

Unit Operational Plan

Due March 22nd, 2024

2024-2025

Name of Unit: Manufacturing Technology

Mission Statement: The Department of Manufacturing Technology (Jefferson/Shelby) aims to remain consistent in support of the mission of Jefferson State Community College and CTE through a broad range of Mechatronics course offerings appropriate for learners majoring in both AAS degree and Certificate options. Community Outreach events like Manufacturing Day, Robofest, and Robotics/STEAM Summer Camps will be used to promote and recruit K12 participants of the Mechatronics Curriculum through lively hands-on, educational, and engaging activities.

Unit Goals

| Unit Goals | Unit Outcome | Institution Strategic Plan | Fundamental Principles |
|--|--|--|---|
| Maintain the Jefferson Campus Community Robofest Competition. | Increase learning and provide quality teaching and learning environments for faculty and learners through maintaining classroom/laboratory spaces and equipment. | II.A - Increase the Fall-to Fall Retention Rate | FP 3.4 - Student academic, developmental, and support services that assist students in achieving their goals. |
| Maintain the Jefferson Campus Community Robotics STEAM Camp. | Increase learning and provide quality teaching and learning environments for faculty and learners through maintaining classroom/laboratory spaces and equipment. | II.A - Increase the Fall-to Fall Retention Rate | FP 3.4 - Student academic, developmental, and support services that assist students in achieving their goals. |
| Maintain an informed and professional faculty to preserve the ability to offer courses to help students meet their educational and career goals. | Provide quality instruction through continued professional development opportunities. | IV.B - Increase opportunities for professional development for all employees. | FP 4.3 - A working environment that supports employee wellness and job satisfaction. FP 4.4 - Continual improvement through ongoing evaluation and |

| | | | |
|---|--|--|--|
| | | | advocacy of innovation in teaching and learning. |
| Maintain adequate Instructional Industrial Systems trainer technologies. | Increase learning and provide quality teaching and learning environments for faculty and learners through maintaining classroom/laboratory spaces and equipment. | II.B - Continue to improve aesthetics and infrastructure at all campuses. | FP 4.3 - A working environment that supports employee wellness and job satisfaction. |
| Update classrooms, laboratories, and common areas as needed. | Increase learning and provide quality pedagogy and learning environments for faculty and learners through maintaining classroom/laboratory spaces and equipment. | III. B – Continue to improve aesthetics and infrastructure at all campuses. | FP 4.3 – A working environment that supports employee wellness and job satisfaction. |
| Convert 2 nd floor Manufacturing classrooms (228 and 232) into laboratories. | Increase learning and provide quality pedagogy and learning environments for faculty and learners through maintaining classroom/laboratory spaces and equipment. | III. B – Continue to improve aesthetics and infrastructure at all campuses. | FP 4.3 – A working environment that supports employee wellness and job satisfaction. |
| Develop Predictive (IIoT) and Preventative Maintenance instructional course materials to meet the needs of Industry Partners. | Provides courses and instructional content relevant to the needs of our Industry partners. Continue to increase DE enrollment and credentials. | II. B, Support the continued growth and enrollment of Dual Enrollment students and programs. II. E. Increase the number of awards and credentials earned by students. | FP 3.4 Student academic, developmental, and support services that assist students in achieving their goals. FP 2.2 – Career and professional associated degree programs that integrate general and career-specific education and prepare students for immediate employment. |

Unit Plan for 2024-2025

1. **Goals** – The activities through which the outcome will be achieved. Each Unit Outcome should have at least one goal.
2. **Method of Assessment** – How the unit will determine if the objective has been met.
3. **Funding/Rationale** – Provide an estimate of the cost of achieving the objective. Also, include a description of how these funds will be used to accomplish the objective.

| Goal | Assessment | Funding/Rationale |
|--|--|---|
| Maintain the Jefferson Campus Community Robofest Competition. | <ol style="list-style-type: none"> 1. Survey participants on the benefit of the robotics competition. 2. Survey K-12 partners on the educational benefits of a robotics competition. | \$500/year for snacks/lunch to provide to participants, judges, and coaches. |
| Maintain the Jefferson Campus Community Robotics STEAM Summer Camp. | <ol style="list-style-type: none"> 1. Survey participants on the benefit of the robotics competition. 2. Survey K-12 partners on the educational benefits of a robotics competition. | \$500/year for snacks/lunch, and promotional materials for the Robotics Summer Camp. \$12,000 for purchase of tabletop robots. |
| Maintain an informed and professional faculty to preserve the ability to offer courses to help learners meet their educational and career goals. | Collect data on faculty professional development engagement – Data will be collected using a survey. | \$2000/year |
| Maintain adequate Instructional Industrial Systems trainer technologies. | Purchase of suitcase electronics technology trainers to meet the needs of Industry partners. Collect data from Performance Skills Assessments for learning outcomes. | Approximately \$7500 for one suitcase electronics trainer. |
| Update classrooms, laboratories, and common areas as needed. | Smart boards for Manufacturing Technology classrooms 228 and 232 to deliver instructional content materials. Collect data from Performance Skills Assessments for learning outcomes. | Approximately \$7500 for one Smart board. |

| | | |
|--|--|--|
| <p>Convert 2nd floor Manufacturing classrooms (228 and 232) into laboratories.</p> | <p>Purchase of industrial trainers to accommodate the FAME program.</p> <p>Collect data from Performance Skills Assessments for learning outcomes.</p> | <ul style="list-style-type: none"> • Pumps & Pipes Trainer - \$164,080 • Mechanical System with vibration - \$128,810 • Brakes and Tables Trainer - \$7,825 • Fanuc Fenceless Collaborative Robot - \$60,600 • Fanuc CRX-5iA Fenceless Training CERT Package - \$47,600 |
| <p>Develop Predictive (IIoT) and Preventative Maintenance instructional course materials to meet the needs of Industry Partners.</p> | <p>Purchase of Predictive Maintenance (IIoT) instruments.</p> <p>Collect data from Performance Skills Assessments for learning outcomes.</p> | <p>Predictive Maintenance (IIoT) instruments approximately \$15,000</p> |

Unit Operational Plan

Due March 22nd, 2024

2024-2025

Name of Unit: Welding Technology

Mission Statement (for the unit): In support of Jefferson State Community College, the welding department is here to develop a well-rounded student in advanced training in different welding processes. Offering students with a quality education in different welding topics. Providing society with a well-trained candidate for employment opportunities in the community we support.

| Unit Goals | Unit Outcome | Institution Strategic Plan | Fundamental Principles |
|--|---|---|---|
| Maintain a clean, orderly, and working welding Program at Jefferson State Community College | Increase learning and provide quality teaching and learning environments for industry and students through maintaining classroom/laboratory spaces and equipment. | II.A - Increase the Fall-to-Fall Retention Rate | FP 3.4 - Student academic, developmental, and support services that assist students in achieving their goals. |
| Maintain an informed and professional faculty to preserve the ability to offer courses to help students meet their educational and transfer goals. | Provide quality instruction through continued professional development through various welding workshops and classroom opportunities. | IV.B - Increase opportunities for professional development for all employees | FP 4.3 - A working environment that supports employee wellness and job satisfaction. FP 4.4 - Continual improvement through ongoing evaluation and advocacy of innovation in teaching and learning |
| Perform maintenance, maintain equipment operation and technology update on all equipment. | Provide quality teaching and learning environments for faculty and students through maintaining classroom/laboratory spaces and equipment. | III.B - Continue to improve aesthetics and infrastructure at all campuses. II. F. Implement and support the Canvas Learning Management | FP 4.3 - A working environment that supports employee wellness and job satisfaction. |

| | | | |
|--|--|--|--|
| | | System and evaluate the quality of online learning. | |
| Update classrooms, Chromebooks, Smartboard and common areas as needed. | Provide quality teaching and learning environments for faculty and students through maintaining classroom/laboratory spaces and equipment. | III.B - Continue to improve aesthetics and infrastructure at all campuses. | FP 4.3 - A working environment that supports employee wellness and job satisfaction. |
| Update Welding faculty offices | To provide each instructor with adequate space for business and advising of students. A space to meet new students and their parents. | III.B - Continue to improve aesthetics and infrastructure at all campuses. | FP 4.3 - A working environment that supports employee wellness and job satisfaction. |
| Develop Course Based for students to be successful. | Provide courses relevant to the career and professional degree program. | I. A.2. Improve alignment of industrial programming with local businesses and industry. I.A.3. Increase work-based learning opportunities for students. II.A - Increase the Fall to Fall Retention Rate. II. B. Support the continued growth and enrollment of Dual Enrollment students and programs. | FP 3.4 - Student academic, developmental, and support services that assist students in achieving their goals. FP 2.2 - Career and professional associate degree programs that integrate general and career-specific education and prepare students for immediate employment. |

Unit Plan for the next year

1. **Goals** – The activities through which the outcome will be achieved. Each Unit Outcome should have at least one goal.
2. **Method of Assessment** – How the unit will determine if the objective has been met.
3. **Funding/Rationale** – Provide an estimate of the cost of achieving the objective. Also, include a description of how these funds will be used to accomplish the objective.

| Goal | Assessment | Funding/Rationale |
|--|---|--|
| Maintain the Jefferson Campus Welding Lab | | |
| Maintain an informed and professional faculty to preserve the ability to offer courses to help students meet their educational and transfer goals. | Faculty professional development engagement – All welding members attend a Fab Tech conference, Welding Workshop or Welding professional development. | \$500-2500 per instructor per year (depending on PD) |
| Maintain adequate computer and Smartboard technology | Computers and SMARTBoards will be updated in labs and offices as needed based on Informal feedback and conversation with faculty - 3 faculty with the oldest laptops will receive new laptops and SMARTboards as needed to be replaced. | 1. Lab top and docking stations \$1459.94 (approx) each x 3 instructors 2. Upgrade SMARTboard in classrooms as needed at \$7000.74 each |
| Promote welding interest at recruiting fairs, Augmented Reality Simulators | Each instructor/campus should have 2 simulators in their possession when attending recruiting events. Also, these simulators are useful for students that are having issues with the actual welding performance in the lab. | \$3400 per unit |
| Develop advance Course Based in robotics programming. | With ever changing robots in industries, more companies are relying on robotic operators in industry. With the advancement of the COBOT robot arm this equipment would be an important part of education by itself and within the welding industry. Each facility should have multiple units for student to work in small teams during class. Student are limit to time on the robot due to the facility only having 1 robot. | LE, COBOT \$100,000.00 per unit |
| Computers for Plasma cutting system, Torchmate. | Computers for the Torchmate system is needed for student to be able to learn the working parts of CAD and be able to design and cut out pieces required in the instruction books. Chromebooks Are not an option. | Laptop \$1459.94 ea (approx) |

| | | |
|--|---|--|
| | Operating system want run Torchmate or CAD programs | |
| Welding Facility Expansion for Jefferson and Shelby Campus | <p>Being able to expand and have more room would allow training on more industry equipment. This would allow students to become valuable to our industry partners and the surrounding community that would employ welders. With the <u>advisory committee requesting a fabrication class to be taught</u> to our students within our program, it would be difficult to perform a successful class in the limited space at the Jefferson campus. The Jefferson Campus needs more space to provide adequate training for the requested course.</p> <p>Shelby Campus needs expanded to accommodate student with multiple instructors and a classroom space which allows for a better classroom learning environment. Office space for each instructor is needed. Instructors can not advise student with current situation.</p> | This is a figure that I'm unable to estimate. It would take several contractors in different areas of construction fields to give estimates. |

Unit Operational Plan

Due March 22nd, 2024

2024-2025

Name of Unit: Biomedical Equipment Technology

Mission Statement:

The Mission of the Biomedical Equipment Technology Option at Jefferson State Community College is to prepare students to enter the field of medical equipment repair as competent, entry-level technicians. This option exists to supply the medical industry with qualified technicians that will maintain, calibrate and repair the equipment found in medical facilities and other areas that might require medical equipment repair. We are committed to accomplishing this mission while assisting students to achieve their goals.

Unit Goals

| Unit Goals | Unit Outcome | Institution Strategic Plan | Fundamental Principles |
|--|---|---|--|
| Strongly promote and market the Jefferson State Community College Biomedical Equipment Technology Program Option (both conventional and online) to be recognized as one of the premier providers of Biomedical Equipment Technology education in the southeast region. | Build and maintain strong, thriving relationships with our service area industry partners and secondary educational institutions. Program Satisfaction: At least 70% of graduates surveyed will report satisfaction with educational preparation. | I.A.2 - Improve alignment of industrial programming with local businesses and industry. II.B - Support the continued growth and enrollment of Dual Enrollment students and programs. | FP 2.5 - Dual enrollment programs that allow qualified high school students to earn credits for a high school diploma and/or a postsecondary degree. FP 2.6 - Distance learning programs and classes that promote accessibility through new technologies. FP 5.1 - Training for Business and Industry / Workforce Development courses, certificates, and other activities that respond to individual and corporate needs, with particular emphasis on the local labor market. |

| | | | |
|---|---|--|--|
| <p>Retain and maintain quality full-time and part-time faculty to ensure that students successfully reach their educational goals</p> | <p>Enhance faculty expertise in curriculum-applicable technologies, subject matter and teaching skills through professional development opportunities.</p> | <p>IV.B - Increase opportunities for professional development for all employees</p> | <p>FP 4.3 - A working environment that supports employee wellness and job satisfaction.</p> <p>FP 4.4 - Continual improvement through ongoing evaluation and advocacy of innovation in teaching and learning</p> |
| <p>Maintain and update student <u>laboratory spaces</u> (physical and online) as well as the instructional and training equipment contained within the <u>laboratories</u>.</p> | <p>Ensure optimal functionality and relevance of student laboratories, which will foster enriched, time-relevant learning experiences. provide high-quality, time-relevant campus laboratory experiences.</p> | <p>III.B - Continue to improve aesthetics and infrastructure at all campuses.</p> <p>II.A - Increase the Fall-to-Fall Retention Rate</p> | <p>FP 2.6 - Distance learning programs and classes that promote accessibility through new technologies.</p> <p>FP 3.1 - A friendly and stimulating atmosphere that is conducive to both formal and informal learning and to cross-cultural awareness.</p> <p>FP 3.2 - Physical facilities, technological resources and other resources that promote learning.</p> |
| <p>Ensure that faculty and students have access to up-to-date <u>computer technology</u> and <u>other classroom technology resources</u> to achieve course and program outcomes</p> | <p>Keep classroom instruction and PC technology current as supported by the college's IT department.</p> | <p>III.B - Continue to improve aesthetics and infrastructure at all campuses.</p> <p>II.A - Increase the Fall-to-Fall Retention Rate</p> | <p>FP 3.2 - Physical facilities, technological resources and other resources that promote learning.</p> <p>FP 4.3 - A working environment that supports employee wellness and job satisfaction.</p> |

Unit Operational Plan for 2024-2025

1. **Goals** – The activities through which the outcome will be achieved. Each Unit Outcome should have at least one goal.
2. **Method of Assessment** – How the unit will determine if the objective has been met.
3. **Funding/Rationale** – Provide an estimate of the cost of achieving the objective. Also, include a description of how these funds will be used to accomplish the objective.

| Unit Goals | Unit Outcome | Assessment | Funding/Rationale |
|---|--|--|---|
| <p>Strongly promote and market the Jefferson State Community College Biomedical Equipment Technology Program Option (both conventional and online) to be recognized as one of the premier providers of Biomedical Equipment Technology education in the southeast region.</p> | <p>Build and maintain strong, thriving relationships with our service area industry partners and secondary educational institutions.</p> | <p>Student Satisfaction - 70% of graduates surveyed will report satisfaction with educational preparation.</p> <p>Employer Satisfaction - 70% of employers surveyed will indicate that graduates were adequately prepared for entry-level positions.</p> | <p>No funding necessary - Use existing college internal resources to perform and analyze student and industry surveys</p> |
| <p>Retain and maintain quality full-time and part-time faculty to ensure that students successfully reach their educational goals.</p> | <p>Enhance faculty expertise in curriculum-applicable technologies, subject matter and teaching skills through professional development opportunities.</p> | <p>Obtain feedback from students via post-graduation student evaluations.</p> | <p>Salary per appropriate salary schedule to hire and/or maintain full-time and part-time instructors as needed based on class loads.</p> <p>\$3200: Association for the Advancement of Medical Instrumentation (AAMI) Conference, Long Beach, CA June 2024 – Conference Fees: \$1100, Travel/Living: \$1400.</p> <p>\$741: Association for the Advancement of Medical Instrumentation (AAMI) Institutional Membership.</p> |

| | | | |
|--|--|---|---|
| <p>Maintain and update student <u>laboratory spaces</u> (physical and online) as well as the instructional and training equipment contained within the <u>laboratories</u></p> | <p>Ensure optimal functionality and relevance of student laboratories. Therefore, fostering enriched, time-relevant, high-tech, high-quality lab learning experiences.</p> | <p>Student satisfaction with available resources via student course evaluations.</p> <p>Use of course outcome data to access student success.</p> | <p>\$24,00: Virtual Reality Biomedical Equipment Training (annual) subscription for 20 (online) students.</p> <p>This subscription and equipment is vital to the continued success of our online option. Other ACCS schools are utilizing VR and AR training technology with great success as well as <u>schools outside of our system that specialize in Biomedical Equipment Technology</u>. This technology will greatly enhance our online student's laboratory experience by providing them with near real-life, hands-on lab experiences. <u>It will also eliminate the need to purchase new lab equipment in the future</u> because the equipment used inside of the simulations will be automatically updated regularly.</p> <p>Collaborate with JSCC Bookstore. Online students will rent the <i>VR Equipment</i> from the bookstore when enrolled in BET 200, BET 202 and BET 203. If possible, add the <i>VR Equipment</i> needed to the Pioneer Pack. Therefore, the <i>VR Equipment</i> will be treated as a book adoption.</p> <p>\$3000: Routine lab/classroom supplies</p> |
|--|--|---|---|

| | | | |
|--|---|--|--|
| | | | and materials. Electronic components, electronic kits etc... |
| Ensure that faculty and students have access to up-to-date <u>computer technology</u> and <u>other classroom technology resources</u> to achieve course and program outcomes | Keep classroom instruction and PC technology current as supported by the college's IT department. | Computers and projectors will be updated in labs and offices as needed based on Informal feedback and conversations with faculty | No funding is required at this time – When needed, price quotes and computer technology suggestions will be sent to the IT Department for feedback and suggestions. |