Plans for Mathematics >> 2012 - 2013 Mathematics CHC Instructional Program Review 2012-2013

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Instructions

Please respond to the following questions. Please consult the Integrated Planning and Program Review Handbook for detailed instructions.

1. Description of Program

Assume the reader doesn't know anything about your program. Please describe your program, including the following:

a. Organization (including staffing and structure)
b. Mission, or primary purpose
c. Whom you serve (including demographics)
d. What kind of services you provide
e. How you provide them (including alternative modes and schedules of delivery: e.g.: online, hybrid, early morning, evening services)
f. **Rubric Item**: Needs-Based Curriculum (Note: All instructional departments must consider the results of their most recent curriculum reviews in this section.)
g. **Rubric Item**: Scheduling Matrix (Attach your scheduling matrix.) Click here for sample!

a. Organization (including staffing and structure).

The development of this document fostered collaborative discussions on many aspects of the program, not all of which can be captured in the writing of this document. (More detail is provided in Question 6.)

The Mathematics Department is one of four disciplines under the Division of Math, English, Reading and Instructional Support. Our discipline currently includes 6 full-time instructors, and anywhere between 27 to 30 part-time instructors per semester (not including summer). Merril Demming, who made up the 7th full time instructor, has since retired and has not yet been replaced. Considering the number of part-time faculty and students we service, our discipline is understaffed.

Our department has access to printing services, but does not have any secretarial support.

Currently, the department has scheduling priority for 5 classrooms: CL 111, CHS 237 (split use with chemistry), MSA 101, MSA 102 and SCC 202, which have various degrees of technology. Any and all other classrooms that the department uses for courses is negotiated through the scheduling process.

b. Mission, or primary purpose.

The mission of the Mathematics Department is: "To provide services and courses that meet the mathematical needs of a diverse student population."

The Mathematics Department strives to create a quality learning environment and instill higher order learning strategies along with quantitative reasoning skills for students to learn the material. The learning of mathematics increases critical thinking skills needed in academia and in life and, thus, the Mathematics Department mission will impact success of students at Crafton Hills College and in their professional pursuits.

The Mathematics Department goals are similar to the Crafton Hills College mission, which is: “To advance the education and success of students in a quality learning environment.”

c. Whom you serve (including demographics)?

Data provided by the OIERP indicates that the Mathematics Department services nearly the same percentages of students as the college in terms of gender and ethnicity. The only dissimilarities in any demographics area, is in regards to certain age groups. As of 2011, our discipline serves 46.2% of the 19 or younger age group while the campus serves 34.1%, and also 1.4% of 50 or older age group, while the campus at 2.9%. The rest of the age demographics are, again, nearly the same percentages as the college. Gender and ethnicity are also similar to the college in percentages. (Click here to see demographics of math students.)

The majority of the mathematics students we serve at Crafton Hills College (94.5%) require preparatory courses in order to prepare them for their GE requirement and/or transfer requirements as well as part of the certificate programs offered in other disciplines. The department offers two degrees: Associate of Science Degree - Mathematics A.S. Degree, and also an Associate of Science Degree - Mathematics Transfer A.S. Degree which is to prepare engineering students, math majors, and science majors for their four year endeavors once they transfer.

The focus of whom do we serve continues to evolve as we adjust our course offerings due to the continued economic trends of the state.

d. What kind of services you provide?

The Mathematics Department serves the campus by attending day and evening activities such as answering centers, awards ceremonies, club advising, as well as serving on numerous committees, attending meetings and mathematics conferences. The department also provides mathematics awards to students that the department believes is living up to the award criteria.

The Mathematics Department course offerings are one of the most diverse on campus (26 total courses) and provide various skill-level students with options for both growth and advancement toward their desired skill and/or degree. We offer math at all levels available to a community college, ranging from Basic Skills/Arithmetic through Multivariable Calculus, Linear Algebra, and Differential Equations.

The Mathematics Department has become more involved with the tutoring center due to its restructuring. The department has input to tutors, SLA (Structured Learning Assistance), SI (Supplemental Instruction), weekend tutoring, Summer Bridge of 2012, and The Left Lane Project. The department responsibilities include transfer advocacy, mentoring, and guidance for students who seek campus services (personal, physical, and mental health as well as math skill performance). We also offer one-on-one mentoring and tutoring whether they are during or outside office hours. The department has offered, and will continue to provide, many linked courses (learning communities). Without some of these linked courses our course offerings would have decreased by a minimum of 5 courses (for fall of 2012) and severely impacted student completion of degrees and certificates as well as putting more students behind in their overall educational plan.

e. How you provide them (including alternative modes and schedules of delivery: e.g.: online, hybrid, early morning, evening services)?

The Mathematics Department serves students and incorporate best practices in a variety of math courses and in an assortment of different formats. Many community colleges offer the traditional semester length course, but the Crafton Hills Mathematics Department offers the same courses for those students who absorb the material at different paces. We offer courses such as Math 943 and Math 953—open entry/open exit—for those who need a quick review of basic skills topics instead of opting for the traditional 18 week course. We had also offered courses in different formats such as the ABC track for Math 090 (Beginning Algebra) and Math 095 (Intermediate Algebra) which were semester-and-a-half track courses created for those students who struggled with the material as an alternative to the traditional 18 week class. (Due to budget constraints, the Math 090ABC and Math 095ABC classes will not be offered until the budget allows these classes to return.) Besides a slower paced track of Math 090 and Math 095, we also have 9 week and 13 week accelerated classes of these same courses (but also includes Math 102 (College Algebra)) for those students who are motivated to get through a course in a shorter period of time.

The department offers classes in a variety of two, three, and five day-a-week formats, and are taught over the entire spectrum of the day—morning, afternoon, and evening classes. Our department is spread out during this spectrum which means that there is a full time instructor on campus at almost any hour of the operational day.

The Mathematics Department is currently in the process of revising curriculum so as to offer hybrid online courses and honors courses.

f. Rubric Item: Needs-Based Curriculum (Note: All instructional departments must consider the results of their most recent curriculum reviews in this section.)

Any and all curriculum is either up to date or in the process of going through its 6 year revision.

Discrete Structures (Math 200) has been added to the departments' course offerings and will be required for the Computer Science Degree. This, along with a new mathematics software course that is in the process of being written, will then complete the lower division transfer mathematics sequence (the calculus sequence).

The department meets the GE requirements and is critical to all STEM majors. The departments preparatory courses are required for classes in the Social and Behavioral Sciences (e.g. Economics, Psychology, Sociology), Health and Wellness (e.g. Health), the Natural Sciences (e.g. Astronomy, Biology, Chemistry, Geology, Physics), and Quantitative Reasoning (e.g. Mathematics).

Whether as a departmental recommendation or as a prerequisite to a course, the preparatory classes affect Transfer Degrees (e.g. Business Administration, Communication, Geology, History, Mathematics, Political Science, Psychology, Sociology), and almost every Associate of Arts or Science Degrees.

g. Rubric Item: Scheduling Matrix

(Attach your scheduling matrix.)

(Math Scheduling Matrix)

2. External Factors with Significant Impact

What external factors have a significant impact on your program? Please include the following as appropriate:

a. Budgetary constraints or opportunities
b. Competition from other institutions
c. Requirements of four-year institutions
d. Requirements imposed by regulations, policies, standards, and other mandates
e. Job market
    i) Requirements of prospective employers
    ii) Developments in the field (both current and future)

a. Budgetary constraints or opportunities.

Without question the depressed state of the economy has negatively impacted the mathematic department and faculty. Since the fall of 2008, the number of sections offered per semester, for the most part, has been in decline significantly over the past several years and the outlook for the future may only bring more course reductions. In the fall of 2008, 81 sections of mathematics courses were offered (Table 1-Number of Math Sections). In the fall of 2012, a total of 64 sections were offered (http://www.craftonhills.edu/), which represents a decrease of 21% (17 sections) in the number of sections offered. Additionally, no summer session was offered during the summer of 2012. This has adversely affected our students with regards to obtaining the courses they need and completing their academic goals in a timely manner. This is occurring at a time when the demand for more courses is on the rise, increasing the pressure on instructors to add more students into their classes. Sometimes 40 or more students may be trying to add a particular class, on top of the 35 students who were already enrolled in the course. While the number of students trying to add a course certainly varies, it does reflect the protensive duration students may face when trying to obtain their classes. If Crafton Hills College wishes to meet the needs of transfer students and re-entry students more sections of mathematic courses need to be offered. Unfortunately, the current state budget does not provide the resources to achieve this goal.

Recently, the Mathematics Department lost one full-time faculty member to retirement. The department currently has six full-time instructors. Due to budgetary constraints this instructor has not been replaced, which has increased the stress and amount of work required by the remaining faculty with respect to, but not limited, to SLO's, committee assignments, and curriculum. During the fall 2012 semester, approximately 36 out of 64 (56%) of the mathematics courses were taught by part-time instructors. Currently, part-time instructors are only offered

eight hours of paid flex time. Part-time instructors need to be afforded more paid flex time and professional development if they are going to be required to provide office hours for their students as well as participate in the SLO process and curriculum.

While budgetary constraints have dominated the overall climate, the STEM grant, Left Lane Project, San Manuel, and other sources of income have helped cushion the reduction in course offerings to a small degree. These projects have also helped improve instructional strategies and practices by incorporating supplemental instruction, linked sections (learning communities), and other best practices into the mathematics curriculum. Given the current economic predicament, the Mathematics Department has tried to be perspicacious with respect to what courses are offered and protecting the number of sections offered whenever possible. However, maintaining academic excellence in the classroom has become increasingly difficult due to the increased demands on instructors outside of the classroom setting.

b. Competition from other institutions.

Perhaps the most substantial factors aiding the competition from other institutions are the significant cuts in course offerings and the lack of a 2012 summer session at Crafton Hills College. Certainly this is directly related to the current fiscal condition. If current and prospective new students cannot enroll in the courses they need, then their only recourse is to enroll at other institutions. Thus, due to the lack of funding, we are only perpetuating the problems we already face with regards to our competitors.

Mt. San Jacinto College has located a satellite campus in Banning, CA. They also offer college course work at both the Beaumont and Banning high schools, which include mathematic courses such as College Algebra and Calculus I (http://www.msjc.edu). Due to the close proximity of these locations, they likely could become an external threat to the mathematics program here at Crafton Hills.

Another external factor that could have a significant impact on student enrollments at Crafton Hills College are the multitude of online courses that surrounding community colleges offer such as College of the Desert, Mt. San Jacinto, Victorville College, RCC, for profit institutions, and other colleges. Further, four-year institutions are also providing online coursework that would be in direct competition with courses offered at Crafton Hills College. This provides students with an option that the Mathematics Department does not currently afford their students.

c. Requirements of four-year institutions.

Four-year institutions have also seen significant cuts in funding, which have led to a precipitous practice of reducing the number of students that they will accept. This has caused an increase in the demand for courses at Crafton Hills College, but the college cannot meet the needs of the students due to the same fiscal restraints. Further, many colleges and universities are requiring students to have their lower division work completed with respect to their majors. For example,

ten CSU campuses will accept applications only for community college transfer students who complete the Associate Degree for Transfer, which was made possible through Senate Bill 1440 (http://www.csumentor.edu/). CSUSB is included in this list of ten campuses.

To support the transfer process, the Mathematics Department has articulation agreements with numerous four-year institutions, including the University of California Riverside (UCR) and California State University San Bernardino (CSUSB). The Articulation System Stimulating Interinstitutional Student Transfer (ASSIST) offers both students and educators a means to agree upon and identify which courses fulfill particular requirements (http://www.assist.org/). The courses that are articulated with CSUSB and UCR for the 2011-2012 academic year can be viewed using the provided links below. The mathematics department continuously strives to support students and improve the transfer process.
Accepted IGETC CSU Baccalaureate Level Course List by Department at Crafton Hills College:
Accepted IGETC UCR Baccalaureate Level Course List by Department at Crafton Hills College:
(Note: IGETC stands for Intersegmental General Education Transfer Curriculum)

d. Requirements imposed by regulations, policies, standards, and other mandates.

The Student Transfer Achievement Reform Act, known as SB1440, is a recent policy that aligns the curriculum between courses and degrees offered at community colleges with the transfer requirements California State University system. While it does not guarantee admission into a particular university, students would receive priority (SB1440 Reform Act). The Mathematics Department, as well as Crafton Hills College, is working diligently to meet the regulations set forth in SB1440.

The Academic Senate at Crafton Hills College has also developed guidelines/policies with respect to prioritizing course offerings during a time of fiscal crisis. The priority is as follows:

1. Courses required for Career-Technical degrees or certificates.
2. Courses required for Associate Degrees or transfer.
3. Developmental Courses (000-level, such as MATH090).
4. Basic Skills Courses (900-level)

This priority list certainly raises a plethora of questions with regards to the mission of the college, the needs of the students the college serves, and numerous other concerns. The Mathematics Department has been negatively impacted by this prioritization and has lost all of the entry level basic skills course, Math 942 (Arithmetic). This has adversely affected the course content in Math 952 (Pre-Algebra) courses by increasing the amount of material that needs to be covered. This population has very little or perhaps no other option than to look to a community college for assistance. Just because an entity decides to make these students a lesser priority does not mean they are declining in need.

It is clear that the data here at Crafton Hills College shows that the number of students starting in basic skills courses who continue on into higher level courses is small. However, a conclusion based on this data and/or a poor fiscal climate that this population no longer needs to be served is

highly unreasonable and in direct conflict with one of the primary services and responsibilities of community colleges. What the data is pointing out is that there exists a significant problem that needs to be addressed. During these poor economic conditions the number of students in need of a basic skills course is soaring. The response should not be to cut these entry level courses or lower their priority, but rather increase the priority and examine the reasons these students do not continue on with their academic careers. It is then, that one would find solutions and implement practices to improve their success and enrollment in subsequent coursework. This would benefit all disciplines that offer associate and transfer level courses. Often the poor persistence and retention of basic skills students are related to more personal issues and obstacles and not academic concerns (Pritchard & Wilson, 2003). In preparatory courses often it is the student's attitude not aptitude that affects altitude.

Pritchard, M. E., & Wilson, G. S. (2003). Using emotional and social factors to predict student success. Journal of College Student Development, 44(1), 18-28. Retrieved October 1, 2012, from ProQuest Psychology Journals database.

e. Job market -Requirements of prospective employers and Developments in the field (both current and future).

i. Requirements of prospective employers.

More students are seeking a college education and the number of re-entry students is also on the rise. For those who are looking for employment, the present job market remains bleak. People are looking to obtain new job skills or make a career changes. The nonprofit organization known as ACT (http://www.act.org/) has identified real world skills that employers believe are critical to job success. These skills include but are not limited to basic numeracy skills, problem solving strategies, analytical and research skills, and the ability to be critical thinkers. Being technologically literate and proficient requires all the skills previously mentioned and is a skill that, without question, is important in today's society. Mathematic courses provide students a means to obtain all the skills just mentioned. The mathematical skills that one possesses can have a direct impact on one's ability to be hired and obtain the career they desire.

ii. Developments in the field.

Improvements in the modalities of how online education can be delivered using platforms like Blackboard, which incorporate synchronous and asynchronous interaction using online chat, online whiteboard and/or lecture, discussion boards, and computerized homework has made the option of an online mathematics course more appealing. Computer-based homework has become a useful complementary tool that instructors can use to improve student learning. The demand for online mathematics courses will increase over time and determining the best way to deliver these courses will involve much collaboration.

The propensity to refrain from hiring additional full-time faculty due fiscal restraints has increased the workload on the remaining full-time mathematic instructors. Certainly the primary responsibility for instructors is constantly seeking ways to improve the interaction

and learning within the classroom setting for their students. One way to achieve this goal is through the use of best practices. However, the ever increasing demands on instructors outside of the classroom setting is beginning to take the focus off of their primary responsibility and taxing one's ability to maintain academic excellence.

Table 1-Number of Math Sections

3. Progress on SLOs

Rubric Item: Student Learning Outcomes

a. Please summarize the progress your unit has made on program and/or course level SLO measures you have applied since your last program review.
b. Please describe any program/course and/or instructional improvements made by your unit as a result of the outcomes assessment process.
c. What is your plan for continuously completing the assessment cycle?
d. If your program has SAOs, please discuss here.

Please summarize the progress your unit has made on program and/or course level SLO measures you have applied since your last program review.

Since the last program review the department has continued to assess course SLOs in sections of Math 942, Math 952, Math 090, Math 095, Math 102, Math 250, and Math 251 on a regular semester basis. The department has continued using data in eLumen for some sections of math classes, and has started using data collected through assessments in MyMathLab for other classes. The process of assessing program SLOs in the Preparatory Math Program has also been initiated. One cycle of all Math (table of cycle data) courses currently being taught has been completed. This semester (fall of 2012) the department is completing a second cycle for the preparatory courses, and are in the process of completing the cycle for the Preparatory Math Program assessments. (See assessment schedule table.) Some of the assessments overlap both course and program level outcomes and are providing informative data for both levels from a variety of sources.

b. Please describe any program/course and/or instructional improvements made by your unit as a result of the outcomes assessment process.

Three examples of improvements made in the math courses, based on the information gained with the SLO assessments, follow. Others can be found in the attachments for the improvement cycle. As a department we have been addressing ways to improve the way factoring is taught in

the Math 090 (Beginning Algebra) classes—an area that has shown up as a weakness in the course assessments for Math 090. These discussions are ongoing at department meetings and at the meetings held with the part-time faculty at the beginning of the semester. A faculty member shared a factoring method, discovered in the summer of 2012, and it is being tried in several fall of 2012 sections of Math 090 and Math 095 (Intermediate Algebra). There are also informal discussions at the Saturday tutoring sessions attended by the mathematics faculty on various teaching methods such as how to teach application problems. Some faculty have also been developing interactive lectures using tablet technology (see question 6).

In calculus, there has been a slight modification in the amount of time spent on each section in order improve areas that students are weak in. There has also been an increased use of computer programs for homework. This gives students immediate feedback on each problem along with a tutorial on problems they are struggling with. It also gives students unlimited and increased practice on any given problem. The data collected this semester will help inform the department on success of these changes. One problem which needs to be addressed for any class which uses the online homework software is the dependence of the student on the "help" options. One way to overcome this is with use of online quizzes which do not have the "help" option. Many faculty consider that this should only be a complementary tool and not the primary mode of instruction.

The department is in process of collecting data on how student attitudes toward mathematics have been impacted by their mathematics courses (see draft of surveys). During the spring semester we will be holding workshops for all CHC math instructors on how to help increase or develop a more positive attitude toward mathematics for the students in their classes.

Persistence and success in the next math class is an important program outcome for the preparatory math program. Due to very low persistence as shown by data in MIS data mart, the department is conducting a survey to help inform us of interventions which might be incorporated to increase persistence. This, coupled with data collected in a research-based study conducted at Crafton Hills College entitled *Student Engagement in Community College Developmental Educations: Differences in Perceptions of Students and Faculty* (Ramirez, 2008), will be used for a workshop for all CHC instructors to gain information on how to help increase persistence though the math sequences. A comparison of a student's math grade to their grade in the subsequent math course is another measure of a program outcome. This may be used to inform the department of possible needed changes, which may include modifications in curriculum, or grading policy discussions. This data is currently being gathered with help of the Institutional Effectiveness, Research & Planning office.

c. What is your plan for continuously completing the assessment cycle?

Our assessment cycle for all math courses is attached (link to assessment cycle). The plan is to assess in the fall of 2012, review the results, and discuss any necessary changes during the spring

semester with the intent to implement changes the following fall. Each year we will look at one program as we have defined them (link to math programs).

In 2013-2014, the department will be focusing on assessment for the 100 level math courses or the transfer GE courses. This will lead to a natural assessment of the transfer program using any overlapping data. The following year, 2014-2015, the department will be focusing on the math degree courses and corresponding degree program.

The department will continue to have two methods for data collection. One method will be using embedded questions in exams given during the semester with the data input into eLumen by the faculty member. An excellent video on how to use eLumen for data input was created for the part-time faculty by a member of the department. This has turned out to be very well done and will be a benefit to anyone who wants to use eLumen. The other option available to instructors is the use of department created assessments done through MyMathLab which produce an item analysis of each SLO. Again, training for the faculty on how to use both systems will be done at the department meetings at the beginning of each semester or via online training. If the assessment process is relatively easy for all instructors to use, then nearly all classes may have some assessment completed each semester. This should produce an up-to-date and complete snap shot of any trends in the data.

4. Quantitative and Qualitative Results

Please provide...

a. A list of any quantitative or qualitative measures not provided in question 5 that you have chosen to gauge your program's effectiveness (e.g.: transfers, degrees, certificates, satisfaction, student contacts, student headcount, Perkin's data, etc.)
b. A summary of the results of these measures
c. What did you learn from your evaluation of these measures, and what improvements have you implemented or do you plan to implement as a result of your analysis of these measures?

a. A list of any quantitative or qualitative measures not provided in question 5 that you have chosen to gauge your program's effectiveness (e.g.: transfers, degrees, certificates, satisfaction, student contacts, student headcount, Perkin's data, etc.).

i. The percent of developmental math courses compared to 100-200-level math courses is 39 preparatory vs. 24 transfer level math courses.

ii. Students' attitudes toward math.

iii. An increased success rate for students in Math 952 (Pre-Algebra).

iv. Persistance of students through the preparatory math sequence.

v. Number of math degrees awarded.

vi. Number of students served.

Manufacturing jobs returning back to the United States because of the increased labor costs in China making it cost prohibitive, and because of the American work force, particularly in the Inland Empire, people do not have the basic mathematical skills. Because these people don't have these skills, they are not prepared for the 21st century workforce.

We expect to see a rise in the Math 952 success rates this year over what we had last year due to the fact that we have a better run and organized SLA program. This includes better training of the tutors, and improved communication with the instructors. Summer Bridge was a great training experience for the tutors.

We are developing a survey about why students are not persisting through the preparatory math sequence.

b. A summary of the results of these measures.

i. 62% of the mathematics courses currently scheduled for the Spring of 2013 are developmental math courses while 38% are transfer-level math courses.

ii. See question 3 regarding surveys of students' attitudes toward math.

iii. The success rate for students in Math 952 is an average of 67.9% from 2008 through 2010. The success rate for students in Math 952 during the years 2011 and 2012 is an average of 65.5%. Results of some data that Keith Wurtz provided showed that approximately 200 students had a raw accuplaced score which would have placed them into Math 942. However, the multiple measures part of the Accuplacer program upped their placement into Math 952. The success rates of these students was around 50%. As a department the multiple measures part of Accuplacer and its effect that it has on placement has been a major concern and an area which the department wants to correct. (See objective 2.1)

iv. The persistence of students taking a praparatory math course (Math 942 through Math 095) is an average of 21.4%. This is showing a significant problem that needs to be address and not ignored.

v. 36 mathematics degrees have been awarded in the last 5 years.

vi. Number of students served = 10,836 during the years 2007 through 2011 for an average of 2,167 students per year. The number of students served increased each year from 2007 through 2010, but decreased in 2011.

c. What did you learn from your evaluation of these measures, and what improvements have you implemented or do you plan to implement as a result of your analysis of these measures?

i. The data reflects that most students (94.5%) (see question 1) place into a preparatory mathematics course which indicates that the primary population we serve is preparatory students.

ii. (See question 3.) Some surveys have been given and/or are in the developmental phase but the department has not received any data at this time.

iii. (See question 4.) The department has changed the format of Math 952 (Pre-Algebra) because Math 942 (Arithmetic) is no longer being offered. Math 952 is now the lowest basic skills course for the department. Since we have only one year of data for the change from the old version of Math 952 to the new Math 952 format, this data is too small of a sample space to draw any meaningful conclusion from.

iv. Again, this is showing a significant problem that needs to be addressed and not ignored. A primary purpose of the community colleges is to serve basic skills students. By removing all of the Math 942 classes, the department believes this will have a negative effect on the success of basic skills students.

v. In spite of course reductions, we predict that the number of math degrees will increase in the next few years due to the implementation of SB1440, the new STEm grant, and having a new transfer center.

vi. Due to fiscal constraints and the loss in the number of offerings, the number of students served, has decreased.

5. Performance on Data Items

Please discuss your program's performance on each program specific data item as provided by the Office of Research and Planning. If you have already discussed your programs performance on one or more these components then refer to that response here, rather than repeating it...
a. Instructional Program Health Evaluation Rubric (The rubric is available in Blackboard, on the ORP Web Site, and in the PPR Handbook.)

i) **Rubric Item**: Course Completion Rate (formally retention) (Use the data provided by the ORP to set a target and provide an explanation for the target that has been set.)
ii) **Rubric Item**: Course Success Rate (Use the data provided by the ORP to set a target and provide an explanation for the target that has been set.)
iii) **Rubric Item**: Full-Time/Part-Time Faculty Ratio (The target is 75% or higher. Use the data provided by the ORP and please provide a reason for any deviation from the target.)
iv) **Rubric Item**: WSCH/FTEF Ratio (Use the data provided by the ORP to set a target and provide an explanation for the target that has been set.)
v) **Rubric Item**: Fill rate (The target is 80% or higher. Use the data provided by the ORP and

please provide a reason for any deviation from the target.)

a. Instructional Program Health Evaluation Rubric (The rubric is available in Blackboard, on the ORP Web Site, and in the PPR Handbook.)

i. Rubric Item: Course Completion Rate (formally retention) (Use the data provided by the ORP to set a target and provide an explanation for the target that has been set.)

The department's completion rate has to be divided into 4 areas: basic skills courses, credit courses, degree courses, and transfer courses. The Mathematics Department would like to attain an 85% overall completion (see retention table) rate.

Basic Skills retention rates have, since fall of 2009, varied from 82% to 91%. The states retention rates in this area have ranged from 80% to 83%. We have put into operation many changes trying to increase our completion rate in the basic skills area such as specifically choosing instructors whose teaching style is a best fit for our basic skills courses, changing books and software, linked sections of math courses with other disciplines. All of these interventions combined with the continued improvement in the SLA program should continue to improve our retention and success rates.

Credit courses at Crafton Hills College have varied from a low of 80% in the spring of 2010 (78% for the state) to a high of 85% in the fall 2009 (80% for the state). The state's highest is 81% in the Fall 2011 and Spring 2012, whereas Crafton's retention rates over the same time period have been 84% and 82% respectively.

Degree courses at Crafton have varied from a high of 84% in the fall of 2009 to a low of 79% in the spring of 2010, but, overall it has been around 80% since then.

Transfer courses hit a high in fall of 2009 of 88% and then slowly fell to 77% in spring of 2010. Crafton has steadily increased since then and has consistently been greater than the state as well as other local colleges.

Since we have been better than state and other local colleges in our area, our goal, now, is to increase our averages in all areas. The overall departmental average retention rate for the past three years was 83.42% and the target for the department is an 85% over the next three years. We have looked at all four areas, and the retention rates for all four are about the same. We have consistently maintained retention rates higher that the than the state since 2009 as well as other local colleges in our area and we hope to continue to improve our retention rates. A factor influencing completion rates has been, and will continue to be, the

implementation of the new state law further limiting repetion of courses. We realize the future could be problematic and comes with no guarantees, but we are optimistic that we can increase our retention rates without lowering our standards. Lowering our standards would cost us severely. The department strives to maintain a high quality program.

ii. Rubric Item: Course Success Rate (Use the data provided by the OIERP to set a target and provide an explanation for the target that has been set.)

The department's success rate has been divided into 4 areas to allign with state data: basic skills courses, credit courses, degree courses and transfer courses. The Mathematics Department average for the past three years has been 62.75%, and the department would like to have a target of a 65% success rate.

In the basic skills area we reached the previous department goal with a success rate of 65% in the fall of 2010. Since then success rates have dropped to about 54%—which is similar to the other local colleges as well as the state. There are other multiple factors that the department is exploring at this time as to the reasons for the success rate drop. As a result, the department has implemented new ideas to increase and maintain the success rate of 65%. We are very interested in finding the success rate for Math 952 for fall of 2012. This will be the first opportunity to look at data where a large number of students have not been able to take Math 942, as this class was put on hiatus. (See question 4 part b.) (See student success table.)

Our transfer GE courses have had success rate around 61% which is greater than the state average and better than other colleges in our area. The department would like to see an increase in success rates which could be influenced by new book choices which provides more support available for the students. The support includes, but is not limited to, computer homework, immediate feedback on homework, tutoring the software provides, and additional support materials that is associated with the software.

The course success rates for our degree courses are above the rates of the state as well as local colleges in our area. The department would like to increase our success rates to 65%. Again, the department believes with the new text books in this area, requiring computer homework which gives immediate feedback to our students, as well as other improvements in delivery, that we will be able to attain our goal.

The course success rates for our transfer rates have remained greater than the state and colleges in our area since the department's last program review. We had a high of 83% in the fall of 2010 and have fallen off since then, but we are still maintaining a rate above 65%.

Our target rate is 65% in all areas. In some areas we have hit the mark, but now the goal will be to consistently have a 65% success rate and improve on the rate without lowering

our standards. We are above the state's rate as well as the rates for colleges in our local area. (Refer to interventions and innovations discussed in questions 6 for plans to achieve a positive impact on our success rates.) Frequently, in department meetings, we discuss ideas on improving retention and success rates.

iii. Rubric Item: Full-Time/Part-Time Faculty Ratio (The target is 75% or higher. Use the data provided by the ORP and please provide a reason for any deviation from the target.)

Our best full-time to part-time ratio from 2007-2008 to 2011-2012 was 43%—far from the targeted 75% set by the state (based on FTEF). Due to budget constraints we cannot meet the ratio at the present time. Not only are we below 75%, but the department is below the required 50% of classes taught by full-time instructors. As will every department, we are hoping to hire a new department member to replace recently retired mathematics faculty. To provide quality instruction and faculty support for our students, the department views hiring of a full-time faculty member as its highest priority. See table

iv. Rubric Item: WSCH/FTEF Ratio (Use the data provided by the ORP to set a target and provide an explanation for the target that has been set.)

The Mathematics Department has increased its FTES from a low of 542.83 in 2007-2008, to a high of 646.92 in 2010-2011; the year of 2011-2012 it fell to 557.37 which is still greater than the state norm of 525. The loss of FTES in 2011-2012 occured during the year Math 942 was put on hiatus. Our FTES/FTEF rose over the same period of time from a low of 14.81 to a high of 18.21, it fell to 18.01 in 2011-2012, yet this is still higher than the state's norm of 17.5. The department's target is 525 and we feel that increasing this number would have a negative impact on the quality of instruction. These numbers have been higher because our faculty are sympathetic to the students' plight of not being able to get into classes, therefore our faculty have added large number of students to their courses. This is not necessarily in the best interest of student success as reflected by the decrease in the success rate. Hopefully, when budget constraints are no longer an issue, we can decrease this to normal levels (35 people per section). Again, it is strictly because of the reduced number of sections that faculty have been adding more students. See table

v. Rubric Item: Fill rate (The target is 80% or higher. Use the data provided by the ORP and please provide a reason for any deviation from the target.)

Our fill rate since 2008 has been consistently over 84%, thus surpassing the target of 80%. We went from a fill rate of 98% to 94% in fall 2011 due in part to the cutting of all Math 942 classes. The Math 942 classes traditionally filled over cap and increased our fill rate due to the need of students for courses at this level. This puts a greater weighting on the 200 level classes which typically do not fill over cap. With the support and increase in enrollments in the STEM majors our fill rates in the 200 level classes should increase. We are in the process of re-evaluating the placement of our math degree courses. See table

6. Evaluation

What is going well and why? What is not going well and why? Please provide a brief analysis of how your unit is performing at serving students on each of the areas listed below (as applicable), along with any other areas you regard as significant.

- Representativeness of population served
- Alternative modes and schedules of delivery (e.g.: online, hybrid, early morning, evening services)
- Partnerships (internal and external)
- Implementation of best practices
- Efficiency in operations
- Efficiency in resource use
- Staffing
- Participation in shared governance (e.g., do unit members feel they participate effectively in planning and decision-making?)
- Professional development and training
- Innovation
- Compliance with applicable mandates

Representativeness of population served.

(See question 1.)

Alternative modes and schedules of delivery (e.g.: online, hybrid, early morning, evening services).

The Mathematics Department is currently working on hybrid courses for Math 090 (Beginning Algebra) and Math 095 (Intermediate Algebra). There was some discussion on the method for testing; the department came to the agreement that the tests for the course would be proctored at an approved location.

For several years the department has been changing the course schedule to reflect the needs of the students. The department has changed from a majority of daily one hour classes to 2 hours/2 days-a-week or 1 ½ hour / 3 days-a-week. Late start classes and an accelerated program are

now 2 hours/ 5 days-a-week for 9 weeks which allows the motivated student to complete two math courses in one semester.

The Math Department has successfully expanded the course offering (by one course per class) for the 100 to 200 level courses (Trigonometry, Pre-Calculus, Calculus I and Calculus II) to have both morning and evening classes. We have also made a new course, Math 200 (Discrete Structures), and will be offering it in the fall of 2013. Offering these courses as both morning and evening seems to have had the desired affect for giving students a greater opportunity to take the college level classes and a more varied schedule which then enables them to transfer in a more timely fashion.

Offering a larger variety of meeting patterns in the course schedule seems to have been helpful to the students and essentially allowing the student to have a more diverse/flexible course schedule. The department has been fortunate that the math faculty, as a whole, varies their schedules so that there is full time faculty on campus throughout the day.

Some of the faculty have been working with pc tablets, smart pens, pod casts, and virtual white boards. Student participation and engagement has increased with the use of the pc tablet. Unfortunately there are not sufficient funds for the mathematics faculty to have a tablet to use in all classrooms. The smart pens requires either an instructor or a student to take notes, which also captures the instructors' voice during lecture; while it is good to have the notes, the voice program that accompanies the pen does not synchronize well with the lectures. Also, the student note-taker can be so busy taking proper notes that their own concentration of the lecture may be compromised. Therefore, a student who is strong in mathematics should be chosen to do this. The videos have been well received by the students, however these should only be used as a supplement to the lecture. It is by no means a substitute for attending class. These documents and videos can be posted on Blackboard, MyMathLab (web based tool provided by the publisher for a specific text), and other web tools.

Partnerships (internal and external).

The Mathematics Department currently is involved in a minimum of 5 linked courses (learning communities)—basic skills classes partnered with English, Geology and Chemistry. The best fit seems to be with the sciences even though there have been no statistics to support our anecdotal conclusions. The department is currently in the process of collecting and analyzing the data for those courses. Another ongoing discussion is whether Math 090 (Elementary Algebra) or Math 095 (Intermediate Algebra) should be linked to a 100 level course, instead of other Basic Skills courses, to improve performance.

Currently, the Mathematics Department is working with the staff for the STEM and Title V grants to help to improve classrooms by providing funds for computers for classrooms, classroom furniture, and document projectors, to name a few. We have also been working with funds from San Manuel, Title V, and a grant from the district Chancellor to provide services for

our Basic Skills Program, The Left Lane Project, and the Summer Bridge Program for the summer of 2012, and training tutors for those programs.

The department has strengthened its connection with the Tutoring Center and have discussed, with the newly hired Developmental Skills Specialist, interest in helping identify, train and mentor tutors. We have also volunteered to provide worksheets, power points, videos, a list of web sites, etc., along with time to help develop workshops for the students utilizing the Tutoring Center.

The department would like to start training sessions with both full and part-time instructors on how to encourage students to continue their mathematics education by guiding the students into the appropriate sequence of math classes.

Implementation of best practices.

The department continues to discuss best practices, focusing on student engagement and student-centered instructional strategies. We continue deriving new methods for instruction for such activities as: factoring, solving polynomials, simplifying trigonometric identities, and solving word problems. Part-time faculty are encouraged to attend department meetings and orientations held at the beginning of the semester to discuss these strategies as well as the use of smart pens, web tools, computers, and MyMathLab online homework assignments as ways to increase student understanding and retention.

Last year, SLA (Structured Learning Assistance) was added to the Math 952 (Pre-Algebra) courses. The data for this addition is mixed because, at the same time, the department started the SLA program, changed texts, lowered the cut scores for admission to the Math 952 class, and cut out the Math 942 (Arithmetic) classes altogether. The department continues to analyze the data and discuss the best direction to proceed. (See question 4 for data.) There is a portion of the student body (1/3) that still demonstrates a need for the Math 942 course.

There is still a need for an open tutoring program on Saturdays. It is currently run with volunteer full-time and part-time instructors. The discussions are ongoing with the Tutoring Center to coordinate with the department to have peer tutors provided for the Saturday sessions.

Efficiency in operations/Efficiency in resource use.

The department would like to increase technology in the classrooms to include wireless projectors, document projectors, and computers for the students. This would increase the efficiency and creativity in instruction as well as promote student success.

With the current demands for activities outside of the classroom combined with the loss of full-time faculty, it has become increasingly difficult to maintain efficiency, student contact, consistency, and excellence in instruction.

With the loss of the academic secretary we have continued to operate at less than optimal efficiency. Having the secretary helped save time in getting tests and work sheets reproduced as well as other book-keeping tasks completed. This would also be an excellent aid for department chairs whose time is overtaxed during the creation of the semester schedules, revision of curricula, letters of recommendation, minutes for meetings, etc., making it increasingly difficult to keep up with their classroom responsibilities.

Staffing.

The mathematics department is currently short 1 full-time faculty. With a full-time/part-time ratio of 36% (see question 5) in spite of the reduction of class offerings which is well below the required 75% full time faculty. There are many excellent and qualified instructors teaching part-time for the department—on average there are between 20-30—however they cannot provide the same level of support and availability needed for the students' success.

Participation in shared governance (e.g., do unit members feel they participate effectively in planning and decision-making?)

The department faculty as a whole takes their obligations to the campus very seriously; not only sitting on committees but meeting as a department to continue improving the program. The development of this document fostered collaborative discussions on many aspects of the program, not all of which can be captured in the writing of this document. Also, many of the questions asked on this document have taken place in departmental meetings on many occasions throughout the years in ad nauseam. All of the members of the department feel that our opinions and statements are respected and encouraged. Whereas we have achieved consensus in many areas, we also respectfully agree to disagree on other peripheral items.

The participation and comments from part-time instructors is encouraged and has been beneficial to the department as a whole.

The mathematics faculty feel we are well represented on the campus with each one of sitting on two or more committees. However, once again, with more and more of the departments' time being focused elsewhere, it is difficult to maintain quality classroom instruction as well as student support and success.

Professional Development and Training.

Members of our department attend many of the professional development activities provided on the campus as well as attending conferences such as AMATYC and CMC^3, plenary sessions for academic senate, district assembly, and CTA.

However we find that there are no specific training sessions for disciplines or andragogy based instructional strategies, for professional development on campus. We hope to provide such trainings in the future with the support of administration and grant funding.

Innovation.

As mentioned earlier, some faculty are assigning homework on MyMathLab, pc tablets, power points, document projectors, webcam, posting lecture notes via Camtasia or smart pens. Some are posting notes, handouts and practice tests on Blackboard, MyMathLab, Facebook and other web based venues in order to get information to our students and encourage discussion. Lastly, some are also using YouTube and other websites to deliver alternative methods of instruction.

We are currently working on a new brochure to inform students of the pathways to transfer classes. We are developing a department website with the help of one of our publishers to specifically list the courses and corresponding books along with specific information for our program. We have developed an instructional video with respect to eLumen and are in the process of developing an instructional video for students in regards to their textbook options on the math department's section of the campus website.

Compliance with applicable mandates.

Losing our Math 942 course (i.e. 6 cut classes per semester for the past year) has put us in danger of placing us at odds with the state mandate of being an open-access campus and in non-compliance with ADA standards.

7. Vision and Mission

a. Tell us your vision: Where would you like your program to be three years from now?
b. **Rubric Item** (Alignment): Describe how your mission from question 1B and vision align with and contribute to the college's mission and vision, as specified in the CHC Educational Master Plan.

a. Tell us your vision: Where would you like your program to be three years from now?

Mathematics Department Mission: To provide services and courses that meet the mathematical needs of a diverse student population.

Mathematics Department Vision: To be a quality mathematics department that produces excellent and successful students.

The Mathematics Department would like to have a wide range of courses spanning the curriculum three years from now. These classes would include the usual repertoire, but would also include such classes as Math 108 (Statistics) Honors, Math 251 (Calculus II) Honors, Math 200 (Discrete Structures), and hybrid online classes. In collaboration with various University of California schools, the department would like to develop and offer a Mathematics software class during this time (economy permitting).

The department would like to see an increase in full-time mathematics faculty and reach the full-time to part-time instructor ratio of 50% (budget and economy permitting). The math faculty, as is the rest of the faculty on campus, are overtaxed with meetings, committees, and activities outside of the classroom. Reaching this 50% would put less strain on one of the largest departments on campus, improve morale, and would make it easier to maintain efficiency and consistency in the classroom environment.

The department would like to see money in the departments' budget so as to obtain technology for use in the classroom which would provide additional student learning (budget and economy permitting). The STEM HSI and the Title V HSI grans may help the department achieve these goals.

b. Rubric Item (Alignment): Describe how your mission from question 1B and vision align with and contribute to the college's mission and vision, as specified in the CHC Educational Master Plan.

Mission of the college: "To advance the education and success of students in a quality learning environment."

Vision of college: "To be the premier community college for public safety and health services careers and transfer preparation."

Our mission and goal fall under the Goal 1.1 and it's objectives as well as Goal 1.2 and it's objectives from the Educational Master Plan by helping students get through the mathematics sequence which is required for both the A.A./A.S. degrees, most certificates, and transfer requirements. We try to provide help and support to students in their endeavor.

Our Vision of the Math Department fits within Goal 3.1, with a focus on providing excellence in teaching.

Various other portions of our plan, such as the department plans for retention and persistence, fall under Objective 4.1.1. which deals with increasing retention, success, and persistence.

Part of our vision as a quality department includes using SLO assessment data to modify courses as discussed in Objective 3.1.4. in the Educational Master Plan.

This document has many ideas and examples on how the department is attempting to achieve this goal/mission/vision whether it be quantitative knowledge/skills, real world scenario applications for mathematics and for other disciplines/areas, striving to create a quality learning environment for which to learn the material, or just incorporating inventions and technologies into the classroom. Mathematics gets a bad reputation as a gate keeper which stops students from obtaining their goals, but the Crafton Hills Mathematics Department has been and always will continue to find ways for students to reach them.

In conclusion, with respect to the document in its entirety, the Mathematics Department fully acknowledges that there is some level of repetition within this report, however the department feels that these points are worthy of repetition. Thank you.

Note: If the committee wishes to review the previous Program Review document from 2009, it can be found in Supporting Documents.

8. Progress on Prior Goals

Briefly summarize the progress your unit has made in meeting the goals and objectives identified in your last Three-Year Action Plan.

- **1 - Goal - Engage students in meaningful learning**
  To incorporate practices and educational structures and facilities that will provide students with the opportunity to be engaged and participate fully in meaningful and purposeful learning experiences.
  Priority Rank:
  1
  Objectives:
  - **1.1 - Objective - To provide excellence in teaching**
    Priority Rank:
    2
    Original Start Date:
    11/15/2010
    Original End Date:
    11/15/2012
    Revised Start Date:
    11/15/2010
    Revised End Date:
    11/15/2012
    Responsible Person:

all fulltime faculty
Actions/Activities:

- **1.1.a1 - Identify and research best practices**
  Obtain and share amongst the full-time and part-time faculty information on best practices on an ongoing and regular basis.
  Start Date:
  11/15/2010
  End Date:
  11/15/2012
  Responsible Person:
  all full time faculty
  Status Code:
  Work is Underway
  Progress Description:
  a
  Measurements/Documentation of Progress:
  a
- **1.1.a2 - Devote parts of Department Meetings to share new teaching strategies.**
  Start Date:
  11/19/2010
  End Date:
  11/30/2012
  Responsible Person:
  all math faculty
  Status Code:
  Work is Underway
  Progress Description:
  At department meetings we discuss these mathematics ideas.
  Measurements/Documentation of Progress:
  Documentatin is in the meeting notes.

- **1.2 - Objective - To provide balanced schedule offerings for all courses**
  Priority Rank:
  1
  Original Start Date:
  11/15/2010
  Original End Date:
  11/15/2013
  Revised Start Date:
  11/15/2010
  Revised End Date:
  11/15/2013
  Responsible Person:
  Faculty Chair person and Dean
  Resource Requests:
  - **1.2.r1 - Funding to offer additional sections**

Description
Rationale
To help students meet their math requirements.
Resource Type:
Ongoing
Expenditure Category:
Personnel
Funded:
No
Funding Source:
San Manuel Grant
First Year Cost/Savings:
$20,000.00/$0.00
Second Year Cost/Savings:
$20,000.00/$0.00
Third Year Cost/Savings:
$20,000.00/$0.00

Actions/Activities:

- **1.2.a1 - To increase the number of course offerings**
  Status Code:
  Work is Planned but not yet firmly scheduled
  Progress Description:
  Measurements/Documentation of Progress:
- **1.2.a2 - To obtain priority scheduling in additional rooms**
  Start Date:
  11/15/2010
  End Date:
  08/15/2011
  Responsible Person:
  Faculty Chair person and Dean
  Status Code:
  Work is Completed and Ongoing
  Progress Description:
  The departrment has aquired use of MSA classrooms 101 and 102. We lost SCC 201. We have a net gain of 1 classroom. Due to the cut in sections this has not been a big of an issue as before the cuts.
  Measurements/Documentation of Progress:
  See course schedule.

- **1.3 - Objective - To obtain access to appropriate classrooms for teaching mathematics**
  Priority Rank:
  2
  Original Start Date:
  11/15/2010
  Original End Date:
  08/15/2011

Revised Start Date:
11/15/2010
Revised End Date:
08/15/2011
Responsible Person:
Faculty Chairperson and Dean
Actions/Activities:

- **1.3.a1 - Obtain computer control system**
  For any computer lab prioritized for mathematics use, we need to obtain a master computer and a computer control system so the instructor can control appropriate use of the classroom computers.
  Start Date:
  11/15/2010
  End Date:
  01/18/2011
  Status Code:
  Work is Planned but not yet firmly scheduled
  Progress Description:
  Measurements/Documentation of Progress:
- **1.3.a2 - Obtain wireless capable projectors**
  Install a permanent mounted data projector in SCC 202
  Start Date:
  11/15/2010
  End Date:
  01/18/2011
  Responsible Person:
  Faculty Chair person and Dean
  Status Code:
  Work is Planned but not yet firmly scheduled
  Progress Description:
  Measurements/Documentation of Progress:
- **1.3.a3 - Improve furniture for technology in classrooms**
  To obtain computer lab furniture that supports computers with fold down monitors, so that computers can be stored while not being used, in particular SCC-202.
  Start Date:
  11/15/2010
  End Date:
  08/15/2011
  Responsible Person:
  Faculty Chairperson and Dean
  Status Code:
  Work is Planned but not yet firmly scheduled
  Progress Description:
  Measurements/Documentation of Progress:
- **1.3.a4 - to have sufficient custodial support**

Several classrooms are inappropriately maintained (dirty, messy, lack of lighting and lack of appropriate restroom maintenance) to ensure a proper learning environment. With additional custodial support this could be alivated.
Also there is a very unpleasant sewer odor in the PAC classrooms which has a negative effect on the students' ability to concentrate.
Start Date:
11/15/2010
End Date:
11/15/2012
Responsible Person:
Dean and Vice President of Instruction
Status Code:
Work is Planned but not yet firmly scheduled
Progress Description:
Measurements/Documentation of Progress:

- **1.3.a5 - Obtain Document Projectors**
  Obtain document projectors for MSA-101, MSA-102, and SCC-202.
  Start Date:
  11/19/2010
  End Date:
  11/30/2012
  Responsible Person:
  all faculty members
  Status Code:
  Work is Planned but not yet firmly scheduled
  Progress Description:
  Measurements/Documentation of Progress:

- **1.4 - Objective - To provide support to mathematics students through virtualization using PC/Tablets or Pads in classrooms**
  Priority Rank:
  3
  Original Start Date:
  11/15/2010
  Original End Date:
  08/19/2013
  Revised Start Date:
  11/15/2010
  Revised End Date:
  08/19/2013
  Responsible Person:
  Math dept faculty chair person and Dean
  Actions/Activities:
  - **1.4.a1 - Meet with IT department**
    Meeting with IT to determine feasability.
    Start Date:

03/16/2012
End Date:
04/20/2012
Responsible Person:
All math faculty
Status Code:
Work is Completed and Ongoing
Progress Description:
Met with Audio Visual and are in the process of getting SCC 202 updated.
Measurements/Documentation of Progress:
There will be technology in the room.

- **1.4.a2 - Obtain PC tablets**
  In order to provide alternative types of technology that can be used to write, store or e-mail mathematics symbols electronically; which is extremely cumbersome and difficult using current technology.
  Once the tablets are obtained, an appropriate place to store them is also needed. (department faculty offices could work)
  Start Date:
  11/15/2010
  End Date:
  08/16/2011
  Responsible Person:
  department faculty Chair person and Dean
  Status Code:
  Work is Planned but not yet firmly scheduled
  Progress Description:
  N/A. Still waiting for a rich Santa Claus to bring us these gifts from the Maji.
  Measurements/Documentation of Progress:
  Once placed in our cold math department faculty hands will it be measured as a success. 3 or more tablets in faculty possession.
- **1.4.a3 - Obtain wireless capability for pemanently mounted projectors.**
  Start Date:
  03/16/2012
  End Date:
  12/03/2012
  Responsible Person:
  Dean and Faculty
  Status Code:
  Work is Underway
  Progress Description:
  Meeting with Audio Visual for wireless capabilities in the rooms.
  Measurements/Documentation of Progress:
  When it is completed it will be there.

- **1.5 - Objective - Increase Math Department involvement in the determination and scheduling of Learning Communities**
  Priority Rank:
  1
  Original Start Date:
  03/16/2012
  Original End Date:
  05/01/2013
  Revised Start Date:
  03/16/2012
  Revised End Date:
  05/01/2013
  Responsible Person:
  Department Faculty (All)
  Status Code:
  Work is Planned but not yet firmly scheduled
  Progress Description:
- **1.6 - Objective - To make the MSA classrooms more effective for teaching mathematics**
  Priority Rank:
  3
  Original Start Date:
  06/04/2012
  Original End Date:
  08/10/2012
  Revised Start Date:
  06/04/2012
  Revised End Date:
  08/10/2012
  Responsible Person:
  Kathleen Gibson
  Actions/Activities:
  - **1.6.a1 - Meet with the technology department to implement the changes**
    Start Date:
    03/16/2012
    End Date:
    05/04/2012
    Responsible Person:
    All Math Faculty
    Status Code:
    Work is Planned but not yet firmly scheduled
    Progress Description:
    Measurements/Documentation of Progress:

- **2 - Goal - To improve the full-time part-time faculty ratio**

There is a need to hire additional full-time faculty so that our ratio of full-time to part-time faculty is increased.
Priority Rank:
2

Objectives:

- **2.1 - Objective - Hire additional full-time faculty**
  Priority Rank:
  5
  Original Start Date:
  11/15/2010
  Original End Date:
  11/30/2012
  Revised Start Date:
  11/15/2010
  Revised End Date:
  11/30/2012
  Responsible Person:
  all fulltime faculty

  Resource Requests:

  - **2.1.r1 - Hire additional full time faculty**
    Description
    Hire new full time mathematics faculty member.
    Rationale
    Our full time to part time ratio is at 36%. To increase faculty quality availability to students.
    Resource Type:
    Ongoing
    Expenditure Category:
    Personnel
    Funded:
    No
    Funding Source:
    District general funds
    First Year Cost/Savings:
    $80,000.00/$0.00
    Second Year Cost/Savings:
    $82,000.00/$0.00
    Third Year Cost/Savings:
    $84,000.00/$0.00

  Actions/Activities:

  - **2.1.a1 - Obtain Funding**
    Request funding to add the position.
    Start Date:
    11/19/2010
    End Date:
    11/30/2012

Responsible Person:
all fulltime faculty
Status Code:
Work is Planned but not yet firmly scheduled
Progress Description:
Measurements/Documentation of Progress:

- **3 - Goal - To Obtain and Analyze Data**
  To obtain current data and analyze it so that we can better serve our students. Our main goal is to analyze retention and success data. However, we need also to obtain/analyze data on the viability of our fast track and A, B, C classes.
  Priority Rank:
  3
  Objectives:
  - **3.1 - Objective - Continue involvement in the Accuplacer Validation Study**
    Priority Rank:
    8
    Original Start Date:
    03/16/2012
    Original End Date:
    05/01/2013
    Revised Start Date:
    03/16/2012
    Revised End Date:
    05/01/2013
    Responsible Person:
    all full time faculty and ORP
    Actions/Activities:
    - **3.1.a1 - Schedule two meetings per year with Frances Southerland and Keith Wurtz**
      Status Code:
      Work is Planned but not yet firmly scheduled
      Progress Description:
      Measurements/Documentation of Progress:
  - **3.2 - Objective - Collect Data on Best Practices**
    Priority Rank:
    9
    Original Start Date:
    11/19/2010
    Original End Date:
    11/30/2012
    Revised Start Date:
    11/19/2010
    Revised End Date:
    11/30/2012
    Responsible Person:
    all fulltime faculty

Status Code:
Work is Planned but not yet firmly scheduled
Progress Description:

- **3.3 - Objective - Obtain data on how CHC math classes impact students' self efficacy**
  Priority Rank:
  10
  Original Start Date:
  11/19/2010
  Original End Date:
  11/30/2012
  Revised Start Date:
  11/19/2010
  Revised End Date:
  11/30/2012
  Responsible Person:
  all fulltime faculty
  Actions/Activities:
  - **3.3.a1 - Construct a testing instrument**
    Request the research department write or obtain a survey instrument to capture the data; to provide the information so that we can close the gap between students perception and instructors. Also this should help in addressing the weakness and strengths in our discipline.
    Start Date:
    11/19/2010
    End Date:
    11/30/2011
    Responsible Person:
    all fulltime faculty and research department
    Status Code:
    Work is Completed and Ongoing
    Progress Description:
    See survey.
    Measurements/Documentation of Progress:
    Data will be collected at end of fall 2012.
  - **3.3.a2 - Collect Data**
    Start Date:
    11/19/2010
    End Date:
    11/30/2012
    Responsible Person:
    all math faculty and ORP
    Status Code:
    Work is Underway
    Progress Description:

A PreSurvey was given out at the beginning of the Fall 2012 semester. A PostSurvery will be given out at the end of 2012 Fall semester for all developmental math classes.

Measurements/Documentation of Progress:

Surveys will be completed and the data results will be given to the department.

- **3.3.a3 - Analyze Data**

  Start Date:
  11/30/2010
  End Date:
  11/30/2012
  Responsible Person:
  all math faculty and ORP
  Status Code:
  Work is Scheduled to begin on a resonably firm date

  Progress Description:

  Once the data is received, the department will go over it during a January department meeting.

  Measurements/Documentation of Progress:

  80% of all developmental math will have data on the survey. The department will have documentation to finally analyze.

- **4 - Goal - Expand Program Offerings**

  Expand our current program offerings to better meet student needs and demand
  Priority Rank:
  4

  Objectives:

  - **4.1 - Objective - Update Course Outlines**

    Priority Rank:
    2
    Original Start Date:
    11/19/2010
    Original End Date:
    11/30/2011
    Revised Start Date:
    11/19/2010
    Revised End Date:
    11/30/2011
    Responsible Person:
    all fulltime faculty
    Status Code:
    Work is Planned but not yet firmly scheduled

    Progress Description:

  - **4.2 - Objective - Increase section offerings of Math 942 - Math 115**

    Priority Rank:
    7
    Original Start Date:

11/19/2010
Original End Date:
11/30/2011
Revised Start Date:
11/19/2010
Revised End Date:
11/30/2011
Responsible Person:
all fulltime faculty
Actions/Activities:

- **4.2.a1 - Faculty Meetings**
  Have faculty meetings to discuss and refine the offerings.
  Start Date:
  11/19/2010
  End Date:
  11/30/2011
  Responsible Person:
  all fulltime faculty
  Status Code:
  Work is Planned but not yet firmly scheduled
  Progress Description:
  Due to budget constraints, this is not a viable option at this time.
  Measurements/Documentation of Progress:
  Same as above.

- **4.3 - Objective - Complete the 200 level course offerings**
  Priority Rank:
  2
  Original Start Date:
  11/19/2010
  Original End Date:
  11/29/2011
  Revised Start Date:
  11/19/2010
  Revised End Date:
  11/29/2011
  Responsible Person:
  all fulltime faculty
  Actions/Activities:
  - **4.3.a1 - Faculty Meetings**
    Start Date:
    11/19/2010
    End Date:
    11/30/2011
    Responsible Person:
    all fulltime faculty
    Status Code:

Work is Underway

Progress Description:

Discrete Math has been completed, thanks to CIS. Math software course to be developed in the spring of 2013.

Measurements/Documentation of Progress:

Completed courses have gone through curriculum. Course will be offered in the schedule.

- **4.4 - Objective - Expand All Course Offerings**

Priority Rank:
7
Original Start Date:
11/19/2010
Original End Date:
11/30/2011
Revised Start Date:
11/19/2010
Revised End Date:
11/30/2011
Responsible Person:
all fulltime faculty

Resource Requests:

- **4.4.r1 - Faculty Curriculum Retreat**

Description

Off campus retreat to review the entire mathematics curriculum sequencing and to write new curricula if deemed necessary.

Rationale

Current trends in math curriculum indicating new pathways for STEm majors and Social Science majors.

Resource Type:
One-time
Expenditure Category:
Other
Funded:
No
Funding Source:
San Manuel or BSI grant money
First Year Cost/Savings:
$800.00/$0.00

Actions/Activities:

- **4.4.a1 - Write Curricula for Self Paced classes**

Assign/volunteer to edit current curricula and write new curricula for the fast track, self paced review of 090 and 095 math courses.

Start Date:
11/19/2010
End Date:
11/30/2011

Responsible Person:
all fulltime faculty
Status Code:
Work is Scheduled to begin on a resonably firm date
Progress Description:
Retreat planned for Spring of 2013 to work on this new curriculum.
Measurements/Documentation of Progress:
Completed curricula.

- **4.4.a2 - Complete Math Curriculum Review**
  The dept needs to hold an off-campus retreat to focus on reviewing the complete sequence of the math curricula. The dept will write new curricula if deemed appropriate.
  Responsible Person:
  Dept. Chair
  Status Code:
  Work is Scheduled to begin on a resonably firm date
  Progress Description:
  Retreat has been discussed by the department. Time and place to be determined, but it has been planned for the spring of 2013
  Measurements/Documentation of Progress:
  Completed review and revision will be completed as needed and as necessary.

- **5 - Goal - Increase faculty involvement with the Math component of the Tutoring Center**
  To increase faculty involvement with the Math component of the Tutoring Center
  Priority Rank:
  5
  Objectives:
  - **5.1 - Objective - Encourage adjunct faculty to use their professional development student contact in the tutoring center**
    Priority Rank:
    5
    Original Start Date:
    11/30/2012
    Original End Date:
    11/30/2011
    Revised Start Date:
    11/30/2012
    Revised End Date:
    11/30/2011
    Responsible Person:
    all fulltime faculty
    Actions/Activities:
    - **5.1.a1 - Provide Adjunct Faculty with neccessary information**
      Start Date:
      11/30/2012

End Date:
11/30/2013
Responsible Person:
all fulltime faculty
Status Code:
Work is Planned but not yet firmly scheduled
Progress Description:
Measurements/Documentation of Progress:

- **5.2 - Objective - Drive process for having Saturday tutoring as a part of the tutoring center responsibility**
  Priority Rank:
  5
  Original Start Date:
  11/30/2012
  Original End Date:
  11/30/2013
  Revised Start Date:
  11/30/2012
  Revised End Date:
  11/30/2013
  Responsible Person:
  Faculty Chairperson and Dean
  Status Code:
  Work is Completed and Ongoing
  Progress Description:
- **5.3 - Objective - Offer Diverse Workshops**
  Priority Rank:
  5
  Original Start Date:
  11/30/2012
  Original End Date:
  11/30/2013
  Revised Start Date:
  11/30/2012
  Revised End Date:
  11/30/2013
  Responsible Person:
  all fulltime faculty
  Actions/Activities:
  - **5.3.a1 - Work with tutoring center staff to determine appropriate workshops and time lines**
    Start Date:
    11/30/2012
    End Date:
    11/30/2013
    Responsible Person:

Dean and Vice President of Instruction
Status Code:
Work is Completed and Ongoing
Progress Description:
With the new staffing in the learning center, there is now a math and science coordinator who is working in conjunction with the mathematics department.
Measurements/Documentation of Progress:
Published schedule of workshops.

- **5.4 - Objective - Offer Open Entry/Exit Courses**
  Priority Rank:
  11
  Original Start Date:
  11/30/2012
  Original End Date:
  11/30/2013
  Revised Start Date:
  11/30/2012
  Revised End Date:
  11/30/2013
  Responsible Person:
  all fulltime faculty
  Status Code:
  Work is Completed and Ongoing
  Progress Description:

9. Three-Year Action Plan (Goals, Objectives, Resources, and Actions)

Rubric Item: Reflect on your responses to all the previous questions. Complete the Three-Year Action Plan, entering the specific program goals (goal rubric) and objectives (objective rubric) you have formulated to maintain or enhance your strengths, or to address identified weaknesses. Assign an overall priority to each goal and each objective. In addition, enter any actions and/or resources required to achieve each objective. (Click here to see a definition of goals, objectives, actions, and how they work together.)

- **1 - Goal - Engage students in meaningful learning**
  To incorporate practices and educational structures and facilities that will provide students with the opportunity to be engaged and participate fully in meaningful and purposeful learning experiences.
  Priority Rank:
  1
  Objectives:
  - **1.1 - Objective - Increase the number of students served by full-time faculty members as measured by an increase to the full-time to part-time faculty ratio from its current low of 36%.**
    Priority Rank:
    1

Start Date:
10/15/2012
End Date:
07/01/2013
Responsible Person:
All full-time faculty

Resource Requests:

- **1.1.r1 - Hiring faculty.**

  Description

  Hire at least one full time math faculty.

  Rationale

  The full-time to part-time for mathematics is at 36% which is not in best interest of the students.

  Resource Type:
  Ongoing
  Expenditure Category:
  Personnel
  First Year Cost/Savings:
  $80,000.00/$0.00
  Second Year Cost/Savings:
  $80,000.00/$0.00
  Third Year Cost/Savings:
  $80,000.00/$0.00

Actions/Activities:

- **1.1.a1 - Hire additional full-time faculty.**

  To provide our students with the best possible resources to succeed in their mathematics curriculum, there is a need to have a more robust full-time faculty ratio. Our part-time faculty are hard working individuals but are usually working at several different colleges, hence they cannot devote a lot of time to our campus' needs. We need more full-time faculty that can devote their time to this campus and our students.

  Start Date:
  10/15/2012
  End Date:
  07/01/2013
  Responsible Person:
  Department Chair and Dean

- **1.2 - Objective - To provide excellence in teaching focusing on the classroom setting.**

To provide excellence in teaching by implementing a vareity of best practices in the teaching of mathematics in order to reach all student learning styles.
Priority Rank:
2
Start Date:
10/15/2012
End Date:

12/15/2015
Responsible Person:
Mathematics Faculty

Resource Requests:

- **1.2.r1 - Support conference attendance of mathematics faculty.**
  Description
  Rationale
  To improve mathematics instruction and increase student success.
  Resource Type:
  Ongoing
  Expenditure Category:
  Other
  First Year Cost/Savings:
  $5,000.00/$0.00
  Second Year Cost/Savings:
  $5,000.00/$0.00
  Third Year Cost/Savings:
  $5,000.00/$0.00

Actions/Activities:

- **1.2.a1 - Identify and research best practices.**
  Obtain and share amongst the full-time and part-time faculty information on best practices on an ongoing and regular basis.
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Mathematics Faculty
- **1.2.a2 - Devote parts of department meetings to share new teaching strategies.**
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Mathematics Faculty
- **1.2.a3 - Promote conference attendance**
  We want to have the ability to attend conferences that relate to the teaching of mathematics to improve student success.
  Start Date:
  10/29/2012
  End Date:
  12/29/2015
  Responsible Person:
  Mathematics Faculty

- **1.3 - Objective - To provide balanced schedule offerings for all courses.**

To provide all students with a wide variety of course offerings and times; evenly distributed throughout the morning, afternoon and evening, with specific emphasis on the graduate requirement course (MATH 095) and the most popular transfer course (MATH 102). Currently there are far more sections of these two courses in the late afternoon and evening than in the morning and early afternoon.
Priority Rank:
3
Start Date:
10/15/2012
End Date:
11/15/2015
Responsible Person:
Mathematics Faculty and Dean

Resource Requests:

- **1.3.r1 - Increase the number of course offerings.**
  Description
  Increase the number of section offerings: 10 per year.
  Rationale
  Math is the gate keeper for most degrees on campus and is a prerequisite or departmental recommandation for many programs and courses at Crafton Hills College.
  Resource Type:
  Ongoing
  Expenditure Category:
  Personnel
  First Year Cost/Savings:
  $37,730.00/$0.00
  Second Year Cost/Savings:
  $37,730.00/$0.00
  Third Year Cost/Savings:
  $37,730.00/$0.00

Actions/Activities:

- **1.3.a1 - To increase the number of course offerings.**
  Start Date:
  10/15/2012
  End Date:
  12/15/2015
  Responsible Person:
  Department Chair and Dean
- **1.3.a2 - To obtain priority scheduling in additional rooms.**
  Currently, with the reduced scheduling of courses due to budget constraints, the availability of rooms is not an issue. However, as budgets improve and course offerings increase, this will become an issue once again for our department.
  Start Date:
  11/15/2014

End Date:
08/15/2025
Responsible Person:
Dept. Chair and Dean

- **1.4 - Objective - To improve the quality of the learning environment for teaching mathematics with appropriately designed classrooms.**
  To obtain classrooms, furniture and technology that are appropriate for best practices in the teaching mathematics .
  Priority Rank:
  7
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Mathematics Faculty and Dean
  Resource Requests:
  - **1.4.r1 - Computer Control System. (NetOp)**
    Description
    Software license that allows the faculty to take control of all of the student's computers. Software also limits what websites the students will go to.
    Rationale
    Improves the quality of instruction when using computers.
    Resource Type:
    One-time
    Expenditure Category:
    Software
    First Year Cost/Savings:
    $500.00/$0.00
    Second Year Cost/Savings:
    $0.00/$0.00
    Third Year Cost/Savings:
    $0.00/$0.00
  - **1.4.r2 - Upgrade technology in the classrooms.**
    Description
    To upgrade SCC 202 and MSA 101.
    SCC 202 will need to have wireless projector, instructor computer station, modified whiteboard surface to project on, new furniture for the monitor to be recessed when not in use.
    MSA 101 will need to have computer furniture for the students and the actual computers.
    Rationale
    To improve the quality of learning. By using more technology we can make the lectures more interactive.
    Resource Type:

One-time
Expenditure Category:
Equipment
First Year Cost/Savings:
$50,000.00/$0.00
Second Year Cost/Savings:
$0.00/$0.00
Third Year Cost/Savings:
$0.00/$0.00

Actions/Activities:

- **1.4.a1 - Obtain computer control system.**
  For any computer lab prioritized for mathematics use, we need to obtain a master computer and a computer control system so the instructor can control appropriate use of the classroom computers.
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Dean and Technology Services
- **1.4.a2 - Obtain wireless capable projectors.**
  Install a permanent mounted data projector in SCC 202.
  Start Date:
  11/15/2010
  End Date:
  03/15/2013
  Responsible Person:
  Department Chair and Dean
- **1.4.a3 - Improve furniture for technology in classrooms.**
  To obtain computer lab furniture that supports computers with fold down monitors so that computers can be stored while not in use, particularly in SCC-202. Working with the Title V HSI grant in procuring furniture for SCC 202. Working with STEM grant for procuring furniture for MSA 101.
  Start Date:
  10/15/2010
  End Date:
  05/31/2013
  Responsible Person:
  Department Chair and Dean
- **1.4.a4 - To have sufficient custodial support.**
  Due to shortage of custodial staff, classroom maintainance has been compromised and inappropriately maintained to ensure a proper learning environment. With additional custodial support this could be alivated.

  Start Date:

10/15/2012
End Date:
11/15/2015
Responsible Person:
Director, facilities and operations

- **1.4.a5 - Obtain Document Projectors.**
  Obtain document projectors for MSA-101, MSA-102, and SCC-202.
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  All mathematics faculty.
- **1.4.a6 - Reorienting MSA 101 and 102.**
  Currently working with the STEm grant to update and reorient the MSA classrooms.
  Start Date:
  10/15/2012
  End Date:
  05/31/2013
  Responsible Person:
  Department Chair and Dean

- **1.5 - Objective - To increase the success of mathematics students through virtualization using PC/Tablets, iPads, or notebooks in classrooms.**
  To provide support to mathematics students through virtualization using PC/Tablets or Pads in classrooms
  Priority Rank:
  11
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Department Chair and Dean
  Resource Requests:
  - **1.5.r1 - Obtain PC Tablets.**
    Description
    Obtain tablets or notebooks for faculty use in classrooms.
    Rationale
    To improve active learning in the classroom and to capture lecture notes for posting on a web based site such as Blackboard.
    Resource Type:
    One-time
    Expenditure Category:
    Equipment
    First Year Cost/Savings:

$4,800.00/$0.00
Second Year Cost/Savings:
$0.00/$0.00
Third Year Cost/Savings:
$0.00/$0.00

Actions/Activities:

- **1.5.a1 - Meet with IT department .**
  Meeting with IT to determine feasability.
  Start Date:
  03/16/2012
  End Date:
  05/31/2015
  Responsible Person:
  All mathematics faculty
- **1.5.a2 - Obtain PC tablets.**
  To capture lecture notes and virtual office hours, which can be made available to mathematics students.
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Depa Chair and Dean
- **1.5.a3 - Obtain wireless capability for permanently mounted projectors.**
  Start Date:
  03/16/2012
  End Date:
  11/15/2015
  Responsible Person:
  Dean and Mathematics Faculty

- **1.6 - Objective - To increase math student success by working in collaboration with the tutoring center.**
  Priority Rank:
  5
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Department Chair

  Actions/Activities:

  - **1.6.a1 - Advocate for hiring mathematics tutors.**
    There is a need for peer tutors to help with the support labs that we currently have for some of our classes. As the Math Department hopes to move toward, having more lab supported classes it is essential to staff the

computer labs with tutors that are trained to use the software and help the instructors.
Start Date:
10/15/2012
End Date:
11/15/2015
Responsible Person:
Tutoring Center Coordinator

- **1.6.a2 - Encourage math faculty to recommend good students to apply to be tutors.**
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Mathematics Faculty
- **1.6.a3 - Encourage faculty to send more students to the tutoring center.**
  In order to help students to be more successful, the faculty need to encourage students to make better use of the tutoring center.
  Start Date:
  10/15/2012
  End Date:
  12/15/2015
  Responsible Person:
  Mathematics Faculty
- **1.6.a4 - Increase faculty involvement with the Math component of the Tutoring Center**
  Encourage full-time faculty to hold office hours in the tutoring center and encourage part-time faculty to use their professional development for student contact in the tutoring center. This could include faculty involvement in offering diverse workshops through the tutoring center.
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Department Chair and Dean
- **1.6.a5 - Obtain tutors for Saturday tutoring.**
  Explore ways to involve the tutoring center to provide staffing for Saturday tutoring.
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:

Tutoring Center Mathematics Coordinator

- **1.7 - Objective - Expand the current math program and course offerings to better meet student needs and demand.**

  Priority Rank:
  8
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  All Full-Time Mathematics Faculty

  Resource Requests:

  - **1.7.r1 - Participate in mathematics faculty retreat**

    Description

    The math department including full-time and part-time faculty need dedicated time to analyze the current curriculum from start to finish and make changes as needed, including alternative paths to GE transfer courses.

    Rationale

    Increase student success. There could be long term savings involved as students move throughout the math sequence more efficiently.

    Resource Type:
    One-time
    Expenditure Category:
    Other
    First Year Cost/Savings:
    $4,500.00/$0.00
    Second Year Cost/Savings:
    $0.00/$0.00
    Third Year Cost/Savings:
    $0.00/$0.00

  Actions/Activities:

  - **1.7.a1 - Participate in mathematics faculty retreat**

    Hold a 1-2 day retreat to do an in-depth analysis of all mathematics content and sequencing of the CHC mathematics courses. This could include the making of honors courses and revision of pathways to transfer level courses as deemed appropriate by the math department faculty. Update current Math 095 course outline with a DE (Distance Education) component to address student need for online or hybrid classes. Of the requirements on the DE component a student cap of 25 should be required so that the student can better access to the instructor.

    Start Date:
    10/15/2012
    End Date:
    11/15/2015
    Responsible Person:

Mathematics Faculty

- **1.7.a2 - Increase section offerings of Math 942 - Math 115**
  Discuss more sections of fast track classes, quite possibly adding Math 115 to the fast track schedule. Linking current fast track classes so that the students in the first class would have priority for the second class. Adding sections of all levels below the 200 classes.
  Being able to bring Math 903 and Math 942 back.
  Start Date:
  10/15/2012
  End Date:
  12/15/2015
  Responsible Person:
  Department Chair and Dean
- **1.7.a3 - Expand transfer level course curriculum.**
  To write such courses as Math 108 Honors, Math 251 Honors, and a new math software course.
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Mathematics Faculty

- **2 - Goal - Continue to engage in evidence-based decision making.**
  To obtain current data and analyze it so that we can better serve our students. Our main goal is to analyze retention and success data. However, we need also to obtain/analyze data on the viability of our fast track and A, B, C classes.
  Priority Rank:
  3
  Objectives:
  - **2.1 - Objective - To improve student success in mathematics courses by participating in a study for alternative placement methods.**
    Continue to meet with Keith Wurtz to analyze and finalize the validation of the Accuplacer Cut Scores.
    Priority Rank:
    6
    Start Date:
    10/15/2012
    End Date:
    11/15/2015
    Responsible Person:
    Mathematics Faculty and OIERP
    Actions/Activities:
    - **2.1.a1 - Design placement research.**
      To meet with Keith to design the placement strategies for the placement study. Long Beach City College has a model the department would like to analyze and possibly incorporate.

Start Date:
10/15/2012
End Date:
11/15/2015
Responsible Person:
Mathematics Faculty and OIERP

- **2.2 - Objective - Increase student success by gathering information on, and implementing best practices for, the teaching of mathematics.**
  Collect data on effectiveness on Best Practices. .
  Priority Rank:
  4
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  All Full-Time Mathematics Faculty
  Actions/Activities:
  - **2.2.a1 - Research math class impact on student self efficacy.**
    Obtain data on how CHC math classes impact students' self efficacy.
    Start Date:
    10/15/2012
    End Date:
    11/15/2015
    Responsible Person:
    Mathematics Faculty
- **2.3 - Objective - Obtain data on how Crafton Hills College mathematics classes impact students' self efficacy.**
  Obtain data on how CHC math classes affect the students self confidence in math; self efficacy, motivation and persistence.
  Priority Rank:
  9
  Start Date:
  10/15/2012
  End Date:
  12/15/2015
  Responsible Person:
  All mathematics faculty
  Actions/Activities:
  - **2.3.a1 - Analyze Data**
    At the end of fall 2012 the department will have data that can be analyzed.
    Start Date:
    10/15/2012
    End Date:
    11/15/2015
    Responsible Person:

Mathematics Faculty and OIERP

- **2.4 - Objective - Increase student success by investigating the factors influencing student persistence through the math sequence.**
  Priority Rank:
  10
  Start Date:
  10/15/2012
  End Date:
  11/15/2015
  Responsible Person:
  Mathematics Faculty and OIERP
  Actions/Activities:
  - **2.4.a1 - Data mining.**
    The department would like data on student success based on their grade in the previous math course. Modifications to grading procedures will be discussed.
    Start Date:
    10/15/2015
    End Date:
    11/15/2015
    Responsible Person:
    Mathematics Faculty and OIERP
  - **2.4.a2 - Explore intervention to increase persistence in the mathematics sequence.**
    Create and implement a survey on why students do not have persistence to the next level of mathematics. The results of this survey will then be used for training workshops with all math faculty to help find ways to increase student persistence.
    Start Date:
    10/15/2012
    End Date:
    11/15/2015
    Responsible Person:
    Mathematics Faculty and OIERP

10. Comments

Division and Area managers can make comments for this plan here.

There are no comments for this plan.

11. Supporting Documents

- SLO Math report Sp2010 5 21 10.doc
- SLO assessment grid MATH with programs.xlsx

- MathAttitudeQuestionnaire.pdf
- PPR Copy of Math Scheduling Matrix.xlsx
- Fill rate.docx
- Flow Chart 2.docx
- success rates.doc
- Full-time part-time ratio.doc
- PPR Planning and Program Review 2009 official document.doc
- rentention rates.doc
- Table 1-Number of Math Sections.docx
- AssessmentByAchm elumen.pdf
- math 250 slo item analysis spring 2011 Wilson.xlsx
- WSCH.doc
- PPR_MATH_Data_20122013.doc
- Three Year Plan 2009 official document.docx