Chaffey College Program Review
Three Year Review 2011

PROGRAM OVERVIEW

Program Title: Math Success Center

Program Code: 4932 - MATH CENTER

Review Type: Student Support

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 Math Success Center (MSC) supports Chaffey College’s mission by providing student access to a wide variety of learner centered activities that support student learning of mathematics. Over the last two years a new vision and direction was established to provide multiple learning opportunities to students as well as enhance staff, apprentices, and faculty of the MSC. HIRING CRITERIA: Only two years ago, the hiring criteria of the MSC was a minimum of successful completion of College Algebra. This was a very detrimental situation for a large portion of Chaffey College math students. There are nine different math courses offered at Chaffey College in which someone who only finished College Algebra would be unable or unprepared to help. An obvious result of this staffing situation was students accessing the MSC and being unable to find a tutor who could help with their specific class or topic. Many students in the higher level math classes became discouraged and would seek help in other ways, often encouraged by their professors to do so. In the last two years, the hiring of Apprentices with a minimum of successful completion of Calculus I has greatly increased the number of students in higher level math classes who can and are seeking help in the MSC. For Fall 2010 semester alone, we hired approximately 15 tutors
from various colleges around the inland empire who were in a BA or MA math degree program. Since then, two of our Apprentices have completed their Master’s degree in Mathematics and continue to work for Chaffey College as Math Adjunct faculty members. The increased hiring standards have allowed the MSC to provide a much more focused and inclusive learning environment for all of our students. PHILOSOPHICAL SHIFT: Only two years ago, the view of the MSC as an area to meet with someone who could help you finish your homework described about 90% of what transpired in the MSC. In the last two years, we have been encouraging and integrating practices that are leading to an overarching philosophical shift in regard to the purpose and goals of the MSC. We believe that every math student at Chaffey College can benefit from the offerings at the MSC. The MSC should be a place of instruction and student learning, not just a place for remediation. Gone are the days of encouraging only those who are struggling in their classes to seek help from the MSC. We are encouraging all students who want to be successful to come to the math center. This is being accomplished by our new hiring practices and through offering more varieties of instructional practices like workshops, led by a faculty member, to learning groups, led by an Apprentice IV. Hopefully, no math instructors will again say things like “only students who are failing my class need to use the MSC” and “I am not going to require my A students to use the MSC.” All students who wish to be successful in their courses are and will continue learning that the MSC is a great resource to help accomplish their goals. STUDENT SATISFACTION SURVEY RESULTS and POSITIVE ATTENDANCE DATA: Despite the initial surprise in regards to the changes in philosophy and practices instituted in the MSC beginning Fall 2010, students have been very positive in their feedback regarding the MSC. (see attached survey results) In every single category, the 2011 student survey results are higher than the 2009, combined with many smaller standard deviations. In several categories, the MSC didn’t receive any score below a 3. Students are realizing that the MSC is a place for learning and they appreciate the increased quality of staff. Since the change of direction and philosophy of the MSC we have seen a substantial change in the positive attendance data (contact hours) over only about two semesters. Workshops and Learning Groups are increasing in attendance which help diversify the learning opportunities for students (see attached graphical summary).

**Review Team Response**

The Program Overview clearly links to the college’s mission. It illustrates the Math Success Center’s commitment to a learning centered environment. The reviewers commend the program for its detailed accountability measures and the program’s commitment to student success in math through improved hiring standards and instructional practices. We also commend the program for its use of data to support Program Overview statements.

**PROGRAM DATA**

Enrollment
<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
<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 Retention</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 retention patterns? Identify any important trends and explain them.

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

#### Measure

<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.
Our primary focus is helping and guiding students to effectively learn mathematics. This is accomplished by providing or offering sound pedagogical practices with the assumption that one practice does not fit all. Thus, diversification of venues are offered: Tutoring, Workshops, and Learning Groups, are presently the main focus. The bottom line is that students are satisfied if they successfully learn mathematics and are successful in their math class.

Discuss how you evaluate your effectiveness in meeting students' needs.
We evaluate the effectiveness by student satisfaction surveys (see attached "Student Surveys") and student success (see attached OLAP data).

How and when has your service reviewed or revised SLO?S and/or AUO?S.
Since the MSC changed and re-directed its philosophical direction the AUO’s and SLO’s have all had to be re-evaluated and most will need to be re-written and accessed. We are currently in the process of this re-evaluation and writing new SLO’s and AUO’s. [See program needs (projected needs) to note why this has not been accomplished over the last year and a half].

How has your program utilized SLO/AUO assessment results for program improvement?
The MSC has not utilized any of the SLO's or AUO's because they do not pertain to its new direction. We are currently operating under the assumption that student learning of mathematics is the primary focus of the Math Center and this is being assessed (See attachments mentioned).

Review Team Response

CURRICULUM UPDATE

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

<table>
<thead>
<tr>
<th>Programs</th>
<th>Last Modified</th>
</tr>
</thead>
</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?

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?

Review Team Response

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 applications, healthcare, student activities, and other specialized services.)

The MSC provides access to student learning by being open from 8AM-8PM M-Th and 10AM-2PM on Friday. The MSC provides students access to math and physics tutors, math instructors, workshops, learning groups, directed learning activities, and computers.

<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:
Please see attached file for "positive attendance" data and graphs. The Workshops and Learning Groups have increased substantially over one year. WORKSHOPS: The workshops have increased from 0 hrs to 766 hrs for fall 2010, 1599 hrs for spring 2011, and 1477 hrs for Fall 2011. LEARNING GROUPS: The learning groups have increased over three semester from 56 hrs in the fall 2010, 200 hrs for spring 2011, and 469 hrs for fall 2011. This shows clear diversification that learning opportunities are being offered and utilized.

Review Team Response

The reviewers commend the Math Success Center for thoroughly addressing how the program facilitates access to learning. We commend the program for utilization of data to show students’ access to reliable student services. Both workshops and learning groups have increased during this review period, and it clearly shows that learning opportunities are being offered and utilized.

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
The MSC provides pedagogically sound practices for mathematics learning. The MSC provides students access to math and physics tutors, math instructors, workshops, learning groups, directed learning activities, and computers.

### Type of Service
<table>
<thead>
<tr>
<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>08-09</td>
<td>09-10</td>
</tr>
</tbody>
</table>

### Additional information:
The Math Center has 23 apprentices (tutors) and currently 9 are apprentice 4's. To become an apprentice 4, one must have a bachelor’s degree in an applicable field related to mathematics. The Math Center offers approximately 16-20 workshops and 16-20 learning groups each week. There is evidence to suggest that students who use the math center at least 6 times increase their success rate by 8-9% and are more likely to succeed in their math class. See attached documents from the OLAP cubes. For workshops, 145 students attended them at least 6 times, and 71% of them were successful in their math class, compared to 56% success rate who did not access the math center. Although the data is still being sorted through by IR, preliminary evidence, over the last year and a half, is showing a positive correlation between accessing alternative learning strategies in the Math Center versus those who are not.

### Review Team Response
The Math Success Center’s response thoroughly addresses how the Math Success Center supports student learning. It is clear, detailed, and a great deal of data was used to prove the statements.

### 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.)

As mentioned in the student support section, the learning opportunities offered at the math center are showing a positive correlation to success. See attached OLAP Cube documents. COMPLETION: Successful completion of a college level math class has been publicized as a clear indicator if students will be able to transfer or attain a degree. There is evidence to suggest that students who utilize the Math Center are more likely to successfully complete their transferable math course. See Additional Information below:

<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:
Successful completion of a college level math class has been publicized as a clear indicator if students will be able to transfer or attain a degree. There is evidence to suggest that students who utilize the Math Center are more likely to successfully complete their transferable math course.
Additional information:
According to the OLAP cubes (see OLAP Transfer attached), the success rate for students taking a transfer level math class who did NOT accessed the Math Center in 10-11 was 54% (N = 836) and for those that DID access the Math Center and were taking a transfer level math class was 68% (N = 455). A 14% difference. Again, there seems to be evidence to suggest a positive correlation between accessing the Math Center for transfer level students and for those who do not. Therefore, the Math Center seems to promote transfer and completion very well.

Review Team Response
The review team commends the program for a thorough description of how the Math Success Center promotes transfer, completion, and/or future success.

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:
Goals/VIP: Improve coordination and collaboration with Chino Success Center and Fontana Success Center. To better support math students in Chino and Fontana, an active line of communication must exist between math subject specialists and multidisciplinary instructional specialists.

To which planning direction does this goal apply?
Flexible and continuous student support
Connectedness

Year 1 Steps to Success (activities) and VIP Assessment:
Meet with faculty and staff that teach at those campuses and see what is needed to improve student learning further at those sites.
Meet with faculty and staff that teach at those campuses and ask if things are going well. Use positive attendance data to see if there has been more diversification of learning opportunities.

Year 2 Steps to Success (activities) and VIP Assessment:
Continue to meet with faculty and staff that teach at those campuses and see what is needed to improve student learning further at those sites.
Meet with faculty and staff that teach at those campuses and ask if things are going well. Use positive Attendance data to see if there has been more diversification of learning opportunities.

**Year Three Goal:**
Goals/VIP: Continue to increase the diversification of the learning strategies. i.e. increase student enrollment in Learning Groups and Workshops as well as broaden the scope, number of, and types of Learning Group and Workshops. The Learning Groups and Workshops have an instructional design that promote collaboration and communication where specific topics and content are covered. Students are afforded another (or different, more intimate) opportunity to better understand content and thus will have a better chance of completing their math homework on their own, which is vital to understanding and learning mathematics. This is the MSC's philosophy of putting the "Home" back into homework.

**To which planning direction does this goal apply?**
Excellence in teaching and learning
Flexible and continuous student support
Connectedness

**Year 1 Steps to Success (activities) and VIP Assessment:**
Promote the philosophy of putting the "Home" back into homework to students and math faculty. Continue to promote the idea of requiring Learning Groups or Workshops as part of student's grade. Review positive attendance records.

**Year 2 Steps to Success (activities) and VIP Assessment:**
Promote the philosophy of putting the "Home" back into homework to students and math faculty. Continue to promote the idea of requiring Learning Groups or Workshops as part of student's grade. Review positive attendance records.

**Year Three Goal:**
Goal/VIP: The instructional specialist will integrate the MSC into the fabric of the other Success Centers, the Math Department, and other departments whose students' access the Math Center. The (pending) future instructional specialist should have a clear focus of collaboration and communication between all stakeholders of the Math Center.

**To which planning direction does this goal apply?**
Excellence in teaching and learning
Flexible and continuous student support
Connectedness

**Year 1 Steps to Success (activities) and VIP Assessment:**
The new instructional specialist will meet regularly with the former instructional specialists, members of the math department, and other instructional specialist at Chaffey College. The instructional specialist will attend all math department meetings. 1) Positive attendance data will be used to see if there is an increase of diversification of modalities. 2) Retention and success rate data will be analyzed on a yearly basis. 3) The Math Dept. and other stakeholders will be involved in the evaluation process of the Math Center.
Year 2 Steps to Success (activities) and VIP Assessment:
The instructional specialist will meet regularly with the former instructional specialists, members of the math department, and other instructional specialist. The instructional specialist will attend all math department meetings. 1) Positive attendance data will be used to see if there is an increase of diversification of modalities. 2) Retention and success rate data will be analyzed on a yearly basis. 3) The Math Dept. and other stakeholders will be involved in the evaluation process of the Math Center.

Year Three Goal:
The MSC will develop and offer Directed Learning Activities (DLA's) as part of the next stage of diversification of learning opportunities.

To which planning direction does this goal apply?
Excellence in teaching and learning
Flexible and continuous student support

Year 1 Steps to Success (activities) and VIP Assessment:
The Instructional Specialist will discuss with math dept. members, and other areas that use math, possible DLA's that would enhance student learning of mathematics. The IS and IA's will develop DLA's for a wide range of topics. This will be done in collaboration with math faculty. For example, do there exist files either digital or paper that contain a wide variety of DLAs? Is there discussion in general about using DLA's as part of instruction?

Year 2 Steps to Success (activities) and VIP Assessment:
The MSC will offer and promote the use of DLAs to students, math instructors, and other areas as part of the course instruction. For example, does the Positive Attendance data show an increase in DLA hours? Are DLA's continually being, discussed, revised, and enhanced?

Review Team Response
The goal is unclear; revision is required and/or the goal is a resource request and not a goal. Goals are not clear; Projected Needs are being reflected in VIPs. We recommend they be moved to the Projected Needs section. Goals need to be revised.

PROFESSIONAL DEVELOPMENT ACTIVITIES THAT SUPPORT STUDENT LEARNING OR IMPROVE YOUR PROGRAM

List Recent departmental professional development activities connected to student learning.

| Recent activities | Recent workshops/courses taken | Recent conferences/training | Other |

How are student learning outcomes affected by these professional activities? What steps are recommended for improvement?

Discuss departmental engagement on campus in connection to student learning.
How does your program benefit from your campus engagement?

Teaching/Years of Service

<table>
<thead>
<tr>
<th></th>
<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?

Does your program anticipate retirements within the next 3 years?

Review Team Response
No activities were reflected.

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.

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:
The MSC is currently led by two individuals who split their load 50/50 between being Instructional Specialists in the MSC and full-time math faculty. Furthermore, these two individuals are currently the Educational Service Coordinators of the math department. Because the conversion of the MSC from the School of Math and Science to the School of Instructional Support occurred in the summer of 2010, the positions of the two Instructional Specialists have aided in a smooth transition for the MSC. The Instructional Specialists have encouraged the active participation of both full-time and part-time math faculty in the development of workshops, determining topics of learning groups, and encouraging students to seek help in the MSC. However, the MSC requires a fully dedicated leader with a singular focus on all the day-to-day details of a successful math center rather than the partial attention of two individuals. If the MSC is to continue with its goal of being a highly integrated learning center with coordination with all of the college entities that require math, there needs to be a new Instructional Specialist hire who can give the MSC his/her full attention.

Hiring Criteria:

Year 2:

Hiring Criteria:
Year 3:
Hiring Criteria:
STAFF
Year 1
Year 2
Year 3
EQUIPMENT
Year 1
Year 2
Year 3
TECHNOLOGY
Year 1
Year 2
Year 3
SOFTWARE
Year 1
Year 2
Year 3
OTHER
Year 1
Year 2
Year 3
Review Team Response
Review Team Response
While there are areas that are unclear, overall the document would be useful for planning, supporting and improving student
The first, second, and fourth VIP goals are clear, concise, attainable, measurable, and clearly tied to Chaffey’s mission statement and student learning outcomes. The third VIP goal is unclear. Revision is required. The goal is a resource request and not a goal. The program did not follow all of the handbook instructions and did not accept the reviewers’ recommendations regarding the VIP goals. Data was effectively used to support the program’s commitment to students’ success.