

## Mechanical Engineering Technology Department

### Mission

The Mechanical Engineering Technology Department prepares future technologists to enrich lives and enhance society through professional level performance within the engineering enterprise.

### Vision

The program will become the outstanding Mechanical Engineering Technology Department in the region.

To accomplish this, the department faculty will:

- Prepare students as life-long learners, intellectually and ethically prepared to serve and lead in a world wide economy;
- Deliver quality instruction based on technical fundamentals, which are supported by practical experiences and applications in support of economic development;
- Advance their own scholarship through new methods of instruction, applied research programs and outreach delivery;
- Provide leadership in outreach activities in both its content and delivery modes to local, national, and international communities; and
- Support diversity, academic freedom, high aspirations, and mutual respect.

### Core Values

**Diversity** – We respect others and value diversity of opinion, freedom of expression, and other ethnic and cultural backgrounds.

**Integrity** – We are committed to the principles of truth and honesty, and we will be fair, equitable, impartial, and professional.

**Service** - We believe that serving others is a noble and worthy endeavor, and we seek to provide exceptional service.

**Intellectual Freedom** – We respect the rights of all to pursue knowledge in an unfettered manner.

**Excellence** –We seek excellence in all our endeavors, aspire to new heights, and are committed to continuous quality improvement.

**Stewardship of Resources** – We are dedicated to the efficient and effective use of resources. We accept the responsibility of the public’s trust and are accountable for our actions.

## **Goals, Critical Success Factors, Objectives and Strategies**

**Goal 1. Academic and Research Excellence: Transition the current Mechanical Engineering Technology program with TAC/ABET accreditation to become TAC/ABET accredited with options in design and manufacturing, fluid power, and electronics and control.**

### **Critical Success Factors:**

- University administration financially supports proposed increase of options.
- Complete all of the administrative requirements and have the necessary resources in place for the next ABET General Review.
- TAC/ABET accreditation.
- Approval from The Oklahoma State Regents for Higher Education (OSRHE).
- 70% Student/Alumni support for proposal.
- Research expenditures (includes in-kind equipment) of \$25,000 per year per FTE.
- Publish at least one peer-reviewed article per year per FTE.
- Overall instructor and course evaluations of 3.25 on a 4.0 scale (based on student surveys of instruction).
- Every faculty member to be engaged in some on-campus or off-campus research or outreach program.
- 25% of faculty conducting professional development/continuing education courses each year.
- 35% of graduates having significant involvement in professional society activities.
- One (1) Wentz Research Scholar application per year.
- 30% of graduates having internships, co-op study, or other engineering technology work experience.
- All undergraduates employed within 3 months of graduation.

### **Objectives:**

**Objective 1.1:** Obtain support and resources for the three new options.

### **Strategies:**

- Finalize proposal for departmental restructuring changes including a specification of resources and faculty required to accomplish the plan.
- Develop undergraduate program outlines and course descriptions.
- Develop a communications plan to inform current students, alumni, and the general public about the proposed changes.

**Objective 1.2:** Change department structure and program emphasis.

Strategies:

- Ensure the new options reflects the needs of industry worldwide.
- Publicize the availability of the new options.
- Develop and implement a program to make the changes necessary to satisfy OSRHE.
- Develop and implement a plan to achieve TAC/ABET accreditation.
- Work with ABET to accomplish a smooth transition.
- Hire a consultant and undergo a trial accreditation visit.
- Increase number of faculty from 6 to 8.
- Increase dollar amount of research proposals from \$50,000 to \$150,000.
- Increase number of funded research programs from 2 to 4.
- Increase number of publications from 0.3 to 1.0 per FTE per year.

**Objective 1.3:** Significantly expand the current research effort.

Strategies:

- Use industry based field projects, which will be part of the systems master's program described in Goal 2, to provide entree to companies in order to obtain research funding.
- Hire new faculty with proven track records in electro-mechanical research.
- Hire new faculty with proven track records in systems research.

**Objective 1.4:** Significantly expand student and faculty development.

Strategies:

- Foster student development through their formalized participation in the Industrial Advisory Board (IAB), student professional societies and continuous quality improvement program.
- Provide financial support for student professional activities and travel.

**Goal 2. Access and Diversity: Recruit, retain, and graduate a larger, more academically prepared, and more diverse student body.**

**Critical Success Factors:**

- Increase number of undergraduate students from 150 to 200.
- Increase diversity of the student population and faculty in proportion to the State's population.
- Simultaneous masters programs to be developed in Oklahoma City and Tulsa.
- Master's degree approved by The Oklahoma State Regents for Higher Education (OSRHE). [Assumes support from Administration.]
- 20 graduate students (shared with EET).

**Objectives:**

**Objective 2.1:** Recruit more undergraduate students into Mechanical Engineering Technology (MET)

Strategies:

- Support the College of Engineering Architecture and Technology recruiting efforts with special emphasis on underrepresented groups.
- Enlist the assistance of the MET's department's Industrial Advisory Board (IAB) in recruiting.

**Objective 2.2:** Establish an applications-oriented master's degree for working professionals.

Strategies:

- Obtain the necessary approvals for the graduate program. (Joint with EET)
- Hire new faculty in a timely manner to facilitate the delivery of a graduate degree. Special emphasis to be placed on recruitment of underrepresented groups.
- Develop graduate program outlines and course descriptions with input from alumni and IAB members to meet the requirements set by OSRHE
- Identify target industries and establish a marketing program for the new master's degree.

**Goal 3. Engagement: Provide programs and services that disseminate knowledge and skills and that enhance the quality of life.**

**Critical Success Factors** (*measures of the degree of success over the next 5 years*):

- Develop at least one course with a service-learning component.
  - Computer Numeric Control/HAAS student machine center
  - Electro-Hydraulics and control
- Graduate 10% of the student body with a service-learning designation.
  - Fluid Power Certification
  - Machine Tool

**Objectives:**

**Objective 3.1:** Foster community involvement in the department.

Strategies:

- Identify two opportunities for community involvement.
- Identify at least one course that will include a service-learning component.

**Objective 3.2:** Become a full-service organization that incorporates research initiation and performance, application development, technical training and industry involvement that supports state and national needs.

Strategy:

- Use the Ground Source Heat Pump Center and the Oklahoma Inventor's Assistance Center as a model.

**Goal 4. Technology: Benefit from the use of technology in the delivery of services.**

**Critical Success Factors** (*measures of the degree of success over the next 5 years*):

- Maintain a quality Internet presence.
- Establish at least 3 courses having a fairly extensive Internet or technology based support component.
  - OSU/OKC
  - OSU/TUL
  - OSU/Okmulgee

**Objectives:**

**Objective 4.1:** Develop supplemental courseware to be made available on the Internet.

Strategies:

- Provide reduced teaching loads for faculty developing Internet learning components.
- Request additional funding to develop the use of technology in the classroom.

Assessment:

- Number of courses with an Internet or technology based learning component.

**Objective 4.2:** Develop distance education ready graduate courses.

Strategy:

- Establish creative delivery options for the master's degree at OSU/OKC and OSU/TUL

**Goal 5. Partnerships/Collaborations: Build strategic partnerships and alliances with external entities.**

**Critical Success Factor** (*measures of the degree of success over the next 5 years*):

- Articulation agreements with junior and/or community colleges. Special working relationship with OSU/OKC, OSU/Tulsa, and OSU/Okmulgee.

**Objective:**

**Objective 5.1:** Develop partnerships with other educational institutions.

Strategy:

- Identify partnerships that would help to increase enrollment and opportunities for joint research proposals.

**Goal 6. Human Resources and Infrastructure: Maintain a quality workforce and work environment.**

**Critical Success Factors** (*measures of the degree of success over the next 5 years*):

- 3 new faculty positions for masters program.
- 1 new staff position.
- Maintain and fund staff training and development, \$1,000 per year.

**Objective:**

**Objective 6.1:** Recruit and retain quality faculty and staff.

Strategies:

- Recruit faculty who can make an immediate contribution to the new masters program.
- Obtain additional office space for new faculty, and laboratory space for their research.
- 25% of faculty and staff participate in a professional training program appropriate for their position or faculty rank.

**Goal 7. Tradition and Pride: Enhance the image of the Department of Mechanical Engineering Technology.**

**Critical Success Factors** (*measures of the degree of success over the next 5 years*):

- Host at least three multi-department events per year
  - Electro-hydraulic
  - HAAS Training Center
  - Ground Source Heat Pump Systems Annual Conference
- Recognize at least one alumnus per year who has achieved a significant leadership role.

**Objective:**

**Objective 7.1:** Instill tradition and pride in being a member or an alumnus of the department.

Strategies:

- Host student events that have participants from across the campus.
- Develop the department's means of recognizing alumni.

**Goal 8. Financial Stability: Strengthen Financial Resources.**

**Critical Success Factor:**

- Increase annual giving from zero to \$2,500 per year.

***Objective:***

**Objective 8.1:** Instill tradition and pride in being a member or an alumnus of the department.

Strategies:

- Enlist the help of the department's IAB in fund raising.
- Issue at least one Newsletter per year with an insert for giving.

**Goal 9. Accountability: Enhance planning, performance, assessment, and public accountability.**

**Critical Success Factors** (*measures of the degree of success over the next 5 years*):

- Obtain TAC/ABET accreditation for new program.

**Objectives:**

**Objective 9.1** Develop a stable and productive workforce.

Strategy:

- Conduct mid-probationary-period reviews of tenure track faculty and lecturers.

**Objective 9.2** Develop a continuous improvement process.

Strategies:

- Establish an ABET assessment database.
- Review assessment results with faculty and staff at least once every six months as part of a continuous improvement process.