

**CONNECTICUT COMMUNITY-TECHNICAL COLLEGE SYSTEM**  
**Program Review**  
**COLLEGE SELF-STUDY REPORT**

Discipline evaluation is part of the institution's overall planning process. It is to be viewed as a critical self-study designed to review systematically the achievement of a discipline's purpose and goals.

**College:** Quinebaug Valley Community College

**Discipline:** Mathematics

**Report Prepared by:** College Department Chair and College Discipline Member(s)

Department Chair Sevin Walsh Signature Apr 29, 2016 Date

College Discipline Member Christopher Sander Signature 4/29/2016 Date

Others (Optional) Signature Date  
Brandon Missino Brandon Missino Apr. 29, 2016  
Ronald RHAULT Ronald RHAULT 4/29/16

**Report Submitted To:** College Academic Dean and College President  
Alfred Williams Signature 5/9/16 Date  
Dean of Academic Affairs and Student Services

Dr. Carlee Drummer Carlee Drummer 5.11.16 Date  
President

**Report Copy for Institutional Effectiveness**  
Received by: Office for Institutional Effectiveness Signature and Date Received

4/29/2016

Brandon (QVCC-Student), Ron (Woodstock Math Department), Chris Parden (Computer Science)

2)

- Add in a line to address incoming H.S. students (possibly not here though!)

5) C)

- Add in CCP agreements with area H.S.

8)

- Math boot camp needs to be restructured to all students with not only an online option but to that of a hybrid option that allows for on ground access to the class for additional support

Quinebaug Valley Community College  
Academic Affairs  
Baseline Program Review

**1) Mission Statement; Program/Discipline Outcomes**

a. List the mission statement of your program or discipline.

The QVCC mathematics department provides students with a solid basis of computational and analytical skills that prepares them for entry into the work force or for transfer to a four-year institution. The mathematics faculty creates an environment that supports, motivates, nurtures, and challenges students. By maintaining academic excellence and integrity, the department is committed to the investigation and implementation of new strategies in curriculum and pedagogy.

This can be found on the Mathematics website on qvcc.edu.

b. List the Program or Discipline Outcomes.

- The students will successfully complete the subsequent mathematics courses at QVCC
- Upon transfer to a 4-year institution, the student will successfully complete upper-division mathematics courses in conjunction with the TAP Math Pathway.
- Discipline members and learning center staff collaborate on a consistent basis.
- Discipline members stay current in the field, belong to professional organizations, and participate in state-wide discipline meetings.
- Provide a curriculum that meets the needs of our programs and our student population, along with meeting the requirement for PA 12-40.

## 2) Historical Enrollment Data

- a. Provide five years of enrollment data and three years of retention data. List on ground and online (if any) separately.

Subject	Course_Nr	2011- Fall	2012- Spr	2012- Sum	2012- Fall	2013- Spr	2013- Sum	2013- Fall	2014- Spr	2014- Sum	2014- Fall	2015- Spr	2015- Sum	2015- Fall	2016- Spr
MAT*	L075	217	126		194	107		136	69						
MAT*	L085					11		31	25		117	103		118	60
MAT*	L095	192	241	26	212	186	16	175	120		100	41		33	31
MAT*	L137	269	200	16	281	247	17	225	167	16	233	200		188	147
MAT*	L137S							38	32		26	14		19	16
MAT*	L143	22	10		17	12		14			23	14		14	
MAT*	L146	28	33		18	17		10	40		55	16		47	26
MAT*	L167	33	28	16	36	29	15	29	29	14	27	31	14	29	51
MAT*	L186	55	58	7	48	53	11	42	53	23	46	72		46	44
MAT*	L254	27	20		22	23		19	19		22	24		22	20
MAT*	L256		16	6		21	10		9			24	10	17	16
MAT*	L268	9			13			20			7			21	
MAT*	L272														9
MAT*	L285		7			8			20			2			13

- b. Analyze the data and draw conclusions.

In the last 5 years, the Developmental sequence has changed as a result of PA-1240 where Pre-Algebra and Developmental Algebra (Math 085) contains material from both the previous Pre-Algebra (Math 075) and Developmental Algebra (Math 095). As a result, enrollment in Developmental Algebra (Math 095) has decreased. Also, the embedded Developmental and Intermediate Algebra class (Math 137S) has begun and has had increases in enrollment. Intermediate Algebra(Math 137) enrollment has remained steady, as has Math for the Liberal Arts (Math 146), Math for Elementary Education Teachers (Math 143), Pre-Calculus(Math 186), Calculus I (Math 254), Calculus II (Math 256), Calculus III (Math 268), along with Differential Equations (Math 285). This spring (2016) is the first time that Linear Algebra (Math 272) has been offered. Statistics (Math 167) enrollment has increased and a second section was added this spring

Retention of Math 085

MAT 085	Term	Number enrolled 085	Successful 085	Percent Successful	Enrolled Math 137	Successful Math 137	Percent Successful
	2013	42	29	69%	20	13	65%
	2014	142	90	63%	66	52	79%
	2015	221	97	44%	20	12	60%

There are several issues with Math 085. First, the success rate needs to be increased and steps have already been taken to incorporate best practices through professional development attendance at workshops. Secondly, the number of students who sign up for Math 137 needs to be increased. Members of the Student Success Center have been visiting the Math 085 classes to remind students to register for the following semester. As for success in Math 137, these remain high. Overall, the success and retention of Math 085 students remains to be a concern.

### 3) Curriculum Review

a. List all courses specific to your program/discipline that are in the catalog or have been offered anytime in the last three years. Note the semester each course was taught:

Course	2013 - 2014	2014 - 2015	2015 - 2016
Math 085 Pre-Algebra and Elementary Algebra	Fall, Spring	Fall, Spring	Fall, Spring
Math 095 Developmental Algebra	Fall, Spring, Summer	Fall, Spring	Fall, Spring
Math 137S Developmental and Intermediate Algebra	Fall, Spring	Fall, Spring	Fall, Spring
Math 137 Intermediate Algebra	Fall, Spring, Summer	Fall, Spring	Fall, Spring
Math 143 Math for Elementary Education Teachers	Fall	Fall	Fall
Math 146 Math for the Liberal Arts	Fall, Spring	Fall, Spring	Fall, Spring
Math 167 Principles of Statistics	Fall, Spring, Summer	Fall, Spring, Summer	Fall, Spring, Summer
Math 186 Pre-Calculus	Fall, Spring	Fall, Spring	Fall, Spring
Math 254 Calculus I		Fall, Spring	Fall, Spring
Math 256 Calculus II	Spring, Summer	Spring, Summer	Fall, Spring
Math 268 Calculus III	Fall	Fall	Fall
Math 285 Differential Equations	Spring	Spring	Spring
Math 272 Linear Algebra			Spring

Is there a syllabus on file in the Academic Affairs Office for each course specific to your program that includes course outcomes and processes for assessment?       YES       NO

If the answer is "NO," list the courses below that lack outcomes and assessment; provide a plan and timeline for completing this work.

b. List any online classes in your program/discipline. How often are each offered, and what are the plans for future online classes? What is the rationale for this plan?

**There are no online classes at this time. As for the future, a hybrid Statistics course is being developed. This would allow students to become more self-sufficient in a class that can utilize problem-solving techniques for the student.**

#### **4) Program/Discipline Delivery Strategies**

Is the program/discipline semester course sequence listed in the catalog? Has the sequence been followed for the current and past two academic years? How does the sequence serve part-time students? Do you coordinate course offerings with other programs?

**The discipline course sequence is not listed in the catalog. This could change as a response to TAP with the addition of the Mathematics Pathway. The math department regularly meets with the Engineering and Science departments to coordinate course offerings.**

#### **5) Trends**

a. What have been two major national and/or state trends specific to your program/discipline during the current and past two academic years? **PA-12-40, the law passed by the State of Connecticut, has taken 2 developmental math courses and merged them into a 6 credit course. This has been happening in community colleges over the past 2 years. Also, the use of technology ( My Math Lab, Maple, etc) as a means to enhance the math courses has also been growing nationally.**

b. What are the emerging trends that will dominate during the next three years? (Do not include enrollment or retention issues here.)

**TAP, (Transfer Articulation Policy) between the 4 state universities and the community colleges will begin to see students take mathematics courses and be able to transfer them to a 4 year institution. PA 12-40 will continue to look at best practices for assisting students who place into the lowest level developmental course and multiple measures are in the process of being instituted and reviewed for placement of students.**

- c. What transfer articulation agreements exist with other institutions? (List each and include expiry data.) What are your future plans for transfer articulation?

**Currently there is a transfer articulation policy with the 4 year (CCSU's) institutions for a math pathway per the new TAP pathway approved by the BOR.**

**6) Institutional Barriers**

- a. What are the major institutional barriers to success that students experience in your program or discipline? (Focus on teaching, learning, and curricular issues.)

For the developmental student, 6 hours per week of mathematics can be difficult in that they are usually the least skilled in the subject. Also, embedded tutors would greatly enhance the classroom experience for the 6 hour math classes, as would refine the curriculum for focus in these courses (Math 085 and Math 137S). For teachers, there is a great deal of material to cover and setting up and incorporating technology into the classroom can be difficult, as there are few opportunities for computers and computer classrooms.

- b. What is your plan to address these issues?  
The dean has been approached for access to a computer classroom and the opportunity for embedded tutors in the developmental classes is continually being explored. The Developmental Math teachers have met several times to re-work the curriculum for the Math 085 class.

**7) For programs only: Advisory Board**

- a. List current members with contact information. List dates of last two meetings. Append minutes for those meetings. N/A
- b. Discuss the three most important ideas or feedback you have received from your Advisory Board. How have you responded to that input?
- c. Discuss input that you have received that you are unable to respond to and why.



**8) Instructional Support**

What are your current classroom, media, and IT needs? How will those needs change in the future? What support will be necessary to meet those needs?

Embedded tutors in both the transitional and embedded courses would assist those students who are taking a 6 hour per week class as they are the neediest in terms of effort and support. The Math Boot camp in the summer and between the fall and spring semester needs to find a way to engage the students who test into the Transitional class and could benefit from this program. Also, there is a need for consistent space for computer usage in both Danielson and Willimantic for both the developmental and college-level classes. This need will continue to grow in the future.

**9) Budget**

What is your current budget and how is it spent? Are there any crucial budget needs you can forecast now that will emerge in the next three years?

Account	Account Title	Total Adjusted Budget	YTD	Commitments	Avail Bal
7222P	COPY SVCS	800.00	1,367.30	0.00	(567.30)
7228	REGULAR POSTAGE	0.00	0.48	0.00	(0.48)
7315	EDUCATIONAL SUPPLIES	500.00	0.00	0.00	500.00
Report Total (of all records)		(1,300.00)	(1,367.78)	0.00	

The majority of the budget is used on photocopying services. Crucial to our future will be licenses of My Math Lab, embedded tutors, a dedicated lab and more calculators. Also needed are memberships to professional organizations and additional monies for conferences to supplement the professional development funds.

**10) Public Disclosure**

Does program/discipline information published on the website provide sufficient information to allow students and prospective students to make informed decisions about registering for classes within the program/discipline?

Students have access to course descriptions on the website along with additional work on the Math Department website. Students are placed into math classes based on their BSA score, their SAT and/or ACT score, and their high school transcripts when applicable.

**11) Resource requests/suggestions**

List resources that will be needed over the next 5 years; financial, physical, personnel

In the next 5 years. The mathematics department will continue to need funds for professional development opportunities and memberships in mathematics organizations. Dedicated computer space would allow a number of classes from developmental through the Calculus sequence to access websites and programs for students such as Maple, My Math Lab, and Excel. As for personnel, embedded tutors in the transitional and embedded courses would assist teachers with students who are having difficulty in these courses.

The math department at QVCC has many strengths including, 5 full-time faculty members that for the first time allows 1 to work solely on the transitional course, and the others to work on transitional through calculus courses with two who are primarily dedicated to the calculus sequence that upon completion, students can transfer to a four year college. The teachers also spend time in the Learning Center tutoring students on a regular basis and have done training of tutors annually. The math department also works with other departments to make sure their curriculum is aligned with their needs. During regular department meetings, decisions on textbooks, curriculum issues, trends both within the state (Math Issues) and nationally are discussed and voted upon. Math teachers have presented at the college's Lunch and Learns and regularly attend other colleague's presentations. Technology is used in the classroom of each teacher, from computer programs to the Smartboard. Finally, the adjuncts that teach here have been here for almost thirty years and have served the college and the students well. The math website is up-to-date on information about the department, courses, and sources for assistance in mathematics.