NORCO COLLEGE COMPREHENSIVE INSTRUCTIONAL PROGRAM REVIEW

Unit: Mathematics

Please give the full title of the discipline or program.

Contact Person: Dr. Jason Parks

Due in draft: March 15, 2015

Final drafts due: April 29, 2015

Please send an electronic copy to the Vice President; Academic Affairs
Norco: Diane.Dieckmeyer@norcocollege.edu
If you are CTE: Kevin.Fleming@norcocollege.edu

Form Last Revised: December 2014

Norco College

Web Resources: http://www.rccd.edu/administration/educationalservices/ieffectiveness/Pages/ProgramReview.aspx

Comprehensive Instructional Program Review Update
Instructions

***Please retain this information for your discipline's/department's use (or forward to your chair).**

The Comprehensive Program Review is conducted by each unit at Norco College and consists of an analysis of changes within the unit as well as significant new resource needs for staff, resources, facilities, and equipment for the next four years. This document serves as a long-term strategic planning document This planning document should reflect the period since the last Comprehensives submitted by your unit and should also cover the planning for the next four years. In the year submitted, an annual program review will not be submitted.

For Program Review data, please go to the following link:
http://www.norcocollege.edu/about/president/strategic-planning/programreview/Pages/Comprehensive-Instructional-Program-Review.aspx

The questions on the subsequent pages are intended to assist you in planning for your unit.

The forms that follow are separated into pages for ease of distribution to relevant subcommittees. **Please keep the pages separated** if possible (though part of the same electronic file), **with the headers as they appear**, and be sure to include your unit, contact person (this may change from topic to topic) and date on each page submitted. Don't let formatting concerns slow you down. If you have difficulty with formatting, Nicole C. Ramirez can adjust the document for you. Simply add responses to those questions that apply and forward the document to nicole.ramirez@norcocollege.edu with a request to format it appropriately.

If you cannot identify in which category your requests belong or if you have complex-funding requests please schedule an appointment with your college's Vice President for Business Services right away. They will assist you with estimating the cost of your requests. For simple requests such as the cost of a staff member, please e-mail your Vice President. It is vital to include cost estimates in your request forms. Each college uses its own prioritization system. Inquiries regarding that process should be directed to your Vice President.

Norco:	**VP Business Services**	**951-372-7157**

Mission

Norco College serves our students, our community, and its workforce by providing educational opportunities, celebrating diversity, and promoting collaboration. We encourage an inclusive, innovative approach to learning and the creative application of emerging technologies. We provide foundational skills and pathways to transfer, career and technical education, certificates and degrees.

Vision

Norco – creating opportunities to transform our students and community for the dynamic challenges of tomorrow.

Educational Master Plan and Strategic Plan Goals and Strategies 2013-2018

Goal 1: Increase Student Achievement and Success

Objectives:

1. Improve transfer preparedness (completes 60 transferable units with a 2.0 GPA or higher).
2. Improve transfer rate by 10% over 5 years.
3. Increase the percentage of basic skills students who complete the basic skills pipeline by supporting the development of alternatives to traditional basic skills curriculum.
4. Improve persistence rates by 5% over 5 years (fall-spring; fall-fall).
5. Increase completion rate of degrees and certificates over 6 years.
6. Increase success and retention rates.
7. Increase percentage of students who complete 15 units, 30 units, 60 units.
8. Increase the percentage of students who begin addressing basic skills needs in their first year.
9. Decrease the success gap of students in online courses as compared to face-to-face instruction.
10. Increase course completion, certificate and degree completion, and transfer rates of underrepresented students.

Goal 2: Improve the Quality of Student Life

Objectives:
1. Increase student engagement (faculty and student interaction, active learning, student effort, support for learners).
2. Increase frequency of student participation in co-curricular activities.
3. Increase student satisfaction and importance ratings for student support services.
4. Increase the percentage of students who consider the college environment to be inclusive.
5. Decrease the percentage of students who experience unfair treatment based on diversity-related characteristics.
6. Increase current students' awareness about college resources dedicated to student success.

Goal 3: Increase Student Access

Objectives:
1. Increase percentage of students who declare an educational goal.
2. Increase percentage of new students who develop an educational plan.
3. Increase percentage of continuing students who develop an educational plan.
4. Ensure the distribution of our student population is reflective of the communities we serve.
5. Reduce scheduling conflicts that negatively impact student completion of degrees and programs.

Goal 4: Create Effective Community Partnerships

Objectives:
1. Increase the number of students who participate in summer bridge programs or boot camps.
2. Increase the number of industry partners who participate in industry advisory council activities.
3. Increase the number of dollars available through scholarships for Norco College students.
4. Increase institutional awareness of partnerships, internships, and job opportunities established with business and industry.
5. Continue the success of Kennedy Partnership (percent of students 2.5 GPA+, number of students in co-curricular activities, number of students who are able to access courses; number of college units taken).
6. Increase community partnerships.
7. Increase institutional awareness of community partnerships.
8. Increase external funding sources which support college programs and initiatives.

Goal 5: Strengthen Student Learning

Objectives:
1. 100% of units (disciplines, Student Support Service areas, administrative units) will conduct systematic program reviews.
2. Increase the percentage of student learning and service area outcomes assessments that utilize authentic methods.
3. Increase the percentage of programs that conduct program level outcomes assessment that closes the loop.
4. Increase assessment of student learning in online courses to ensure that it is consistent with student learning in face-to-face courses.
5. Increase the number of faculty development workshops focusing on pedagogy each academic year.

Goal 6: Demonstrate Effective Planning Processes

Objectives:
1. Increase the use of data to enhance effective enrollment management strategies.
2. Systematically assess the effectiveness of strategic planning committees and councils.
3. Ensure that resource allocation is tied to planning.
4. Institutionalize the current Technology Plan.
5. Revise the Facilities Master Plan.

Goal 7: Strengthen Our Commitment To Our Employees

Objectives:
1. Provide professional development activities for all employees.
2. Increase the percentage of employees who consider the college environment to be inclusive.
3. Decrease the percentage of employees who experience unfair treatment based on diversity-related characteristics.
4. Increase participation in events and celebrations related to inclusiveness.
5. Implement programs that support the safety, health, and wellness of our college community.

I. Norco College Comprehensive Instructional Program Review Update

Unit: __Mathematics_____
Contact Person: __Dr. Jason Parks_____
Date: __April 29, 2015_____

Trends and Relevant Data

1. **Have there been any changes in the status of your unit in the last four years? What are the anticipated changes for the next four years?**

Question:	Prior Four Years	Next Four Years
Has your unit shifted departments?	None	The Math & Science Department voted in Fall 2014 to split the department into two departments: a Mathematics Department and a Science and Kinesiology Department. Since college-wide meetings have taken place and the idea is still being evaluate by the college community.
Have any new certificates programs been created by your unit? For example, did your unit develop an ADT or if not, are you in the process?	A Math ADT was passed through the college processes and approved by the State. It is now in effect.	None
Have activities in other units impacted your unit? For example, a new Multi Media Grant could cause greater demand for Art courses or a new ADT may require resources such as supplemental courses for another unit's ADT.	Norco College's Summer Advantage program has had an effect on the scheduling of fall semester courses, advancing many incoming freshmen from the lowest levels of basic skills up one or two levels. RCC and MVC both removed MAT-63 and MAT-64 from their course offerings. This has forced Norco College to deal with a huge	

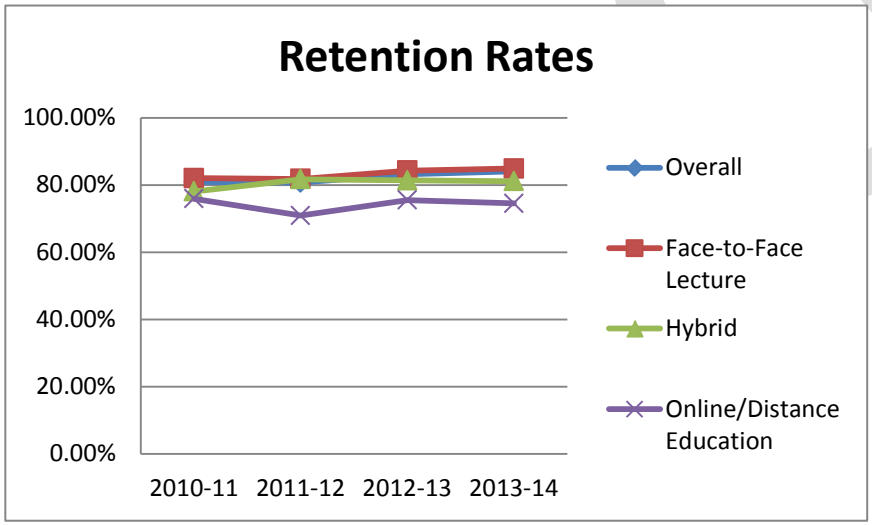
	demand for MAT-63 courses in the 2013-2014 and 2014-2015 academic years. In the Spring 2015 Norco College Math Faculty voted unanimously to phase out offerings of MAT-63 and MAT-64 beginning in the Fall 2015 semester.	

2. List your retention and success rates as well as your efficiency for the previous four years. Have there been any changes or significant trends in the data? If so, to what do you attribute these changes? Please list Distance Education, retention, success and efficiency separately.

RETENTION

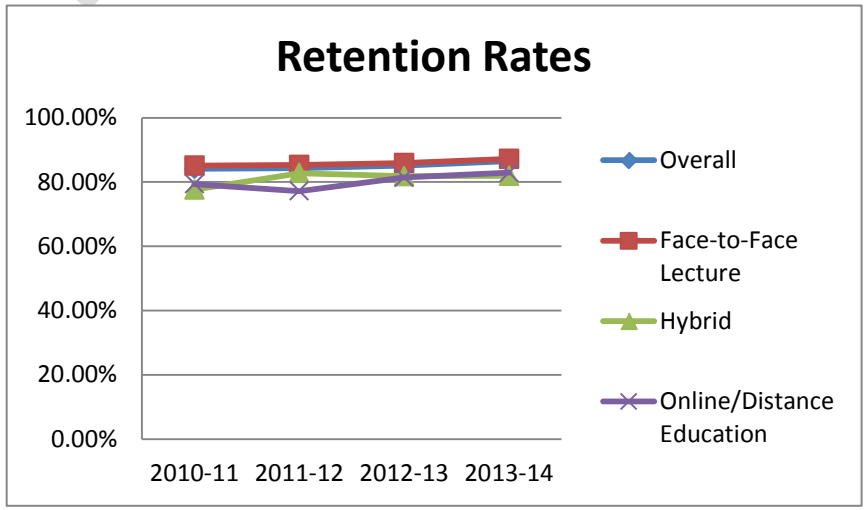
MATHEMATICS

Retention Rate NORCO	2010-11	2011-12	2012-13	2013-14
Overall	80.95%	80.72%	83.19%	84.06%
Face-to-Face Lecture	82.07%	81.82%	84.30%	84.90%
Hybrid	78.09%	81.69%	81.37%	81.13%
Online/Distance Ed	75.91%	70.89%	75.55%	74.53%



NORCO COLLEGE

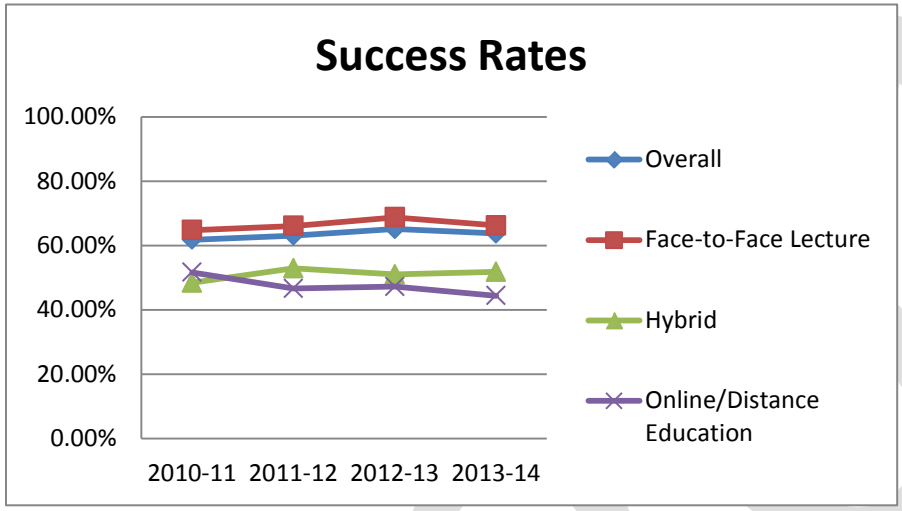
Retention Rate NORCO	2010-11	2011-12	2012-13	2013-14
Overall	84.12%	84.35%	85.12%	86.51%
Face-to-Face Lecture	85.09%	85.27%	85.90%	87.18%
Hybrid	77.65%	82.74%	81.83%	81.91%
Online/Distance Ed	79.36%	77.16%	81.40%	82.91%



SUCCESS

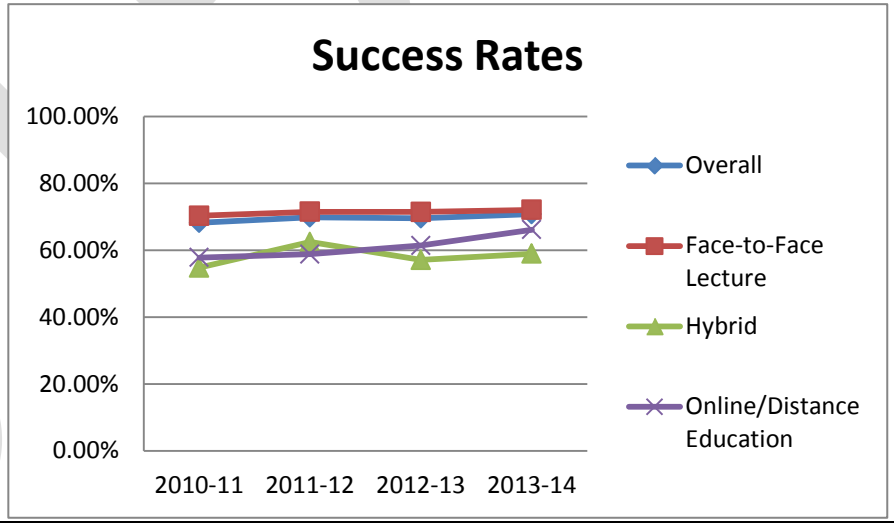
MATHEMATICS

Success Rate NORCO	2010-11	2011-12	2012-13	2013-14
Overall	61.81%	63.10%	65.15%	63.72%
Face-to-Face Lecture	64.79%	66.08%	68.78%	66.24%
Hybrid	48.40%	52.92%	50.99%	51.81%
Online/Distance Ed	51.68%	46.65%	47.22%	44.41%



NORCO COLLEGE

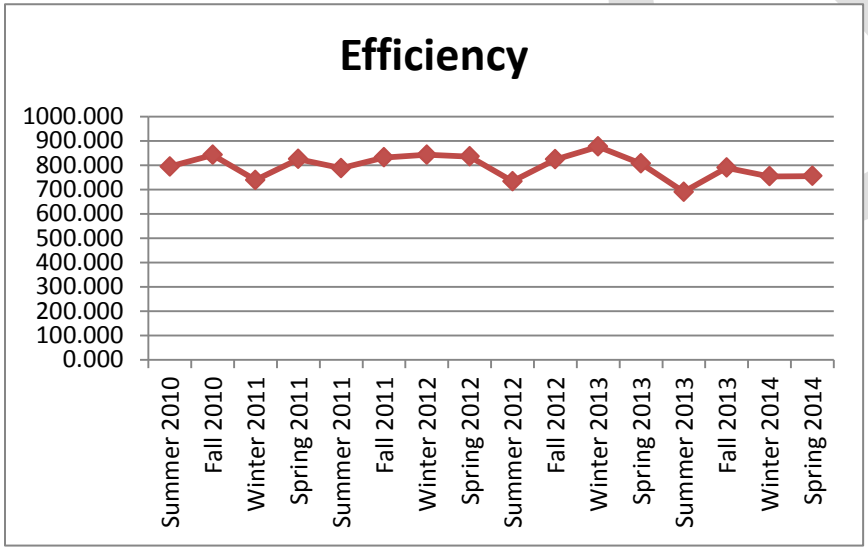
Success Rate NORCO	2010-11	2011-12	2012-13	2013-14
Overall	68.21%	69.81%	69.52%	70.77%
Face-to-Face Lecture	70.29%	71.49%	71.44%	72.05%
Hybrid	54.81%	62.45%	57.07%	58.97%
Online/Distance Ed	57.83%	58.81%	61.40%	66.12%



EFFICIENCY

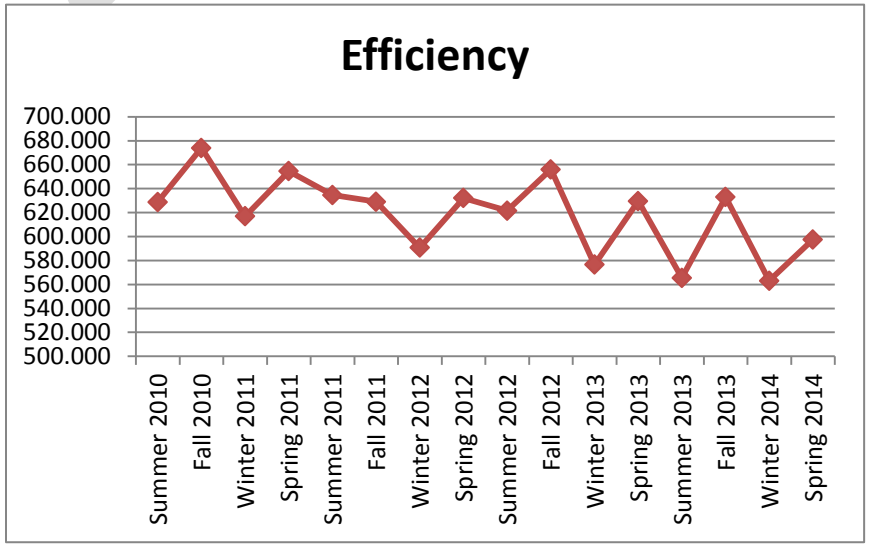
MATHEMATICS

Term	Efficiency
Summer 2010	793.833
Fall 2010	842.280
Winter 2011	738.732
Spring 2011	824.832
Summer 2011	787.517
Fall 2011	831.673
Winter 2012	842.409
Spring 2012	835.339
Summer 2012	733.282
Fall 2012	823.393
Winter 2013	876.421
Spring 2013	806.811
Summer 2013	690.359
Fall 2013	789.205
Winter 2014	753.670
Spring 2014	755.057
Total	807.377



NORCO COLLEGE

Term	Efficiency
Summer 2010	628.847
Fall 2010	673.930
Winter 2011	616.886
Spring 2011	654.611
Summer 2011	634.611
Fall 2011	628.986
Winter 2012	590.777
Spring 2012	632.099
Summer 2012	621.577
Fall 2012	655.979
Winter 2013	576.499
Spring 2013	629.599
Summer 2013	565.463
Fall 2013	632.917
Winter 2014	563.129
Spring 2014	597.476
Total	634.404



3. In the table below, state your goals from your previous comprehensive unit reviews. List the most important first.

State your goals from your previous comprehensive unit reviews	List activity(s) linked to the goal	Indicate progress made towards the goal	Relationship of goal to mission and master plan	Indicate if goal is related to Distance Education. (Yes or No)

4. **In the table below, please list your long term goals for your unit. How do your goals support the college mission and the goals of the <u>Educational Master Plan/Strategic Plan</u>?** **Your unit may need assistance to reach its goals. Financial resources should be listed on the subsequent forms. In addition you may need help from other units or Administrators. Please list that on the appropriate form below, or on the form for "other needs."*

List the long term goals of your unit for the next four years.	List activity(s) linked to the goal	Anticipated timeline for completion	Relationship of goal to mission and master plan	Indicate if goal is related to Distance Education. (Yes or No)
Improve success rates and through-put in basic skills courses, increasing the number of students who start in a basic skills course who complete a transfer level mathematics course.	To support the students in MAT-52, MAT-65 was redesigned to better prepare students for MAT-52 Ongoing assessment of MAT-52 to identify weaknesses in the course and teaching methodology.	Ongoing By 2017 we anticipate a significant increase in the number of students who begin in a basic skills course and successfully pass MAT-35.	Goal 1: Increased Student Achievement and Success Goal 5: Strengthen Student Learning	Yes, in that MAT-52 and MAT-64 are classes taught online.
Develop courses to shorten the number of classes necessary to complete the math sequence as related to math the Math ADT	Develop a combination trigonometry and precalculus course.	Completed for the Fall 2016 Semester.	Goal 1: Increased Student Achievement and Success	No
Increase the percentage of students who take MAT-10 who successfully complete MAT-1B	Conduct a comprehensive study of the MAT-10 -> MAT1B sequence (STEM sequence) to find gaps in the curriculum and make improvements to increase retention and success.	To be ongoing as a part of assessment with initial report completed in Fall 2016	Goal 1: Increased Student Achievement and Success Goal 5: Strengthen Student Learning	No

Course Outlines of Record (COR)

An important part of comprehensive program review is a review of the course outlines of record that are associated with a unit. Please list all of the courses in your unit as listed in the Norco College Catalog and the date that they were last updated. If they have not been updated in the last four years, you must update them before submitting your program review, e.g., making sure the edition of the textbook is current. Please do not submit the actual COR.

Course Number	Date Last Updated	Last Editor (name)	If not current, where is the COR in the review process	Was the last update a major or minor modification?
MAT-1A MAT-1A	11/19/2013 N/A	Namekata (MVC) Sanchez (RCC)	N/A Level 7.00	Yes Yes
MAT-1B	4/16/2014	Brown (RCC)	N/A	Yes
MAT-1C	6/18/2013	Chiek (RCC)	N/A	Yes
MAT-2	11/19/2013	Namekata (MVC)	N/A	Yes
MAT-3	4/16/2013	Namekata (MVC)	N/A	Yes
MAT-4	5/20/2014	Johnson (NC)	N/A	Yes
MAT-5	1/20/2015	Robles (NC)	Level 11.00	Yes
MAT-6	6/15/2010	Brown (RCC)	N/A	No – New Course
MAT-10	6/17/2014	Namekata (MVC)	N/A	Yes
MAT-11	4/15/2014	Namekata (MVC)	N/A	Yes
MAT-12	11/19/2013	Brown (RCC)	N/A	Yes
MAT-12H	4/15/2014	Brown (RCC)	N/A	Yes
MAT-25	8/15/2014	Cramm (RCC)	Level 7.00	Yes
MAT-32	4/15/2014	Johnson (NC)	N/A	Yes
MAT-35	11/19/2013	Mendoza (RCC)	N/A	Yes
MAT-36	1/21/2014	Namekata (MVC)	N/A	Yes
MAT-52	4/19/2011	Brown (RCC)	N/A	Yes
MAT-53	11/19/2014	Cramm (RCC)	Level 7.00	Yes
MAT-63	12/11/2012	Dawson (RCC)	N/A	Yes
MAT-64	4/17/2012	Dawson (RCC)	N/A	Yes
MAT-65	4/17/2012	Dawson (RCC)	N/A	Yes

Norco College Comprehensive Instructional Program Review Update

Unit: __Mathematics_____
Contact Person: __Dr. Jason Parks_____
Date: __April 29, 2015_____

Current Human Resource Status

5. Complete the Faculty and Staff Employment Grid below. Please list full and part time faculty numbers in separate columns. Please list classified staff who are full and part time separately:

Faculty Employed in the Unit			
Teaching Assignment (e.g. Math, English)	Full-time faculty or staff (give number)	Part-time faculty or staff (give number)	Distance Education
Mathematics Instructors	9 (8 in 2015-2016)	27	6
Courses Taught	102	88	
Units Taught	362	444	

Classified Staff Employed in the Unit			
Staff Title	Full-time staff (give number)	Part-time staff (give number)	Distance Education

Long Term Resource Planning

This section should be completed with your long term goals in mind. However, as you will not be filing an annual program review this academic year, you may need to include some of your short-term resource requests as well.

Unit Name: __Mathematics__

6. Staff Needs

NEW OR REPLACEMENT STAFF (Administrator, Faculty or Classified)[1]

List Staff Positions Needed **Please justify and explain each faculty request as they pertain to the goals listed in item #3.** Place titles on list in order (rank) or importance.	**Indicate (N) = New or (R) = Replacement**	**Annual TCP***	**Distanced Education**	**Short Term Goal (S) Long Term Goal (L)**
1. Tenure Track Mathematics Faculty Member Reason: Currently mathematics teaches 18 different courses and has 83 sections scheduled for Fall 2015 with 9 FT faculty and 27 Associate Faculty. These numbers include all but one FT faculty member taking on overload, several of whom are at more than a 1.5 FTE total each semester.	**R**	**$123,881**	**Y/N**	**L**
2. Tenure Track Mathematics Faculty Member Reason: Currently mathematics teaches 18 different courses and has 83 sections scheduled for Fall 2015 with 9 FT faculty and 27 Associate Faculty. These numbers include all but one FT faculty member taking on overload, several of whom are at more than a 1.5 FTE total each semester.	**R**	**$123,881**	**Y/N**	**L**
3. Dean of Math & Science Reason: Currently under the structure of the Norco College there is one dean who oversees all Norco College courses outside of CTE. This workload is excessive. While we believe the size of Norco College warrants the addition of at least two more deans, we believe a Dean of Math & Science (and a dean of Letters and Arts) add a strategic element to the operation of				

[1] If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the "reason" section of this form.

the college and division lacking and desperately needed.				
4. Reason:				
5. Reason:				

* TCP = "Total Cost of Position" for one year is the cost of an average salary plus benefits for an individual. New positions (not replacement positions) also require space and equipment. Please speak with your college Business Officer to obtain accurate cost estimates. Please be sure to add related office space, equipment and other needs for new positions to the appropriate form and mention the link to the position. Please complete this form for "New" Classified Staff only. All replacement staff must be filled per Article I, Section C of the California School Employees Association (CSEA) contract. Requests for staff and administrators will be sent to the Business and Facilities Planning Council. Requests for faculty will be sent to the Academic Planning Council.

Unit Name: __Mathematics__

7. Equipment (including technology) Not Covered by Current Budget[2]

List Equipment or Equipment Repair Needed. Please list/summarize the needs of your unit on your college below. Please be as specific and as brief as possible. Place items on list in order (rank) or importance.	*Indicate whether Equipment is for (I) = Instructional or (N) = Non-Instructional purposes	Annual TCO*				
		Cost per item	Number Requested	Total Cost of Request	EMP GOALS	Distance Education
1. Faculty Computers – All 9/8 faculty members Reason: All computers are very old, many approaching 10 years old. The department lacks the funds to replace computer equipment on a regular basis and some faculty members have been fortunate enough to receive hand-me-down computers from departments with greater technology needs and/or grants but even those are aging now	**I**	***See Technology Plan***				**Y**
2. Classroom projectors Reason: Current classroom projectors are not well suited for mathematics instruction, placing the projection in the center of the board and leaving small areas on either side of the whiteboard for use. New projectors would be placed above the whiteboard and project down immediately onto the board near the sides so instructors can efficiently utilize the rest of the board in conjunction with the projection. ***(See also Program Review for Library/Learning Rescoures, 2014 – ITEM: Replacement Projectors)***	**I**	***Detailed Prices available on Library/Learning Resources Program Review 2014***				**N**

[2] If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the "reason" section of this form.

3. Adjunct Office Room Reason: Adjunct instructors have made several requests for a space to work with students in an office-hours like atmosphere. The LRC is a difficult space to work in such a capacity. Many surrounding colleges and universities have a dedicated shared space for ssociate faculty to meet with students outside of class.						
4. Reason:						
5. Reason:						
6. Reason:						

*** Instructional Equipment is defined as equipment purchased for instructional activities involving presentation and/or hands-on experience to enhance student learning and skills development (i.e. desk for student or faculty use).**

Non-Instructional Equipment is defined as tangible district property of a more or less permanent nature that cannot be easily lost, stolen or destroyed; but which replaces, modernizes, or expands an existing instructional program. Furniture and computer software, which is an integral and necessary component for the use of other specific instructional equipment, may be included (i.e. desk for office staff).

**** These requests are sent to the Business and Facilities Planning Council.**

Unit Name: __Mathematics__

8. Professional or Organizational Development Needs Not Covered by Current Budget*[3]

List Professional Development Needs. Reasons might include in response to assessment findings or the need to update skills to comply with state, federal, professional organization requirements or the need to update skills/competencies. Please be as specific and as brief as possible. Some items may not have a cost per se, but reflect the need to spend current staff time differently. Place items on list in order (rank) or importance. Examples include local college workshops, state/national conferences.	**Annual TCO***				
	Cost per item	**Number Requested**	**Total Cost of Request**	**EMP Goals**	**Distance Education**
1. Conference/Travel Monies Reason: Conference/Travel monies were revoked during the budget down turn to save money and preserve classes for students. As a result faculty members have still attended local conferences (CMC3 for example) at their own expense but have not been able to attend other converences (such as MAA) due to the cost involved and need for substitutes.	**$500**	**3**	**$1500**	**1, 2, 5, 7**	**Y**
2. Reason:					
3. Reason:					
4. Reason:					

*It is recommended that you speak with the Faculty Development Coordinator to see if your request can be met with current budget.

** These requests are sent to the Professional Development Committee for review.

[3] If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the "reason" section of this form.

Unit Name: __*Mathematics*__

9. Student Support Services, Library, and Learning Resource Center (see definition below*) Services needed by your unit over and above what is currently provided by student services at your college. Requests for Books, Periodicals, DVDs, and Databases must include specific titles/authors/ISBNs when applicable. Do not include textbook requests. These needs will be communicated to Student Services at your college[4]

List Student Support Services Needs Please list/summarize the needs of your unit on your college below. Please be as specific and as brief as possible. Not all needs will have a cost, but may require a reallocation of current staff time.	**EMP GOALS**	**Distance Education**
1. Math Tutors Reason: Current tutor staffing levels are insufficient for the volume of students needing help in mathematics	**1, 2, 3, 4, 5, 6, 7**	
2. Reason:		
3. Reason:		
4. Reason:		

*Student Support Services include for example: tutoring, counseling, international students, EOPS, job placement, admissions and records, student assessment (placement), health services, student activities, college safety and police, food services, student financial aid, and matriculation.

** These requests are sent to the Student Services Planning Council and the Library Advisory Committee.

[4] If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the "reason" section of this form.

Unit Name: __Mathematics__

10. OTHER NEEDS AND LONG TERM SAFETY CONCERNS not covered by current budget[5]

**** For immediate hazards, contact your supervisor ****

List Other Needs that do not fit elsewhere. Please be as specific and as brief as possible. Not all needs will have a cost, but may require a reallocation of current staff time. Place items on list in order (rank) or importance.	**Annual TCO***				
	Cost per item	**Number Requested**	**Total Cost of Request**	**EMP Goals**	**Distance Education**
1. Reason:					
2. Reason:					
3. Reason:					
4. Reason:					
5. Reason:					
6. Reason:					

These requests are sent to the Business and Facilities Planning Council, but are not ranked. They are further reviewed as funding becomes available.

[5] If your SLO assessment results make clear that particular resources are needed to more effectively serve students please be sure to note that in the "reason" section of this form.

Norco College – Program Review Committee

Spring 2015

Rubric for Comprehensive Instructional Program Review - Part I only

Discipline: Contact Person:

Reviewer: Average Score:

Area of Assessment	0 No attempt	1 some attempt	2 good attempt	3 outstanding attempt
1. Trends and status change, prior and next four years identified	Trends and status change section is blank	Only prior **or** next four years completed, not both		Prior and next four years section completed with clear information in both, or identified as N/A
2. Retention, success, and efficiency rates have been identified and reflected upon	No identification or discussion of retention, success, or efficiency data	Limited identification or discussion of retention, success, and efficiency data	Clear identification and discussion of retention, success, and efficiency data	Substantial identification and discussion/interpretation of success, retention and efficiency data
3. Goals from prior comprehensive identified, activities linked to the goal, progress stated	No goals from prior comprehensive identified	Limited/generic statement made regarding goal(s), lacks clarity or details and/or activities, and/or progress stated	Clear statement made regarding goal(s), activities, and progress	Well-defined statement made regarding goal(s), and activities, includes details & reasoning, progress stated in depth
4. Long term goals identified, activities and timeline stated	No attempt made to identify long term goals, activities, and timeline	Limited/generic statement made regarding goal(s), lacks clarity or details and/or activities, and/or timeline	Clear statement made regarding goal(s), activities, and timeline	Well-defined statement and justification made regarding goal(s), and activities, includes details & reasoning, suggested timeline

5. Long term goals aligned to mission and EMP	No link between the long term goals and the Mission or EMP	Limited attempt to link goals to Mission and EMP	Clear attempt to link goals to Mission and EMP	Well defined connection made between goals and Mission and EMP
6. Course Outline of Record section is completed	COR section is blank	COR section is partially completed, missing some courses from catalog		COR section is completed in its entirety – all courses in catalog identified
7. Linkages made between reasons for resource request and EMP/Strategic Plan Goals (SPG)	No linkage made between resource requests and EMP/SPG	Limited/generic/basic connection made between resource requests and EMP/SPG	Clear connection made between resource requests and EMP/SPG	Substantial connection made between resource requests and EMP/SPG
Column scores				

Additional comments:

II. Comprehensive Program Review Assessment Update

Purpose –This comprehensive review should provide your unit with an opportunity to reflect and analyze any trends or indicators from the assessments you have conducted over the past four years. Consider it a type of meta-analysis of your own work. This update is intended to facilitate discussion within your discipline regarding the types of assessments, the range of outcomes you have experienced with regard to increasing student success, and any changes, modifications, or improvements you have made to courses that seem to have supported student learning. It should also provide you with an opportunity to look forward to determine a plan of action for assessment for the next four years. Your Annual Program Reviews and the Norco Assessment Rotation Plan are all stored on the Norco website in the Program Review section. If you have any questions, please contact either Sarah Burnett at sarah.burnett@norcocollege.edu, or Greg Aycock at greg.aycock@norcocollege.edu.

Please take some time to review your Annual Program Review assessment updates and answer the following questions.

Section 1: Discipline Evaluation of Assessment Process

a. Please identify the modes of assessments (embedded tests, assignments with rubrics, class projects etc.) you have conducted as a unit since your last comprehensive program review. Please indicate if the assessments were designed by individual faculty or if there was a collaborative group that planned and executed the assessments.

   The math discipline is taking a two fold approach to assessing mathematics courses:

   i. Looking at individual Students Learning Outcomes and assessing how well the students are learning and retaining the information. This is done by issuing a set of common questions to all students taking the class being assessed. The delivery of these questions is different among instructors, ranging from a separate test/quiz entirely composed of those questions to embedding the questions into regularly scheduled examinations.

   ii. Using data from the College and district to track students through the mathematics progression. Data is collected and analyzed by the department chair tracking students through two basic progressions: the basic skills track to MAT-35 and the STEM track consisting of MAT-10 → MAT → MAT-1A → MAT-1A.

b. Please provide an overview of the types of changes or modifications (updated test questions, revised PowerPoints, redesigned assignments, new assignments) that were made in a course or a program in response to your assessments.

To date the majority of changes have taken place in the basic skills track where very low success rates are persistent. The lowest success rates course in mathematics is MAT-52 Elementary Algebra. Analysis of SLO's has shown students are deficient in several places including word problems and fractions. In trying to tackle these problems the faculty decided it would be best to start at the level where students are supposed to be learning these topics, the prerequisite MAT-65.

i. The Norco College mathematics discipline voted on 4/4/2015 in a mathematics meeting to remove MAT-63 from schedule and only allow students to who place into the lowest level of mathematics to enroll in MAT-65. The rationale for this is two fold: (1) RCC and MVC both were forced to delete MAT-63 from their schedules causing an enrollment boom in MAT-63 at Norco College. (2) A study of the basic skills pipeline study (see attached study) revealed that students who place into MAT-63/65 and take MAT-63 at their first course have only an 8% chance of progressing to and passing MAT-35 (the graduation requirement) while students with the same placement who enrolled on MAT-65 first had a 13% chance of progressing to and passing MAT-35.
ii. MAT-65 was completely redesigned and implemented in during the Spring 2015 semester. The pace and order of the material were completely redesigned and a group of faculty members created a custom book with the publisher consisting of two different books merged together. Initial anecdotal results appear positive, but concreted SLO data will collected to verify as well as tracking these students though the pipeline.
iii. MAT-65 classes have been scheduled different to be mostly MWF. This was done in conjunction with the redesign of the MAT-65 course and some classes were left at TTH or MW (evenings) to give a control group to test results against.
iv. An intentional effort in scheduling is being made to have associate faculty teach one or two classes more consistently.

c. Please identify any elements or approaches that seem to garner greater success, or have led to permanent modifications in any courses. Please speak to changes that did not seem to make any impact and provide a reasoned argument as to why you think this occurred. Please consider any external variables that you think might have provided support or deterred from your ability to increase student success in your discipline.

The number of different sections and different instructors (many of whom are associate faculty working at several different local colleges) in mathematics has made small changes in this type of approaches very difficult as instructors have a differing method of delivering material. To advance this in coming semesters scheduling has been shifted to emphasize a consistency of scheduling among the 18 different level math classes taught at the college.

d. Please identify any teaching approaches (pedagogy) that as a discipline you perceive to have had a positive impact on your student's ability to engage in the learning process. This might relate to elements such as the way you might have restructured the class (e.g., small group vs. direct lecture), the way in which you disseminate information (e.g., lecture vs. flipped classroom or action based learning). It might include the manner in which you gain feedback from students (journals, or clickers). This might not specifically include elements that have been formally assessed, but rather may reflect on good teaching practices that you deem effective.

As a discipline there are two things that have been looked into as having a difference in students ability to engage in the learning process. (1) An analysis of hybrid/online classes versus face to face classes was conducted. Online classes have consistently shown a significantly lower success rate in MAT-52 and as a result the number of sections has been significantly reduced while instructors work to make improvements in the delivery method to improve those numbers. No significant difference was found in the success rates of hybrid students at all levels (this was surprise) and so no changes have been made there, and one faculty member had developed and implemented an hybrid model for MAT-12 (statistics) for the first time during the Spring 2015 semester.

e. On reflection, can you identify any specific resources, support, or training that your discipline, department, or the institution might need to provide on-going support for student learning? If so, please explain.

Training resources and funding to pay associate faculty members to work closer with FT Faculty to better assess and make changes are desperately needed. The mathematics discipline consists of 9 Full Time Faculty (8 in the Fall 2015) and 27 Associate Faculty teaching 18 different courses (83 sections in the Fall 2015 semester). This shear volume of classes combined with the lack of resources for Associate Faculty makes assessing and making meaningful changes a herculean task for a few faculty.

Section 2: Overview of Completed Assessment

Using your Annual Program Reviews from the past four years please fill in the following data ***for each of the courses and programs your discipline offers*** at Norco College. Please list courses first and then programs. *Examples are provided on the first three lines in italics*. Your Annual Program Reviews and the Norco Assessment Rotation Plan are all stored on the Norco website in the Program Review section.

Course Number and Name and/or Program	**Total number of initial assessments conducted**	**Total Number of Improvements/changes made to courses as a result of assessment**	**Total number of loop-closing assessments conducted**	**Total of all assessment activity for each course/program (all columns combined)**
MAT-63 Arithmetic	*2*	*(course was eliminated from schedule in Fall 2015)*	*1*	*2*
MAT-65 Arithmetic & Prealgebra	*3*	*2*	*0*	*5*
MAT-64 Prealgebra	*2*	*0*	*0*	*1*
MAT-52 Elementary Algebra	*2*	*1*	*0*	*3*
MAT-53 Geometry	*0*	*0*	*0*	*0*
MAT-35 Intermediate Algebra	*2*	*0*	*0*	*2*
MAT-36 Trigonometry	*0*	*0*	*0*	*0*
MAT-12 Statistics	*2*	*1*	*0*	*3*
MAT-10 Precalculus	*2*	*0*	*0*	*2*
MAT-1A Calculus I	*1*	*1*	*1*	*3*
MAT-1B Calculus II	*1*	*0*	*0*	*1*
MAT-1C Calculus III	*1*	*0*	*0*	*1*
MAT-2 Differential Equations	*1*	*0*	*0*	*1*
MAT-3 Linear Algebra	*1*	*0*	*0*	*1*
MAT-4 Finite Mathematics	*0*	*0*	*0*	*0*
MAT-5 Business Calculus	*1*	*0*	*0*	*1*
MAT-11 College Algebra	*0*	*0*	*0*	*0*
MAT-25 Math for Liberal Arts	*1*	*1*	*1*	*3*

Section 3: Plan for Assessment

Please provide a comprehensive plan for assessment in your unit for the upcoming four years. Include plans **for all course and program level assessment** (certificate programs or ADTs.) The Norco Assessment Rotation Schedule is posted on the Assessment website for you to use in planning for program level assessment. If you have an existing rotation plan please attach it to this document and indicate such in the table. Feel free to insert the dates aligned to each year.

Plan for the next 4 years	Courses and Programs to be assessed
Plan for Year 1 (2015 – 2016)	**Basic Skills Track (*Lead Faculty: Janet Frewing, Bob Prior, and Stephen Park*)** Continue to collect data on the MAT-65 redesign and track student progress through MAT-52 and MAT-35. Better analyze the issues of MAT-52 with (hopefully) better prepared students coming from the prerequisite course. **STEM Track (*Lead Faculty: Jason Parks*)** Begin with MAT-10 in a similar manner as with MAT-65 in the basic skills track. This will be done in conjunction with MAT-1A instructors and data collection at the beginning and end of each semester in MAT-10, MAT-1A, and MAT-1B. **Courses** MAT-12 (*Lead Faculty: Andy Robles and Jason Parks)* Implementation of discoveries and loop closing from Spring 2015 Assessment. MAT-5 (*Lead Faculty – Andy Robles*) Initial Assessment MAT-11 (*Lead Faculty: Stephen Park*) Initial Assessment MAT-10 (*Lead Faculty: Jason Parks*) Implementation of discoveries and loop closing from Spring 2015 Assessment. MAT-1B (*Lead Faculty: Jason Parks*) Implementation of discoveries and loop closing from Spring 2015 Assessment. MAT-1C (*Lead Faculty: Brian Johnson*) Implementation of discoveries and loop closing from Spring 2015 Assessment.

	MAT-2 (*Lead Faculty: Andy Robles*) Implementation of discoveries and loop closing from Spring 2015 Assessment. MAT-35 (*Lead Faculty: Elisa Chung, Joseph DeGuzman, Brian Johnson*) Implementation of discoveries and loop closing from Spring 2015 Assessment.
Plan for Year 2 (2016 – 2017)	**<u>Basic Skills Track</u> (*Lead Faculty: Janet Frewing, Bob Prior, and Stephen Park*)** Continue to collect data on and track student progress through MAT-52 and MAT-35. **<u>STEM Track</u> (*Lead Faculty: Jason Parks*)** Continue to analyze SLO achievement and students success and retention patterns, making changes to each class as found necessary. This will include data collection and analysis for MAT-10, MAT-1A, and MAT-1B. MAT-1A (*Lead Faculty: Jason Parks*) Implementation of discoveries and loop closing. MAT-5 (*Lead Faculty – Andy Robles*) Implementation of discoveries and loop closing. MAT-11 (*Lead Faculty: Stephen Park*) Implementation of discoveries and loop closing. MAT-2 (*Lead Faculty: Andy Robles*) On going assessment and loop closing. MAT-3 Initial Assessment. MAT-36 (*Lead Faculty: Bob Prior*) Initial Assessment MAT-35 (*Lead Faculty: Elisa Chung, Joseph DeGuzman, Brian Johnson*) Ongoing assessment. MAT-64 (*Lead Faculty: Janet Frewing*) Initial Assessment Loop

Plan for Year 3 (2017 – 2018)	**<u>Basic Skills Track</u> (*Lead Faculty: Janet Frewing, Bob Prior, and Stephen Park*)** Continue to collect data on and track student progress through MAT-52 and MAT-35. **<u>STEM Track</u> (*Lead Faculty: Jason Parks*)** Continue to analyze SLO achievement and students success and retention patterns, making changes to each class as found necessary. This will include data collection and analysis for MAT-10, MAT-1A, and MAT-1B. MAT-12 (*Lead Faculty: Andy Robles and Jason Parks)* Initial assessment. MAT-3 On going assessment and loop closing. MAT-35 (*Lead Faculty: Elisa Chung, Joseph DeGuzman, Brian Johnson*) Ongoing assessment. MAT-36 (*Lead Faculty: Bob Prior*) Implementation of discoveries and loop closing MAT-53 (*Lead Faculty: Brian Johnson*) Implementation of discoveries and loop closing MAT-64 (*Lead Faculty: Janet Frewing*) Implementation of discoveries and loop closing

Plan for Year 4 (2018 – 2019)	**<u>Basic Skills Track</u> (*Lead Faculty: Janet Frewing, Bob Prior, and Stephen Park*)** Continue to collect data on and track student progress through MAT-52 and MAT-35. **<u>STEM Track</u> (*Lead Faculty: Jason Parks*)** Continue to analyze SLO achievement and students success and retention patterns, making changes to each class as found necessary. This will include data collection and analysis for MAT-10, MAT-1A, and MAT-1B. MAT-12 (*Lead Faculty: Andy Robles and Jason Parks)* Implementation of discoveries and loop closing. MAT-35 (*Lead Faculty: Elisa Chung, Joseph DeGuzman, Brian Johnson*) Ongoing assessment.

Scoring Rubric for Comprehensive Program Review of Assessment – Part II only

Assessment Unit Name: __Mathematics_____ **Average score _____**

	0	1	2	3
Section 1 • **Modes of assessment** • **Modifications to courses** • **Success indicators** • **Teaching approaches** • **Resources**	No attempt made to provide responses to any of the questions (1-4) 0	Answers are extremely limited, e.g., yes, no, none; inconsistent depth in some responses; barely any reflection or insight provided, limited attempt to use assessment to increase ***understanding*** of student success and learning in the classroom 1	Clear and consistent responses to each question, indication the discipline has attempted to use discipline based assessment results to increase ***understanding*** of student success and learning in the classroom 2	Clear and robust responses to each question, strong indication the discipline has utilized assessment as a tool to increase ***understanding*** of student success and learning in the classroom 3
Section 2 • **# of initial, improvements, loop-closing activities for course and program**	Chart is blank 0	Does not include all courses or programs 1		All courses and programs in the discipline are listed on the chart, each box has a number (including a zero to indicate "nothing") 3
Section 3 **Plan for assessment in the coming 4 years** • **Courses** • **Programs**	Chart is blank 0	Does not include all courses or programs 1		All courses and programs in the discipline are listed on the chart, each box has a number (including a zero to indicate "nothing") 3