**Unit Strategic Plan**

**2021- 2023**

**Name of Program/Department: Biology Department – Jefferson Campus**

**Mission Statement (for the program or department):** 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 also to be a more informed member of their community, able to make responsible decisions in biological matters.

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

The Biology Department supports the Associate in Arts, Associate in Science and the Associate in Applied Science curriculums through Area III. Both our Biology for majors (Bio 103, 104) and Biology for non-majors (Bio 101, 102) can help to fulfill the 8 hours of Natural Sciences with laboratory requirement in Area III.

In Addition, several career programs have specific Biology course requirements. The table below outlines these programs and the courses within the Biology department that are required.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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 | Radiological Technology |  |
| Veterinary Technology |  | Physical Therapy Assistant |  |  |
| Transfer Students |  | Radiological Technology |  |  |

**Internal Conditions:**

1. **Technology**
   1. Our department has permanent projectors with a dedicated computer in three of our classrooms (RCH 244, RCH 245, and RCH 235) and all 5 of our laboratories (RCH 230, RCH 232, RCH 240, RCH 241, RCH 242). The Biology 202 laboratory has room for ten computer workstations that are essential for simulated physiological experiments. The projectors were recently added to the lab spaces (Spring 2021) and the computers in the Biology 202 laboratory have been updated within the past 3 years.
   2. The microbiology laboratory is equipped with a free-standing incubator that was purchased and installed in 2018. It is also equipped with a new autoclave that was purchased and installed in 2018.
   3. Each of the five laboratory spaces is equipped with a set of microscopes. In the past three years with have worked to replace the old microscopes and were able to use CARES money to increase our number of functional microscopes. Each student in a lab class will be able to use their own microscope during the class period.
   4. All full-time faculty members have computers in their offices. Full- time faculty computers are being upgraded as needed.
   5. All faculty members are encouraged to use the blackboard learning system to aid in classroom instruction by posting syllabi, grade books, and classroom communications. The hybrid offerings in our department utilize both blackboard and Knowmia to deliver the lecture portion of the course. We have also added a section of the internet BIO 101, non-majors biology which utilizes blackboard and Knowmia.
2. **Budget**
   1. The budget for the Biology department has been sufficient in the past in order to maintain and pay for small repairs on our equipment.
   2. It is anticipated that the budget will need to be increased in the near future to cover repairs of major pieces of equipment, provide upkeep and maintenance to existing equipment (microscope cleaning, autoclave maintenance, etc), and replenish consumables.
3. **Staffing**
   1. The current staff is sufficient to maintain a consistent level of instruction within the department.
4. **Resources**
   1. Faculty members may choose to belong to individual scientific communities within their discipline. There is a set amount of money allocated for professional development which they can use to attend meetings, conferences, and workshops.
5. **Enrollment**

Enrollment in the Biology department continues to hold steady, although we did see an uptick in registrations during academic year when all courses were online (20/21) due to the pandemic. The Jefferson campus typically holds the second largest number of registrations among the campuses.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total Registrations | Credit Hour Production | Term |
| BIO | 5019 (9.7%)\* | 20076 | 2018-2019 |
| BIO | 4981(10%)\* | 19924 | 2019-2020 |
| BIO | 5091(10.3%)\* | 20364 | 2020-2021 |

\* percent Biology registrations account for of the total registrations at the college

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total Registrations | Credit Hour Production | Term |
| Online | 2129 | 8516 | FA2020 |
| Online | 1949 | 7796 | SP2021 |

In light of the pandemic, all course were transitioned to online therefore no campus specific date is available

1. **Facilities**
   1. Biology has three dedicated classroom spaces for lecture and several others that are shared with other transfer and general studies courses. There are five laboratories which are dedicated to specific Biology courses.
   2. Each full-time faculty member maintains an office space and the department maintains a central office, which houses both the chairperson and the office manager for Mathematics and Sciences. Facilities and spaces are adequate with no anticipated need for additional facilities.
2. **Equipment**
   1. Other equipment that has not been mentioned under the Technology section of this report include, two laser jet printers, and a copy machine.

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

All of our Biology courses are regulated by the Alabama Department of Postsecondary Education. Competencies for each course are reviewed and adopted. Instructors are encouraged to use the competency to outline their courses and their own individual syllabi.

**2019-2020 Accomplishments:**

* The faculty on the Jefferson Campus assessed and adopted Open Educational resources for BIO 101, BIO 102, BIO 104, BIO 201 ,BIO 202, and BIO 220.
* Faculty members met with colleagues at UAB to form a strategic collaboration designed to better prepare and support biology transfer students
* All faculty received laptops to facilitate working from home and online instruction
* Faculty members transitioned their courses and labs online due to the Pandemic
* Faculty designed and implemented laboratory kits for students taking BIO 103, BIO 104, and BIO 220 to fulfil laboratory learning objectives

**2020-2021 Accomplishments:**

* Projectors (and computers) were installed in all five biology laboratories
* New microscopes were purchased to ensure that each laboratory had enough microscopes for 1 per student in a class
* Purchased new models for Biology and Anatomy and Physiology labs
* Received approval for and ordered new desks and chairs for RCH 235. Once delivered and installed, all Biology lecture rooms will have up to date desks and chairs
* Replaced nonfunctional chalkboards with new whiteboards

**Unit Goals (plans for the unit for the next two years):**

**Unit Goals for 2021-2022**

**Goal 1: Update online course offerings to ensure they are aligned with the Quality Matters Rubric**

1. Outcomes
   1. This goal will help to meet all of our departmental and student learning outcomes by enhancing the student experience in our online courses
2. Objectives
   1. Full time instructors will use what they have learned in QM certification course to update existing online course offerings
   2. Peer review updated online courses to ensure they align with the QM rubric
   3. Work with part time instructors to align their courses with QM standards
3. Method of assessment
   1. Compare student success in QM courses vs traditional online offerings
4. Additional funding request
   1. No funding requested

**Goal 2: Explore the addition of research-based courses to the Jefferson State Biology Curriculum (Bio 105 - Introduction to Biotechnology and BIO 203 – techniques in Molecular Biology)**

1. Outcome
   1. This goal will help to meet all of our departmental and student learning outcomes while providing students an opportunity to explore an interest in current STEM research technique.
   2. Students will receive the appropriate Biological knowledge to support a career within the scientific, medical, or health and fitness community
2. Objective
   1. Assess interest amongst are students for research-based courses
   2. Create syllabi for the courses
3. Method of Assessment
   1. Faculty will assess student interest in STEM research via survey
   2. Biology faculty will meet to review course competencies, student learning objective and course content.
4. Additional Funding requests
   1. No funding required

**Goal 3: Maintain adequate computer and projector technology**

1. Outcome
   1. This goal will help us to meet all of our departmental and student learning outcomes by ensuring we have the computer and projector technology to maintain a high-quality educational experience
2. Objectives
   1. Continue to update instructor and classroom computers every three years
   2. Maintain classroom projectors and replace as needed
3. Method of assessment
   1. Informal feedback and conversation with faculty
4. Additional funding requests
   1. Lab top and docking stations $1459.94 each x 3 instructors teaching hybrids = $4379.82
   2. Upgrade computers in classrooms and laboratories as needed at $1005.74 each

**Goal 4: Update classrooms, laboratories, and common areas as needed**

1. Outocme
   1. This goal will help us to meet all of our departmental and student learning outcomes by ensuring our classrooms and laboratories are modern and functional
2. Objectives
   1. Ensure that our classroom and laboratories maintain maximal functionality
3. Method of assessment
   1. Informal feedback and conversation with faculty
4. Additional funding requests
   1. None funding requested at this time

**Goal 5: Develop Open Educational Resources (OER) for our Laboratory Offerings**

1. Outcome
   1. This goal will help to meet all of our departmental and student learning outcomes by providing easily accessible lab materials
   2. Students will understand the principles and processes that are fundamental to life
   3. Students will understand the fundamental principles of biology at the elemental, cellular, molecular, and organism levels
   4. Students will receive the appropriate Biological knowledge to support a career within the scientific, medical, or health and fitness community
2. Objective
   1. Develop and implement OER that align with the laboratory curriculum
   2. Improve students’ outcomes in Biology courses
3. Method of Assessment
   1. Survey students regarding the lab activities and manuals
4. Additional Funding requests
   1. No funding requested at this time

**Unit Goals for 2022-2023**

**Goal 6: Develop Course Based Undergraduate Research Experiences (CUREs)**

1. Outcome
   1. This goal will help to meet all of our departmental and student learning outcomes by offering inquiry-based lab experiences
   2. Students will understand the principles and processes that are fundamental to life
   3. Students will understand the fundamental principles of biology at the elemental, cellular, molecular, and organism levels
   4. Students will receive the appropriate Biological knowledge to support a career within the scientific, medical, or health and fitness community
2. Objective
   1. Develop and implement CUREs that align with the laboratory curriculum
   2. Increase the number of students exposed to scientific research
   3. Improve students’ outcomes in Biology courses
   4. Improve student attitudes regarding Biology
3. Method of Assessment
   1. Survey students regarding their attitudes towards Biology at the beginning and ending of the semester
   2. Assess students understanding of biological concepts at the beginning and ending of the CURE
4. Additional Funding requests
   1. $1,000 per CURE lab section for consumable materials