**Unit Strategic Plan**

**2019 - 2021**

**Department: Biology Department Shelby Campus**

**Mission Statement**

The mission of the Biology Department is consistent with the mission of Jefferson State Community College. The department provides biology courses appropriate for students majoring in both science and non-science disciplines. Our teaching aims to help prepare students for their future professions both inside and outside of the scientific field and to be a more informed member of their community, able to make responsible decisions in biological matters.

**Summary of Access, Productivity, and Effectiveness**

The Biology Department offers a wide array of courses that serve as degree requirements and foundational prerequisites for non-science majors, biology majors, and students pursuing careers in Nursing and allied health at the college and other four-year institutions. These courses include a two-course biology sequence for non-science majors (Introduction to Biology I & II){BIO 101/102}, science majors (Principles of Biology I & II){BIO 103/104} and Anatomy and Physiology (Anatomy and Physiology I & II){BIO 201/202}. The department also offers a one-semester course in Microbiology (Biology 220), and Survey of Human Biology (Biology 111). Four of these courses serve as degree requirements for two-year career programs **(Table 1)** offered at the college.

**Table 1: Two-year Career Program Biology Courses**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Biology 103** | **Biology 111** | **Biology 201** | **Biology 202** | **Biology 220** |
| Clinical Laboratory Technology | Funeral Services | Clinical Laboratory Technology | Nursing | Nursing |
| Emergency Medical Service (Paramedic) |  | Biomedical Equipment Technology | Physical Therapy Assistant |  |
| Biomedical Equipment Technology |  | Nursing | Radiologic Technology |  |
| Veterinary Technology |  | Physical Therapy Assistant |  |  |
| Transfer Students |  | Radiologic Technology |  |  |
|  |  | Respiratory Therapy | Respiratory Therapy |  |

**Internal Conditions:**

1. **Technology**

* Every instructor is assigned Blackboard course management shells for each course they teach. Over 60% of the faculty utilizes the Blackboard course management system within their courses. Minimal use includes the posting of the course syllabus, grades, and class communications. Instructors that maximize Blackboard in the class not only use it for the posting of course materials but also provide links to outside resources that are valuable to student success.

Additionally, several instructors utilize the technology options provided by the textbook companies. Assessments and ancillary resources are utilized to improve student learning.

* All lecture classrooms in the Health Sciences Building are equipped with a computer and projector for instructor use. This equipment allows instructors to present lecture material to the students using alternative formats such as PowerPoint, animations, and videos. Four of the five biology laboratories contain 9-10 desktop computers that are used to complete virtual biological and physiological simulations.

1. **Budget**

* The academic budget for the office and classroom supplies have met the needs of the department.

1. **Staffing**

* The department employs five full-time faculty (one is full-time temp), an office manager, and a lab coordinator. On average, the department employs seventeen adjunct instructors during the fall and spring semesters and nine during the summer. A full-time instructor from the Jefferson campus taught at the Shelby campus through Spring 2018 to help maintain full-time part-time ratios.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Full-Time*** | | | | **Part-Time** | | | | **Total** | |
| ***Sections*** | ***Enrolled*** | ***Credit Hr. Production*** | ***Credit Hr. %*** | **Sections** | **Enrolled** | **Credit Hr. Production** | **Credit Hr. %** | **Total Number of Sections** | **Total Credit Hr. Production** |
| ***50*** | ***1,339*** | ***5,356*** | ***54.7%*** | **45** | **1,110** | **4,440** | **45.3%** | **95** | **9,796** |

**Table 1. Fall 2017-18 – Summer 2017-18 Credit Hour Production by Faculty Status**

**Table 2. Fall 2018-19 – Summer 2018-19 Credit Hour Production by Faculty Status**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Full-Time*** | | | | **Part-Time** | | | | **Total** | |
| ***Sections*** | ***Enrolled*** | ***Credit Hr. Production*** | ***Credit Hr. %*** | **Sections** | **Enrolled** | **Credit Hr. Production** | **Credit Hr. %** | **Total Number of Sections** | **Total Credit Hr. Production** |
| ***44*** | ***1,185*** | ***4,740*** | ***48.3%*** | **50** | **1,269** | **5,076** | **51.7%** | **94** | **9,816** |

1. **Resources**

* Several resources are available to faculty members for professional development. These resources include professional science and teacher organizations, publisher-supported seminars/webinars, Alabama Community College System sponsored events, and library-supported resources. Funding for the annual ACCS conference has been covered by the college and faculty members are grateful for this provision.

1. **Enrollment**

* Students pursuing degrees in Nursing and Allied Health programs contribute significantly to steady enrollment in Anatomy and Physiology and Microbiology courses. Enrollment in non-majors science sequence (Introduction to Biology I & II) remains constant because these courses are chosen to meet general science requirements for both the AS and AAS degrees. Additionally, the online and hybrid courses provide accessibility and flexibility to another cohort of students that may not be able to enroll in the traditional campus course offering.
* Overall enrollment by class offerings yearly total showed a slight increase (.3%) in 2018-2019, when comparing 2017-2018 data. Despite the fact that traditional and internet course delivery methods decreased total enrollments by 5% and 7% respectively, comparing the same time frame. This may be due to the fact that hybrid enrollment increased by a whopping 57%, comparatively. BIO-201 has the largest enrollment percentage of course loads for both reporting frames (charts 1 & 2).

**Table 3. 2017 -2018 Enrollment by Class Offering Format (Shelby)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course** | **Traditional** | | | **Method** | **Internet** | | | **Method** | **Hybrid** | | | **Method** | **Yearly Total** |
| **F** | **SP** | **SU** | **Total** | **F** | **SP** | **SU** | **Total** | **F** | **SP** | **SU** | **Total** |
| **BIO 101** | **151** | **138** | **52** | **341** | **68** | **60** | **28** | **156** | **0** | **0** | **0** | **0** | **497** |
| **BIO 102** | **24** | **30** | **10** | **64** | **33** | **31** | **27** | **91** | **0** | **0** | **0** | **0** | **155** |
| **BIO 103** | **123** | **94** | **46** | **263** | **0** | **0** | **0** | **0** | **27** | **26** | **0** | **53** | **316** |
| **BIO 104S** | **0** | **34** | **25** | **59** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **59** |
| **BIO 111** | **0** | **-** | **-** | **0** | **0** | **-** | **-** | **0** | **0** | **-** | **-** | **0** | **0** |
| **BIO 201** | **291** | **241** | **108** | **640** | **0** | **0** | **0** | **0** | **31** | **20** | **0** | **51** | **691** |
| **BIO 202** | **130** | **176** | **59** | **365** | **0** | **0** | **0** | **0** | **21** | **18** | **31** | **70** | **435** |
| **BIO 220** | **85** | **98** | **73** | **256** | **0** | **0** | **0** | **0** | **18** | **21** | **0** | **39** | **295** |
| **TOTAL** | **804** | **811** | **373** | **1988** | **101** | **91** | **55** | **247** | **97** | **85** | **31** | **213** | **2448** |

**Chart 1. 2017-2018 Enrollment Percentage Based on Course Offerings**

**Table 4. 2018-2019 Enrollment by Class Offering Format(Shelby)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Course** | **Traditional** | | | **Method** | **Internet** | | | **Method** | **Hybrid** | | | **Method** | **Yearly Total** |
| **F** | **SP** | **SU** | **Total** | **F** | **SP** | **SU** | **Total** | **F** | **SP** | **SU** | **Total** |
| **BIO 101** | **148** | **143** | **49** | **340** | **59** | **64** | **23** | **146** | **0** | **0** | **0** | **0** | **486** |
| **BIO 102** | **25** | **27** | **6** | **58** | **30** | **29** | **23** | **82** | **0** | **0** | **0** | **0** | **140** |
| **BIO 103** | **122** | **80** | **46** | **248** | **0** | **0** | **0** | **0** | **31** | **14** | **0** | **45** | **293** |
| **BIO 104S** | **-** | **0** | **30** | **30** | **-** | **0** | **0** | **0** | **-** | **31** | **0** | **31** | **61** |
| **BIO 111** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **0** | **-** | **-** | **-** | **-** | **-** |
| **BIO 201** | **316** | **244** | **78** | **638** | **0** | **0** | **0** | **0** | **26** | **28** | **17** | **71** | **709** |
| **BIO 202** | **116** | **175** | **26** | **317** | **0** | **0** | **0** | **0** | **50** | **31** | **59** | **140** | **457** |
| **BIO 220** | **84** | **108** | **67** | **259** | **0** | **0** | **0** | **0** | **21** | **28** | **0** | **49** | **308** |
| **TOTAL** | **811** | **777** | **302** | **1890** | **89** | **93** | **46** | **228** | **128** | **132** | **76** | **336** | **2454** |

**Chart 2: 2018-2019 Enrollment Percentage Based on Course Offerings**

1. **Facilities**

* The facilities at the Shelby campus adequately support the classes offered by the department. Classes are taught in various classrooms in the Health Science Building and each course with more than two-course offerings a semester has a designated laboratory. Two courses, Principles of Biology II (Bio 104) and Introduction to Biology II (Biology 102) float between available lab spaces.
* The biology department is located on the second floor of the Health Science Building. All faculty members are housed in Suite 200, and the lab coordinator is in room 207. Office space reserved for adjunct instructors is in room 203.

1. **Equipment**

* The biology department has adequate equipment to support faculty, lecture, and laboratory classes. Routinely, equipment is ordered to maintain the faculty offices and the laboratory.

**External Conditions**

All Biology courses are regulated by the Department of Postsecondary Education. A statewide syllabus and competencies are established for every course. The competencies are reviewed and updated as changes occur.

**2018-2019 Accomplishments:**

**The Biology Department continues to examine ways in which to diversify student learning and improve instruction. The following items reflect ways by which the department and individuals have made strides:**

* **Tom Baker** – Mr. Baker was part of a group of instructors who offered open lab time for A&P students in order to improve student retention and better prepare students for lab course content and practical assessments. He made himself available to students for additional tutoring outside of class time.
* **Meena Bej –** Dr. Bej was selected as a participant in the Alabama Community College Systems’ 2019 Instructional Leadership Academy. As well she continues to stay abreast of current research in the biological sciences and medicine through literature searches and attending seminars at the University of Alabama at Birmingham.
* **Zareen Dodwad-**Khan-Dr.-Dr. Khan attended the ACCS conference in the Fall 2018. She was a participant in ROSE collaboration with UAB to re-evaluate BIO 103 effectiveness and incorporate CURE experiences into the labs at JSCC. She added quizzes to help students keep up with studying, created alternative homework and lab assignments(such as poster and 3D models) as a way to keep her Anatomy & Physiology students motivated. She has a desire to take on a leadership role and collaborate with colleagues to reassess their approach to A&P class to increase student retention and pass rates.
* **Julie Maharrey-** Dr. Maharrey is responsible for providing the SLO compilation data for BIO 202 for the department. She continues to be a guide for her student in Human Anatomy and Physiology courses. She offers a variety of assignments, which include online resources such as EdPuzzles and Wiki to help students identify their best way to learn, develop critical thinking skills and foster independence**.**
* **Stephanie Miller –** Ms. Miller was hired as the Shelby Campus Chairperson for the Biology department inSummer 2018**.** Ms. Miller was selected to become a member of the Instructional Administrators Association Fall 2018. She attended the Fall 2018 ACCS conference. She continues to serve as a member of Jefferson State’s Selection Committee for the college’s Leadership Academy. She was a participant in ROSE collaboration with UAB to re-evaluate BIO 103 effectiveness and incorporate CURE experiences into the labs at JSCC. Stephanie continues to work to provide quality instruction to her students to foster their understanding and success in the classroom, their clinical programs and/or their transfer goals.
* **Amanda Swindall –** Dr. Swindallis a new transfer to the Shelby campus Fall 2019. She is a member of the Honors day committee. She participated in the Yale University Summer Institutes on Science Teaching Online Seminars. She was a collaborator on a grant submitted to NIH by Dr. Nic Kin. She was a participant in ROSE collaboration with UAB to re-evaluate BIO 103 effectiveness and incorporate CURE experiences into the labs at JSCC. Amanda developed and taught a BIO 101 online course Summer 2019 for Clanton campus. She incorporated Augmented Reality Cadaver dissection into BIO 201/202 lab experiences via Virtual Body Lab simulations.
* The Shelby Biology Department along with the Jefferson, Pell City, and Clanton campuses continue to partner successfully with one another to collect, analyze and review student learning outcome data.

**Unit Goals -2019-2020:**

**Goal 1: Maintain up-to-date hardware/software for faculty and staff**

1. **Objective**

* Replace faculty computers to enhance quality of instruction offered to students through the use of up-date equipment and technology. Office computers are generally replaced on a three-year rotation and an assessment of our office suite determined that the computers in faculty offices have been out of warranty over a year and two of them for close to three years.

1. **Method of Assessment**

* Assessment of hardware/software will be based on input from faculty members/staff and department chair. A record will be kept in the department as to when faculty computers were replaced.
* Survey faculty periodically to determine their needs
* Submit requests to replace equipment to administration for approval

1. **Funding Requests**

* Based on the 3-year rotation schedule, four faculty members, the office administrator and the two adjunct offices will need new office computers in 2019. Approximately $10,500-$12,000 for office computers**.**

**Goal 2: Service Microscopes in all laboratories**

* + - 1. **Objective**
* Microscopes in all laboratories need to be cleaned and serviced in order to work properly
  + - 1. **Method of Assessment**
* The lab coordinator, instructors, and students will provide feedback on the functionality of the microscopes.
* The lab coordinator will establish a schedule with the service provider to ensure that the microscopes are cleaned and serviced annually.
  + - 1. **Additional Funding Request**
* Cleaning 167 microscopes @ 20.00 ea – $3340.00
* Estimated Repairs @ $300.00
* Bulb replacement 10 @$100.00
* Total estimate = $3,740.00

**Goal 3: Upgrade of dissection models for the Anatomy and Physiology laboratory.**

1.**Objectives**

* To add additional models for Biology 201 laboratory
  + Increase the number of Skull/Head models
* To add additional models for the Biology 202 laboratory
  + Increase the number Lung and Larynx models

1. **Method of Assessment**

* New models will be included on laboratory exams
* Informal feedback and conversation between students and instructors
* End of the semester course evaluation forms

1. **Additional Funding requests**- Funds are requested and will be used to purchase the following laboratory specimen/items.

* Biology 201 – 4 Human Head Relief Models (Fisher/S17106) @ $122.40 ea = $489.60
* 4 Model, Skulls (Color Coded) (Fisher/S13501) @ 61.60 ea = $246.40
* Biology 202 - 4 Lung Model-5 Part Full Size (Fisher/S172332) @ $317.60 ea = $1170.40
* 4 Larynx Model 2 Parts (Fisher/17178) @ 83.20 each = $332.80

Total = $2,239.20

**Goal 4: Hire new, permanent faculty member to fill vacancy due to recent retirement of faculty member**

1. **Objective**
   * Maintain the full-time/part-time ratio of faculty within the department.
2. **Method of Assessment**
   * The new faculty member will be formally evaluated annually by department chairperson
   * The new faculty member will be evaluated formally by students at the end of each semester.
3. **Additional Funding Request**
   * Education and experience will determine the salary of the new faculty according to the D-1 salary scales.

**Goal 5: Maintain an informed and professional faculty to preserve the ability to offer courses that help students meet their educational and transfer goals.**

**1. Objectives:**

1A. Provide support for professional development

\*Encourage faculty to attend local, in-state and out-of-state conferences

2A. Continue to review Student Learning Outcome and assessments, course competencies and requirements for every course

3A. Hire additional adjunct instructors/faculty as needed

**2. Methods of Assessment**

**Objective 1A assessment**

1. Administer a faculty survey to determine faculty areas of interest for professional development
2. Review faculty Individual Action Plans for meaningful professional development needs
3. Ask faculty who have attended conferences to share their knowledge with other faculty members
4. Encourage faculty members to present at conferences/workshops.

**Objective 2A assessment**

1. Study SLO data to determine how courses can be improved
2. Implement changes to SLO and assessments
3. Continue to review annual assessment results

**Objective 3A assessment**

1. Evaluate enrollment numbers to determine if additional faculty are needed
2. Review applications and conduct interviews for additional part-time instructors as needed

**Funding requests:**$3,000 to support conference attendance for full time faculty. Requests will be on a first come basis until funds are exhausted

$2,500 to continue to provide $500 per instructor for IAP funds

**Unit Goals 2020- 2021**

**Goal 1: Introduce innovative lab experiences to increase and improve the number of STEAM activities for students enrolled in high demand Workforce fields.**

1. **Objective**
   * Utilize equipment purchased through grant funds awarded through the Alabama Community College System’s Workforce Development Division to align laboratory activities with regional workforce development strategies and priorities.
2. **Method of Assessment**
   * The biology department purchased equipment through Vernier to conduct the following activities:
     + DNA Fingerprinting – Exploring Electrophoresis and Forensics
     + Cellular Respiration – Fermentation tubes will allow student to complete several different activities related to fermentation.
     + Classroom Polymerase Chain Reaction Laboratory Station - Experiments include but are not limited to gene cloning, genotyping, PCR- testing of water contaminants, and mitochondrial DNA analysis.

Students will be assessed via laboratory test and surveys. Instructors will provide feedback based on their experiences.

1. **Additional Funding Request**

* No funds required

**Goal 2: Introduce peer instructor evaluations to improve faculty instruction.**

1. **Objective**

* Implement peer instructor evaluations 1-2 times during an academic year to allow partnering instructors an opportunity to evaluate each other’s online resources, in-class experiences, resources, and assessment results. The peer review process will allow instructors to share ideas and identify best practices.

1. **Method of Assessment**

* Participant feedback

1. **Additional Funding Requests**

* No funding resources requested.

**Goal 3: Maintain an informed and professional faculty to preserve the ability to offer courses that help students meet their educational and transfer goals.**

**1. Objectives:**

1A. Provide support for professional development

\*Encourage faculty to attend local, in-state and out-of-state conferences

2A. Continue to review Student Learning Outcome and assessments, course competencies and requirements for every course

3A. Hire additional adjunct instructors/faculty as needed

**2. Methods of Assessment**

**Objective 1A assessment**

1.Administer a faculty survey to determine faculty areas of interest for professional development

2.Review faculty Individual Action Plans for meaningful professional development needs

3.Ask faculty who have attended conferences to share their knowledge with other faculty members

4.Encourage faculty members to present at conferences/workshops.

**Objective 2A assessment**

1.Study SLO data to determine how courses can be improved

2.Implement changes to SLO and assessments

3.Continue to review annual assessment results

**Objective 3A assessment**

1.Evaluate enrollment numbers to determine if additional faculty are needed

2.Review applications and conduct interviews for additional part-time instructors as needed

**Funding requests:**$3,000 to support conference attendance for full time faculty. Requests will be on a first come basis until funds are exhausted

$2,500 to continue to provide $500 per instructor for IAP funds