Feather River College

COMPREHENSIVE PROGRAM REVIEW
MATHEMATICS PROGRAM

PURPOSE AND INTEGRATION WITH BROADER PLANNING

The comprehensive program review captures the longer-term strategic plan for a program. It allows the program to document its vision. The CPR alerts the campus of the program's mid- to long- term goals and describes the means for achieving those goals. The CPR is the touchstone for creating and reviewing annual program goals and student learning outcomes. CPR information may also be used to inform college planning including: the strategic plan, education plan, facilities plan, strategic enrollment plan, including scheduling, budget, sustainability and equity efforts, etc., see AP/BP 3260.

Items that may be included in a program review:

1. Analyze data on key performance indicators, such as enrollment, retention and completion rates, and findings from student learning outcome assessments and degrees and certificates awarded.
2. Highlight and analyze program activities, and accomplishments.
3. Identify and document program weaknesses and strengths.
4. Develop program objectives and goals.
5. Discussion of relevant program compliance with Federal and State law, Title 5, Student Equity, VTEA, matriculation (including prerequisite and co-requisite standards), ADA (American with Disabilities Act), and other legal or certification requirements. (applicable to specific programs)

Academic program review is an integral part of educational planning and enables the college to meet the accreditation standards of the Accreditation Commission for Community and Junior Colleges (ACCJC).

CPRs will be submitted per the schedule developed and communicated by the Strategic Planning Committee. Instructional CPRs will be reviewed and summarized within the Council on Instruction and used to inform leadership of program health and needs and to provide a vehicle for linking CPRs to other planning documents (e.g., Education Plan). Additionally COI will route specific portions of the CPR to shared governance committees for review. For example, a CPR that had a facilities need could be communicated/routed to Facilities Committee.

PROGRAM LINK TO COLLEGE MISSION

Feather River College provides high-quality, comprehensive student education as well as opportunities for learning, workforce preparation, and achievement in a small college environment. The College provides general education, associate and bachelor's degrees, certificates, transfer programs, and life-long learning for a diverse student population by serving local, regional, national and international students through traditional face-to-face instruction as well as distance education. The College also serves as a cultural and economic leader for all communities that lie within the District and embraces the opportunities afforded by its natural setting.

Feather River College

COMPREHENSIVE PROGRAM REVIEW
MATHEMATICS PROGRAM

PROGRAM VISION AND GOALS

1. Describe the goals of the program and how these relate to the FRC Mission.

The mathematics program at FRC not only offers the general education mathematics courses required for other programs, but also offers both an Associate in Science in Mathematics for transfer (AS-T) degree and an Associate in Science in Mathematics (AS) degree.

The Associate in Science in Mathematics for transfer degree is based on the approved Transfer Model Curriculum provided by the Academic Senate for California Community Colleges in accordance to SB1440 and California Education Code sections 66746-66749. The AS-T in Mathematics is consistent with and supports the college's mission of providing transfer education to its students. The courses within the AS-T in Mathematics fulfill the major requirements for students who wish to transfer into the CSU system to complete a baccalaureate degree in Mathematics or a related field. It was designed to assist students in seamlessly transferring to a CSU.

The Associate in Science in Mathematics degree (AS) provides an alternative degree in mathematics to students who do not necessarily wish to transfer to a CSU. The AS in Mathematics degree provides other options for both general education courses and mathematics courses besides those required for the AS-T. Students receiving an AS degree, just as those receiving an AS-T, will be prepared to pursue a baccalaureate degree in Mathematics or a related field.

Students who continue their education and receive a baccalaureate degree and/or professional certificates will have the foundation to pursue careers such as urban planner, financial analyst, statistician, systems analyst, computer programmer and teacher.

2. What have been some program accomplishments since the last program review?

Traditionally, at most higher education institutions, math majors comprise a very small portion of the student population. FRC manages to maintain decent class sizes for most of its mathematics courses despite the small size of the college. Additionally, the math program has produced an average of two math majors per year for the past four years. That trend will continue this spring.

The mathematics program offers many of its courses to satisfy the general education requirements for students in non-STEM majors. To that end, the mathematics program at FRC has added two new options to our general education curriculum. The first course, MATH 150 Concepts and Structures of Mathematics for Educators, is not a new offering, but previously did not transfer to satisfy the general education requirement in mathematics. It has now received approval for transfer credit. MATH 150 is designed for those students who express an interest in becoming elementary or pre-school teachers.

The second course is a new offering. MATH 114 Finite Math will serve as an alternative to statistics for those non-STEM, degree-seeking, students who do not need statistics. This course satisfies the mathematics requirement for many business majors as well as other non-STEM areas such as English, Art, and History.

3. What support does the program need to assure its continued success? Explain by referring to specific program goals and objectives.

One of the concerns for the mathematics program is the availability of high-quality computer lab space for the new math workshops. The mathematics program created these workshops to support transfer level mathematics courses in accordance with AB 705. Currently FRC has only one computer lab available for these courses. The computers in this lab often function at a frustratingly slow pace. The demands for high-quality computer lab space will continue to increase as both English and math struggle to comply with AB 705.

STAFFING

1. How many full-time and part-time faculty teach in this program (in-person, online, and ISP)?

FRC has utilized thirteen different instructors in its mathematics courses over the past five years. Of these thirteen, six held full-time faculty positions with nearly all of their load taught on campus as follows:

- Two taught solely mathematics courses. One left for another position and one remains.
- Four split their load with either physics or chemistry. Two of these left for other positions and the third will leave after Spring 2022. The fourth retired.

The other seven all taught as Associate (Adjunct) Instructors with nearly all of their load fulfilled either online or through ISP.

2. What changes to staffing, if any, could make this program more effective for course offerings and student success? Also, how could staffing changes contribute to other programs and towards improving student interest and success in the program?

No simple answer to this question exists. FRC has tried many different staffing arrangements and so far, none have successfully satisfied the needs of FRC. While FRC offers a sufficient number of courses to justify two full time math instructors, we have chosen to move away from this in order to provide full loads for chemistry and physics instructors. In order for a chemistry instructor to have a full load, they must teach two math courses in the fall and one in the spring. In order for a physics instructor to have a full load, they must teach two math courses in both the spring and the fall.

Attempting to find a good fit for a chemistry/math instructor and a physics/math instructor has proven quite difficult. As a result, all three of these areas have suffered from a lack of consistency and support.

CURRICULUM

1. Describe the educational pathways the program offers: completion of general education, certificates, associate degrees, bachelor's degrees, and/or transfer degrees.

In order to satisfy new State of California requirements outlined in AB 705, the mathematics program has redesigned itself more than once over the past few years. In order to satisfy the requirement that all students enter a transfer level math class within one year, we had to reduce the number of developmental classes. To do this, the mathematics program created two tracks for students to follow. One of these tracks provided an Intermediate Algebra course for students who intended to follow a non-STEM pathway, but needed some skill refreshment or development before enrolling in a transfer level course such as statistics. The second track provided an alternate Intermediate Algebra course for students who intended to enter a STEM field and needed to prepare for College Algebra. Each of these five-hour courses replaced the fourteen hours of developmental math previously offered at FRC.

After developing and offering these courses, the State of California changed its guidelines on the implementation of AB 705. Developmental mathematics became completely discouraged and co-requisite or workshop classes encouraged instead. FRC's mathematics program responded by creating workshops to aid in student success for students enrolled in both statistics and College Algebra. Implemented in Fall 2022, these courses are still too new to have data on their success.

As previously stated, the mathematics department has also added two new transfer-level courses that will satisfy the general education requirement. These courses are MATH 150: Concepts and Structures of Math for Educators and MATH 114 Finite Math. With the addition of these courses and the support workshops for College Algebra and Statistics, the math program hopes to meet the general education needs for all of FRC's degree seeking students.

For those students who seek either an AS or an AS-T in mathematics, FRC offers a full complement of mathematics courses. Unfortunately, due to staffing issues, one of our courses, MATH 224 Differential Equations, has necessarily only been offered online. It appears unlikely that this will change in the near future due to staffing choices.

2. What changes and conversations have occurred in the program to incorporate equity-minded curriculum? Examples from specific courses may be included. *See the Building Equity into Curriculum and Reducing Barriers to Learning (i.e., ideas, checklist) in the appendices to guide this reflection.*

The mathematics program at FRC has attempted to follow the State of California's guidelines to create equity in mathematics. Unfortunately, over the past five years, California has set changes in motion and then changed those changes so frequently that the previous changes never had time to make an impact before the next set of changes took place.

California's initial change required the placement of students into mathematics classes, either developmental or transfer-level, using a Multiple Measure Placement Procedure (MMPP) instead of a single placement test score. Advisors gave consideration to high school GPA, previous math coursework, and grades in these previous math courses to determine which math class best suited each student. Theoretically, combining these measures corrected potential underplacement caused by using only a placement test score. At that time, FRC still offered MATH 003 Prealgebra 1, MATH 004 Prealgebra 2, MATH 016 Elementary Algebra, and MATH 018 Intermediate Algebra in addition to transfer-level courses. Based on the Multiple Measure Placement Procedure, students enrolled in whichever of these courses would best serve them.

Before Multiple Measures Placement had time to become fully implemented and the results assessed, AB 705 became law. This law requires California community colleges to maximize the probability that students will complete transfer level mathematics and English courses within one year of entering college. In order to comply with it, the mathematics program deleted all of its developmental courses and created two separate math pathways, one for STEM majors and one for NON-STEM majors. To continue to provide some developmental assistance while still following this new law, the mathematics program created two new developmental courses, MATH 015 Intermediate Algebra for Non-STEM Majors, and MATH 020 Intermediate Algebra for STEM Majors. Each five-hour course attempted to provide the necessary remediation in one semester that would allow students to succeed in the transfer-level course for their chosen pathway.

Again, before allowing any time to conduct an analysis concerning the effectiveness of new courses such as these, California changed the guidelines. Currently, the Chancellor's Office requires the removal of all developmental courses from the curriculum. Instead, the mathematics program should provide support for underprepared students placed directly into transfer-level courses. To comply with this, the mathematics program once again created two new courses in the form of workshops. One of these workshops supports students in MATH 110 College Algebra, and the other supports students in MATH 202 Elementary Statistics. The first implementation of these courses occurred this spring. It remains to be seen if the current set of guidelines will improve equity in mathematics, or if changes will occur yet again.

3. Discuss how the program incorporates sustainability efforts, goals, or conversations in its curriculum?

The mathematics program does not specifically incorporate or discuss sustainability. The use of etexts and online homework comprise our efforts in this area.

4. Discuss how course outlines have been reviewed, and what curricular changes have resulted from these reviews.

The mathematics program reviews each Course Outline of Record (COR) every four years per FRC curriculum guidelines. We compare each COR with the corresponding course outline listed in C-ID to make certain it remains in alignment with California standards for that course. Those COR's not in alignment with C-ID are updated to assure continued transferability.

INSTRUCTION

1. How does the program develop course scheduling to meet student needs?

After the creation of MATH 015 and MATH 020 Intermediate Algebra courses, the arrangement of the math schedule changed so that the timeslots for these course offerings coincided with the timeslots for a transfer-level course. This would allow students to drop backward or move forwards as necessary. These timeslots were discussed with FRC's academic advisors to make certain that they would work for our students. No students ever switched between the classes.

Now that the mathematics program offers workshops instead of either MATH 015 or MATH 020, the transfer-level courses will remain in their current timeslots since we know that these work for FRC's students. Timeslots for the workshops coincide with the timeslots for the courses they support, but on Fridays, since most math classes meet Monday through Thursday.

Timeslots for the two new mathematics transfer courses, MATH 150 Concepts and Structures of Math for Educators and MATH 114 Finite Mathematics, were discussed with both advisors and those in charge of intersecting programs before scheduling these courses.

2. Describe effective and innovative teaching strategies (activities, projects, etc.) used by faculty to increase student learning and engagement.

Mathematics courses, with the exception of MATH 108: Trigonometry, all use MyLab (MyMathLab or MyStatLab). This program provides instant feedback on homework in the form of positive reinforcement for correct answers and various types of assistance for incorrect answers. Additionally, the program includes a study plan with practice problems, videos, examples, and an etext. Trigonometry does not use this program because it is only a one-hour course.

Most mathematics courses use note-taking guides provided by the instructor to aid student learning. Statistics classes require students to submit Excel assignments. MATH 150 Concepts and Structures of Math for Educators and MATH 291 Directed Reading, require student research projects. The project in MATH 150 involves finding articles and online activities related to one of the California Common Core objectives in mathematics. Students select the research topic for their project in MATH 291 and present their results at the research symposium.

Other strategies used by the mathematics program include the use of embedded tutors. Pre-COVID, the embedded student tutors provided assistance with struggling students during in-class work on practice problems. In large classes, one instructor cannot always provide the help required by students experiencing difficulties. After assisting students in-class, the tutors then offered to work with students outside of class, in the IRC. Each tutor did this for one to two of hours a week. During COVID, embedded tutors offered both online and in-person student-led tutoring sessions.

The in-class embedded tutors employed pre-COVID proved more successful than student-led tutoring sessions held during COVID. This likely resulted from the relationships formed by personal contact during class. The tutoring sessions during this time were informally arranged and not widely advertised. The tutors held these sessions at times that worked for the students they assisted in class.

The student led tutoring sessions during COVID met at the same scheduled times each week and advertised to all students. Despite this, these sessions were not well attended either online or in person. Since these were only offered during COVID online instruction, it is not known if they might prove effective now that we have returned to in-person instruction. It is also unclear how they would interact with the new workshops. The math department plans to re-implement them in the fall to investigate.

ASSESSMENT

1. Describe how students have achieved Program-level Student Learning Outcomes (PSLOs). Explain how PSLOs are assessed and how assessment been used to improve student learning and/or curriculum? Please be as detailed as possible.

The Mathematics Program-level Student Learning Outcomes are as follows:

- Apply mathematical concepts and principles to perform computations.
- Apply critical thinking and technology to solve applied problems.
- Create, use and analyze graphical representations of mathematical relationships.
- Communicate mathematical knowledge and reasoning.

These Program-level SLO's arise naturally from the content of mathematics courses. In every course, students solve problems that require computation, critical thinking, and communication of results. The use of technology happens throughout each class for both computation and problem-solving purposes.

Technology used in FRC's mathematics classes includes Desmos and graphing calculators in MATH 108, 110, 218, 220, and 222; and scientific calculators and Excel in statistics. In MATH 150, scientific calculators, online activities, and online research comprise the technology used. Additionally, all math courses of more than one hour use an online homework program.

Because a student cannot succeed in a math class, aside from a directed reading, without proficiency in all of the Program-level SLO's, student success in math courses provides the best measure of student achievement in these outcomes. While the mathematics program would like some of these success rates to be higher, they are not out of line with success rates across the state.

Please note that the mathematics program can no longer offer MATH 015 and MATH 020 as both are developmental courses. Results from these classes are included because they still appear in the FRC Catalog. MATH 108 Trigonometry is a 1-hour class offered only on Friday. MATH 224 Diffferential Equations has only been offered online.

Math Program Fall 2017 - Fall 2021

Course	Success Rate	Retention Rate	Total Enrollments
MATH-015	68% (252)	91% (337)	371
MATH-020	56% (5)	89% (8)	9
MATH-108	58% (19)	64% (21)	33
MATH-110	69% (230)	86% (286)	331
MATH-150	99% (80)	100% (81)	81
MATH-202	60% (796)	79% (1053)	1328
MATH-218	81% (125)	88% (136)	155
MATH-220	89% (48)	94% (51)	54
MATH-222	84% (21)	96% (24)	25
MATH-224	69% (9)	69% (9)	13
MATH-291	41% (7)	41% (7)	17
Overall	**64% (2379)**	**87% (3230)**	**3717**

2. How do PSLOs support college-wide SLOs (CWSLOs)? Please use the table below and example, to capture this support using the following scale: (0) PSLO does not address CWSLO; (1) PSLO scarcely touches on CWSLO; (2) PSLO addresses the CWSLO to a moderate degree; (3) PSLO strongly meets the CWSLO:

Mathematics PSLO's and CWSLO's

	Commun-ication	Critical Thinking	Info Literacy	Ethics	Sense of Self	Inter-personal	Respon-sibility
Apply mathematical concepts and principles to perform computations.	1	3	1	0	1	1	1
Apply critical thinking and technology to solve applied problems.	1	3	2	0	1	1	1
Create, use and analyze graphical representations of mathematical relationships.	2	3	1	0	1	1	1
Communicate mathematical knowledge and reasoning.	3	2	1	2	1	1	1
Total Impact	**7**	**11**	**5**	**2**	**4**	**4**	**4**

3. How do course-level student learning outcomes (CSLOs) and other program learning experiences support the PSLOs? Please use the table below and example, to capture this support using the following scale: (0) CSLO does not address PSLO; (1) CSLO scarcely touches on PSLO; (2) CSLO addresses the PSLO to a moderate degree; (3) CSLO strongly meets the PSLO:

Mathematics Courses and Mathematics PLSO's

	Apply mathematical concepts and principles to perform computations.	Apply critical thinking and technology to solve applied problems.	Create, use and analyze graphical representations of mathematical relationships.	Communicate mathematical knowledge and reasoning.
MATH-015	3	3	3	3
MATH-020	3	3	3	3
MATH-108	3	3	3	3
MATH-110	3	3	3	3
MATH-150	3	3	3	3
MATH-202	3	3	3	3
MATH-218	3	3	3	3
MATH-220	3	3	3	3
MATH-222	3	3	3	3
MATH-224	3	3	3	3
MATH-291	1-3	1-3	1-3	3
Total Impact	**31-33**	**31-33**	**31-33**	**33**

4. What were the most important things your department learned from assessment? How has the program used the results of assessment to improve student learning and/or curriculum? Please be as detailed as possible.

Over the past five years, FRC's transfer-level courses and the student preparation required for them has undergone so much change that the mathematics program finds it impossible to sort out what needs improving and what works well. Over the past five years, course offerings in FRC's two main transfer-level mathematics courses has changed dramatically. MATH 110 College Algebra has enrollment dropped from one section each semester with high enrollment to one section each semester with low enrollment. MATH 202 Elementary Statistics enrollment increased from one high enrollment class each semester, to three or four sections each semester with high enrollment.

Rapid changes in required student preparation provides the main confounding factor in determining departmental success in curriculum and student success within MATH 110 and MATH 202. Five years ago, students placed mandatorily into one of four developmental classes or a transfer-level course. If a student arrived underprepared, they might take up to fourteen hours of development coursework to bring them to the appropriate level of knowledge before enrolling in MATH 110 or MATH 202. The main difficulty with this system lay in appropriate placement, which the Multiple Measures Placement Policy (MMPP) sought to rectify. Upon completing the appropriate development coursework, students arrived well prepared for their transfer-level course.

Before the effects of MMPP could be studied, AB 705 came into law and mandatory placement was eliminated. Further, only one semester of developmental coursework could be offered. Thus, the possibly fourteen of hours of preparatory coursework went to five hours of preparatory coursework, which was not mandatory, only advisory. Students could enroll directly into a transfer-level course regardless of their previous mathematical experience. The math program had barely transitioned to this model when COVID hit, moving everything online, further confounding any results on student success.

Upon emerging from COVID mandatory online instruction, changes to student preparation happened once again. The mathematics program had to switch from a five-hour developmental course to a one-hour co-requisite support class. Again, placement into this one-hour corequisite support class is not mandatory, only advisory. Many students who need this course may simply ignore advice to take it.

The changes described above have happened quickly, with no time to assess the effects of one change before another change occurred, completely confounding any determination of student learning and success in courses up to and including the basic transfer-level courses MATH 110 College Algebra and MATH 202 Elementary Statistics.

Courses such as MATH 218 Calculus 1, MATH 220 Calculus 2, MATH 222 Calculus 3, and MATH 224 Differential Equations, have remained unaffected by the changes to preparation for the transfer-level courses. These courses all require MATH 110 and MATH 108 as prerequisites, and this has not changed. Assessment shows that the mathematics program maintains a very high success rate in these courses, with MATH 224 Differential Equations having the lowest at 69%. The causality for the lower success rate in this course likely lies with the online only availability of it.

STUDENT LEARNING AND SUCCESS

1. What are some program goals to strengthen and/or grow this program to accomplish greater student interest, learning and success?

More than anything, the main goal of mathematics program lies in finding some stability in full-time faculty. While the decision not to hire a second full-time mathematics instructor has great merit, the lack of a second consistent full-time faculty member that has a half-time load of mathematics has limited the program's ability to create opportunities for student outreach and participation. A third such faculty member would help the program even more.

Other program goals consist of continuing to participate in career fairs, A Day in the Mountains, Home-field Advantage, and any other opportunities to visit with students and hand out the informational flyers the mathematics program created for such occasions. We now have a special Mathematics Department tablecloth to use as well.

The mathematics program has updated its website to provide more information and increase its appeal to students. More could be done to improve it.

2. How does the program consider or approach issues of student equity related to retention and success? This may include use of tutors and other student support services, etc.

As stated under *Curriculum* question 2, the mathematics program attempts to follow the State of California guidelines for equity. As for use of tutors, placement, retention and success, please see *Instruction* question 2 and *Assessment* question 4.

3. Describe the average student demographics of the program and discuss success rates of different student populations by mode of instruction (i.e., race, ethnicity, sex, age. Analyze data provided by the Institutional Research. *Look at enrollment, retention, and success data by delivery mode as applicable.* What are your observations?
    - In-person (on campus)
    - Hybrid
    - Online
    - ISP

Feather River College

COMPREHENSIVE PROGRAM REVIEW
MATHEMATICS PROGRAM

Math Program Fall 2017 - Fall 2021

Age Group	Success Rate	Retention Rate	Total Enrollments
Under 18	76% (13)	82% (14)	17
18-19	60% (153)	84% (217)	257
20-21	61% (339)	80% (442)	554
22-24	65% (538)	82% (679)	826
25-29	61% (243)	85% (341)	399
30-34	66% (238)	91% (329)	361
35-39	62% (241)	93% (358)	387
40-49	67% (366)	93% (513)	550
50-64	69% (224)	93% (300)	324
65 and over	59% (24)	88% (36)	41
Unknown	0% (0)	100% (1)	1
Total	**64% (2379)**	**87% (3230)**	**3717**

Math Program Fall 2017 - Fall 2021

Gender	Success Rate	Retention Rate	Total
Female	64% (975)	84% (1278)	1516
Male	64% (1355)	89% (1889)	2132
Unknown/Unreported	71% (49)	91% (63)	69
Total	**64% (2379)**	**87% (3230)**	**3717**

Math Program Fall 2017 - Fall 2021

Race	Success Rate	Retention Rate	Total Enrollments
American Indian/Alaskan Native	54% (56)	83% (86)	103
Asian	76% (92)	93% (113)	121
Black or African American	56% (301)	87% (470)	540
Latinx	62% (586)	91% (850)	938
Native Hawaiian or Pacific Islander	64% (43)	87% (58)	67
Unreported or Unknown	59% (123)	85% (177)	208
White	68% (1178)	85% (1476)	1740
Overall	**64% (2379)**	**87% (3230)**	**3717**

Math Program Fall 2017 - Fall 2021

Instruction Method	Success Rate	Retention Rate	Total Enrollments
F2F	67% (838)	82% (1029)	1251
ISP	64% (1020)	93% (1485)	1590
Online	59% (521)	82% (716)	876
Overall	**64% (2379)**	**87% (3230)**	**3717**
note: Face-to-Face (F2F) may include off-campus courses			

4. Are there differences in course retention and completion rates between in-person/on campus, online/hybrid courses and ISP courses as applicable? Explain.

ISP and Face-to-face, on-campus courses demonstrate identical success rates, with ISP performing slightly higher in retention.

Online courses and Face-to-face, on-campus courses have the same retention rate, but Online courses have a lower success rate. Attempting to learn mathematics online proves extremely difficult for many students. Most of the online offerings involve either MATH 202 Elementary Statistics, a course populated by many students who struggle with math already, or MATH 224 Differential Equations, the most difficult course we offer at FRC.

5. What has or might be done to improve course completion and retention rates?

The mathematics program makes extensive use of Student Academic Referrals, both very early on in the semester, and then once or twice more before Student Athlete Academic Referrals. The very early referrals attempt to assure all students have the resources to set up their online homework program (MyLab). Later referrals endeavor to pull students back on course who may have strayed, in addition to connecting students to tutors as necessary.

The use of instructor created and provided note-taking guides further attempts to provide students with assistance. These guides include embedded questions, examples, and definitions.

The MyLab homework program includes pop-up examples for students to follow as they work a similar problem. Each problem also has a link to the place in the etext where the explanation of the topic occurs. Some problems have videos or animations showing how to work the problem. All problems contain a link, Ask My Instructor, that allows the student to send their instructor the problem and ask a question about it. Additionally, MyLab has section video lectures and a study plan to assist in student learning.

Tutoring recommendations, embedded tutors, office hours, workshops, and instructor made videos over the note-taking guides encompass other attempts to improve student success.

6. What has been done to improve the number of degrees and certificates awarded? Explain.

The mathematics faculty attend all student recruitment events and fairs to hand out flyers and speak with students about majoring in mathematics. The mathematics program has improved its website to make it more appealing to students as a major.

PHYSICAL RESOURCES

1. Describe the facility and resource needs of the program. Link these needs to student learning and overall program goals.

The math program remains concerned regarding the availability and usability of computers for the new workshops. FRC should consider installing a second computer classroom or making the library computer area available for holding workshops and embedded-tutor help sessions. In addition, the computers in the current computer classroom continue to perform slowly, causing student frustration.

2. If applicable, discuss how the facilities used or needed for the program may be made or used in a more sustainable, environmentally-minded way?

The mathematics program has fairly simple needs that remain adequately met by the current facilities, with exception described in question 1.

ADVISORY COMMITTEES

1. If there is a program advisory committee, list the names and titles of members, and the meeting dates since the last program review. Describe any advisory committee involvement in this program review.

The mathematics program has no advisory committee.

PROGRAM GOALS MOVING FORWARD

1. Given the analyses and reflection in this CPR, what are the goals of this program in the coming year?

For the remainder of this year and into next year, if necessary, the mathematics program intends to review the AS requirements at other, similar institutions to make certain our course selections remain appropriate. Changes will be submitted to the Curriculum Committee as necessary.

Additionally, the mathematics program needs to update its course-level SLO assessments. FRC suspended these during COVID and all of the math courses now need reviewing.

With the addition of new on-campus math faculty in Fall 2022, although not full-time math faculty, new ideas for improving success rates in our transfer-level courses may come under consideration. Any deemed feasible and likely to improve results will move forward.