problem solving.

Note: Students planning to transfer with a major in mathematics should also refer to the program description for the A. S. Degree in Mathematics.

Compton College Major Requirements:

Complete the Following:
Mathematics 190, 191;

and three courses from:
Mathematics 140, 150, 210, 220, 270,
Physics 1A,
one Computer Science course.

Total Units: 21-23

POSSIBLE CAREER PATHS

Actuary	Financial Analyst
Applied Science Programmer	Information Scientist
Appraiser	Inventory Manager
Architect	Investment Analyst
Assessor	Loan Officer
Auditor	Mathematician
Biomedicine Researcher	Operations Research Analyst
Budget Analyst	Physical Scientist
Casualty Rater	Programmer
Cartographer	Psychometrist
Computer Scientist	Statistician
Credit Counselor	Stock Broker
Cryptanalyst	Surveyor
Demographer	Systems Analyst
Econometrist	Teacher/Professor

Engineering Analyst   Technical Writer

Estimator   Technical Sales Representative

Finance Director

Additional career information is available from the professional society:

MAA ([Mathematical Association of America](#))

c)   Explain how the program fulfills the college's mission and aligns with the strategic initiatives. (see Appendix A)

The mission of Compton College is a welcoming environment where the diversity of our students is supported to pursue and attain academic and professional excellence. Compton College promotes solutions to challenges, utilizes the latest techniques for preparing the workforce and provides clear pathways for transfer, completion and lifelong learning.

In support of this mission the mathematics department seeks to provide instruction and support for students learning mathematics at all levels, in compliance with the strategic initiatives (S.I.) of the College:

GOAL 1: Improve recruitment, enrollment, retention, and completion rates for our students.

Objective 1. Tailor degree and certificate programs to meet the needs of our students.

See above description of our degree and certificate programs.

Objective 2. Educate students about pathways to graduation.

We are currently being trained in guided pathways. Math faculty members are attending workshops.

Here are our guidelines for guided pathways:

KEY QUESTIONS ABOUT STUDENT PATHWAYS
CLARIFYING PATHWAYS TO STUDENT END GOALS
• Are our programs designed to guide and prepare students to enter further education and employment in fields of importance to our region?

- Are further education and employment targets clearly specified for every program?
- How clearly are our programs mapped out? Do students know which courses they should take and in what sequence? Are the courses that are critical for success in each program clearly identified?

HELPING STUDENTS ENTER A PATHWAY

- How do we help new students choose a program of study, particularly the many who do not have clear plans for college and careers?
- How well do we help students succeed in the gateway courses for our main program areas (such as nursing and allied health, business, education and social services, social and behavioral sciences, arts and humanities, STEM, etc.)?
- How do we ensure that students enter a program of study as quickly as possible?
- Do we help students who are unlikely to be accepted into limited-access programs (such as nursing or culinary arts) to find other viable program paths?

KEEPING STUDENTS ON PATH

- How well do we monitor students' program choices and progress toward completing their program's requirements?
- Do students know how far along they are in their programs and what they have left to do to complete them?
- Are we able to identify when students are at risk of deviating from their program plans? How effective are we at intervening to help students get back on track?
- Does the way we schedule courses enable students to take courses when they need them, plan their lives around school from one term to the next, and complete their programs on time?

ENSURING THAT STUDENTS ARE LEARNING

- How well defined are the learning outcomes for each of our programs?
- Are program learning outcomes aligned with the skills and knowledge students need to succeed in the four- year college majors and employment opportunities targeted by each program?
- Are assignments and exams designed to evaluate whether students are building essential skills and mastering learning outcomes across each program?

Objective 3. Enhance student preparation for academic success and completion.

We offered many workshops throughout the semester on several topics in math. These were open to all students in all math courses. They were offered free of charge and were taught by math faculty. Going forward this program is being streamlined and pending approval from administration it will be offered through the student success center in the future.

Objective 4. Provide a student-centered environment that leads to student success.

Faculty always invite and answer student's questions when presenting a lesson. Students are also encouraged to attend office hours. Free workshops in math are available throughout the semester, as well as free tutoring, Monday through Saturday in the L-SSC.

GOAL 2: Support the success of all students to meet their education, and career goals.

Objective 1. Attract and retain traditional students, and focus on retaining non-traditional students.

In Math we offer classes Monday through Saturday, from 8:00 am through 10:00 pm. In addition we offer short term and hybrid classes. We fully endorse and participate in the F.I.S.T. program, and the food pantry.

Objective 2. Minimize the equity gap for access, retention, and graduation rates.

Our support programs mentioned above contribute to closing the equity gap in access, retention and graduation rates. There are also SI (supplemental instruction) coaches, who attend lectures with the students, then provide follow-up sessions with students immediately after the lecture to review and augment the material just covered in class.

We provide teaching strategies to accommodate the various styles of learners:
The Seven Learning Styles:
- Visual (spatial): You prefer using pictures, images, and spatial understanding.
- Aural (auditory-musical): You prefer using sound and music.
- Verbal (linguistic): You prefer using words, both in speech and writing.
- Physical (kinesthetic): You prefer using your body, hands and sense of touch.
- Logical (mathematical): You prefer using logic, reasoning and systems.

- [Social](#) (interpersonal): You prefer to learn in groups or with other people.
- [Solitary](#) (intrapersonal): You prefer to work alone and use self-study.

From http://www.learning-styles-online.com/overview/

We also work closely with counselors, the FYE staff, DSPS, EOP&S, coaches, and others on campus,

Objective 3. Identify and provide clear pathways for traditional and non-traditional students to meet their goals.

This is a work in progress as we are now embarking in this new direction of guided pathways. However, we do have a four semester plan that we encourage our students to take. This will be modified as we go forward.

MATHEMATICS
AS-T DEGREE PLAN/ FOUR-SEMESTER PLAN

	NURSING	LIBERAL ARTS	BUSINESS	ENGINEERING, MATH & SCIENCE AS-T DEGREE PLAN
SEMESTER 1	Option 1: Math 12 Option 2: Math 37	Option 1: Math 23 Option 2: Math 37	Math 40	Math 190* and optional: Csci 1* or Math 150*
SEMESTER 2	Option 1: Math 23 Option 2: A: Math 40 or 73 depending on level completed in 37 B: Math 67 (this path is for those transferring)	Option 1: Math 40 Option 2: Math 67	Math 80	Math 191* and a **total** of one course from List B below
SEMESTER 3	Option 1: Math 40 Option 2: A: Math 73 if not completed B: Math 150*	Option 1: Math 73 Option 2: Math 150*	Math 130*	Math 220* and a **total** of one course from List B below

SEMESTER 4	Option 1: Math 73 Option 2: Math 150*	Math 150*	Math 165*	Math 270* and a **total** of one course from List B below

* Transfer: CSU, UC
List B: a total of <u>one</u> of the following courses: Csci 1, 2, 3; Math 150, 210; Phys 1A, 3A

We now offer new Pre-Transfer Mathematics Pathways for our students: BAM (Basic Accelerated Mathematics) Math 37, which can take students from Math 12 to eligibility for Math 80 in one semester, and GEA (General Education Algebra) Math 67, which can take a student from Math 12 to most general education transfer-level math courses, all within one semester.

Math Sequence Spring 2020
IMPORTANT: Consult with a counselor for appropriate placement & pathway
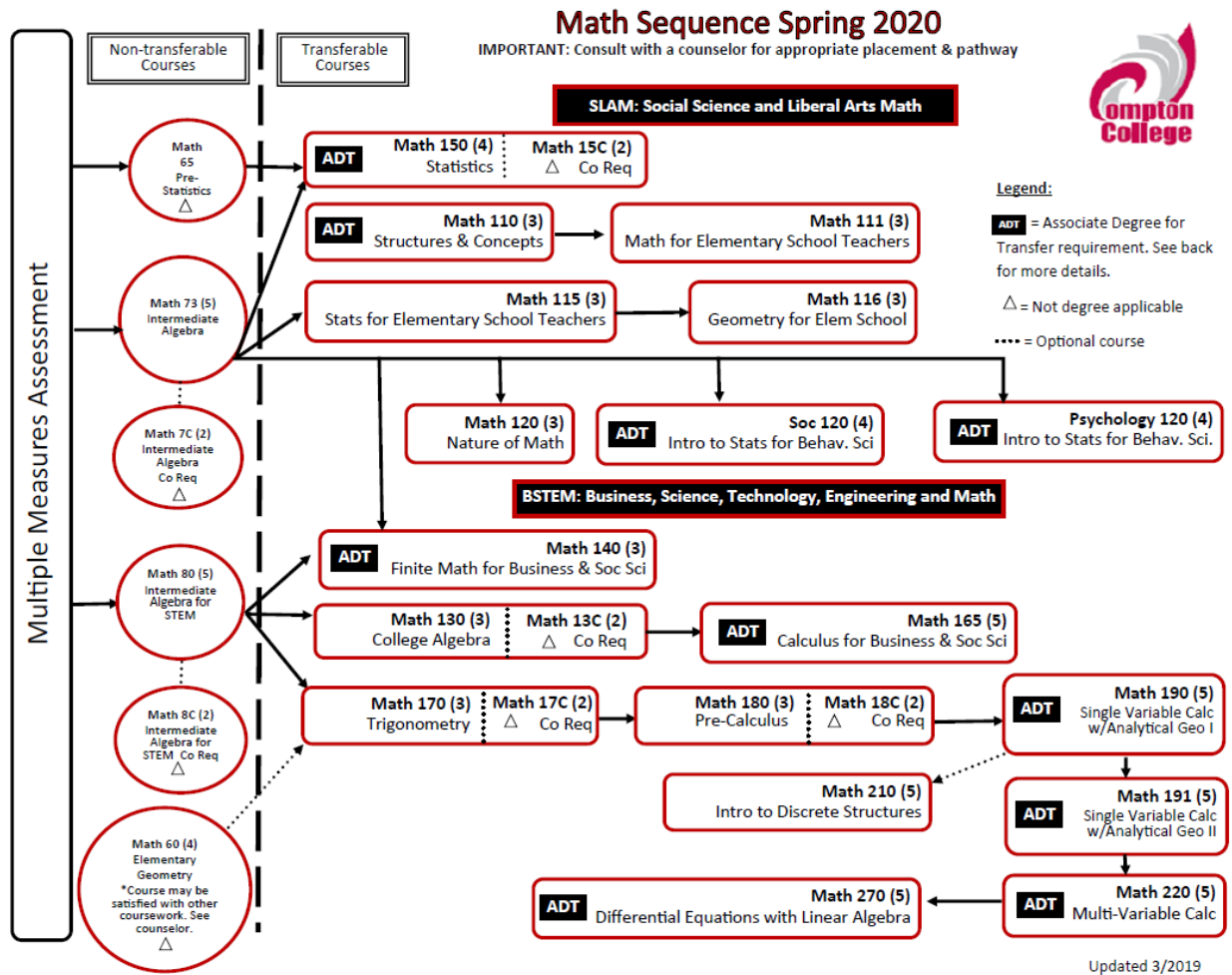
GOAL 3: Support the success of students through the use of technology.

Objective 1. Implement an early alert program to identify and notify students of support services and programs in a timely manner.

Counseling, we are informed, is implementing such a program. Faculty will be able to notify counseling of failing students, who will then provide the necessary follow-up. In the meantime, faculty does engage failing students about their grades and provide counseling and direction on a one on one basis.

Objective 2. Provide robust distance education course and service offerings.

We offer DE courses both developmental (Math 40, 73 and 80) and transfer (Math 150). We hope to expand these offerings as faculty is trained. Several of our courses have been updated to now provide online Math at Compton College.

Objective 3. Enhance technology for teaching and learning through professional development.

Our teaching strategies include power point, projector use, as well as chalkboard and whiteboard. We provide free use of calculators through a loan program in L-SSC for student's use. We recently purchased thirty-five new state-of-the-art desktop computers for our computer lab courses, Math 37 and Math 67 in MS 203. Students now remain in the MS building for lecture and lab in Math 37 and 67 and no longer need to trek over to the Voc Tech labs. Our math classrooms are smart classrooms and we plan to upgrade them further with more features. We invite publishers periodically to provide hands-on training to faculty on their technological products: WebAssign, MathTV, MyMathLab, etc. showing the latest features as they evolve.

GOAL 4: Offer excellent programs that lead to degrees and certificates in Allied Health and Technical fields.

Objective 1. Increase the number of degrees and certificates awarded in the Allied Health and Technical fields.

We partner with other programs to train students for special fields of study.
We offer Math 73 as on ground and hybrid courses Monday through Saturday, morning and evening to accommodate our nursing students. Though in the future nursing students will be required to take Math 150 statistics instead of intermediate algebra to enter the nursing program.

Objective 2. Implement a plan to target outreach of working professionals in Healthcare and Advanced Manufacturing.
Our hybrid and online courses are an option for working professionals in these fields.

Objective 3. Create collaborative partnerships with industry leaders in the Allied Health and Technical fields.
Our non-credit math courses will fulfill a need in this area. These courses will provide greater flexibility in meeting the specific needs in the Allied Health and Technical fields. However, current options available include hybrid, short term and accelerated courses.

GOAL 5: Establish partnerships in the community and with the K-12 schools.

Objective 1. Establish faculty to faculty partnerships with K-12 feeder schools to better align curriculum between the two segments, and to improve student preparation.

We are starting to do this. We recently had a productive meeting with the faculty at Lynwood High and hope to expand such contact.

Objective 2. Continue to develop more Career and Technical Education programs that meet the needs of the community.

Our non-credit courses will fulfill this need as they become on stream.

Objective 3. Strengthen the broader needs of the community served by Compton Community College District.

We are always listening, attentive, and responsive. For example, the need for non-credit courses was identified and we are responding to that need.

c)   Discuss the status of recommendations from your previous program review.

Recommendations

1. Removal of all televisions and tables along the walls in Mathematical Science Building classrooms on the second floor.
    a. Removal of the televisions and tables along the walls will provide more space for the faculty and students to work with. The televisions serve no purpose and often impede the vision of students. The tables along the wall take up space and prevent faculty and students from being able to use what could be white boards on those walls. Anticipated cost: $700
2. Relocation of projector and screens to be at the corner of the room.
    a. The way the projector and screens are currently positioned take up board space on the wall that could be used. By re-positioning the projector screens to be at the corner of the room, faculty would be able to project onto the screen and also use the board space simultaneously.   Anticipated cost: $1000
3. Addition of white boards along all the walls that do not have windows.
    a. Many faculty would like to create student-centered classrooms. Having white boards along all the walls in the classroom is conducive to student-centered learning.   Anticipated cost: $3000
4. The purchase of new pod desks and chairs to facilitate student collaboration.
    a. Many faculty would like to create student-centered classrooms. Having pod desks and chairs that students can easily get in and out of groups is conducive to the student-centered environment that is needed.   Anticipated cost: $4000
5. The purchase of 3 class sets of graphing calculators.

a. The purchase of 3 class sets of graphing calculators for courses such as Math 150 are essential for student success. Technology is an important component to many transfer level courses.   Anticipated cost: $13125

6. The purchase of 1 document camera for classroom use.
   a. The purchase of 1 document camera is recommended for faculty that are looking to engage their students by having them present their work to the class. This ties into the student-centered classroom that faculty are looking to adopt.   Anticipated cost: $150

7. The existence of a supply room where faculty can access unlimited white board markers, white board erasers, pens, staples, paper clips, tape and other office supplies.
   a. As faculty move more to a more student-centered teaching style, students will be more hands-on with their learning, as a result there will be a greater demand for white board markers and other supplies.   Anticipated cost: $500

8. Ongoing professional development for pedagogy, technology training and other best practices under AB 705.
   a. Professional development will be needed for faculty teaching under AB 705. There will be a need for faculty to be trained in pedagogy, technology training and best practices. There will also be a need for faculty to meet regularly in a "community of practice" where they come together for support and share resources, discuss effectiveness of strategies and teaching practices.   Anticipated cost: $10,000

Recommendations	Cost Estimate	Strategic Initiatives	Status
1.Establish 5 smart classrooms	$50,000	Goal 3	Completed
2.Purchase and install 35 desktop computers with software in MS 203	$100,000	Goal 3	Completed
3.Hire 10 additional tutors and 10 additional SI coaches	$50,000	Goal 2	In Progress
4. Purchase 3 projectors with DVD players in them and/or flash drive pluggable (in other words, with no laptop needed for adjuncts who may need to use a projector and do not have a work laptop)	$5000	Goal 3	Completed
5. Two media carts (projector, laptop computer, speakers)	$3000	Goal 3	Completed
6. A printer/scanner for scanning notes to etudes and print documents when the computer lab is inaccessible. Also, tablets for teaching hybrid classes. 1. HP LaserJet Pro 400 MFP M425dn - $400+tax+shipping 2. Surface Pro 3 - 128GB / Intel i5 - $1,000+tax+shipping	$2000	Goal 1	Not done

3. Surface Pro Type Cover (Black) - $130+tax+shipping 4. Surface USB 3.0 Ethernet Adapter - $40+tax+shipping 5. Surface Mini DisplayPort to VGA Adapter - $40+tax+shipping				
7. Provide WiFi throughout campus	$50,000	Goal 3	Completed
8. Early College-develop partnerships with local high school personnel-teachers, counselors and administrators	$5000	Goal 5	In Progress
9.Include counseling staff in departmental meetings	$0	Goal 1	Completed
10.District should allocate funding based on needs outlined in our program review document	See above	Goal 1	In progress
11.Install whiteboards in remaining six classrooms	$5000	Goal 1	Not done
12. Make book grants available by the second week of the semester	$50,000	Goal 1	Incomplete

2. Analysis of Research Data (include data provided by Institutional Research)

Provide and analyze the following statistics/data.

a) Head count of students in the program

Fall Terms 2013-2016							Compton Student Population
			Term				
		2013	2014	2015	2016		Fall 2016
	Term Headcount	2,728	2,772	2,620	2,650		7,701
Gender	F	66.6%	65.9%	64.4%	63.5%		63.4%
	M	33.4%	34.1%	35.6%	36.5%		36.2%
Ethnicity	African-American	36.3%	32.2%	30.3%	27.5%		34.6%
	Amer. Ind. or Alask. Native	0.2%	0.0%	0.2%	0.1%		0.2%
	Asian	2.5%	2.1%	1.7%	2.4%		4.7%
	Latino	54.6%	60.1%	63.5%	65.3%		53.7%
	Pacific Islander	1.0%	0.9%	0.3%	0.8%		0.7%
	White	2.4%	1.8%	0.9%	1.4%		2.9%
	Two or More	2.5%	2.5%	2.7%	2.4%		2.7%
	Unknown or Decline	0.5%	0.4%	0.4%	0.2%		0.5%
Age/Age Group	<17	0.2%	0.0%	0.1%	0.0%		0.6%
	17	1.6%	1.7%	2.0%	2.4%		2.2%

		2014	2015	2016	2017	Compton Student Population
	18	10.9%	11.9%	13.3%	14.8%	*7.5%*
	19	12.1%	12.9%	13.4%	15.5%	*9.2%*
	20	12.0%	11.3%	11.4%	11.6%	*9.8%*
	21	8.8%	9.9%	9.6%	8.5%	*9.5%*
	22	7.4%	7.0%	7.9%	6.7%	*7.5%*
	23	6.6%	6.2%	4.9%	5.7%	*6.3%*
	24	4.1%	5.4%	4.6%	4.2%	*5.9%*
	25-29	15.2%	14.5%	14.4%	13.6%	*16.5%*
	30-39	11.7%	11.3%	10.5%	9.4%	*13.9%*
	40-49	6.2%	4.9%	4.7%	4.0%	*6.5%*
	50-64	3.0%	2.9%	3.0%	3.2%	*3.6%*
	65+	0.1%	0.2%	0.3%	0.2%	*0.4%*
Class Load	Full-time	38.5%	38.5%	41.1%	39.1%	*25.5%*
	Part-time	61.2%	61.5%	58.6%	60.6%	*73.3%*
Academic Level	College degree	5.8%	5.0%	3.9%	3.8%	*10.0%*
	HS Grad	88.4%	89.5%	90.7%	91.0%	*81.6%*
	Not a HS Grad	0.5%	0.3%	0.5%	0.4%	*0.4%*
	K-12 Special Admit	0.1%	0.0%	0.1%	0.2%	*2.1%*
	Unknown	5.2%	5.2%	4.9%	4.6%	*5.9%*
Educational Goal	Intend to Transfer	31.9%	33.6%	48.3%	56.5%	*31.6%*
	Degree/Certificate Only	6.9%	5.9%	8.3%	9.1%	*7.6%*
	Retrain/recertif.	2.8%	2.9%	2.9%	4.0%	*3.8%*
	Basic Skills/GED	6.5%	6.6%	4.9%	5.2%	*6.8%*
	Enrichment	2.0%	1.9%	2.4%	2.1%	*1.7%*
	Undecided	12.9%	11.9%	13.6%	13.8%	*1.3%*
	Unstated	37.1%	37.2%	19.7%	9.3%	*34.1%*

Spring Terms 2014-2017						Compton Student Population
			Term			
		2014	**2015**	**2016**	**2017**	**Spring 2017**
	Term Headcount	2,597	2,574	2,297	2,239	*6,944*
Gender	F	64.5%	66.7%	63.6%	63.6%	*64.1%*
	M	35.4%	33.3%	36.4%	36.4%	*35.9%*
Ethnicity	African-American	36.2%	30.6%	28.5%	25.9%	*32.5%*
	Amer. Ind. or Alask. Native	0.2%	0.1%	0.1%	0.0%	*0.2%*
	Asian	3.0%	1.7%	1.5%	2.1%	*5.0%*
	Latino	54.8%	62.7%	65.6%	66.4%	*55.2%*

	Pacific Islander	0.9%	0.7%	0.5%	0.7%	*0.7%*
	White	1.9%	1.5%	1.1%	1.7%	*3.0%*
	Two or More	2.5%	2.5%	2.5%	3.0%	*2.8%*
	Unknown or Decline	0.5%	0.3%	0.2%	0.2%	*0.5%*
Age/ Age Group	<17	0.1%	0.2%	0.0%	0.0%	*0.9%*
	17	0.3%	0.1%	0.1%	0.3%	*1.4%*
	18	8.9%	10.8%	11.8%	11.7%	*6.0%*
	19	13.1%	14.7%	15.1%	16.7%	*8.4%*
	20	12.9%	12.2%	12.4%	11.6%	*9.1%*
	21	9.4%	9.7%	9.2%	9.5%	*8.2%*
	22	7.8%	7.2%	7.3%	7.1%	*7.4%*
	23	6.3%	6.5%	5.6%	5.9%	*6.3%*
	24	5.2%	5.1%	5.0%	5.0%	*5.1%*
	25-29	14.6%	14.8%	15.7%	14.6%	*16.1%*
	30-39	12.0%	10.5%	10.1%	10.7%	*12.8%*
	40-49	6.1%	5.1%	4.4%	3.9%	*6.2%*
	50-64	3.2%	3.0%	3.2%	2.5%	*3.9%*
	65+	0.1%	0.2%	0.2%	0.3%	*0.4%*
Class Load	Full-time	42.5%	41.3%	38.6%	35.6%	*23.4%*
	Part-time	57.1%	58.5%	61.3%	64.4%	*71.5%*
Academic Level	College degree	5.8%	3.3%	4.9%	6.3%	*9.9%*
	HS Grad	87.9%	90.4%	88.9%	87.9%	*81.5%*
	Not a HS Grad	0.3%	0.2%	0.6%	0.5%	*3.1%*
	K-12 Special Admit	0.4%	0.2%	0.0%	0.2%	*2.8%*
	Unknown	5.6%	5.8%	5.6%	5.0%	*4.8%*
Educational Goal	Intend to Transfer	31.3%	37.8%	50.0%	57.9%	*31.7%*
	Degree/Certificate Only	6.9%	7.5%	8.8%	8.4%	*7.3%*
	Retrain/recertif.	3.6%	3.4%	3.2%	3.7%	*4.4%*
	Basic Skills/GED	6.6%	5.9%	5.4%	4.6%	*5.8%*
	Enrichment	1.9%	2.1%	2.3%	2.6%	*1.6%*
	Undecided	13.1%	12.5%	13.9%	14.0%	*13.6%*
	Unstated	36.5%	30.8%	16.4%	8.9%	*26.8%*

Analysis of the data from 2014-2017 show that:
- One third of students on campus are taking math in any given semester.
- Two thirds are female.
- 60% are Latino and 30% are African-American.
- 40% are in the 18-20 age group and 25% are in the 25-40 age group.
- 40% are full-time students.
- 90% are high school graduates.
- 50% plan to transfer to the university, with 10% studying for a certificate or retraining..

b) Course grade distribution

Year	COURSE	Method	We	'A'	'B'	'C'	'P'	'D'	'F'	'NP'	Inc P	Inc NP	'DR'	'W'	Total	Succ.	Reten.
2013	MATH-110	Lecture	16	4	7						-	-		1	12	91.7%	91.7%
	MATH-12	Lecture	16	47	89	105		64	118		-	3		145	571	42.2%	74.6%
	MATH-130	Lecture	16	5	9	11		8	23		-	-		29	85	29.4%	65.9%
	MATH-150	Distance	16	28	24	10		8	1		-	-		21	92	67.4%	77.2%
		Lecture	16	28	63	58		9	32		-	-		102	292	51.0%	65.1%
	MATH-170	Lecture	16	10	13	7			1		-	-		4	35	85.7%	88.6%
	MATH-180	Lecture	16	1	5	2		2	3		-	-		7	20	40.0%	65.0%
	MATH-190	Lecture	16	3	2	6		2	3		-	-		17	33	33.3%	48.5%
	MATH-23	Lecture	16	85	101	120		22	40		1	3		82	454	67.6%	81.9%
	MATH-33	Lecture	12	1	6	5			1		-	-		7	20	60.0%	65.0%
		Lecture	16	5	3	6		2	2		-	-		8	26	53.8%	69.2%
	MATH-37	Lecture	16				10			15	-	-		4	29	34.5%	86.2%
	MATH-40	Distance	16			9		1	4		-	-		10	24	37.5%	58.3%
		Lecture	16	25	46	85		41	58		-	-		115	370	42.2%	68.9%
	MATH-43	Lecture	16	1	2	5		3	2		-	-		3	16	50.0%	81.3%
	MATH-67	Lecture	16	2	4	2		1			-	-		3	12	66.7%	75.0%
	MATH-73	Distance	16	7	12	20		5	11		-	-		19	74	52.7%	74.3%
		Lecture	16	31	64	82		33	55		-	-		104	369	48.0%	71.8%
	MATH-80	Distance	16	5	4	7		3	4		-	-		7	30	53.3%	76.7%
		Lecture	16	24	29	26		15	18		-	1		61	174	45.4%	64.9%
2013 Total				312	483	566	10	219	376	15	1	7		749	2,738	50.1%	72.6%
2014	MATH-110	Lecture	16	7	3	2					-	-		3	15	80.0%	80.0%
	MATH-12	Lecture	16	108	169	223		86	157		-	1		291	1,035	48.3%	71.9%
	MATH-130	Lecture	16	11	13	28		9	18		-	-		47	126	41.3%	62.7%
	MATH-150	Distance	16	45	40	28		10	9		-	-		30	162	69.8%	81.5%
		Lecture	8	3	6	6					-	-			15	100.0%	100.0%
			16	116	161	162		28	55		1	-		152	675	65.2%	77.5%
	MATH-170	Lecture	16	6	11	13		4	4		-	-		33	71	42.3%	53.5%
	MATH-180	Lecture	16	8	9	7		2	1		-	-		12	39	61.5%	69.2%
	MATH-190	Lecture	16	1	3	5			1		-	-		11	21	42.9%	47.6%
	MATH-191	Lecture	16	2	1	2		1	1		-	-		6	13	38.5%	53.8%
	MATH-23	Lecture	16	122	184	205		71	95		1	2		183	863	59.3%	78.8%
	MATH-33	Lecture	16	5	14	18			9		-	-		9	55	67.3%	83.6%
	MATH-37	Lecture	16				38			40	-	-		18	96	39.6%	81.3%
	MATH-40	Distance	16	2	6	10		2	4		-	-		26	50	36.0%	48.0%
		Lecture	16	77	132	147		106	151		-	-		230	843	42.2%	72.7%
	MATH-43	Lecture	16	6	10	12		8	4		-	-		10	50	56.0%	80.0%
	MATH-67	Lecture	16	8	12	12		3	5		1	-		5	46	71.7%	89.1%
	MATH-73	Distance	16	16	36	29		9	19		1	1		35	146	56.2%	76.0%
		Lecture	16	83	126	194		70	79		-	-		198	750	53.7%	73.6%
	MATH-80	Distance	16	3	9	10		1	6		-	-		22	51	43.1%	56.9%
		Lecture	16	27	46	63		25	28		-	-		77	266	51.1%	71.1%
2014 Total				656	991	1,176	38	435	646	40	4	4		1,398	5,388	53.2%	74.1%
2015	MATH-110	Lecture	16	4	7	2		1			-	-		1	15	86.7%	93.3%
	MATH-111	Lecture	16	2	2	4					-	-		1	9	88.9%	88.9%
	MATH-12	Lecture	16	133	106	182		74	188		-	1		249	933	45.1%	73.3%
	MATH-130	Lecture	16	7	15	19		5	8		-	-		22	76	53.9%	71.1%
	MATH-150	Distance	16	48	36	21		6	13		-	-		55	179	58.7%	69.3%
		Lecture	16	101	136	123		31	74		-	-		162	627	57.4%	74.2%
	MATH-170	Lecture	16	5	4	11		7	15		-	-		33	75	26.7%	56.0%
	MATH-180	Lecture	16	6	13	11		7	8		-	1		4	50	60.0%	92.0%
	MATH-190	Lecture	16	11	8	5		1	5		-	-		4	34	70.6%	88.2%
	MATH-23	Lecture	16	112	141	178		92	107		-	-		221	851	50.6%	74.0%
	MATH-33	Lecture	12	6	6	19		5	5		-	-		9	50	62.0%	82.0%
	MATH-37	Lecture	16				63			29	-	-		12	104	60.6%	88.5%
	MATH-40	Distance	16	5	5	7		5	17		-	-		12	51	33.3%	76.5%
		Lecture	16	69	106	177		88	159		1	2		214	816	43.3%	73.8%
	MATH-43	Lecture	16	9	15	4		4	7		-	-		7	46	60.9%	84.8%
	MATH-67	Lecture	16	11	7	7		2	10		-	-		12	49	51.0%	75.5%
	MATH-73	Distance	16	30	30	25		11	6		-	-		24	126	67.5%	81.0%
		Lecture	16	82	155	207		73	67		-	-		168	752	59.0%	77.7%
	MATH-80	Distance	16	10	5	13		5	14		-	-		18	65	43.1%	72.3%
		Lecture	16	34	69	88		24	28		-	-		57	300	63.7%	81.0%
2015 Total				685	866	1,103	63	441	731	29	1	4		1,285	5,208	52.2%	75.3%

Year	Course	Type	Wk												Total	Success	Retention
2016	MATH-110	Lecture	16	10	12	1		1			-	-		1	25	92.0%	96.0%
	MATH-12	Lecture	16	113	121	198		75	175		5	-		225	912	47.9%	75.3%
	MATH-130	Lecture	16	5	7	9		4	5		-	-		11	41	51.2%	73.2%
	MATH-150	Distance	16	41	45	34		24	5		-	-		46	195	61.5%	76.4%
		Lecture	16	88	127	139		28	66		-	1		160	609	58.1%	73.7%
	MATH-170	Lecture	16	5	9	12		5	15		-	-		32	78	33.3%	59.0%
	MATH-180	Lecture	16	11	16	11		4	5		-	-		13	60	63.3%	78.3%
	MATH-190	Lecture	16	17	22	17		2	5		-	-		13	76	73.7%	82.9%
	MATH-191	Lecture	16	17	13	5		4	4		-	-		6	49	71.4%	87.8%
	MATH-220	Lecture	16	9	8	5					-	-			22	100.0%	100.0%
	MATH-23	Lecture	16	133	158	167		69	90		-	1		142	760	60.3%	81.3%
	MATH-33	Lecture	12	3	9	11		3	2		-	-		2	30	76.7%	93.3%
	MATH-37	Lecture	16				41			20	-	-		19	80	51.3%	76.3%
	MATH-40	Distance	16		4	11			4		-	-		10	29	51.7%	65.5%
		Lecture	16	43	109	162		84	134		-	1		237	770	40.8%	69.2%
	MATH-43	Lecture	16	4	3	9		6	3		-	-		6	31	51.6%	80.6%
	MATH-60	Lecture	16	8	5	1		3	3		-	-		2	22	63.6%	90.9%
	MATH-67	Lecture	16	1	7	3			1		-	-		2	14	78.6%	85.7%
	MATH-73	Distance	16	29	16	20		5	11		-	-		22	103	63.1%	78.6%
		Lecture	16	89	150	166		50	49		-	-		180	684	59.2%	73.7%
	MATH-80	Distance	16	3	10	13		8	8		-	-		20	62	41.9%	67.7%
		Lecture	16	30	51	68		30	39		-	-		96	314	47.5%	69.4%
2016 Total				**659**	**902**	**1,062**	**41**	**405**	**624**	**20**	**5**	**3**		**1,245**	**4,966**	53.7%	74.9%
2017	MATH-12	Lecture	16	41	36	48		15	51		-	-		89	280	44.6%	68.2%
	MATH-130	Lecture	16	3	3	4		1	5		-	-		8	24	41.7%	66.7%
	MATH-150	Distance	16	19	18	17		13	10		-	-		22	99	54.5%	77.8%
		Lecture	16	75	71	60		11	17		1	2		94	331	62.5%	71.6%
	MATH-170	Lecture	16	1	7	4		3	4		-	-		15	34	35.3%	55.9%
	MATH-180	Lecture	16	5	5	9		3	7		-	-		6	35	54.3%	82.9%
	MATH-190	Lecture	16	8	3	11		1	2		-	-		7	32	68.8%	78.1%
	MATH-191	Lecture	16	11	14	8		2			-	-		4	39	84.6%	89.7%
	MATH-220	Lecture	16	7	5	8		1			-	-			21	95.2%	100.0%
	MATH-23	Lecture	16	97	76	81		25	20		-	-		75	374	67.9%	79.9%
	MATH-270	Lecture	16	6	5	8					-	-		1	20	95.0%	95.0%
	MATH-37	Lecture	16				17			9	-	-		28	54	31.5%	48.1%
	MATH-40	Lecture	16	32	54	90		26	76		-	-		77	355	49.6%	78.3%
	MATH-43	Lecture	16	2	2				6		-	-			10	40.0%	100.0%
	MATH-60	Lecture	16	3	6	2		1	2		-	-		2	16	68.8%	87.5%
	MATH-67	Lecture	16	2	4	4			1		-	-		5	16	62.5%	68.8%
	MATH-73	Distance	16	6	8	15		2	7		-	-		8	46	63.0%	82.6%
		Lecture	16	14	42	75		12	23		-	-		84	250	52.4%	66.4%
	MATH-80	Distance	16	3	4	8			9		-	-		10	34	44.1%	70.6%
		Lecture	16	18	19	27		7	40		-	-		65	176	36.4%	63.1%
2017 Total				**353**	**382**	**479**	**17**	**123**	**280**	**9**	**1**	**2**		**600**	**2,246**	54.9%	73.3%

Overall the transfer level courses have a higher success and retention rate than the non-transfer courses. As is to be expected, the transfer level students are more motivated and focused. More support services need to be provided for the students taking the developmental math courses.

c)   Success rates (Discuss your program's rates, demographic success characteristics and set a
      success standard for your program.)

Program Success Standard*	54.9%
5-year Program Success Average	55.6%

*Calculated as the average between the 5-year average and the lowest yearly rate in the 5-year period.

Year	Total Grades	Success Rate
FA 2013	2,738	50.1%
2014	5,388	53.2%
2015	5,208	52.2%
2016	4,966	53.7%
SP 2017	2,246	54.9%

Fall Term Demographic Success (2013-2016)

	Fall 2013		Fall 2014		Fall 2015		Fall 2016	
Ethnicity	Success	N	Success	N	Success	N	Success	N
African-American	42.0%	994	44.7%	894	43.8%	794	41.1%	730
Amer. Ind. or Alask. Native	20.0%	X	0.0%	X	50.0%	X	66.7%	X
Asian	65.7%	70	74.6%	59	65.9%	44	83.1%	65
Latino	54.8%	1,495	56.6%	1,669	56.3%	1,671	54.7%	1,737
Pacific Islander	50.0%	28	50.0%	26	11.1%	X	60.0%	20
Two or More	38.8%	67	53.6%	69	64.8%	71	39.1%	64
Unknown or Decline	30.8%	13	63.6%	11	72.7%	11	80.0%	X
White	68.2%	66	54.0%	50	83.3%	24	67.6%	37
Gender								
M	49.5%	915	50.7%	946	51.5%	938	51.6%	969
F	50.4%	1,823	54.2%	1,833	53.9%	1,690	51.6%	1,692
X	0.0%	X	0.0%	X	0.0%	X	0.0%	X
Age Groups								
19 or less	56.0%	678	56.7%	735	56.6%	755	53.7%	870
20 to 24	47.7%	1,064	49.9%	1,105	51.8%	1,009	48.4%	978
25 to 49	49.7%	906	54.3%	852	53.3%	778	54.9%	723
Over 49	37.8%	90	48.3%	87	33.7%	86	40.0%	90
X: Counts are suppressed for groups with less than 10 students.								
Shaded regions indicate groups achieving at a rate less than 80% of the reference group, respectively. Reference groups are White, male, and 20 to 24 years old.								

Spring Term Demographic Success (2014-2017)

	Spring 2014		Spring 2015		Spring 2016		Spring 2017	
Ethnicity	Success	N	Success	N	Success	N	Success	N
African-American	46.1%	944	42.3%	788	48.6%	656	44.6%	581
Amer. Ind. or Alask. Native	50.0%	X	50.0%	X	50.0%	X	0.0%	X
Asian	62.8%	78	69.8%	43	82.9%	35	77.6%	49
Latino	57.9%	1,431	55.4%	1,620	59.3%	1,512	58.1%	1,490
Pacific Islander	58.3%	24	41.2%	17	58.3%	12	20.0%	15
Two or More	45.3%	64	47.7%	65	44.8%	58	47.1%	68
Unknown or Decline	50.0%	14	28.6%	X	80.0%	X	100.0%	X
White	56.0%	50	60.5%	38	52.0%	25	76.9%	39
Gender								
M	51.2%	926	48.6%	860	54.3%	840	53.2%	821
F	54.5%	1,682	52.7%	1,720	57.3%	1,465	55.8%	1,425
X	100.0%	X	0.0%	X	0.0%	X	0.0%	X
Age Groups								
19 or less	55.1%	583	49.0%	665	56.7%	619	54.5%	646
20 to 24	54.3%	1,088	51.0%	1,048	55.8%	909	54.4%	881
25 to 49	51.5%	850	53.6%	785	57.2%	699	56.2%	655
Over 49	47.7%	88	51.2%	82	48.7%	78	51.6%	64
X: Counts are suppressed for groups with less than 10 students.								
Shaded regions indicate groups achieving at a rate less than 80% of the reference group, respectively. Reference groups are White, male, and 20 to 24 years old.								

- Asians have the highest success rates.
- African Americans have a lower success rate than Latinos.
- The 25 to 49 age group has the highest success rate in math than any other age group on campus.
- The success rate in math is about 53%.

d)   Retention rates

Year	*Total Grades*	Retention Rate
FA 2013	*2,738*	72.6%
2014	*5,388*	74.1%
2015	*5,208*	75.3%
2016	*4,966*	74.9%
SP 2017	*2,246*	73.3%

The retention rate in math is 74% on average.

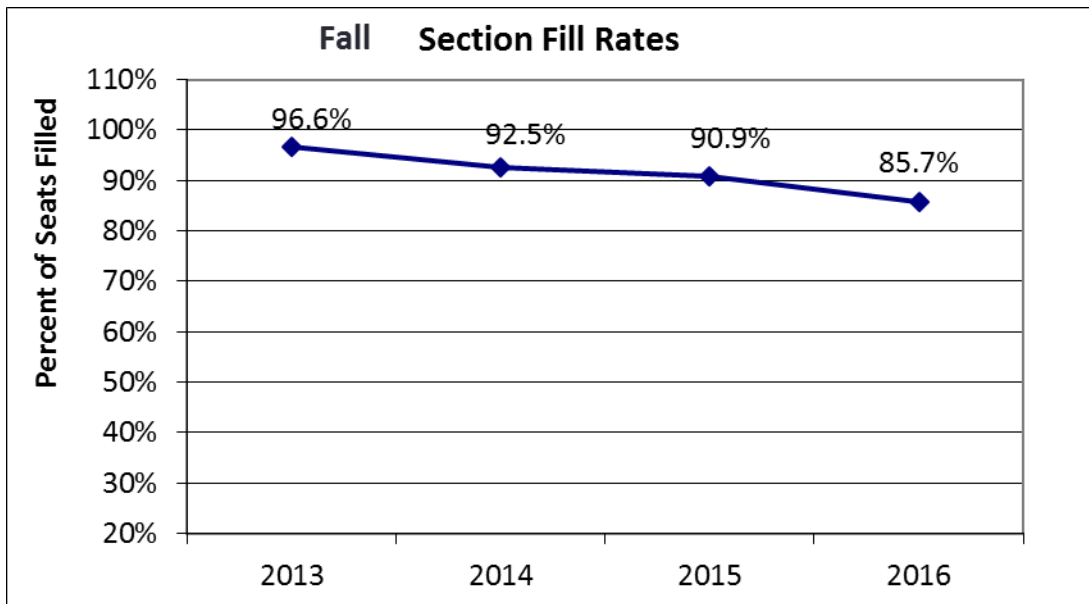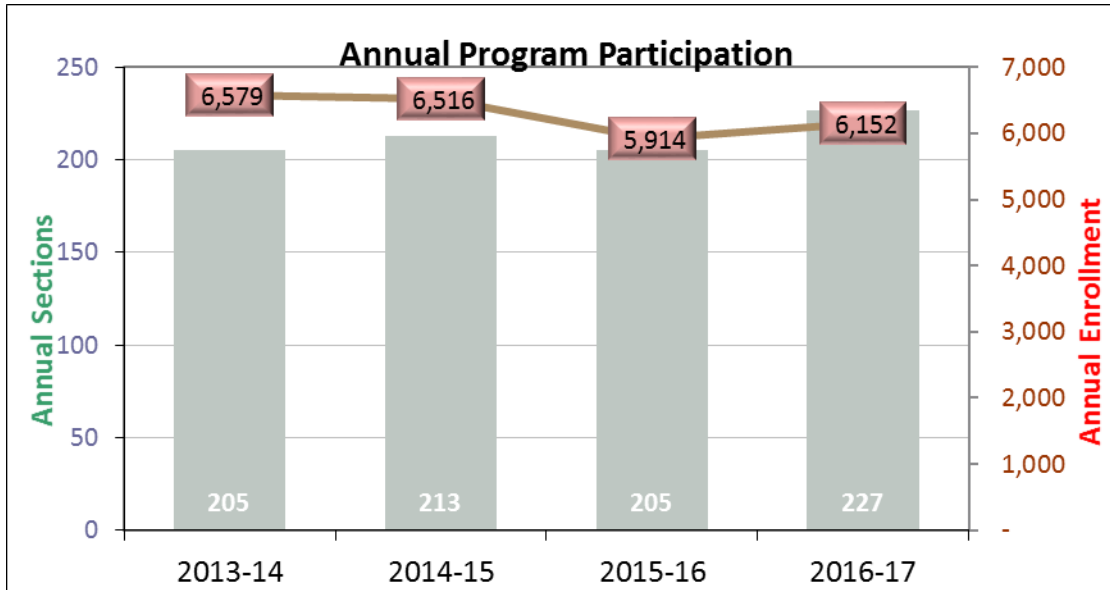e) A comparison of success and retention rates in face-to-face classes with distance education classes

Year	COURSE	Method	Weeks	W's	Grades	Success	Retention
FA 2013	MATH-150	Distance	16	21	92	67.4%	77.2%
		Lecture	16	102	292	51.0%	65.1%
	MATH-40	Distance	16	10	24	37.5%	58.3%
		Lecture	16	115	370	42.2%	68.9%
	MATH-73	Distance	16	19	74	52.7%	74.3%
		Lecture	16	104	369	48.0%	71.8%
	MATH-80	Distance	16	7	30	53.3%	76.7%
		Lecture	16	61	174	45.4%	64.9%
2014	MATH-150	Distance	16	30	162	69.8%	81.5%
		Lecture	8	-	15	100.0%	100.0%
		Lecture	16	152	675	65.2%	77.5%
	MATH-40	Distance	16	26	50	42.2%	72.7%
		Lecture	16	230	843	56.0%	80.0%
	MATH-73	Distance	16	35	146	56.2%	76.0%
		Lecture	16	198	750	53.7%	73.6%
	MATH-80	Distance	16	22	51	43.1%	56.9%
		Lecture	16	77	266	51.1%	71.1%
2015	MATH-150	Distance	16	55	179	58.7%	69.3%
		Lecture	16	162	627	57.4%	74.2%
	MATH-40	Distance	16	12	51	33.3%	76.5%
		Lecture	16	214	816	43.3%	73.8%
	MATH-73	Distance	16	24	126	67.5%	81.0%
		Lecture	16	168	752	59.0%	77.7%
	MATH-80	Distance	16	18	65	43.1%	72.3%
		Lecture	16	57	300	63.7%	81.0%
2016	MATH-150	Distance	16	46	195	61.5%	76.4%
		Lecture	16	160	609	58.1%	73.7%
	MATH-40	Distance	16	10	29	51.7%	65.5%
		Lecture	16	237	770	40.8%	69.2%
	MATH-73	Distance	16	22	103	63.1%	78.6%
		Lecture	16	180	684	59.2%	73.7%
	MATH-80	Distance	16	20	62	41.9%	67.7%
		Lecture	16	96	314	47.5%	84.6%
SP 2017	MATH-150	Distance	16	22	99	54.5%	77.8%
		Lecture	16	94	331	62.5%	71.6%
	MATH-73	Distance	16	8	46	63.0%	82.6%
		Lecture	16	84	250	52.4%	66.4%
	MATH-80	Distance	16	10	34	44.1%	70.6%
		Lecture	16	65	176	36.4%	63.1%

No clear pattern emerges. Overall the hybrid classes enjoy higher success and retention rates. But this too varies, perhaps depending on the instructor and that set of students.

f)   Enrollment statistics with section and seat counts and fill rates

	2013-14	2014-15	2015-16	2016-17	4 Yr Average
Annual Enrollment	6,579	6,516	5,914	6,152	6,290

Annual Program Participation

	2013-14	2014-15	2015-16	2016-17
Annual Enrollment	6,579	6,516	5,914	6,152
Annual Sections	205	213	205	227

Fall   Section Fill Rates

2013	2014	2015	2016
96.6%	92.5%	90.9%	85.7%

Spring Section Fill Rates

[Chart: Spring Section Fill Rates — Percent of Seats Filled]

- 2014: 92.1%
- 2015: 88.8%
- 2016: 79.9%
- 2017: 77.7%
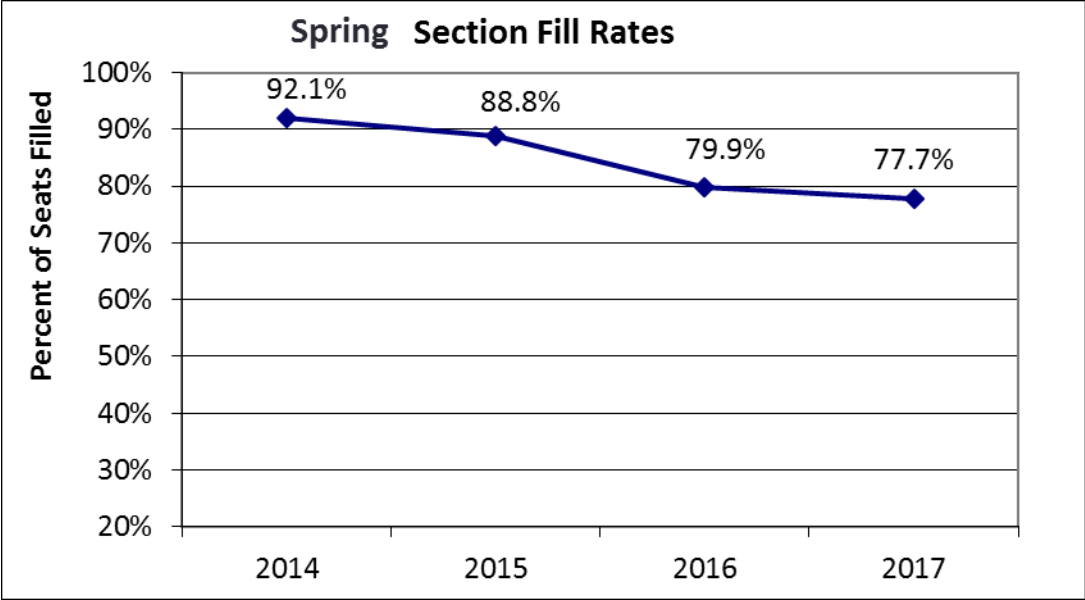
Math offers over 200 sections each semester, with a fill rate of 85% in Fall and 78% in Spring. Enrollment is more robust in Fall.

g) Scheduling of courses (day vs. night, days offered, and sequence)

Enrollment by Time of Day

Fall Term	2013	2014	2015	2016
Day	69.3%	67.7%	67.9%	74.0%
Night	30.7%	32.3%	32.1%	26.0%
Weekend/Unknown	0.0%	0.0%	0.0%	0.0%

Enrollment by Time of Day

Spring Term	2014	2015	2016	2017
Day	74.5%	76.2%	72.5%	76.9%
Night	25.5%	23.8%	27.5%	23.1%
Weekend/Unknown	0.0%	0.0%	0.0%	0.0%

h) Improvement rates (if applicable)

Our retention rate peaked in 2015 at 75.3% and has been in decline ever since; whereas our success rate has increased and now stands at 54.9%. Our math workshops sponsored by the success center may help to explain the increase in the success rates. When the economy is good, students go to work and often drop out of college, and the retention rate suffers.

i) Additional data compiled by faculty

None

j)   List any related recommendations.

Referral to support services needs to be emphasized to the students by faculty and staff. This should include syllabus policies, posters, in-class announcements, and tours of the student success center.

3. <u>Curriculum</u>
Review and discuss the curriculum work done in the program during the past four years, including the following:

a)   Provide the curriculum course review timeline to ensure all courses are reviewed at least once every 6 years.

We taught El Camino courses. They took the lead in this. However, we have now separated from El Camino and have established our own curriculum committee that has started work on created new curriculum to meet the demands of AB705 and to include online components for our Math courses so we can stay competitive with other campuses offering online options.

b)   Explain any course additions to current course offerings.

We are offering some non-credit courses. We have also added Math 17A, 27A and 47A for the Math Academy. These are three-week courses intended to prepare students for sixteen-week courses during winter and summer and act as refresher courses and support during regular semesters.

We are also creating co-requisite courses that have recently been approved by the curriculum committee and should be sent to the senate and the chancellor's office for approval there. These courses will support our current transfer level and one level below course offerings to be in line with AB 705.

c)   Explain any course deletions and inactivations from current course offerings.

We no longer offer Math 33, 43, 12, 23, 40. Students can always take the three-week courses in the Math Academy to refresh for the semester long course or enroll in co-requisite courses to get support in passing their transfer level courses.

d)   Describe the courses and number of sections offered in distance education. (Distance education includes hybrid courses.)

We offer Math 73 (2 sections), Math 80 (2 sections) and Math 150 (3 sections) as hybrid courses; and hope to expand our hybrid and online DE course offerings.

e)   Discuss how well the courses, degrees, or certificates are meeting students' transfer or career training needs:

The commitment to the needs of programs needs to be greater. For example Math 110, 111 are only offered as one section, once per year; but yet are cancelled the last two years. We need to commit to these courses so they can get a chance to grow.

1. Have all courses that are required for your program's degrees and certificates been offered during the last two years? If not, has the program established a course offering cycle?

For the most part, yes, however others are initially put in the schedule, but are cancelled due to low enrollment.

2. Are there any concerns regarding program courses and their articulation?

No, all our transfer courses articulate without any issues.

3. How many students earn degrees and/or certificates in your program? Do students take licensure exams? If so, what is the pass rate? If few students receive degrees or certificates or if few students pass the licensure exam, should the program's criteria or courses be re-examined? Set an attainable, measurable goal for future degrees, certificates, and/or licensure pass rates.

None

f)   List any related recommendations.

See below

4. <u>Assessment and Student and Program Learning Outcomes (SLOs & PLOs)</u>

a)   Provide a copy of your alignment grid, which shows how course, program, and institutional learning outcomes are aligned.

For developmental math go to:
http://www.elcamino.edu/academics/slo/docs/alignment_grids_by_division/math/SP15_DEV-MATH_Alignment-Grid_Rev2015-0226.pdf

For GE & Non-science majors go to:
http://www.elcamino.edu/academics/slo/docs/alignment_grids_by_division/math/FA15_MATH-GE_Alignment-Grid_Rev2015-1107.pdf

For math & science majors go to:
http://www.elcamino.edu/academics/slo/docs/alignment_grids_by_division/math/FA14_Completed_MATH-MATH-SCI-MAJ_Alignment-Grid_2014-0921.pdf

For Prospective elementary school teachers go to:
http://www.elcamino.edu/academics/slo/docs/alignment_grids_by_division/math/FA14_Completed_MATH-PROSP-ELEM_Alignment-Grid_2014-0921.pdf

b)   Provide a timeline for course and program level SLO assessments.

SLO/PLO Timelines
(2017 - 2020)
Program: DEVELOPMENTAL MATH

Course and SLO #	SP 2016	SU 2016	FA 2016	SP 2017	SU 2017	FA 2017	SP 2018	SU 2018	FA 2018	SP 2019	SU 2019	FA 2019	SP 2020	SU 2020	FA 2020
PLO #1												X			
PLO #2									X						
PLO #3						X									
PLO #4			X												X
MATH 12 - SLO #1										X					
MATH 12 - SLO #2							X								
MATH 12 - SLO #3				X											
MATH 12 - SLO #4	X												X		
MATH 23 - SLO #1										X					
MATH 23 - SLO #2							X								
MATH 23 - SLO #3				X											
MATH 23 - SLO #4	X												X		
MATH 37 - SLO #1										X					
MATH 37 - SLO #2							X								
MATH 37 - SLO #3				X											
MATH 37 - SLO #4	X												X		
MATH 40 - SLO #1										X					
MATH 40 - SLO #2							X								
MATH 40 - SLO #3				X											
MATH 40 - SLO #4	X												X		
MATH 60 - SLO #1										X					
MATH 60 - SLO #2							X								
MATH 60 - SLO #3				X											
MATH 60 - SLO #4	X												X		
MATH 67 - SLO #1										X					
MATH 67 - SLO #2							X								
MATH 67 - SLO #3				X											
MATH 67 - SLO #4	X												X		
MATH 73 - SLO #1										X					
MATH 73 - SLO #2							X								
MATH 73 - SLO #3				X											
MATH 73 - SLO #4	X												X		
MATH 80 - SLO #1										X					
MATH 80 - SLO #2							X								
MATH 80 - SLO #3				X											
MATH 80 - SLO #4	X												X		

Course and SLO #	SP 2016	SU 2016	FA 2016	SP 2017	SU 2017	FA 2017	SP 2018	SU 2018	FA 2018	SP 2019	SU 2019	FA 2019	SP 2020	SU 2020	FA 2020
PLO #1									X						
PLO #2												X			
PLO #3			X												X
PLO #4						X									
MATH 170 - SLO #1									X						
MATH 170 - SLO #2												X			
MATH 170 - SLO #3			X												X
MATH 170 - SLO #4						X									
MATH 180 - SLO #1									X						
MATH 180 - SLO #2												X			
MATH 180 - SLO #3			X												X
MATH 180 - SLO #4						X									
MATH 190 - SLO #1									X						
MATH 190 - SLO #2												X			
MATH 190 - SLO #3			X												X
MATH 190 - SLO #4							X								

Course and SLO #	SP 2016	SU 2016	FA 2016	SP 2017	SU 2017	FA 2017	SP 2018	SU 2018	FA 2018	SP 2019	SU 2019	FA 2019	SP 2020	SU 2020	FA 2020
MATH 191 - SLO #1									X						
MATH 191 - SLO #2												X			
MATH 191 - SLO #3			X												X
MATH 191 - SLO #4						X									
MATH 210 - SLO #1									X						
MATH 210 - SLO #2												X			
MATH 210 - SLO #3			X												X
MATH 210 - SLO #4						X									
MATH 220 - SLO #1									X						
MATH 220 - SLO #2												X			
MATH 220 - SLO #3			X												X
MATH 220 - SLO #4						X									
MATH 270 - SLO #1									X						
MATH 270 - SLO #2												X			
MATH 270 - SLO #3			X												X
MATH 270 - SLO #4						X									

Course and SLO #	SP 2016	SU 2016	FA 2016	SP 2017	SU 2017	FA 2017	SP 2018	SU 2018	FA 2018	SP 2019	SU 2019	FA 2019	SP 2020	SU 2020	FA 2020
MATH 110 - SLO #1			X			X									
MATH 110 - SLO #2			X						X						
MATH 110 - SLO #3			X									X			
MATH 111 - SLO #1	X						X								
MATH 111 - SLO #2	X									X					
MATH 111 - SLO #3	X												X		
MATH 111 - SLO #4	X									X					
MATH 111 - SLO #5	X												X		
MATH 130 – SLO #1										X					
MATH 130 – SLO #2	X														
MATH 130 – SLO #3				X											
MATH 130 – SLO #4							X								
MATH 150 – SLO #1										X					
MATH 150 – SLO #2	X														
MATH 150 – SLO #3				X											
MATH 150 – SLO #4							X								

c)   State the percent of course and program SLO statements that have been assessed.

100%

d)   Summarize the SLO and PLO assessment results over the past four years and describe how those results led to improved student learning. Analyze and describe those changes. Provide specific examples.

Several themes have emerged from doing SLO and PLO assessments:
- Students need more time on task. This is a recurring problem, because there is only limited time to spend on each topic. Instructors who use class time to try to meet this need often fall into the other ditch of not finishing the material to be covered.
- Students across programs have difficulty with word problems. Strategies of breaking down word problems into small manageable units require skill on the instructor's part. We are continually battling this problem, with small incremental improvement. Professional development should be created or researched to help combat this deficit in skill.
- Graphing is a programmatic problem. Drawing graphs is a challenge for many students. We give homework problems requiring students to spend time on this outside the classroom.
- Factoring is another issue that crops up across programs. This relates to difficulty with times tables. The student who struggles with the times tables will struggle with factoring.

e)   Describe how you have improved your SLO process and engaged in dialogue about assessment results.

SLOs are now routinely assessed on a time schedule. We discuss the results via email and in our department meetings. Faculty go to Trac Dat to write, view and discuss SLO reports.

f)   **List any related recommendations.**

Continue to explore ways to modify course content and introduce new courses to keep pace with technological advances which are continually changing requirements for majors within disciplines.

5.   **Analysis of Student Feedback**
Provide a copy of any feedback reports generated by Institutional Research and Planning. Review and discuss student feedback collected during the past four years including any surveys, focus groups, and/or interviews.

a)   Describe the results of the student survey in each of the following areas:
   i. Student Support
   ii. Curriculum
   iii. Facilities, Equipment, and Technology

iv. Program Objectives

Students share their input with faculty on an ongoing basis. The days and times classes are offered is no longer an issue. More recently, we have moved the days and times that we offer our calculus classes to accommodate students taking the science classes; so now they can take science and calculus together.

b)   Discuss the implications of the survey results for the program.

Our outstanding issue remains class cancellations. We just have to find a way to stick with a class once it is in the schedule. Cut back on the number of class offerings where feasible. But even when we have just one section of a course that is offered once a year, it gets cancelled. That should stop. It hurts the program, as students were counting on that course being offered in the Ed plan, and leave in frustration for Torrance or elsewhere.

c)   Discuss the results of other relevant surveys.

The cancellation of classes is a perpetual problem that frustrates our students. We must do the honorable thing and stick by the classes we put in the schedule. Early cancellation before the semester begins is particularly annoying. This practice should stop. Often students register the week before and the week after classes begin. But by then the class is cancelled. The most hurtful is for a class with one section offered once a year to be cancelled, for example Math 110 and 111. We are not giving the elementary school teacher program a chance to take hold by this practice.

d)   List any related recommendations.

See above on early cancellations.

6.   **Facilities and Equipment**

a)   Describe and assess the existing program facilities and equipment.

We are making strides in this area, but more needs to be done. Our classrooms are now smart classrooms for the most part. Maintenance of the physical facilities is an ongoing problem however. One full-timer who recently resigned says that she could no longer deal with the untidy surroundings when she arrived first thing in the morning.

b)   Explain the immediate (1-2 years) needs related to facilities and equipment. Provide a cost estimate for each need and explain how it will help the program better meet its goals.

Six classrooms are still in need of whiteboards, cost estimate $1000.
Eleven doc readers, $6000 total, can be purchased at:
https://www.bhphotovideo.com/c/product/1266810-
REG/elmo_1353_lx_1_visual_presenter.html?ap=y&c3api=1876%2C%7Bcreative%7D%2C%7Bkeyword%7
D&gclid=EAIaIQobChMI6PW8wcCj2QIVTgoqCh02NQyNEAkYAiABEgI-HfD_BwE

c) Explain the long-range (2-4+ years) needs related to facilities and equipment. Provide a cost estimate for each need and explain how it will help the program better meet its goals.

See above.

d) **List any related recommendations.**

See above and below

7. Technology and Software

a) Describe and assess the adequacy and currency of the technology and software used by the program.

The technology and software should be upgraded on a regular basis, just to keep pace with the advances.

b) Explain the immediate (1-2 years) needs related to technology and software. Provide a cost estimate for each need and explain how it will help the program better meet its goals.

See below.

c) Explain the long-range (2-4+ years) needs related to technology and software. Provide a cost estimate for each need and explain how it will help the program better meet its goals.

See below.

d) **List any related recommendations.**

List provided below.

8. Staffing

a) Describe the program's current staffing, including faculty, administration, and classified staff.

We have 13 full-time faculty and are about to hire another for 2018-19. We have 23 adjuncts.

b) Explain and justify the program's staffing needs in the immediate (1-2 years) and long-term (2-4+ years). Provide cost estimates and explain how the position/s will help the program better meet its goals.

See comment under c) below.

c) **List any related recommendations.**

With the upcoming changes to our course offerings due to AB 705 we should not hire additional staff at this time until we see the impact such substantial changes will make on staffing needs. Developmental courses have long been the largest portion of courses offered at Compton. We should adapt according to the changes in transfer level and one level below course offerings in the future and the growth of the student population at Compton College.

9. **Future Direction and Vision**
a) Describe relevant changes within the academic field/industry. How will these changes impact the program in the next four years?

Adult education will be the responsibility of community colleges if the current planners have their way. This will impact our course offerings. The lowest level courses such as Math 12 will be taught by adult education faculty at the lower adult education rate.
AB 705 will have a tremendous impact on our offering as Math 73/80 will then become the lowest math classes that we offer.
Noncredit courses will have more of an impact in what we offer. We plan to increase our offerings in this area.

b) Explain the direction and vision of the program and how you plan to achieve it.

We would like to see more of our students transferring to the four-year institutions. One mechanism to accomplish this would be to offer more mathematics courses for the transfer level classes. This will attract more transfer-oriented students and increase our enrollment in transfer level classes.

To assist our students in their progress through their study of mathematics, several initiatives have been instituted:
- We offer a Summer Math Academy and a Winter Math Academy. This program is available free of charge to students, and covers a period of three weeks. The courses offered are Math 17A, 27A and 47A. Students bone up on their skills for the next level of credit courses in math.
- We provide the Plato software in the L-SSC where students can work on topics using user friendly computer software.
- Every semester we offer free one hour workshops on various math topics, open to all students. These are taught by instructors.
- We have a loan program where students can borrow calculators from the L-SSC.
- We have an Early College program for high school students to get a jump start on their college education.
- We also have the MESA (Math Engineering Science Achievement) program on campus. Compton MESA students have access to the ECC MESA|ASEM resources including Counseling, Academic Excellence Workshops, Group Study Sessions, Tutoring, Field Trips to Industry and Universities, Professional Development Opportunities (workshops in Time Management, Personal Statement, Resume Building, Financial Literacy among others).

c) List any related recommendations.

See below

10. Prioritized Recommendations

a)   Provide a single, prioritized list of recommendations and needs for your program/department (drawn from your recommendations in sections 2-8). Include cost estimates and list the college strategic initiative that supports each recommendation (see Appendix A). Use the following chart format to organize your recommendations.

b)   Explain why the list is prioritized in this way.

Emphasis is on assisting learning of students we currently have with tutors/SI coaches. However, we also want to expand the number of students that we do serve, and finally we look at technological tools that would enhance learning, student success and retention.

c)

Recommendations	Cost Estimate	Strategic Initiatives
1. Assign 10 additional in-class tutors and 10 additional SI coaches for developmental math classes.	$50,000	Goal 2
2. Early College-develop partnerships with local high school personnel-teachers, counselors and administrators.	$5000	Goal 5
3. Install whiteboards in remaining six classrooms; move projector screens to corners.	$5000	Goal 3
4. Make book grants available by the second week of the semester	$50,000	Goal 2
5. Install Ti-84 smart view on work computers.	$3000	Goal 3
6. Eleven doc readers for the math classrooms	$6000	Goal 3
7. Continuous upkeep of the classrooms and offices. For example; clean boards, sweeping the classroom floors at least weekly, at the beginning of the semester making sure that the light bulbs are working, doors stoppers are working, blinds are working, the trash from our offices be taken out, and carpets be vacuumed, and a functional air conditioner.	$3000	Goals 1 & 2