Chaffey College Program Review
Three Year Review 2011

PROGRAM OVERVIEW

Program Title: Mathematics & Science Dean's Office

Program Code: 6014 - DEAN OF MATHEMATICS & SCIENCE

Review Type: Administrative

Does this review contain any career technical education (occupational) programs?
No

External Regulations:
No

Chaffey College Mission Statement

Chaffey College improves lives within the diverse communities it serves through equal access to quality occupational, transfer, general education, and foundation programs in a learning-centered environment where student success is highly valued, supported, and assessed.

Please describe how your program supports the college's mission and discuss how your program evaluates its effectiveness in meeting the college mission:
The Office of the School of Mathematics and Science provides leadership, supervision, and support to the instructional disciplines within its purview in accordance with the mission statement and other applicable laws, policies, and regulations. The Office strives to be a valuable resource and to provide exceptional service to the diverse population of students in the disciplines and to faculty and staff in order to facilitate a high-quality learning environment which fosters innovation and excellence. The disciplines represented within the School provide rigorous and student-support-centered instruction leading toward achievement of occupational, transfer, general education, and academic foundation goals.

Review Team Response
While the response provided addresses diversity, learning-centered environments, and quality success and service, the review team was unable to identify in the response the means by which the program evaluates its effectiveness.
PROGRAM DATA

Enrollment
Enrollment by Day, Evening, Online, Arranged ()

<table>
<thead>
<tr>
<th>Measure</th>
<th>2008-09 to 2009-10</th>
<th>2009-10 to 2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Census Enrollment</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Day</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Evening</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Online</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Arranged</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Given the data, what changes can be identified in enrollment patterns? Identify any important trends and explain them.

Retention
### Retention Rate by Day, Evening, Online, Arranged

#### Measure | 2008-09 to 2009-10 | 2009-10 to 2010-11
---|---|---
Total Census Retention | N/A | N/A
Day | N/A | N/A
Evening | N/A | N/A
Online | N/A | N/A
Arranged | | |
Given the data, what changes can be identified in retention patterns? Identify any important trends and explain them.

Success
Success Rate by Day, Evening, Online, Arranged ()

<table>
<thead>
<tr>
<th>Measure</th>
<th>2008-09 to 2009-10</th>
<th>2009-10 to 2010-11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Census Success</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Day</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Evening</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Online</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Arranged</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Given the data, what changes can be identified in student success patterns? Identify any important trends and explain them.

Review Team Response

DEGREE/CERTIFICATE DATA

Review Team Response

STUDENT LEARNING OUTCOMES

Discuss how the number, type, depth, and breadth of the courses support program SLO's.

Discuss how courses in the program articulate with or complement each other.

Discuss how courses in the program interact with other programs on campus (for example: cross-listing, overlapping content, or shared resources).

How and when has your department assessed Program SLO's' and how have you responded to the
results?

What program or course changes have been made based on the result of the assessed outcome?

Review Team Response

Discuss how your services help maintain a high level of student satisfaction.

Discuss how you evaluate your effectiveness in meeting students' needs.

How and when has your service reviewed or revised SLO?s and/or AUO?s.

How has your program utilized SLO/AUO assessment results for program improvement?

Review Team Response

CURRICULUM UPDATE

<table>
<thead>
<tr>
<th>Courses</th>
<th>Last Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Programs</th>
<th>Last Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Courses should be updated every six years; if course updates are due, please describe your plan and timeline for updating courses:

What steps has your program taken to proactively respond to changing and emerging student and community needs?

Briefly explain:

Review Team Response

Review Team Response

NON-INSTRUCTIONAL PROGRAM INFORMATION

How does your program improve, expand, or support student learning? How do you know?

The activities of the Office of the School of Mathematics and Science enhance student learning by:

• Providing balanced access to excellent instructional programs through scheduling and budgeting
• Facilitating institutional processes for faculty, staff, and students in a cooperative and efficient manner including the regular evaluation of employees
• Encouraging and supporting innovative teaching/learning activities on the part of specific departments
• Valuing the student learning activities of instructional departments and providing guidance as they strive to improve student learning through the SLO process.

The Dean and office staff meet regularly with the Coordinators to review programs and goals, to discuss schedules
that attempt to compliment and coordinate with each discipline, to consider new courses or alternate scheduling patterns that enhance student success, and to promote interdisciplinary cohesiveness. Some of the results of these interactions include:

• a growing awareness of interconnected courses for students majoring in the sciences and the need for clearer integrated scheduling,
• review courses and workshops in Mathematics to promote student success,
• the scheduling of accelerated classes to assist students to complete mathematics and science courses more quickly
• the infusion of college initiatives into instruction (notably Learning-to-Learn, Hope Theory, Writing Center workshops, and Math Center workshops)

Describe staff functions and services (these can include diversity, specialties, staff preparation and training, professional activities and committee participation, accomplishments, grants, new programs etc.)

How does your program evaluate its effectiveness?

Within a college-wide structure the Office of the School of Mathematics and Sciences has wide-ranging responsibilities for the smooth and efficient operation of a large and complex instructional program. These include class scheduling, budget management, supervision of staff and programs, evaluation of staff and programs, student assistance and information, facilities monitoring, and certain processes of payroll and human resources. In addition the Dean and office staff members provide direct daily assistance to faculty and staff on a seemingly endless variety of issues. Several Lab Techs also report to the Dean as well as short-term workers and student workers - - their contribution is documented through the specific programs in which they work.

The Dean and office staff are active members of various college committees which has the effect of promoting interaction with other college employees/departments as well as assuring consideration of the Math and Science perspective in college-wide discussions.

Faculty and classified staff are consistently supported in taking advantage of training or professional development activities. The Office enjoys constant feedback from faculty, staff, and students on the efficiency and efficacy of its activities. Much of the measurement takes the form of smooth or not-so-smooth day to day activities of the School. Scheduling flaws are identified by faculty and students, issues with college functions are noted by various institutional offices, difficulty with operations is seen by frustration or anger. The office staff is always looking for ways to improve processes and procedures to maximize service to students, faculty, and staff and to gain efficiency.

Review Team Response

The response provides useful insight into the operations and functions of the program and its members, but the review team was unable to identify how the program evaluates its effectiveness beyond addressing and reflecting upon qualitative and anecdotal experiences within the program itself. Are there surveys or assessments, perhaps implemented with Institutional Research, that can also be reported here?

STUDENT SUPPORT - ACCESS

How do the services you provide to students facilitate access to learning? (e.g. - admissions applications, payment processing, pre-requisite clearances, assessment testing, adaptive technology, program
application, healthcare, student activities, and other specialized services.)

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>Description of Service</th>
<th>How many students received this service?</th>
<th>Measured with?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>08-09</td>
<td>09-10</td>
</tr>
</tbody>
</table>

Additional information:

Review Team Response

**STUDENT SUPPORT - SUPPORT**

How do the services you provide to students support student learning? (e.g. counseling, orientations, workshops, financial assistance (scholarships, grants, etc'), career assessments, health education, service learning, advisory committees, and other specialized services.)

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>What knowledge, skills, and/or abilities are learned?</th>
<th>How many students received this service?</th>
<th>Measured with?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>08-09</td>
<td>09-10</td>
</tr>
</tbody>
</table>

Additional information:

Review Team Response

**STUDENT SUPPORT - OTHER**

How do the services you provide to students promote transfer, completion, specialized services, and/or future success? (e.g. graduation ceremony, CSU/IGETC certifications, university transfer, securing employment, transcript requests, enrollment verification, conferring of degrees/certiﬁcates, scanning/imaging documents, phone calls received, face-to-face contacts, refunds granted, and other specialized services.)

<table>
<thead>
<tr>
<th>Type of Service</th>
<th>How does this contribute to student success?</th>
<th>How many students received this service?</th>
<th>Measured with?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>08-09</td>
<td>09-10</td>
</tr>
</tbody>
</table>

Additional information:

Review Team Response

**VISIONARY IMPROVEMENT PLAN(VIP)**
Please identify 1-3 program improvement goals for the next three years. Goals should state 'what' you plan to achieve and the rationale 'why' for doing so. 'How' you achieve your goals will be entered under Steps to Success. Keep in mind that your VIP should be SMART:

- Specific
- Measurable
- Action-oriented
- Realistic
- Time-bound

All plans should improve or expand student learning.

**Year Three Goal:**
Adequately address facilities and equipment replacement/repair needs of the School.

**To which planning direction does this goal apply?**

**Year 1 Steps to Success (activities) and VIP Assessment:**
1. Provide adequate signage in the Science Complex.
2. Strive to provide adequate lighting, seating, and instructional equipment (document camera and instructor station) in the Planetarium.
3. Seek to replace chalkboards in the Math and PS classrooms with those of a larger size.
4. Seek to replace the screen and projector in VSS-103.
5. Develop a School-wide plan for discipline-specific facilities/technology needs to specifically include the Planetarium and VSS.
6. Develop a School-wide plan for discipline-specific major equipment purchase, replacement, and maintenance contract needs at all three campuses.

**Year 2 Steps to Success (activities) and VIP Assessment:**
1. Increase and stabilize equipment budgets for all science disciplines.
2. Seek approvals and funding for achievement of the School-wide plans.

**Year Three Goal:**
Achieve a schedule of offerings at Chino and Fontana that is balanced in its ability to address student needs, coordinated among the disciplines, and adequately supported.

**To which planning direction does this goal apply?**

**Year 1 Steps to Success (activities) and VIP Assessment:**
1. Support the Biology department's request for a permanent 1FTE Lab Tech III to handle the needs of the recently expanded lab sections at Chino and Fontana.
2. Support the Chemistry department's request to expand the hours of the Lab Tech II from .25 FTE to .475 FTE to handle the needs of the recently expanded lab sections at Chino and Fontana.
3. Support the departments of Biology and Chemistry in their request for full-time faculty at Chino and Fontana.
4. Initiate coordinated planning of Math/Science sections for Chino and Fontana to maximize optimal student schedules.

**Year 2 Steps to Success (activities) and VIP Assessment:**
1. Continue to support Biology and Chemistry requests if not achieved in Year 1.
2. Work with Chino and Fontana administration to assure adequate room availability for the integrated Math/Science schedule.
3. Increase supply and equipment budgets for science disciplines to account for the more comprehensive discipline offerings at Chino and Fontana.
4. Support the expansion of student success activities.
5. Seek appropriate approvals for and institutionalization of the Biohazards Plan and the Chemical Hygiene Plan.

**Year Three Goal:**
Provide adequate support for a fully-integrated comprehensive curriculum in Mathematics and Science.

**To which planning direction does this goal apply?**

**Year 1 Steps to Success (activities) and VIP Assessment:**
1. Support the departments of Earth Science/Geology and Mathematics in their requests for full-time faculty.
2. Develop a clear sequence of courses (including pre-requisites) for students majoring in mathematics or the sciences.
3. Continue to refine an integrated schedule among all of the disciplines to minimize conflicts for students majoring in the sciences.
4. Develop a comprehensive rotation of courses in Engineering and Drafting/Engineering Technology and Physics to assure access and completion.
5. Monitor activities in mathematics to improve student success (especially a lower class size in Math-410, changes in hybrid instruction, and interventions for third time petitioners) and expand as warranted.
6. Continue to refine office practices to handle the support needs of a lively and vigorous school.
7. Revise the Biohazards Plan and the Chemical Hygiene Plan taking the Chino and Fontana campuses into account.

**Year 2 Steps to Success (activities) and VIP Assessment:**
1. Support the departments of Earth Science/Geology, Geography, Astronomy, and Physics in their request for a permanent 1 FTE Lab Tech IV to handle the needs of the physical sciences at all three campuses.
2. Continue to support requests of Earth Science/Geology, Mathematics, Geography, Astronomy, and Physics if not achieved in Year 1.
3. Provide an integrated scheduling pattern in Mathematics and Sciences that provides students and counselors with clear information about the sequences and semester availability for majoring in mathematics or the sciences.
4. Support the Biology department’s request for a permanent 0.475 FTE Lab Tech II to handle the needs of the recently expanded/renovated physical resources of the department (aviary, greenhouse, ponds, collections).
5. Fill the vacant AAII in the School Office.
6. Support the department of Physics in its request for full-time faculty.
7. Initiate a comprehensive rotation of scheduled courses in Engineering and Drafting/Engineering Technology and Physics to assure access and completion.

**Review Team Response**
The goal is unclear and not fully developed.
While the goals themselves were mostly clear, the review team expressed concern about the specificity of the steps to success and assessment measures. Steps like "support[ing] the expansion of student success activities" seemed too vague to be useful for planning. Additionally, other steps like "increas[ing] the supply and equipment budgets for the science disciplines" seemed to rely too heavily on external factors to be useful for planning.

PROFESSIONAL DEVELOPMENT ACTIVITIES THAT SUPPORT STUDENT LEARNING OR IMPROVE YOUR PROGRAM

List Recent departmental professional development activities connected to student learning.

<table>
<thead>
<tr>
<th>Recent activities</th>
<th>Recent workshops/courses taken</th>
<th>Recent conferences/training</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>School &amp; Department</td>
<td>Math-410 workshop provided; staff attended several</td>
<td>Conference to improve internet class success rates.</td>
<td></td>
</tr>
<tr>
<td>Meetings</td>
<td>Microsoft workshops.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How are student learning outcomes affected by these professional activities? What steps are recommended for improvement?
Improved success rate in Math-410 & online courses. Important deadlines met. Improved computer skills.

Discuss departmental engagement on campus in connection to student learning.

<table>
<thead>
<tr>
<th>Governance committees</th>
<th>Other college-related committees</th>
<th>Other campus participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment &amp; Success</td>
<td></td>
<td>Management, CPAC</td>
</tr>
<tr>
<td>Management, CPAC</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How does your program benefit from your campus engagement?
We are connected to other college employees, we learn about new policies, we provide input that drives change, and we are more aware of new policies and upcoming events.

Teaching/Years of Service

<table>
<thead>
<tr>
<th>0-5 years</th>
<th>6-10 years</th>
<th>11-15 years</th>
<th>16-20 years</th>
<th>21+ years</th>
</tr>
</thead>
</table>

Given the data how has your program been impacted?
MS has had 6 retirements and 1 f/t faculty leave in the last several years without replacements. This impacts current faculty who are responsible for SLOs, Curriculum updates, & committee responsibility, requiring more time spent in non-classroom activities.

Does your program anticipate retirements within the next 3 years?
Yes, possibly three full-time faculty may retire.

Review Team Response
The review team experienced some confusion while responding to this section. It is our understanding that MATH-410 workshops are designed for a student audience and are not considered professional development. The review team was unable to identify any
steps for improvement with regards to professional development and thought the connection between professional development activities and SLOs could be articulated more substantially.

**PROJECTED NEEDS**

Is any part of the program funded by sources other than the instructional budget (such as grants, partnerships, or other means)? If yes, please identify the source, amount, and length of funding.

No

After reviewing and analyzing the data and assessment results in this report, please describe and provide rationale for any projected resource needs required to accomplish your Visionary Improvement Plan using the boxes below. Your requests should be based on student need.

**FT Faculty:**

**Year 1:**
Support the Faculty Requests of the Departments in the School of Mathematics & Science.

**Hiring Criteria:**

**Year 2:**
If not approved in Year One, faculty requests by departments continue to be supported.

**Hiring Criteria:**

**Year 3:**
If not achieved in year two, add staff requested in Year One requests.

**Hiring Criteria:**

**STAFF**

**Year 1**
1. 1 FTE Lab Tech III for Biology to handle the needs of the recently expanded lab sections at Chino and Fontana. 12 month CSEA Range 11 Instructional Assistant III $35,328 annually.
2. Expand the hours of the Lab Tech II in Chemistry from .25 FTE to .475 FTE to handle the needs of the recently expanded lab sections at Chino and Fontana. This is a CSEA Range 7 Instructional Assistant II position. The difference in annual salary to cover the increased hours = $7200.

**Year 2**
1. 1 FTE Lab Tech IV for Earth Science/Geology, Geography, Astronomy, and Physics to handle the needs of the physical sciences at all three campuses. 12 month CSEA Range 13 Instructional Assistant IV $37,116 annually.
2. .475 FTE Lab Tech II for Biology to handle the needs of the recently expanded/renovated physical resources of the department (aviary, greenhouse, ponds, collections) 12 month CSEA Range 7 Instructional Assistant II $15,202 annually.
Year 3
Fill the vacant position of the AAl in the School Office.

EQUIPMENT

Year 1
Color Printer for Dean's office - $1,332. Augmentation of the Biology, Chemistry, and Earth Science Equipment Budgets to support new class offerings. CPU replacement for VSS-201 Instructor Station - $744. Computer for Biology Lab Tech in Chino - $900.00

Year 2

Year 3

TECHNOLOGY

Year 1
Seek to replace the screen and projector in VSS-103 $5300. The projector ceased working Fall 2011 (IT provided a loaner). Any new projector needs to be specifically mounted in VSS-103 because of odd configuration of the room. Projector and screen will serve all of the drafting and EgTech students.

Year 2

Year 3

SOFTWARE

Year 1

Year 2

Year 3

OTHER

Year 1
Augmentation of the Biology and Chemistry Instructional Supply Budgets to support the Chino and Fontana expansion lab class offerings and to keep up with the increasing costs of supplies needed to continue to provide quality lab experiments.

Year 2
1. Increase supply and equipment budgets for science disciplines to account for the more comprehensive discipline offerings at Chino and Fontana.
2. Increase and stabilize equipment budgets for all science disciplines.

Year 3

Review Team Response
The review team was unable to identify a vision or plan based on the request to "support the faculty requests" of certain departments under this program and was concerned that the lack of specificity here would not be useful for planning. Requests for projected needs need not be repeated for years after Year 1 even if they are not immediately granted. Hiring cost information is not provided for the AAII position requested in Year 3. The review team was unable to connect the color printer for the dean's office and CPU replacement for VSS-201 requests with the VIP goals provided.

**Review Team Response**
The document seems unclear and does not contain enough information to be useful for planning, supporting and improving student achievement and SLO’s. Revisions required.
The review team commends the efforts of the primary writers and appreciates the proactivity of those writers early in the PSR process. However, the team is reluctant to recommend this review for the next step because of concerns about assessment and evaluation mechanisms, vague steps to success with the VIP, confusion in the Professional Development section, and projected needs which do not directly relate to the stated VIPs. The review team believes that with some revision, this PSR can be more useful for planning and can offer a better understanding of the department and its plans to those considering it at the next stage.