**Unit Strategic Plan**

**2021 - 2023**

**Department:** **Math/Engineering/Physical Science Jefferson Campus**

The Department of Mathematics/Engineering/Physical Sciences offers a broad range of courses that service the career programs of the college and that will transfer to baccalaureate degree granting institutions. The department, also, offers developmental mathematics courses to prepare students for college level mathematics.

The Mathematics, Engineering, & Physical Sciences Department will:

* Provide freshman- and sophomore-level courses in chemistry, mathematics, physics, physical sciences, and astronomy with emphasis on critical thinking and analytical ability that are transferable to public institutions of higher learning.
* Offer an appropriate remedial mathematics program accommodating various skill levels.
* Develop and provide courses relevant to the career and professional degree programs of the college.

**Summary of Access, Productivity and Effectiveness (Including, but not limited to, program load, success rate, retention rate, completion rate, employer surveys, student surveys):**

The Department of Mathematics/Engineering/Physical Sciences offers a broad range of courses that service the career programs of the college, transfer to baccalaureate degree-granting institutions, and prepare students for college-level mathematics. Many of these courses serve as degree requirements for two-year career programs offered at the college. The following tables list enrollment for our transfer programs as well as the two-year career programs for the years TBD.

(TABLES TBD)

**Internal Conditions:**

1. **Technology**

The lecture classrooms serve math, chemistry, physical science, physics, and astronomy.

* + 3 lecture classrooms have older equipment consisting of a projector, screen, and Elmo (CH312, RC234, RC321)
  + 4lecture classrooms have older screens and no technology (CH211, CH308, CH319, RC320).

(Note: CH211 and CH319 have been approved for new computers, projectors, and screens)

* + 2 lecture classrooms have older screens, projectors, Elmos, and newer computers (CH217, CH 310)
  + 2 lecture classrooms have no working technology (CH212 auditorium room, CH315)
  + The physics lab has 5 outdated computers (CH221).
  + The chemistry lab has no technology. (CH202)

1. **Budget**

* The academic budget for faculty and classroom (lecture and lab) supplies is currently sufficient.
* CH211 has been approved for a projection unit, screen, and computer. Work is to be completed.
* CH 319 has been approved for a projection unit, screen, and Elmo. Work is to be completed.
* The chemistry lab needs a new projection unit, screen, computer, and document camera.
* The physics lab needs 5 computers compatible with Pasco equipment.
* The physics and chemistry labs need items for day-to-day use such as chemicals and glassware.
* Astronomy needs 1 reflecting, motorized telescope.
* Funding is needed to equip each classroom with a desk and chair to accommodate handicapped students.

1. **Staffing**

The MEP Division at the Jefferson Campus has four full-time faculty. In addition to math, one of these instructors teaches physics and astronomy.

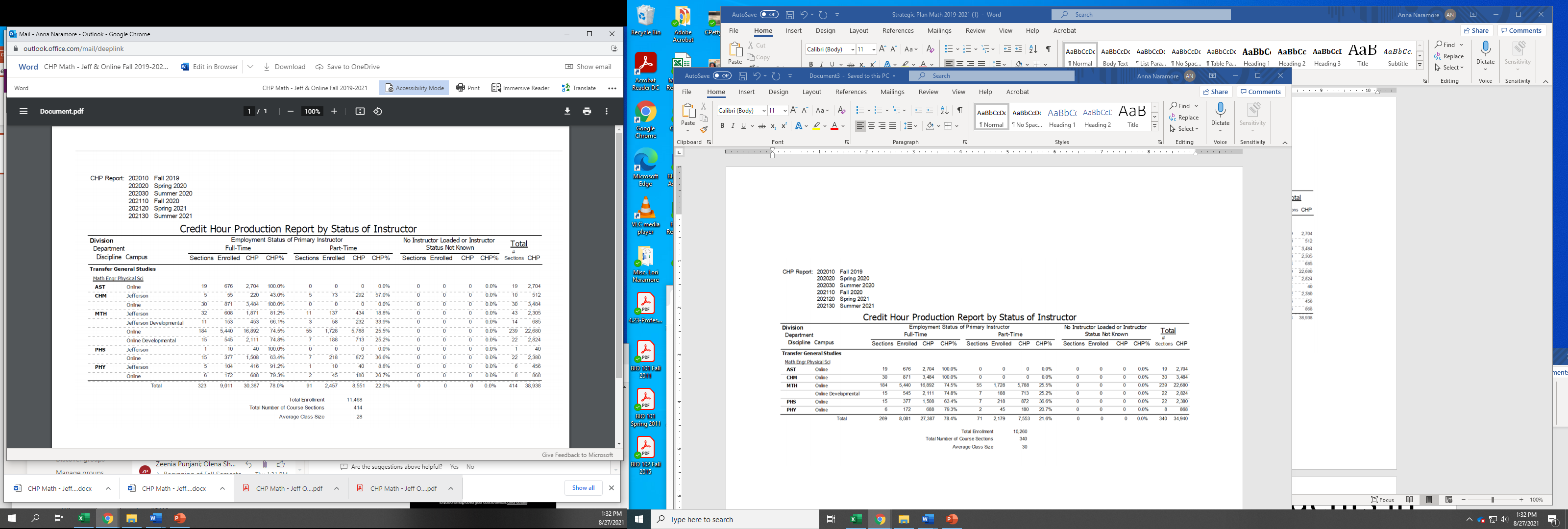
The division has one fulltime chemistry instructor who is home-based at the Shelby campus but teaches two classes each semester at the Jefferson Campus. The division has five adjunct faculty members who teach math, physics, chemistry, and physical science courses as needed each semester. This allows us to maintain the 50/50 full-time/part-time ratio. There is a full-time office manager serving Math/Engineering/Physical Sciences along with Biology. There is usually one work study student per semester.

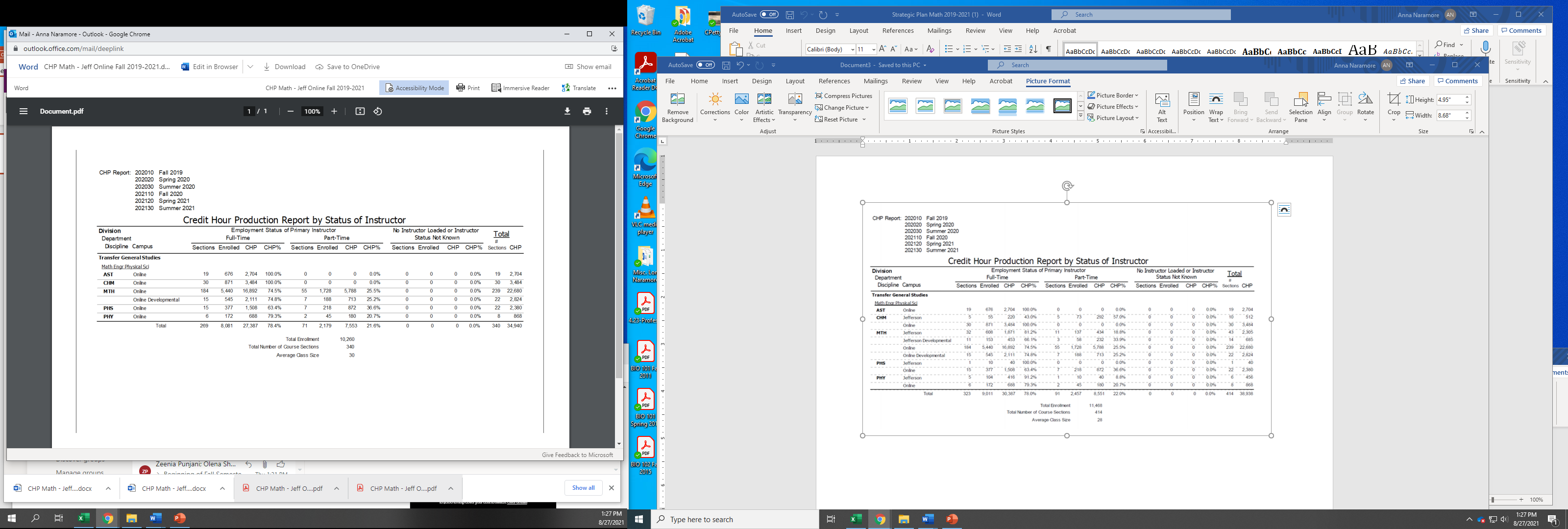
1. **Resources**

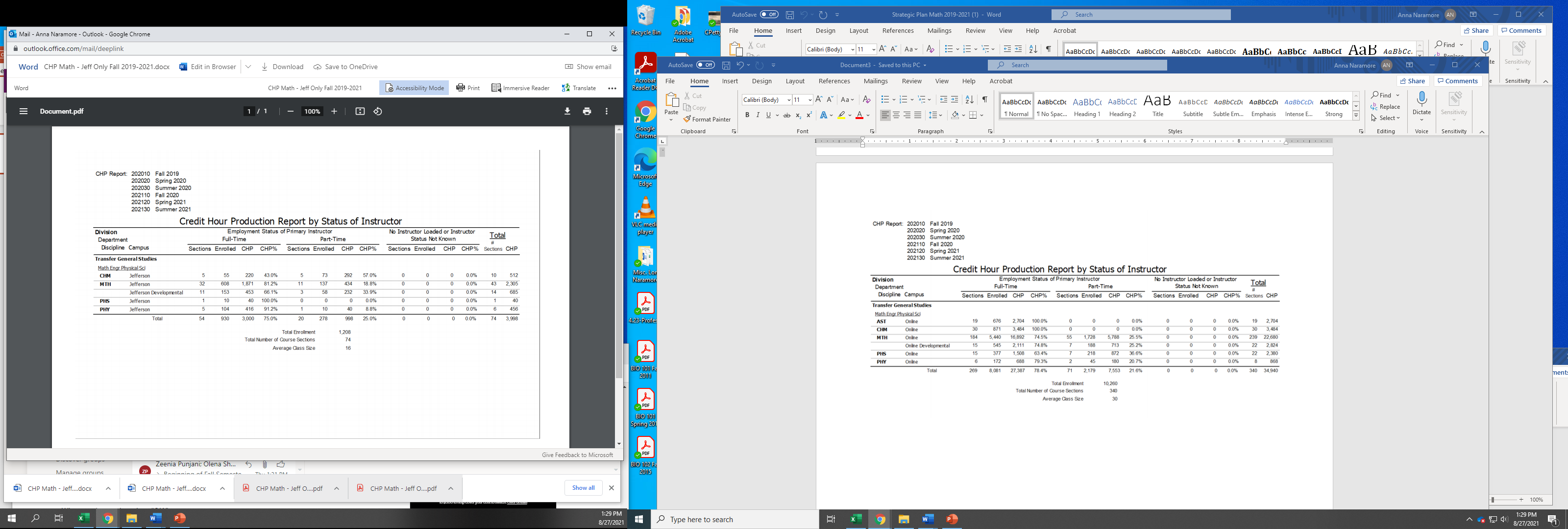
Requests are met through the college budget and various grants.

1. **Enrollment**

In the following Credit Hour Production Reports, there were only two semesters with full on-campus enrollment: Fall 2019 and Spring 2020. From Summer 2020 through Summer 2021, all enrollment was online except for six MTH 099 classes (two each semester Fall 2020 – Summer 2021). Course offerings were adjusted with respect to current enrollment trends with a significant increase in online enrollment due to COVID 19. As a matter of comparison, total MEP Jefferson student enrollment for Fall 2016-Summer 2017 was 9,047 and for Fall 2017-Summer 2018 was 8,098 with only a few online classes. When the pandemic wanes, the goal is to increase on-campus offerings while maintaining a balance with online courses to meet the needs of the students.







1. **Equipment**

There are four full-time faculty members who have laptop computers and digitizers. A multifunction printer is in the MEP Faculty Workroom,

RC236 B, and a colored multifunction printer is in the MEP Department Office, RCH 322. There is a computer and printer in the adjunct faculty workroom to serve the part-time faculty members. See the Technology section for equipment in the classrooms.

**External Conditions (such as state funding, accrediting agencies, advisory committees, postsecondary policy changes):**

All math, physics, chemistry, physical science, and astronomy courses are regulated by the Department of Postsecondary Education. A statewide syllabus and competencies are established for each individual course offered. The course curriculum is reviewed and updated as changes occur.

**2020-2021 Accomplishments:**

* 4 laptop computers and 4 digitizers were purchased for the math department.
* 8 Vernier probe ware sets, 10 stirring stations, pH sensors, drop counters, gas pressure sensors, colorimeters, oxidation-reduction potential sensors, Lab-Quest 2 data collection interfaces, and other smaller pieces of equipment were purchased for the chemistry lab (Some of the purchases were with the Cares grant money.)
* 5 blue smart carts and 4 red smart carts were purchased for the physics lab.
* Grant funding purchased 5 Conservation of Angular Momentum Experiments, 5 Atwood’s Machine Experiments, 3 Ohaus Triple-Beam Balances (with Tare), and 1 Ohaus Scout SKX Balances 8200g along with other smaller pieces of equipment.
* Old offices and storage rooms were cleaned, and outdated equipment was eliminated.
* Old chalkboards were removed in some classrooms, and some were replaced with whiteboards.
* Staff monitored for Covid and maintained all Covid protocols including arrangement of seating for students.
* 1 math classroom, CH 319, was approved for an Elmo, projector, and screen. 1 chemistry classroom, CH211, was approved for a computer, projector, and screen. These rooms need to be wired for this equipment, and work is not yet completed.
* All full-time faculty completed three Online Learning Consortium Workshops: Strategies for Increasing Interaction and Engagement, Fundamentals: Giving Effective Feedback, and ADA and Web Accessibility.
* Three full-time faculty completed the QM Workshop, Applying the QM Rubric.
* All full-time faculty converted courses to online instruction while learning new technology and a new teaching style.

**Unit Goals (2021-2023)**

**Goal 1. Add a projection unit, including screen, computer, and document camera to the chemistry lab, CH202.**

1. Objectives

* Keep the quality of instruction in the classroom upgraded with current up-to-date technology for faculty.

1. Method of Assessment

* Monitor the purchase and installation of equipment. Obtain feedback from the faculty using the equipment for instruction.

1. Additional Funding Requests

* The funding estimate to purchase a projection unit with screen, computer, and document camera for the chemistry lab is TBD.

**Goal 2. Continue to upgrade equipment being used by faculty members.**

1. Objectives

* Replace and/or upgrade computers, digitizers, or other equipment as needed for faculty.

1. Method of Assessment

* Obtain feedback from faculty regarding the use and currency of instructional equipment used in lecture classrooms, as well as the faculties’ offices.

1. Additional Funding Requests

* The funding estimate to purchase 1 digitizer for a fulltime faculty member is $400.

**Goal 3. Continue to equip the chemistry lab with needed lab equipment and chemicals.**

1. Objectives

* Replace and/or upgrade equipment and chemicals for the chemistry labs.

1. Method of Assessment

* Obtain feedback from faculty regarding the use and currency of lab equipment and chemicals needed in the chemistry lab.

1. Additional Funding Requests

* The funding estimate for an open purchase order is $4000 per year.

**Goals: 2021-2023**

**Goal 4: Continue to equip the physics lab, CH 221, with needed lab equipment.**

**1.** Objectives

* Replace and/or upgrade equipment for the physics lab.

1. Method of Assessment

* Obtain feedback from faculty regarding the use and currency of lab equipment needed in the physics lab.

1. Additional Funding Requests

* The funding estimate to purchase 5 computers compatible with Pasco equipment used in lab is TBD.

**Goal 5: Equip astronomy classroom with a telescope.**

1.Objectives

* Replace and/or upgrade equipment for astronomy classes.

1. Method of Assessment

* Obtain feedback from faculty regarding the use and currency of astronomy equipment needed for class**. (There is 1 telescope for an entire class to share, and the telescope that has been used for several years is the instructor’s personal telescope.)**

1. Additional Funding Requests

* The funding estimate to purchase 1 reflecting, motorized telescope is $3100.

**Goal 6: Replace 1 standard desk and chair per classroom to accommodate handicapped student.**

1.Objectives

* Provide seating for special needs or handicapped students with wheelchairs.

1. Method of Assessment

* An inventory of classrooms shows that only a few have special desks that are extremely old and not adjustable.

1. Additional Funding Requests

* The funding estimate to purchase 9 special desks is approximately $4000.

**Goal 7: Maintain up-to-date curriculum and courses to prepare students for transferring to a four-year university.**

1. Objectives

* Review course competencies on an annual basis and revise as necessary based on state guideline changes and new editions and/or changes in textbooks being used for instruction.

1. Method of Assessment

* Assessment of course competencies and the curriculum will be considered met based on the Alabama state guidelines for each course offered in the Math/Engineering/Physical Science Department.

1. Additional Funding Requests N/A

**Goal 8: Continue to develop, implement, and monitor written Student Learning Outcomes (SLO’s) for all courses.**

1. Objectives
   * Provide guidelines/examples to ensure all faculty understand the terminology used in developing SLO’s.
   * Assign courses to individual faculty and or faculty groups as appropriate for writing one- and three-year reports.
   * Conduct faculty reviews of SLO’s and modify them as necessary.
   * Plan methods for assessing SLO’s and documenting results.
2. Method of Assessment
   * Assessment of SLO’s will be based on judgment of the faculty and performance of the students. SLO’s and assessments will be continually modified as faculty determine where improvements are needed.
3. Additional Funding Requests N/A

**Goal 9: Establish a national math honor society chapter of Mu Alpha Theta.**

1.Objectives

* Provide students with recognition of academic achievement, meetings of interest, and comradery of people with interests in mathematics.

2. Method of Assessment

* Membership eligibility is based on requirements of the national organization.

1. Additional Funding Requests

* The funding estimate for the charter is $25 to be paid by Louise Fall.