**Unit Strategic Plan**

**2016 - 2018**

**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 and that will transfer to baccalaureate degree granting institutions. The department also offers developmental mathematics courses to 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 2014 & 2015.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **2014** | | | |  | | | | |  |  | |  |  | |  |
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| **Annual Credit Hour Trend Report by Department Fall 2015, Spring 2016, Summer 2016 Preliminary** | | | | | | | | | | | | | | | | | | |
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|  | | **Fall 2015** | | | |  | **Spring 2016** | | | | | |  | | | **Summer 2016** | | |
|  | |  | | **Credit** | |  |  | | **Credit** | | | |  | | |  | **Credit** | |
|  | | **Total** | | **Hour** | |  | **Total** | | **Hour** | | | |  | | | **Total** | **Hour** | |
| **Department** | | **Registrations** | | **Production** | | **Department** | **Registrations** | | **Production** | | | | **Department** | | | **Registrations** | **Production** | |
| AST | | 75 | | 300.0 | | AST | 77 | | 308.0 | | | | AST | | | 52 | 208.0 | |
| CHM | | 187 | | 748.0 | | CHM | 201 | | 804.0 | | | | CHM | | | 211 | 844.0 | |
| MTH | | 3,242 | | 9,917.0 | | MTH | 2,743 | | 8,441.0 | | | | MTH | | | 1,410 | 4,396.0 | |
| PHS | | 193 | | 772.0 | | PHS | 152 | | 608.0 | | | | PHS | | | 79 | 316.0 | |
| PHY | | 50 | | 200.0 | | PHY | 65 | | 260.0 | | | | PHY | | | 42 | 168.0 | |
|  | | | | | | WDT | 30 | | 90.0 | | | | WDT | | | 6 | 18.0 | |
|  | |  | |  |  |  |  | |  |  | | |  | | |  |  |  |
| **Totals** | | **3,747** | | **11,937.0** | | **Totals** | **3,238** | | **10,421.0** | | | | **Totals** | | | **1,794** | **5,932.0** | |
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**Internal Conditions:**

1. **Technology**

5 lecture classrooms are equipped with computers, document cameras, and projection units. The department also has one portable projector

unit which can be moved from classroom to lab as needed. These classrooms serve Math, Chemistry, Physical Science, and Physics.

1. **Budget**

* The academic budget for faculty and classroom (lecture and lab) supplies is currently sufficient.
* The Physics department is in need of updating and relocating the Physics Lab, which will incur expenses not only for new state of the art equipment, but also to include the expense of preparing a drawing of a floor plan and planning for construction. Therefore, the future budget needs to include these expenses.
* The budget for the removal of chemical waste from the Jefferson and Shelby Campus should remain the same, to provide a safe instructional environment for students and faculty.
* As there are 5 classrooms that have been equipped with computer, document camera, and projection system serving Physics and Math, a 6th classroom is in need to be upgraded with the same equipment, in order to serve our students taking Chemistry courses.
* Our Chemistry Department is due to have the Hazardous Chemical Waste picked up within the next year. This is supposed to take place every 3 to 4 years. There will need to be a bid taken from different companies specializing in doing this. Based on the past Chemical Waste pickups, the estimated cost should be around $7500.00.

1. **Staffing**

The Mathematics Department at the Jefferson Campus has 3 ½ full time math faculty members, the ½ being a faculty member who teaches 2 Math courses, a Physics course and an Astronomy course each semester. The Math department has 6 adjunct faculty members who teach 1 to 2 math courses each semester. The department has one full time Chemistry instructor who is home-based at the Shelby campus, but teaches 2 classes each semester at the Jefferson Campus and one full time Chemistry instructor, home based at Jefferson Campus, who teaches all online chemistry and 2 physical science courses per semester. . Our traditional classroom physical science classes are covered by 1 adjunct instructor. We also have 2 adjunct faculty members who teach Chemistry courses. This has allowed us to be able to maintain the 50/50 full-time/part-time ratio. Our Associate Dean of Transfer Studies teaches 2 physics courses each semester One full time math instructor deceased in the fall of 2014, and a request has not been sent to Dean of Instruction to replace the vacancy due to enrollment in the Spring and Summer 2015 semesters. A request to replace this position will be sent to Dean of Instruction pending enrollment and need in the Fall 2015, or Spring 2016, semester.

1. **Resources**

Funding to support professional development opportunities for our faculty is greatly appreciated and useful. Faculty members that request professional development tend to be met with approval and support.

1. **Enrollment**

Enrollment numbers remain steady, with the exception of Summer 2016. Course offerings are adjusted with respect to current enrollment trends.

Enrollment in distance education courses continue to increase as more courses are made available.

1. **Facilities**

The biggest need in our division is to renovate the Physics Lab.  We have completed the renovation of both BIO and CHM labs and this has been a wonderful benefit to our students.  However, the Physics lab has been declining in numerous ways over the past few years and is now in need of several things.

1. **Equipment**

The fax machine for the Math/Engineering/Physical Science Department is located in the adjunct faculty workroom. There is a computer and printer also in the adjunct faculty workroom to serve the part-time faculty members. There is one full-time faculty member, who teaches math, physics, and astronomy, that is assigned a laptop computer, which is used for teaching the online astronomy class. Also, 1 document camera, 1 projection unit, and 1 computer are located in CH 217, Physics classroom, and in CH 310, math classroom. A document camera with projection unit and screen is located in the following math classrooms: CH 312, CH 212, RCH 321, and RCH 234.

A multifunction printer is located in Math Faculty Workroom, RCH 236 B, and a colored multifunction printer is located in

Math Department Office, RCH 322.

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

All Math, Physics, 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 competencies are reviewed and updated as changes occur.

**2015-2016 Accomplishments:**

* Purchased 1 projection unit with screen, and 1 document camera, which was installed in Math classroom CH 312.
* Purchased Melting Point Determination instruments needed for Organic Chemistry labs**.**

**Unit Goals (2015-2017)**

**Goal 1. Add 3 projection units, including computer, screen, and document camera to one Math and two Chemistry classroom and**

**Upgrade or add 5 new computers in Physics Lab as they are XP’s and the newer version is needed.**

1. Objectives

* Keeping 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, while also obtaining feedback from the faculty using the equipment for instruction.

1. Additional Funding Requests

* Funding estimate to purchase 3 projection units with screen @$1,750.00, each, and document cameras @ $2,192.00, each, for

Chemistry and Math classrooms.

5 new computers in Physics Lab @$1,700 each =$8,500.

**Goal 2.** **Continue to upgrade computers being used by full-time Faculty members**

1. Objectives

* Replace and/or upgrade computers 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

* Funding estimate to purchase computers for 4 full time faculty members and 1 computer for Adjunct Faculty workroom: 5 units @ $1,700 each = $8,500.

**Goal 3. Relocate the Physics Lab from current location.**

1. Objectives

* Relocating Physics lab in order to have a larger lab and install new lab with state of the art equipment as the current Physics lab has been declining in numerous ways over the past few years and is in need of several things.

1. Method of Assessment

* Coordinate with the Dean of Building and Grounds to see that the physics lab construction goes as planned, and monitor the purchase and installation of hardware and software to ensure currency.

1. Additional Funding Requests

* This project being a major expense is estimated conservatively around $70,000.

**Unit Goals: 2015-2017**

**Goal 4: Maintain up-to-date curriculum and courses to prepare students for transferring to a 4 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 change 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 a. N/A

**Goal 5: Develop and Implement written Student Learning Outcomes (SLOs) for all courses in the department to more adequately document and enhance reporting of student progress in the department.**

1. Objectives
   * Provide guidelines/examples to insure all faculty understand the terminology used in developing SLOs.
   * Assign courses to individual faculty and or faculty groups as appropriate for developing a draft SLO for each course.
   * Conduct faculty reviews of SLOs, modify as necessary.
   * Plan methods for assessing SLOs and documenting results.
2. Method of Assessment
   * Assessment of SLOs will be based on judgment of the faculty and performance of the students. It is expected that SLOs and assessments will be continually modified as faculty determine where improvements are needed.

* Additional Funding Requests to be determined based on QEP committee’s recommendations



