

Program Review Self Study Mathematics Department Fall 2006 (Final Draft, 2-13-07)

Part I: PREAMBLE

Program

Staff

The most outstanding feature of the Mathematics Department is the exceptional quality of its faculty. The math faculty greatly surpass the minimum qualification required by the state. The Department, which consists 10 full-time faculty and approximately 14 adjunct faculty, is a diverse group of talented individuals and offers students a wide range of teaching styles. Several members of the Department have received honors and awards for excellence in teaching. This is particularly noteworthy considering mathematics is a discipline for which many students feel anxiety. The Mathematics Department is proud of its faculty and is dedicated to teaching and helping students achieve their goals.

Courses

We are one of the two largest departments on campus with approximately 50 sections of math offered each semester to over 1400 students. We offer on-campus courses in the morning, afternoon, and evening as well as online courses. In Fall, 2007 we will begin offering an additional three classes at the Marina Satellite Campus. Our program includes developmental math courses, transfer level courses that satisfy general education requirements, and transfer level courses that satisfy lower division major requirements for specific majors. We also have a Math Learning Center that offers drop in tutoring and student access to computers.

Our developmental mathematics courses provide the foundation of all later math classes, and also provide courses that meet the requirement for the AA degree. Many students suffer from math anxiety, and our developmental courses are designed in structure and pace to help such students overcome their anxieties and succeed. We work closely with Supportive Services to help students with learning disabilities, and also with the Tutoring and Supplemental Instruction Programs offered by the Academic Support Center.

In addition, we offer a comprehensive curriculum of transfer level lower division courses. Students with almost any major can take all the lower division mathematics that they need to transfer to a four-year college or university. In addition to courses that meet the general education requirements, we offer the math courses needed for majors in engineering, mathematics, physics, chemistry, geology, biology, and other majors. Many students report back to us after taking some classes at the university level that they felt better prepared than the students who took their lower division mathematics classes at the university. They appreciate the smaller student-teacher ratio at MPC. They also thank us for showing an interest in them and “actually caring.”

Instructional Support

The Math Learning Center is one of the many resources Monterey Peninsula College offers its students to help them achieve their academic goals. The Mathematics Department, in cooperation with the rest of the Physical Science Division, has created a positive and caring learning environment in the Physical Sciences Computer Lab located in PS-205 (home of the Math Learning Center). Students find the Center is a great place to get their questions answered by concerned individuals in a comfortable setting without any fee. They can just drop in and receive quality tutoring in many, if not all, math courses taught at MPC during its hours of operation. Students in both on-campus and online classes can get help with computer based assignments for their math and science classes. They also have the option of using the tutorial software from publishers and such sophisticated math software as MathCad. Many also come to the Math Learning Center to do homework and study along with their other goal-oriented peers. However, the MPC budget only allows 18 hours per week of instructor time for staffing the Math Learning Center and 20 hours per week for student peer tutors.

Critical Needs

Staffing

We offer an excellent program for our students, but we are frustrated by our critical need for the improved support and tutorial assistance that could be provided by an expanded Math Learning Center. If the Mathematics Department had a Math Learning Center as large and as fully staffed and equipped as the English and Study Skills Center, it would have a huge effect on our retention and success rates as well as substantially increasing FTES by as much as 40 FTES, as described in **Program Information, Section 8**. Not only that, but those math students who are now dropping out for lack of support, would stay at MPC to continue their studies in other classes, thus having a beneficial effect on FTES for the rest of campus. We need a full-time instructor/supervisor for the Math Learning Center in order to increase the number of hours of operation and expand the services offered to our students. We also will need an additional full-time math instructor as the Department expands its program at the Marina Satellite Campus.

Facilities

We face a serious lack of facilities for our program. We are in desperate need of more space including classrooms, offices, a workroom, a testing center, and expanded space for the Math Learning Center. The Mathematics Department had been planning a Math/Science Building for years. Our local community was asked to fund such a building as well as other projects, and passed a \$145 million bond. After the bond was passed, the facilities master planning group removed the building from the facilities master plan. This was a crushing blow to our Department's plans to enhance and improve our program to meet the current and future needs of our students. Despite opposition from the Mathematics Department, the plan now is to remodel the Physical Sciences Building and provide additional space for the Mathematics Department in the first floor of the Business Building. This solution does not meet the critical need for a single consolidated math facility as described in **Program Information, Section 8**. It is essential that the Mathematics Department have an adequate number of classrooms, faculty offices, an expanded Math Learning Center, a testing center, and storage space for instructional equipment.

“Smart” Classrooms

We are also frustrated by the poor quality of our classrooms. All math classrooms need to be converted to “smart” classrooms with overhead computer display, online access, document projectors, and high quality chalkboards. Other departments on campus (including Physical Education) have converted all or most of their classes to “smart” classrooms. It is outrageous that the Mathematics Department does not have a classroom where instructors can easily present computer demonstrations. And we do not have a classroom equipped with student computers available for subjects such as Statistics that require regular student use of computers during class.

Conclusion

The Mathematics Department provides an excellent program for students at MPC, but these are the critical needs that must be met if we are to offer the highest quality instruction that seamlessly integrates technology, classroom instruction, and academic support systems for our students as we prepare them for success in the technological world of the 21st century.

Part II: ANALYSIS

Program Information

1. Present and discuss the quantifiable factors pertinent to your department/program by semester over the past three years.

COMMENTS:

Summer sessions were not included in the analysis.

The analysis over these three years may not reveal influences or trends that would become apparent over a longer time base.

The accuracy of the data is questionable. The Mathematics Department warns against making any final decisions based on the data provided.

❖ **Trends of FTES**

	Fa 2003	Sp 2004	Fa 2004	Sp 2005	Fa 2005	Sp 2006	Grand Total
Sum of FTES	217.66	201.91	222.35	203.01*	203.31	202.46*	1225.22

The data show no clear trend.

DATA ISSUES: The FTES for Sp 2005 and Sp 2006 were originally underreported as 198.84 and 181.15 respectively because the FTES generated by the Math Learning Center was not included in the totals. The figures given in the table are the correct figures that include the Math Learning Center’s FTES.

❖ **FTES/FTE ratio**

	Year 1		Year 2		Year 3		
	Fa 2003	Sp 2004	Fa 2004	Sp 2005	Fa 2005	Sp 2006	(Sum of FTES)/(Sum of FT and PT FTE)
FTES/FTE	15.32	13.74	14.32	13.61	15.03	13.26	14.21

The changes are insignificant, and show no clear trend.

DATA ISSUES: The usefulness of this ratio is questionable. FTES is the number of full-time equivalent students for an entire school year (Fall and Spring). If you look at the FTES/FTE ratio for one semester, it looks like the student/teacher ratio is half of what it really is. It would make more sense to divide the total FTES for both Fall and Spring semesters by the FTE for that year. We also found underreported FTE. These results are inaccurate and misleading.

❖ **Total Enrollment**

	Fa 2003	Sp 2004	Fa 2004	Sp 2005	Fa 2005	Sp 2006	Grand Total
Sum of EnrollCen	1641	1535	1662	*	1445	*	*

* We discovered that the raw data for FTES did not include the Math Learning Center enrollments for Sp2005 and Sp 2006 (see the comment under Trends of FTES, above). Since we do not have the raw data for total enrollments, and since the numbers supplied for Sp 2005 and Sp 2006 were unusually low, we must assume that the Math Learning Center enrollments were not included. Rather than provide a misleading picture for Sp 2005 and Sp 2006, we have left these spaces blank.

❖ **Number of sections**

	Fa 2003	Sp 2004	Fa 2004	Sp 2005	Fa 2005	Sp 2006	Grand Total
Count of Section	49	47	50	47	46	51	290

There are slight variations if you single out the fall or spring semesters. However, the variations are minimal because the total amount of sections offered for the year is either 96 or 97.

❖ **Average class size at census**

	Fa 2003	Sp 2004	Fa 2004	Sp 2005	Fa 2005	Sp 2006	Overall Avg.
Avg. Class Size	33.5	32.7	33.2	27.7	31.4	26.5	30.8

There is a slight downward trend during this time. This is probably in part due to school policy aimed at combating lower school-wide enrollments by allowing marginal class sizes.

❖ **Grade distribution**

	Fa 2003		Sp 2004		Fa 2004		Sp 2005		Fa 2005		Sp 2006		Grand Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Sum of Grade A	261	20%	269	22%	267	20%	242	20%	232	19%	241	21%	1512	20%
Sum of Grade B	251	19%	190	16%	205	15%	204	17%	226	19%	214	19%	1290	17%
Sum of Grade C	228	17%	197	16%	215	16%	222	18%	186	15%	160	14%	1208	16%
Sum of Grade D	71	5%	69	6%	67	5%	75	6%	60	5%	63	6%	405	5%
Sum of Grade F	96	7%	72	6%	129	10%	97	8%	99	8%	101	9%	594	8%
Sum of Grade I	8	1%	15	1%	6	0%	6	0%	8	1%	13	1%	56	1%
Sum of Grade W	325	25%	328	27%	354	26%	301	25%	343	28%	267	24%	1918	26%
Sum of Grade CR	59	4%	49	4%	76	6%	53	4%	41	3%	50	4%	328	4%
Sum of Grade NC	17	1%	18	1%	17	1%	16	1%	9	1%	19	2%	96	1%
Total	1316	100%	1207	100%	1336	100%	1216	100%	1204	100%	1128	100%	7407	100%

There are no dramatic trends.

DATA ISSUES: We made an eye-opening discovery. According to the data, every semester there is a large difference between the “census enrollment” total and the “grade distribution” total by at least 100. In fall of 2003, the difference is 325. The only explanation given us was that students drop between the “census enrollment” date and the “no grade of record” date, which is about two weeks apart. However, it seems unlikely that as many as 325 students would drop over such a short period. This discrepancy should be examined further by the administration – it may indicate errors in the original data.

❖ **Course success: grades of A, B, C, or CR**
(This counts students who passed, excluding students with Ws)

	Fa 2003	Sp 2004	Fa 2004	Sp 2005	Fa 2005	Sp 2006	Grand Total
Course Success (grades of A, B, C, and CR only)	60.71%	58.41%	57.11%	59.29%	56.89%	58.95%	58.57%

The success rate is consistent. It is about 59% ± 2%.

❖ **Course retention**

There are two definitions for course retention. Data is provided for both:

Definition I Course retention: grades of A, B, C, D, CR, and I
(This definition counts all students except those who had F, NC, or W)

	Fa 2003	Sp 2004	Fa 2004	Sp 2005	Fa 2005	Sp 2006	Grand Total
Definition I Course Retention	66.72%	65.37%	62.57%	65.95%	62.54%	65.69%	64.79%

Definition II Course retention: grades of A, B, C, D, F, CR, NC, I
(This definition counts all students except those who had W)

	Fa 2003	Sp 2004	Fa 2004	Sp 2005	Fa 2005	Sp 2006	Grand Total
Definition II Course Retention	75.30%	72.83%	73.50%	75.25%	71.51%	76.33%	74.11%

The course retention rate under either definition has been quite stable.

DATA ISSUES: This is where data anomalies started to be detected. As specified in the program review instructions, we used Definition II to calculate the course retention rates from the raw data supplied to us. A department member noticed that our results were higher than the retention rates supplied by the Office of Institutional Research. After talking with Dean of Instruction, Occupational & Economic Development, he supplied us with the definitions used by The Research and Planning Group for California Community Colleges (“The RP Group”). It turns out that the retention rates supplied by the Office of Institutional Research used Definition I, so those rates supplied to us were inconsistent with the Definition II as specified in the program review instructions. Since Definition II gives significantly higher retention rates than Definition I, comparisons among departments will be misleading if it is not clear what definition is being used. **In the future, one definition should be chosen and consistently used for all program reviews, and all research throughout MPC.**

❖ **Ratio of Full-time faculty FTE to part-time faculty FTE**

	Fa 2003	Sp 2004	Fa 2004	Sp 2005	Fa 2005	Sp 2006	(Sum of FT FTE)/(Sum of PT FTE)
Ratio FT FTE/PT FTE	2.83	2.48	2.45	2.97	3.81	3.51	2.93

There seems to be a noticeable increase in the ratio in the last year (Fa 2005 and Sp 2006). This was due to lower numbers in PT FTE. The increase in Sp 2005 is due to a large FT FTE. The number for Fa 2004 does not show that during that semester, the FT FTE was the largest for the three years shown. It was offset by the largest PT FTE of the three years. It should be noted the FT FTE is always higher than 10, the number of full-time faculty in the Mathematics Department.

DATA ISSUES: We found that several FTE data values were entered into the system incorrectly. Three MATH 261P sections in fall 2004 and five spring 2006 sections were each under-reported by 0.07. MATH 32 in spring 2004 and spring 2005 were both under-reported by 0.07. MATH 351 was under-reported by 0.18. The numbers above reflect the corrections. We realize that data entry may be performed by several people, but there needs to be a system of checks to make sure the data is accurate. This is especially crucial when decisions are based on such data.

❖ **Student demographics**

This information was not provided to other departments within the Division. We asked for the data, but it was not provided in an easily transferable electronic format; hence, it is not displayed in this report.

❖ **Student needs assessments (college and/or program administered) when available**

No data values were available for analysis.

❖ **Community needs assessments when available**

No data values were available for analysis.

❖ **Other program or service generated measures or data as appropriate**

No data values were available for analysis.

2. Describe progress made in identifying learning outcomes for the program and steps taken to collect evidence of student learning that address the outcomes specified.

Course outlines have been revised and updated for all math courses. These outlines include learning outcomes for each specific course and methods used to collect evidence of student learning for the outcomes specified.

3. If your program is an occupational program, additionally present data and discuss

- a. the percent of program completers since the last program review.**
- b. the number of certificates and degrees awarded, and**
- c. job placement rates.**

N/A

4. Describe the current scope and sequence of the program's course offerings.

The Mathematics Department offers developmental math courses, transfer level courses which satisfy general education requirements, and transfer level courses which satisfy lower division major requirements for specific majors. We also have a Math Learning Center, which offers drop in tutoring and student access to technology.

Our developmental mathematics courses provide the foundation for all later mathematics classes and consists of five courses: Arithmetic and Basic Mathematics (Math 360), Pre-Algebra (Math 351), Beginning Algebra (Math 261), Plane Geometry (Math 262), and Intermediate Algebra (Math 263). These courses prepare students for various certificate programs and for the AA degree. In addition, Intermediate Algebra is the pre-requisite for all transfer mathematics courses. As well as helping mature students who need to improve their geometry and reasoning skills, Plane Geometry also serves high school students who either need to improve a poor high school grade, or who need to take geometry at MPC in order to advance more quickly in their high school math program. The developmental mathematics courses serve a broad and diverse population of students such as students just out of high school who need to brush up poor math skills; returning students who need a good foundation in math skills either to re-enter the work force or for re-training into a different occupation; and even parents who just want to help their kids with their math homework!

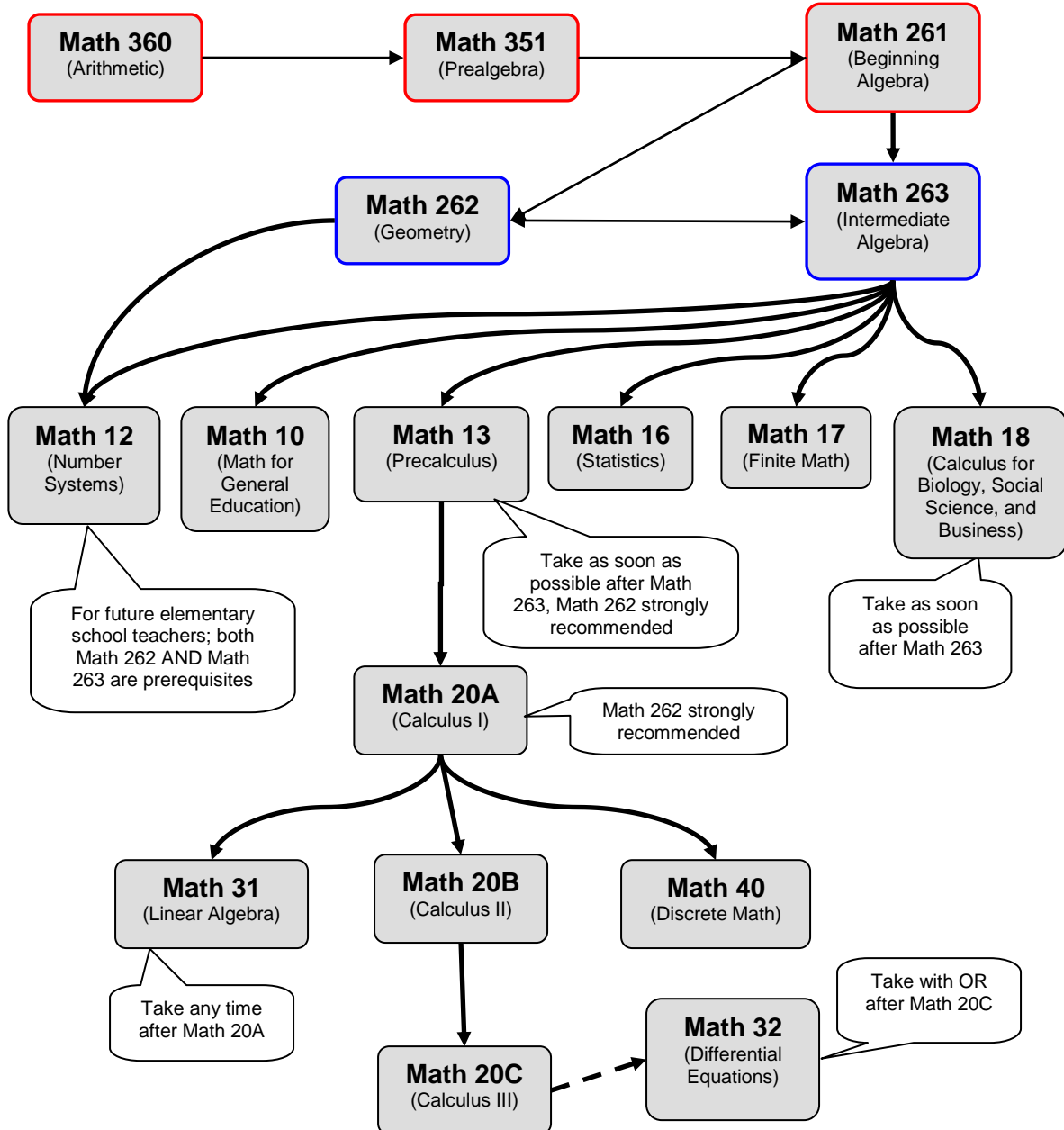
Transfer courses that meet the General Education Requirements for students transferring to CSU or UC campuses are Math for General Education (Math 10), Pre-Calculus (Math 13), Elementary Statistics (Math 16), Finite Math (Math 17), Calculus and Analytic Geometry for Biology/Social Science/Business (Math 18), and Calculus with Analytic Geometry (Math 20A and 20B).

For Math, Physics, Chemistry, Engineering, Computer Science, Geology and other science majors we offer a three semester Calculus sequence (Math 20A, 20B, and 20C), Linear Algebra (Math 31), Differential Equations (Math 32), and Discrete Math (Math 40). Elementary Statistics (Math 16) is a requirement for many majors in the social and life sciences. Calculus and Analytic Geometry for Biology/Social Science/Business (Math 18) is a one semester Calculus course specifically for Biology, Social Science and Business majors. Number Systems (Math 12) is for students who are preparing to be elementary school teachers.

The sequence for these math courses is shown on the flow chart on the next page.

Sequence of MPC Math Courses

Courses outlined in **RED** (first row) do not have a prerequisite. Courses outlined in **BLUE** (second row) are AA degree applicable, but not transferable. All other courses are transferable. Narrow arrows represent *advisories*. Bold arrows represent *prerequisites*, and dashed arrows represent *co-requisites*.



5. *Describe the scheduling of your courses or delivery of services as they apply to your program or service. Examples:*
1. *If your program is part of a major or certificate, can a student complete the major or certificate within two years? If not, why?*
 2. *Explain the appropriateness of your scheduling pattern:*
 - a. *MWF, TTh &/or Other*
 - b. *Morning, afternoon, evening, weekend, including time blocks/patterns of scheduling or classes and/or services*
 - c. *17-week, 8 week or shorter*
 - d. *Fall, early spring, spring, summer*
 - e. *Every semester, once-a-year, once-in-every-two-years*

Scheduling patterns are based on course content; number of hours per week the class meets; student needs and preferences; availability of classroom space; offering a variety of times for multiple section classes; and avoidance of conflict with other courses, particularly Math, Physics, Chemistry, and Biology courses, that students are likely to take concurrently with specific math classes. We also try not to schedule math courses at noon on Friday so there is a time for Department and Division meetings.

Math classes meet 4, 5, or 6 hours per week. This makes it difficult to fit the campus model which is designed for classes that meet 3 hours per week. In order to accommodate students with various learning styles, we try to offer a choice of daily or blocked classes. Some students do better with daily classes where a smaller quantity of new material is presented each day. Other students prefer a class that meets two or three days a week for a longer period of time. With some classes such as Calculus, instructors find it is beneficial to have more than an hour to allow time for going over lengthy homework problems and for lectures on new material. We offer classes that meet daily, MTWTh, TWThF, MW, TTh, or MWF.

Math courses are offered in the morning, afternoon and evening during the Fall, Spring, and Summer sessions. The time of day that classes are offered is based on student demand, availability of classrooms, and avoidance of conflict with other courses. The distribution of math courses for Spring, 2006 and Fall, 2006 follows.

Morning (7 am – noon)	53%
Afternoon (noon – 5 pm)	26%
Evening (5 pm – 10 pm)	21%

During the Fall and Spring semesters, math classes meet for 17 weeks. During the summer session, classes meet for 6, 7, or 8 weeks. Classes that meet 5 or 6 hours per week during the Fall and Spring are 7 weeks during the day and 8 weeks during the evening in the summer. Classes that meet 4 hours per week in the Fall and Spring are 6 weeks in the summer. Previously many day summer classes met for 8 weeks, but we have modified our schedule to coordinate with the MPUSD calendar so that K-12 students can benefit from our summer program.

Most classes are offered every semester and in the summer. There are a few exceptions because of low demand for particular courses. Geometry is only offered in the summer because it primarily benefits high school students who choose to take it in the summer. Math 17, 18, 31, and 32 are

offered once a year. These classes are essential transfer courses for particular majors, but we do not have sufficient student demand to offer them every semester.

We also offer online courses to accommodate students who are unable to attend classes on campus. Currently we offer Math 261 and 263 online, and we will be offering Math 16 online in Fall, 2007. We may expand courses offered online in the future.

In Fall of 2007, we will offer Beginning Algebra, Intermediate Algebra, and Elementary Statistics at the Marina Satellite Campus. We may expand courses offered at the Marina site in the future.

6. Describe your faculty and staff in terms of their diversity, past and recent education/training, and workload.

The Department is comprised of 10 full-time and approximately 14 part-time instructors. Among full-time members, we have a PhD in Mathematics, a PhD in Astronomy, and Masters Degrees in Pure or Applied Mathematics, Math Education, and Math Modeling. We also have faculty who, in addition, have a masters in Physics, and a bachelors in Biology. These degrees have been earned from the UC system, CSU system, and several other fully accredited universities around the country. All of our full-time instructors meet or exceed the current state minimum requirements for teaching math at a community college. Our adjunct faculty members meet or exceed these same state minimum qualifications.

For several years until this Fall when she resigned, one member had some reassigned time as chief negotiator for MPCTA and taught just 2 courses most semesters. Now all department members teach a minimum of 15 TLUs per week (usually three courses that meet 5 hours per week). Some instructors choose to teach an additional course or work in the Math Learning Center as an overload assignment.

Our Department is diverse in a variety of ways. Our Department membership has included, and currently includes, traditionally underrepresented groups in the teaching of community college mathematics. Asian Americans, African Americans, women, and disabled persons have served as full-time instructors in our Department. We are also diverse in our teaching methods and philosophies, providing a variety of educational opportunities and experiences for our students.

7. Describe your faculty and staff's satisfaction with the program including its ability to meet students' needs.

Among the ten full-time faculty and 14 part-time faculty in the Department we have a wide range of teaching styles. Instructors appreciate being able to choose textbooks that reflect their teaching philosophy and style. In Calculus, where the same textbook is used for three semesters, faculty work together to find an appropriate text.

Some instructors teach daily classes which meet one hour per day. Others teach "blocked" classes that meet two or three days a week for a longer period. Some teachers have classes that meet early in the morning and others teach classes late in the afternoon or evening. Faculty work together to accommodate the needs of our students, and the result is a schedule that allows students to choose a

class schedule that meets their needs both in terms of learning styles, time, day, and length of each class. Faculty do not always get to teach the class they would like to teach, the room they would like to teach in, nor the time slot they would like to teach in; however faculty get to voice their preferences and the Mathematics Department Chair tries to satisfy as many requests as the schedule allows.

The Department has sometimes been unable to find sufficient well qualified adjunct faculty to meet our staffing needs. Because of this, we have sometimes not been able to offer courses needed by our students.

Overall, the full-time faculty are satisfied with the quality of the instructional program.

However, it is a different story when it comes to our satisfaction with the ability of the math facilities to meet our students' needs. Many of the rooms in which math classes are held are inadequate for teaching mathematics and five of the eight rooms in which we teach are scattered across campus. This negatively impacts the quality of the instructional program, so our faculty are not at all satisfied with our math facilities. Consequently, we are very unhappy with the decision to remove the Math/Science Building from the facilities master plan.

8. Discuss the adequacy of your staffing, supplies, equipment, and facilities to meet your program goals. Also discuss any trends/changes in these areas that are pertinent to your program.

Staffing:

The Mathematics Department is currently staffed with 10 full-time excellent instructors and 14 well-qualified adjunct faculty. The Department typically has a hard time finding a sufficient number of adjunct faculty to maintain its high quality comprehensive instructional program. Nevertheless, the Department is able to offer MPC students a wide variety of courses that meet their educational needs taught in a variety of teaching styles, class formats, and times.

The Math Learning Center provides a place where all students receive the extra help they need for success. High risk students find this is a place where they can find a patient instructor to assist them in learning math. Students who regularly use the tutoring center are more likely to succeed in class and learn the material well. At present we are only able to staff the center with instructors for 18 hours per week. This is inadequate to meet demand. Math classes meet morning, afternoon, and evening, but we are not able to have an instructor available in the Center for our late afternoon and evening students.

There is a critical need to hire a full-time instructor/supervisor to be in charge of the Math Learning Center. A quality program requires someone to oversee it, to hire and train the tutors, to plan ways to extend and improve the program, to keep track of expensive equipment, and to be sure students log in and out each time. Computers are often left unattended during breaks between hours. When no instructor is on duty, students must leave the center and find another place to study. We need to provide more hours of operation and

continuity of instruction, so there is equal access to all students including late afternoon and evening students

As the Department expands its Marina, online, and main campus course offerings, an additional full-time mathematics instructor will also be needed.

The duties of the Mathematics Department Chair have become complex and time consuming. The Mathematics Department Chair is not adequately compensated for these duties. **The college needs to provide reassigned time or equivalent compensation for the Mathematics Department Chair comparable to that provided to the English Department Chair who has a similarly sized department and responsibilities.**

Supplies:

The Mathematics Department has been thought by some to be one in which chalk is the only supply that is needed. In the technological world we now live in, mathematics software is widely available. Mathematica, Maple and other software are very common programs used to demonstrate and explain complex Calculus and other mathematical concepts. Excel, SPSS and many other statistical software programs are widely used in Elementary Statistics courses. For our Statistics course to transfer, many institutions require that there be computer component. As more of the math classrooms are converted to “smart” classrooms, the technology will become more commonly used by instructors and by students. **The Mathematics Department needs supply money to update its software (and money for the license to use the software).**

The Mathematics Department also needs to purchase more graphing calculators. Several instructors require their students to use graphing calculators in their courses. Some of the calculators are specifically designed for students to use in certain mathematics courses; for example, some of the calculators are programmed to perform real world statistical applications. For those students who can not afford to purchase a graphing calculator of their own, we have a loaner program. The Department needs instructional supply money to purchase more graphing calculators for students to use in the Math Learning Center, and for those students who don’t have graphing calculators, who forgot to bring their calculator to class or whose calculator gave out on test day, etc.

Equipment:

The Mathematics Department is striving to make each classroom within its area of responsibility as standard as possible in terms of furniture and available equipment. This allows more flexibility in scheduling because any instructor can then teach in any classroom and have available all the equipment he or she needs. **At present, the Mathematics Department needs each of the classrooms used by the Mathematics Department in the Physical Sciences Building and in the International Center to be upgraded to “smart” classrooms. The Department also needs the deteriorated chalkboards to be replaced with new high quality chalkboards.**

In addition to the classrooms being converted to “smart” classrooms, **computers and related equipment are needed in faculty offices.** As the campus becomes more

technological, the faculty who will be using the technology in the classroom need to have computers in their office capable of supporting it. Several mathematics instructors are planning to offer online courses. They need new computers and equipment that allow them to offer such courses.

Facilities:

We have a Critical Need for a Single Consolidated Math Facility with an Expanded, Fully Staffed and Equipped Math Learning Center

When the Physical Sciences Building was built on campus in 1965, the original plans included a Math Wing with classrooms, laboratories and offices. The Math Wing was never built. Instead the Mathematics Department took over 3 classrooms and laboratories originally intended for Geology, Physics, Chemistry, Engineering and Oceanography. Over forty years later, we still have only 3 math classrooms in the Physical Sciences Building. This building is old and despite significant work done on its HVAC system, it still has heating and cooling problems. Our other classes are held in Physical Education, the International Center and other places on campus where classrooms often do not have adequate chalkboard space tables or access to technology. These spaces frequently have HVAC problems as well. Three of our 10 full-time faculty must share small offices and none of our 14 part-time faculty has office space. Teachers need a quiet place to prepare for classes and to meet confidentially with each other and with students.

i. The Need for a Single Consolidated Math Facility

The two largest departments at MPC are the English Department and the Mathematics Department. The Mathematics Department is comparable in size to the English Department. For example, in Spring, 2006, the total number of hours spent on math classroom instruction was 193 hours compared with 181 hours spent on English instruction. The two departments serve similar populations of students; both have a large population taking developmental classes.

The English Department is fortunate in that 86% of its FTES comes from classes held in the Humanities Building; the remaining 14% comes from classes held nearby in the Business/Humanities or Business/Computer Science Buildings. The Humanities Building classrooms are nicely proportioned and the right size for about 30 – 36 students, reasonably well lit, can be darkened, and are equipped as “smart” classrooms.

In contrast, the Mathematics Department has only 64% of its FTES coming from classes held in the Physical Science Building; the remaining 36% comes from classes held mostly in the International Center (IC) with a few in the Physical Education Building (PE). The classrooms in IC are very poorly proportioned, two are too small, they can't be darkened, they are noisy, have poor heating/ventilation, and none are “smart” classrooms. We often hear our students rather plaintively ask “why are you teaching math in IC (or PE)?” A first rate mathematics program requires that instructors have access to technology. Instructors need to hold classes in rooms that allow for demonstrations using a computer or graphing calculator display, and classroom activities may require the use of computers.

As a result, with 40 to 50 math sections serving over 1400 students each semester, we have a serious scheduling problem. Even with classes meeting from 7:55am to 9:30pm, it is often difficult and sometimes impossible to schedule math classes in appropriate rooms.

When our instructors and students are scattered all over campus, we lose that sense of cohesion and community that is so important, especially to our developmental students. When the students who are fortunate enough to have their classes in the Physical Science Building leave their classrooms, they rub shoulders with other math students as well as physics, geology, oceanography, and chemistry students, and there is a sense of camaraderie as they converse, exchange ideas, ask about what's going on in other classes, swap notes about what they think of their instructors, or just plain gossip. They get to know each other and support each other. They get exposure to what, for example, Engineering is all about. What is Physics? What is Calculus? This is so important, especially for our developmental students, and has a subtle, but important contribution to a student's sense of being in a comfortable and welcoming environment that can only help them in their efforts to succeed in college. The one-third of our students leaving their classrooms in IC experience none of this.

Every other department on campus has a "home" within or near its Division. For the improved success of our students, for the ability to expand our program, to better support our students, and for the ability to increase our FTES, it is long past time for the Mathematics Department, as one of the two largest departments on campus, to have a single consolidated Math Facility that is an integral part of our Physical Science Division as our "home."

ii. The Need for an Expanded, Fully Equipped Math Learning Center

Currently, one room with 23 computers serves as the computer lab for the entire Physical Science Division and also as the Math Learning Center. It is inadequate for the needs of our students. We need more space, more computers, and more hours when the lab is open for student use. Also needed is a room where our instructors can bring students for computer aided instruction.

In contrast, the English Department is fortunate to have a large, well supported and staffed English and Study Skills Center (ESSC), which is open during the day, evenings and weekends. Their student retention and success rates reflect the excellent support their students receive.

To see the potential for increasing retention and success rates for our math students, we just need to look at the enrollment and FTES figures for the English Department and the ESSC compared with the Mathematics Department and the Math Learning Center (MLC) for Spring, 2006, as projected on 5-9-06.

	Projected FTES for Spring, 2006, as of 5-9-06		
	Tutoring in the ESSC or MLC	Regular Classes	Total
Math Department	50.29	181.4	231.69
English Department	90.83	175.42	266.25

If the Mathematics Department had a Math Learning Center as large and as fully staffed and equipped as the ESSC, we would be able to offer individualized math and study skills classes, classes that addressed math anxiety, and classes offering computer based instruction. This would have a huge effect on our retention and success rates as well as substantially increasing FTES. Not only that, but our math students who are now dropping out for lack of support would stay at MPC to continue their studies in other classes, thus having a beneficial effect on FTES for the rest of campus.

In the plans for the Math/Science Building, there was an expanded Math Learning Center with an adjacent classroom equipped for computer based instruction that could also be used for tutoring when no class was scheduled. Even without a Math/Science Building, we still need at least one math classroom/lab for computer based instruction. Colleges all over the state are teaching Calculus using software such as Mathematica or Maple. **This requires a classroom with a computer for each student**, since the course involves using the computers every day as an integral part of instruction. Computer algebra software together with computer assignments are a tremendous help to students learning Calculus concepts.

In order for our Statistics course to transfer to CSU and UC campuses, it must have a computer component. Because we do not have classrooms with computer access, we have been using programmable calculators for this technology component, but in the future we need to include real data, simulated experiments, and graphical displays of data.

In order to incorporate this level of technology in our classes, we need at least one classroom with computers, and we need a computer lab with tutoring help available that is open enough hours to accommodate both our day and evening students. Ideally, the computer lab should be adjacent to the Math Learning Center and both should also be open on the weekends.

As more instructors offer online courses, it is essential that there be a testing center. This was also included in the Math Learning Center planned for the Math/Science Building, and should be part of the expanded Math Learning Center for ease of monitoring students taking tests. A testing center is needed as a secure space for students enrolled in online courses to take their exams. In addition, the testing center would be used as a place for students enrolled in traditional mathematics courses to take make-up exams.

Summary

Staffing needs are:

- i. A Full-time Math Learning Center Instructor (this is ranked third in priority in AAAG's recommendations for new positions)**
- ii. Reassigned time or equivalent compensation for the Mathematics Department Chair**
- iii. Additional qualified adjunct faculty**
- iv. A Full-time Mathematics Instructor**

Supplies needs are:

- i. Mathematics software and licenses**
- ii. Graphing calculators**

Equipment needs are:

- i. Equipment for "smart" classrooms**
- ii. Computers and related equipment for faculty offices**

Facility needs are:

The Math/Science Building was dropped from the facilities master plan. Despite opposition from the Mathematics Department, the plan now is to remodel the Physical Sciences Building and provide additional space for the Mathematics Department in the first floor of the Business Building.

Whatever proposal is implemented, the Mathematics Department facilities needs are:

- i. An adequate number of "smart" classrooms and classrooms equipped with student computers**
- ii. An expanded, fully staffed and equipped Math Learning Center with a testing center**
- iii. A computer lab associated with the Math Learning Center**
- iv. A faculty office for each full-time faculty and office space for part-time faculty**
- v. A faculty workroom**
- vi. A conference room**
- vii. Storage space**
- viii. A properly functioning HVAC system**

9. Explain how external factors are influencing your program or have affected your program in the past and describe any measures that have been taken in response to these factors.

The old Fort Ord land is being developed by the cities of Marina and Seaside. The Mathematics Department is planning to offer mathematics courses at MPC's recently opened satellite campus in Marina, starting with three courses in Fall, 2007.

The Mathematics Department had been planning a Math/Science Building for years. Our local community was asked to fund such a building as well as other projects, and passed a \$145 million bond. After the bond was passed, the facilities master planning group removed the building from the facilities master plan. This was a crushing blow to our Department's plans to enhance and improve our program to meet the current and future needs of our students. Instead, the plan now is to provide additional space for the Mathematics Department in the first floor of the Business building. This solution does not meet the critical need for a single consolidated math facility as described in item 8, above.

Student Information

1. What are the students' programmatic expectations and goals? How does the program respond to those expectations and goals?

The Mathematics Department serves a large number of students with a wide variety of academic goals. Some students are developmental math students and need to meet the math requirements for various certificate programs and for the AA degree (currently Beginning Algebra). For these students, our Department provides a supportive learning environment in which students are able to build skills and confidence, while still maintaining the appropriate level of rigor for each class.

Other students plan to transfer and need to take a transfer level math course. The transfer course(s) a student chooses to take depends on the student's academic goal. Our highest transfer-level enrollments are in Statistics. Most students who plan to earn a bachelors degree in the sciences will need to take our calculus sequence. Transfer level students expect that our courses will be taught at the same level as the corresponding UC or CSU course, but with a smaller class size and a more accessible instructor. Our transfer level courses are taught at a rigorous level in order to prepare students to transition as seamlessly as possible to a university. We routinely see students transfer to math and science programs at UC Berkeley, UCLA, UC Davis, and UCSC. Feedback about our program from students who have transferred to these schools is very positive. We often hear that students who took their lower division math courses in our Department were better prepared for upper division work than their counterparts who took all of their lower division math courses at the university.

To support and assist our students, all full-time faculty hold at least five office hours per week and some also tutor in the Math Learning Center.

2. Discuss the indicators of student satisfaction pertinent to your program.

Student satisfaction is most commonly and formally measured during the instructor evaluation process. Student evaluations are done in all classes taught by an instructor when that instructor is being evaluated. The Evaluation Committee Chair writes a summary of the comments as part of the evaluation process and the actual forms are returned to the instructor at the end of the semester. This type of feedback is very valuable. It gives us an idea of how well we are relating to our students, and encourages us to regularly fine-tune our course content, textbook selection, and teaching methods.

Student complaints are taken seriously in the Mathematics Department. Students are encouraged to first approach the instructor personally and if the student is unable to resolve the situation with the instructor, the Department and/or Division Chair will become involved. Complaints received anonymously during the evaluation process are dealt with by the Evaluation Committee.

3. How well do students appear to be progressing through the program/department?

Placement is currently an issue in our Department. A number of students try to take classes they are not really prepared to take in order to quickly complete their math requirements. They may meet prerequisites through high school courses taken many years ago, or through “equivalent” high school courses that really are not equivalent, or they may attempt to have a prerequisite waived through counseling. Most of these students end up attempting the same course several times or eventually going back and re-taking the prerequisite course.

The Mathematics Department is currently discussing ways to improve student success and progress through our program by making sure as many students as possible are correctly placed in a level-appropriate math class when they first enter our program. Implementing a placement exam is a possibility – we are currently looking at measures of placement used by other community colleges with similar demographics.

4. Discuss what your program is doing to promote student access, success, and equity. Identify any barriers to these.

We actively support student access and equity and promote academic success in the following ways:

- We have a strong commitment to high academic standards and work collaboratively to maintain these standards within our courses.
- We schedule our classes in both daily and block format to ensure access to all students. We offer a full range of courses in the evening for those students who work during the day. We are now offering both Beginning and Intermediate Algebra online in order to serve students who are unable to come to campus. Starting in Fall, 2007, we will offer an online Statistics class as well. Also in Fall 2007, we will offer Beginning Algebra, Intermediate Algebra, and Statistics classes at MPC’s satellite campus in Marina.
- The Department works closely with the Academic Support Center to encourage success for our students. We recommend that our students sign up for one-on-one tutoring there. The Academic Support Center also offers Supplemental Instruction in many courses; this is a program that encourages group learning and helps students develop their study skills.
- We also work closely with Supportive Services. If we suspect that one of our students has a learning disability, we advise the student to make an appointment with Supportive Services for assessment. When a student has been diagnosed with a learning disability, we arrange for the appropriate accommodations, including extra time for testing.
- We have a Math Learning Center staffed by math faculty and student tutors. The Center is open during the day (and sometimes in the evening) to offer assistance on a drop in basis to students in

all math courses. Tutoring is also provided for math skills needed to succeed in other Physical Sciences courses. The environment in the Center encourages group work and offers the individual student the additional assistance often needed to achieve success in a particular math course.

Barriers to access, success, and equity:

There are three substantial barriers.

1. Our largest barrier to student access, success and equity is the inadequate facilities and staffing in our Math Learning Center. At this time, the Center is staffed 18 hours per week with instructors and approximately 20 hours per week by student tutors. There is only one tutor available at any given time, but there may be twenty students needing tutoring. We have asked for a full-time Math Learning Center instructor/supervisor to build the program and better meet student needs based on the following justification:

Having a full-time mathematics instructor supervising the Math Learning Center and coordinating its varied activities will allow one person to focus entirely on helping the center to achieve its full potential by:

- researching and obtaining up-to-date technology, and training students (and faculty) in its use.
- recruiting, training, and supervising a cadre of student peer tutors to assist in staffing the Math Learning Center.
- enhancing the Math Learning Center's coordination with, and support for, our math and science instructors and their students.
- increasing the hours of operation to the late afternoon and early evening to provide much needed support for our evening students.
- providing the additional tutoring that will be needed when Math 263 (Intermediate Algebra) becomes a requirement for the Associate Degree. There will be a need for additional sections of Math 263 to meet the increased demand.
- ensuring that the Math Learning Center's policies, practices, and procedures are in full compliance with Title 5 and the education code.

This will increase the retention and success rates of students, especially basic skills students, not only in math classes, but also in science classes where many students have such poor basic math skills that success is difficult, if not impossible.

2. The other barrier to student access, success and equity is the inadequacy of our classrooms that are scattered across campus. These classrooms are noisy, with poor heating and ventilation, inadequate lighting, deteriorated blackboards, no ability to darken the room for overhead projector illustrations, and no access to technology. Our students deserve to have a single consolidated math facility as a math "home." We often hear our students plaintively ask "why are we being taught math in IC (or PE)."
3. A third problem is that we would like to teach more online classes and expand the number of classes offered at the Marina satellite campus, but it is difficult to find qualified instructors to teach all the classes we would like to offer.

External Relations

1. Identify any program or service that is similar to yours within the college and/or in neighboring institutions or agencies and describe the differences.

While both Hartnell and Cabrillo offer many of the same classes as MPC's Mathematics Department, there are differences in how many of the classes are scheduled.

Cabrillo has a 16 week semester and a Monday – Thursday teaching schedule. All classes are blocked either four days/week or two days/week. The Department uses Fridays for meeting days. Cabrillo currently has 19 full-time math instructors and thus offers more sections than MPC. Cabrillo offers Discrete Math in collaboration with their Computer Science Department at least once a year. Cabrillo offers Linear Algebra, Differential Equations, Math for General Education, Finite Math, Business Calculus and Geometry as 3 hour/week classes while at MPC they are 4 hour/week classes. Statistics is a 5 hour/week class at Cabrillo while at MPC it is a 4 hour/week class.

Hartnell has an 18 week semester and their Mathematics Department currently has 11 full-time instructors. Our course offerings are very similar. Math for Liberal Arts, Finite Math, Trigonometry, and Pre-Calculus are 3 hour/week classes while Statistics is a 5 hour/week class at Hartnell.

While we have not offered Number Systems for many years, Hartnell and Cabrillo both currently offer Number Systems at least once a year.

While we offer one online section each of Beginning Algebra and Intermediate Algebra, Cabrillo College offers multiple online sections in Elementary Algebra, Intermediate Algebra and Statistics. Cabrillo also has a late start Cyber Session in which its Mathematics Department offers Elementary Algebra, Intermediate Algebra and Statistics. Hartnell does not offer online course in mathematics.

Both Hartnell and Cabrillo have full-time math instructor positions to supervise their Math Learning Centers. In addition, the Cabrillo Math Learning Center has one 10-month 100% contract Learning Instructional Assistant (LIA), one 9-month 80% contract LIA, two 9-month 50% contract LIAs and an average of 27 student tutors. Also, at Cabrillo College, the Math Learning Center is producing FTES that is the equivalent of 6 regular math classes (having an average of 35 students in it). Both the Cabrillo and Hartnell Math Learning Centers are open for longer operational periods than here at MPC. Hartnell has its Center open on Saturday mornings and Cabrillo has its Center open on Sunday afternoons. It was reported that many students make use of the Cabrillo and Hartnell Centers during the weekend hours. Both Math Learning Centers also have quiet testing rooms for make up exams.

Both Hartnell and Cabrillo have required assessment exams for placement in mathematics courses. Cabrillo requires all new students without transfer credit in math from another college to complete its assessment in math before attempting to enroll in any math course that has a prerequisite. Hartnell requires assessment for students in their developmental math courses and requires either high school transcripts or college transcripts in order to enroll in a math course that has Intermediate Algebra as a prerequisite.

2. Describe how your program coordinates with other programs on campus and how successful you feel you are in these efforts.

The Mathematics Department is one of the departments in the Physical Science Division and strives to work in a positive manner with other departments both inside and outside of the Division. The Department typically works to avoid schedule conflicts so that students taking mathematics classes will be able to take other classes. When the Mathematics Department Chair builds the schedule, he/she coordinates with other departments in the Physical Science Division and Life Science Division to resolve potential conflicts.

The faculty in the Mathematics Department discusses the curriculum and student success with faculty in the Departments to which the mathematics students will be progressing. This helps in the evaluation of what we are teaching and how well the students are learning.

In addition, the Mathematics Department shares courses with other Departments. We offer some courses under several designations, for example Math15/Engr15/CSIS15 is offered in the Mathematics, Engineering, and Computer Science Information Systems Departments.

Members of the Mathematics Department have served on numerous hiring committees for other programs and departments on campus. A member of the Mathematics Department served on each of the following hiring committees: Superintendent/President, Vice-President of Academic Affairs, Dean of Student Services, Physics Instructor, Philosophy Instructor, Physical Education Instructor, Counselor, Physics Lab Specialist, and adjunct positions in Lindamood and the International Student Program.

During the last few years, members of the Mathematics Department have attended many meetings about the new Math/Science Building that was to be built using bond monies. One member of the Mathematics Department has spent countless hours as a member of a Presidential committee charged with deciding how to allocate the bond monies. At the end of last year, this committee voted to not build the Math/Science Building. This recommendation has been extremely disheartening to our Department, and we still believe that the need for an adequate single consolidated math facility exists.

3. Describe and evaluate the support that your program receives from other college programs or service areas.

The Mathematics Department receives support from several other programs on campus. Supportive Services provides a quiet testing environment and extended time for learning disabled students. Supportive Services also identifies learning disabilities in students and assists them in developing coping skills, often working with the student's math instructor. The Academic Support Center offers a Supplementary Instruction program in which experienced math students sit in a math class as role models and assist students in several out-of-class study sessions per week. Math instructors often refer students who are struggling in a course to the Academic Support Center to sign up for free tutoring. Supportive Services, Academic Support, and Supplemental Instruction all provide excellent support for our program.

The Instructional Technology Department provides valuable support to our Department by dealing with instructor computer related problems as they occur. Members of the IT Department are always available to us and often go beyond what is required to help us incorporate technology into our curriculum. We look forward to working closely with the IT Department as we turn all of our rooms into “smart” classrooms.

Human Resources provide a valuable service to our Department by helping to facilitate all department recruitment and hiring. Our Department relies a lot on qualified adjunct instructors and we are constantly reviewing the pool of qualified candidates. Human Resources works with us to make certain that the recruitment and hiring process runs smoothly.

4. Describe your program’s involvement with the community at large through activities involving recruitment and articulation; partnership with educational institutions; facilitation of advisory committee meetings; and/or collaboration or partnerships with businesses, government, or private agencies.

MPC mathematics faculty are involved in collaboration and articulation in a number of ways:

- Several of our faculty members, full-time and part-time, teach at other schools such as Cabrillo College, Hartnell, CSUMB, UCSC and the Naval Postgraduate School.
- Some of our faculty members have personal relationships with mathematics teachers at the local high schools and consequently have informal discussions about issues of mutual concern.
- Some of our faculty members coordinate the annual Monterey County Mathletics competition. This provides an informal forum for discussion with high school and middle school mathematics teachers from all over the county. It should be noted that the MPC Mathematics Department hosts the Mathletics competition on our campus every other year.
- Some of our faculty members were instructors with the Monterey Bay Area Mathematics Project. They worked with K-12 teachers from San Benito, Santa Cruz, and Monterey counties, helping them to develop a richer understanding of mathematics and to learn different methods of instruction to better implement the changing mathematics curriculum in the state of California.
- A member of the Mathematics Department is currently serving on the Matriculation and Assessment committee. This committee is attempting to improve assessment of our incoming students and the matriculation of our current students.

Part III: SUMMARY

1. In reviewing your data and responses, what do you see as your programs greatest strengths? Greatest weaknesses?

Our program's greatest strength is its outstanding faculty. Our ten full-time and approximately fourteen adjunct instructors are a diverse and talented group of individuals who genuinely love teaching and are extremely dedicated to helping our students achieve their goals.

One area of concern is the high attrition rate, most particularly in our developmental courses. While the overall departmental attrition rate is approximately 25%, the rate of attrition in our developmental courses sometimes can exceed 50%. This attrition rate is due to many factors, many which are beyond the control of our program: family obligations can take priority, students become ill; work schedules can be arbitrary. While these factors are beyond our control, others we can do something about: many students fail to complete their courses because of math anxiety, incorrect course placement, and poor preparation and study skills. The lack of an assessment/placement exam could also be contributing to the high attrition rate.

2. What do you see as your program's greatest challenges during the next five years? Greatest opportunities?

The Mathematics Department has several challenges facing us over the next five years.

Proper instructional facilities are an issue: currently many of our classrooms are inadequate for teaching mathematics and this negatively impacts our program. The decision to remove the Math/Science Building from the Master Plan, and split the program between two buildings has been met with dismay; we have serious concerns not only that the Mathematics Department will become fragmented, making it harder to coordinate the various aspect of our program and to communicate with each other and our students, but that this plan will not meet the current and future needs of our students.

Another challenge is staffing and expanding our Math Learning Center. We need to hire a fully qualified individual to manage and oversee the facility. We also need to significantly enlarge the Center. This will allow us to develop it to its fullest potential by reaching out and catering to more students, especially the developmental students.

A third challenge facing our program is the Department's difficulty finding the highly qualified adjunct faculty it needs. We currently have difficulty staffing classes each semester, and we also face challenges when substitutes are needed. A new full-time instructor is needed to maintain our current program on the main campus, expand online courses, and staff the new Marina Satellite Campus. This will be particularly important when Math 263 becomes a graduation requirement for the AA degree.

These challenges we are facing over the next five years also offer us our greatest opportunities. The Marina site will offer many students the chance to take courses closer to where they live. Developing our program there will allow us to be more of a presence in their community, and help students make

the transition to our main campus. Expanding the Math Learning Center and hiring a full-time instructor/supervisor for the Center will help it achieve its full potential, which will help with the retention of our students and their success rates, with the added advantage of increasing our Department's FTES.

A final challenge to our program is the difficulty we have in scheduling our classes so that they don't conflict with other classes. The scheduling model that we are supposed to follow was apparently developed on the assumption that most MPC classes meet for 3 hours a week. All our classes meet for 4, 5, or 6 hours a week, so it is inevitable that some conflicts will occur even though we do our best to follow the model.

A challenge that is specific to the program review process itself is understanding the data that are provided to us for the purpose of analyzing **“the quantifiable factors pertinent to our department”** as listed in **Program Information Part 1**. The data has often been incomplete or incomprehensible, with no information as to how it is computed, or what the various codes mean. It is presented in a very user **unfriendly** way. No definitions of key descriptors or terms are given. In discussions with Institutional Research, as we tried to understand the data, we have discovered errors, some of which were correctable, but some were unexplainable. As we, and others, review our programs, it is of the utmost importance that the data we are to rely on is accurate, trustworthy, and presented in a user friendly manner that is easy to understand, otherwise there is no point in spending valuable time analyzing the data looking for trends and comparisons that could be meaningless or misleading because of poor data, or poorly understood data.

Part IV: RECOMMENDATIONS/GOALS

Based on your critical evaluation of the terms studied in Part I and II, please provide recommendations for the development, modification, and/or improvement of your program.

1. Identify the goals that were identified in the last program review and describe whether they were attained or not. If not, why not?

- a) New Math Science Building: The new Math/Science Building was removed from the Master Plan. The decision has been made instead to split the Mathematics Department between the original Physical Science Building and the first floor of the Business Building.
- b) Office Space: No new offices have been found. Currently three of our ten full-time faculty must share small offices, and none of our adjunct faculty have office space.
- c) Access to Technology: None of math classrooms are “Smart” Classrooms. There are plans for two of our five classrooms to be converted in the near future. The rest still need to be upgraded to “smart” classrooms.

Many of our faculty still have old, outdated computers in their offices that need to be replaced.

- d) Math Learning Center: The current space is inadequate for the needs of our students. More computers were requested and more room was requested. We also requested more instructor hours to both help with the students and run the Center. These needs have not changed, nor have our requests been met.
- e) Heat/Ventilation in the Physical Sciences Building: The heat and ventilation is still an issue in the Physical Sciences Building. Many of our classrooms are either too hot or too cold, and several faculty use space-heaters in their offices, which can pose safety issues.

2. Specify clearly in this section your program goals for the next five years, your plans to achieve them, the responsible person, and a timeline for completion.

- a) A Single Consolidated Math Facility. All math classrooms, offices and the Math Learning Center should be in a single location and close to the Physical Science Division to which we belong. This is important because it exposes our students to the students and instructors in the physics, chemistry, geology, and oceanography classes. Against the objections of the Mathematics Department, construction of the Math/Science Building has been removed from the Master Plan, and the decision was made to split the Department between the Physical Science and Business buildings. We are very concerned that this will not meet the current and future needs of our students and will lead to fragmentation of the Mathematics Department.
- b) Adequate Math Facilities: If it is not possible to have all math classes in a single location, then they should be close together and close to the Physical Sciences Building with the following components:

“Smart” Classrooms: All math classes must be large enough to accommodate our class sizes and should be “smart” classrooms with appropriate technology and high quality chalkboards.

Expanded Math Learning Center: The Math Learning Center needs additional space to provide support for more students, and computers must be available for students to complete computer based assignments and to get tutoring support for online courses.

Computer Equipped Classroom: We need at least one math classroom/lab for computer based instruction. Colleges all over the state are using Calculus software such as Maple or Mathematica. Statistics is being taught using Excel or other computer programs. This requires a classroom with a computer for each student.

Offices: Each full-time instructor needs an office, and part-time instructors should have access to office space for preparing classroom materials and meeting with students.

A conference room and Faculty Work Room: We need a room for faculty meetings and meeting with small groups of students. There should also be a work room near offices and classrooms.

Testing Center: A quiet and secure testing room is needed for online courses and for make-up tests. This Testing Center should be part of the expanded Math Learning Center for ease of monitoring students taking tests.

Storage Space: Computers and other instructional materials need to be stored in a secure and convenient location.

c) **Full-time Instructor/Supervisor for the Math Learning Center**

There is a critical need for a full-time instructor/supervisor to be in charge of the Math Learning Center. In order for the Center to reach its full potential and thus benefit our students and increase FTES to the college, it needs a person to oversee the program, hire and train student tutors, plan ways to extend and improve the program, keep track of expensive equipment, and make sure students log in and out correctly. This position has been recommended and placed third in order of priority by AAAG, but no action has been taken to begin the hiring process.

d) **Access to Technology:** Every math instructor must have a functioning computer in his/her office that is capable of running the software used for math instruction. This includes specialized software that is used for online courses.

e) **Compensation for the Math Chair:** The Mathematics Department is one of the two largest departments on campus and the job of Department Chair requires many hours of work. The English Department, which is similar in size to the Mathematics Department, has reassigned time for its Chair. There needs to be similar time allotment for the Math Chair. It is too big a job for any one person to do in addition to teaching a full load, and the current system of rotating the job to a different person each year leads to a lack of continuity.

f) **Assessment Testing:** We need an assessment test for placement in math classes for students who are entering our program and have not taken math courses at other colleges.

- g) **A course to meet the new Math 263 requirement for the AA degree.** We need to design a new course at the same level as Math 263 to meet this requirement before 2009, when the new graduation requirements take effect.
- h) **Add a Full-time Math Instructor:** We will need to add another full-time math instructor in order to maintain our current program on the main campus, expand online courses, and staff the Marina Satellite Campus. The Mathematics Department will request this position as needed when the Marina Satellite Campus is fully developed.

3. Prioritize your goals and plans, listing the highest priority first.

1. A single consolidated math facility
2. Adequate math facilities (“smart” classrooms, expanded Math Learning Center, offices, Testing Center, conference room, work room, and storage space)
3. Hiring a full-time instructor/supervisor for the Math Learning Center
4. Reassigned time or equivalent compensation for the Mathematics Department Chair
5. New computers for faculty offices
6. The development and implementation of assessment/placement tests.
7. Developing a course to satisfy the new Math 263 graduation requirement for the AA degree
8. Hiring another full-time math instructor

4. Prioritize, within and between categories, requests for faculty, staff, supplies, equipment and facilities.

1. A single consolidated math facility
2. Hiring a full-time instructor/supervisor for the Math Learning Center
3. Expanding and upgrading the Math Learning Center
4. Converting all math classrooms to “Smart” classrooms
5. Reassigned time or equivalent compensation for the Math Chair
6. A private office for every full-time instructor; office space for our part-time instructors
7. New computers for faculty offices
8. Hiring another full-time math instructor