



2015
Annual Program Review
Mathematics

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Section 1: Program Planning:

Internal Analysis

Enrollment and FTES:

The Mathematics Department reported 521 FTES in 2009-2010. Due to the budget cut, FTES gradually decreased through 2013 reported 440. The 2013-2014 data report indicates the increase of 19% to 522 FTES. The Fill Rates increased from 73.6 % (2011-2012) to 76.8% (2013- 2014). Although student success rates decreased from 57.0% to 54.6%, and retentions from 77.5% to 74.7%, however, the Fall/Spring Persistence kept 29%. Student survey showed that 63% were enrolled to satisfy transfer requirements, 55% were enrolled to satisfy A.A. degree requirements and only 18% to prepare for a new job or improve job skills.

Efficiency (FTEF/30 and fill rates):

The productivity measure identified as FTEF30, indicates the number of full-time faculty required to meet the program course load for the entire year at 30 Lecture Hour Equivalents. For 2013-2014, 14.8 full-time positions (FTEF30) are required to teach the instruction load for the academic year, it is ranked as the top one needed in the whole college.

Student Demographics:

The majority of the student population is female. However there has been an increase in male student population over the last three year. Nearly 40% of the population is under the age of 24. The majority of the ethnic population remains highly Asian Pacific Islander and White non-Hispanic representing over 60%.

Success:

As the enrollment increases the rate of success continues to decline as there has been in remedial level math.

Retention:

Another impact to success is the decline in student term retention.

Persistence in Subject:

The rate of persistence specifically in remedial math has showing an increase over the past three years. This may be attributed to the increases support services associated with the courses.

Awards (Degrees and Certificates):

There was a recent approval of and AST degree with an emphasis in math which should reflect an increase in awards in the future of the program.

Table 1.1 Program Review Data for Mathematics

Academic Year	2011-12	2012-13	2013-14
ENROLLMENT	3,445	3,563	4,101
FTEs:	448	440	522
FTEF30:	11.3	11.8	14.8
WSCH/FTEF:	649	612	579
Fill Rates:	73.6%	80.8%	76.8%
FALL TO SPRING PERSISTENCE WITHIN SUBJECT			
Fall-to-Spring:	230	229	233
F-to-S Persistence:	24%	26%	29%
DEGREES AND CERTIFICATES			
Certificates:	0	0	0
Associate Degrees:	0	2	2

STUDENT DEMOGRAPHICS			
GENDER			
Female:	60.0%	57.1%	56.8%
Male:	38.5%	40.9%	41.8%
Unknown:	1.5%	1.9%	1.4%
AGE at TERM			
Less than 19	13.6%	14.5%	12.6%
20 to 24	27.9%	27.8%	30.7%
25 to 29	17.8%	17.0%	17.7%
30 to 34	10.5%	10.7%	11.9%
35 to 39	7.0%	6.7%	6.5%
40 to 49	13.0%	12.3%	11.1%
50 and Older	10.4%	11.1%	9.5%
RACE/ETHNICITY			
African American:	4.6%	5.0%	5.7%
Asian/Pac Islander:	32.4%	32.5%	29.9%
Hispanic:	13.1%	13.1%	14.7%
Multiple Race:	11.3%	10.6%	9.2%
White:	35.2%	31.0%	35.3%
Unknown:	4.6%	7.8%	5.3%

Table 1.2 Program Review Data for Mathematics by Modality

Academic Year	2011-12	2012-13	2013-14
Total SUBJECT Enrollment	3,445	3,563	4,101
- Success Rate	61.5%	56.6%	54.6%
- Retention Rate	82.6%	77.7%	74.8%

SUBJECT ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	237	325	489
- Success Rate	48.1%	52.0%	44.2%
- Retention Rate	80.2%	76.6%	72.0%
Correspondence Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Hybrid Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Online Enrollment	2,450	2,339	2,968
- Success Rate	59.4%	53.6%	54.4%
- Retention Rate	80.2%	74.9%	73.7%
Telecourse Enrollment	---	---	---
- Success Rate	0.0%	0.0%	0.0%
- Retention Rate	0.0%	0.0%	0.0%
Traditional Enrollment	758	899	644
- Success Rate	72.7%	66.2%	63.7%
- Retention Rate	90.9%	85.3%	81.8%

COLLEGE ENROLLMENT, SUCCESS AND RETENTION RATES BY MODALITY			
Cable Enrollment	875	558	766
- Success Rate	58.4%	57.7%	50.5%
- Retention Rate	86.7%	79.7%	75.7%
Correspondence Enrollment	453	524	813
- Success Rate	56.5%	67.2%	77.6%
- Retention Rate	89.0%	81.5%	89.7%
Hybrid Enrollment	1,245	689	627
- Success Rate	72.9%	72.3%	66.2%
- Retention Rate	89.6%	89.8%	84.4%
Online Enrollment	23,260	22,827	25,551
- Success Rate	64.3%	62.0%	62.9%
- Retention Rate	87.0%	82.2%	81.2%
Telecourse Enrollment	10,657	9,664	15,993
- Success Rate	57.3%	53.7%	55.3%
- Retention Rate	87.8%	80.5%	82.8%
Traditional Enrollment	14,712	12,345	10,517
- Success Rate	81.9%	77.0%	77.6%
- Retention Rate	93.0%	90.1%	88.5%

Program Student Learning Outcome(s)

In spring 2015 the math faculty met at the All-College Meeting in a breakout discipline focused session to discuss the PSLO data. Through the discussions, the faculty determined that they needed to draw more attention on the use of technology such and calculations. Additionally, the faculty discussed implementing more supplemental instruction workshops and student engagement activities around math.

Progress on Forward Strategy Initiative(s)

Table 1.3 Progress on Forward Strategies

Initiative(s)	Status	Progress Status Description	Outcome(s)
Hire two full-time math instructors due to the top ranking of FTEs, 14.8, in the entire college and 147 LHEs taught by adjunct instructors.	In-progress	2015-2016 a new math faculty was hired	The college was able to offer more math courses
Establish Math Academy or Bridge Program in summer and winter sessions to prepare students before classes start; and to increase the math success and retention rate, especially for STAR and STAR2 programs.	Completed	In summer 2015 a math boot camp was help at NBC to help incoming students.	The results were that students placed into higher math courses. However the labs need to be longer to cover more material.
Create "Pathway" curriculum to help students succeed in college level math courses at a faster pace.	In-progress	Currently discussions are occurring around curriculum development	N/A
Acquire a mobile "smart cart" with laptops, printer and wifi at Newport Beach Center for math classrooms.	In-progress	One smartboards but more is needed.	N/A
Develop a system to mentor and evaluate new math instructors, especially online.	In-progress	Discussions at all college meetings have occurred around that evaluation of math instructors.	N/A
Create a dedicate Math Lab for math students. In the student survey, one of the suggestions for the Student Success Center tutoring was to have a quiet place to study. Currently, the Center has English and other subjects' tutoring in the same room.	Not started		N/A
Math tutors shall be recommended by math instructors or interviewed by a math instructor prior to hiring.	In-progress	Discussion have occurred with Student Success faculty	N/A
Develop and plan a system of an efficient online tutoring; improve online embedded tutoring services; provide a coordinator for this effort; implement a system that allows the Student Success Center to track individual student	Completed	In spring 2015 a math coordinator was assigned	Though there was direction given from the coordinator, there need to be a better planning to effectively use the support services.

assistance and sends that information to each instructor as well as sending student success center use by math students to the department.			
Discuss implementation of a STEM or STEAM Program and provide appropriate permanent office space for full-time faculty at the Newport Beach Center.	Not started		N/A
Provide more technology training programs for math faculty.	In-progress	2014-2015 PIEAC and budget allocated professional development funds to explore new trainings	N/A
Participate with the college bookstore and the textbook publishing companies to help lower the cost of textbooks to students, and to more clearly outline all the options available to students for instructional materials; investigate free or low-cost online educational resources to help lower the cost of textbooks to students.	In-progress	In spring 2015 the math faculty met at the All-College Meeting in a breakout discipline focused session where discussion occurred around the textbook.	N/A
Implement the Statway program.	In-progress	Research is currently being conducted on using this program	N/A
Procure software programs for math faculty and students including, but not limited to statistics.	In-progress	The faculty will explore R-Commander or R-Studio both open source.	N/A
Equip classrooms where math is taught with furniture and equipment that promote active leaning, such as mobile chairs with laptops and individual student whiteboards.	Not started		N/A
Modify the math placement system to include a student's recent performance in math classes that do not transfer (such as high school students).	In-progress	Multiple measures have been piloted in summer 2015 and are awaiting courses performance results in fall 2015.	N/A

Section 2: Human Capital Planning

Staffing

Table 2.1 Staffing Plan

Year	Administrator	Management	F/T Faculty	Adjunct	Classified	Hourly
Previous year 2014-2015	Dean of NBC	-	3	26	-	-
Current year 2015-2016	Dean of NBC	-	4	30	-	-
1 year 2016-2017	Dean of NBC	-	5	34	-	-

In 2014-2015 a full-time faculty member was prioritized and hired for fall 2015. Though this alleviates some of the workload, however, based on the growth in enrollment and demand of students seeking degrees, certificates and transfer it is imperative that another full-time math instructor is hired.

Professional Development

In 2014-2015 five faculty attended local CMC³ conference. In addition, the full-time faculty attended the national AMATYC conference. In 2015-2016 the department will be giving a national level presentation on math imbedded tutoring.

Section 3: Facilities Planning

Facility Assessment

Currently, math is taught at all college learning centers, Costa Mesa center, Early College High School, online and in the incarcerated program. In 2014-2015 requests were made to equip classrooms where math is taught with furniture and equipment that promote active leaning, such as mobile chairs with laptops and individual student whiteboards and implementation of a STEM or STEAM Program and provide appropriate permanent office space for full-time faculty at the Newport Beach Center. Currently, these have not been approved or funded.

Section 4: Technology Planning

Technology Assessment

The department has recently upgraded all the desktop computers with the pass of bond Measure M in 2012-2013. There were minimal technology modification in 2014-2015. Currently, the faculty are exploring new technologies and smart classrooms to ensure math is easily taught..

Section 5: New Initiatives

Initiative: Increase program effectiveness and continue to grow and meet student demand for math courses.

Describe how the initiative supports the college mission:

This provides additional faculty to teach math courses and expand students the opportunity to complete degrees, certificates and transfer in a timely manner. In addition, the new position will support the continual development and assessment of the program in PSLOs, curriculum and student support interventions.

What college goal does the initiative align with?

- | | |
|---|--|
| <input checked="" type="checkbox"/> Student Success | <input type="checkbox"/> Partnerships |
| <input checked="" type="checkbox"/> Access, Persistence and Retention | <input type="checkbox"/> Culture of planning, evidence and inquiry |
| <input type="checkbox"/> Innovation | <input checked="" type="checkbox"/> Growth and efficiency |

What College planning document(s) does the initiative align with?

- | | |
|---|-------------------------------------|
| <input checked="" type="checkbox"/> Educational Master Plan | <input type="checkbox"/> Facilities |
| <input checked="" type="checkbox"/> Staffing | <input type="checkbox"/> Technology |

What evidence supports this initiative?

- Learning Outcome (SLO/PSLO) assessment
- Internal Research (Student achievement, program performance)
- External Research (Academic literature, market assessment, audit findings, compliance mandates)

Describe how the evidence supports this initiative.

The enrollment, FTES and growth trends strongly emphasize and increase in math.

Recommended resource(s) needed for initiative achievement:

Full-time faculty member with an emphasis in statistics

What is the anticipated outcome of completing the initiative?

Increased offering of statistics and other math courses throughout different modalities.

Provide a timeline and timeframe from initiative inception to completion.

On approval of PIEAC, Budget Committee and College Council, the position will be advertised in spring 2016 and hired in May and trained in August in preparation for 2015-2016.

Section 6: Prioritization

Staffing

Initiative	Resource(s)	Est. Cost	Funding Type	Health, Safety Compliance	Evidence	College Goal	To be Completed by	Priority
Increase program effectiveness and continue to grow and meet student demand for math courses.	Full-time faculty member with an emphasis in statistics (with health and welfare)	88,540	Ongoing	No	The enrollment, FTES and growth trends strongly emphasize and increase in math.	Student Success; Access, Persistence and Retention; Growth and efficiency	Fall 2016	1