

**Program Review Evaluation Team Report
Weber State University
College of Applied Science & Technology
School of Engineering Technology
Design Engineering Technology Program**

Evaluation Team:

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Program Overview

The Design Engineering Technology Program (DET) at Weber State University offers Associate of Applied Science and Bachelor of Science Degrees with the opportunity for students to obtain a Bachelor of Integrated Studies with an emphasis in Building Information Management. The program fills a vital role in the local economy as is evidence with the extensive list of community support and local employers of students and graduates.

Students have access to computer labs with software currently used by both the academic and industry communities. Students are encouraged to explore the applications of software in a variety of areas and industries such as: 3D Modeling, CAD/CAM applications, Building Information Modeling, as well as Graphic Presentations and Animations. The software used in these applications is readily available to the students.

The mission of the program is to provide students a solid theoretical background supplemented by practical experience. The aim being to prepare each student to enter the workplace and/or continue his or her academic pursuits. Each graduate from the program are expected to obtain a mastery of a variety of software tools, and to demonstrate his or her knowledge of academic interests and career goals through oral, written, and graphic communications and to exhibit a desire for lifelong learning.

Program Strengths

The most pronounced strength is that the faculty have industry work experience along with academic credentials. Evidence of a supportive budget is present to maintain equipment and supplies. There is strong support from local industry, through the advisory committee and the hiring of graduates. All senior students must complete a significant capstone project prior to graduation. These capstone project require that the student implements appropriate technology, understanding and skills in the development of his or her project. These projects develop leadership, teamwork, and creativity through the design process.

Completion of the program can be obtained within a four year period, 64 -66 credits for the AAS degree and 125 for the BS degree.

The syllabi for the various course exhibit a continuity of purpose. There is evidence of knowledge and skills being built or increased from one course to the next. Each course challenges the student.

The current faculty have a wide range of professional and academic experiences, creating a diverse group of instructors that collaborate and interact well with one another.

Program Challenges

The faculty are all teaching overload contracts. This limits the amount of time a faculty member has to advise or assist students. It also can contribute to workplace burn out and low performance in the classroom. Over the last 5 years, the budget for the program has decreased by approximately 20% despite the increase in student enrollment.

Areas where Standards were not met

The standards are all met, however the team identified a few areas of concern. One area of concern is the amount of time that faculty have to work with students outside of the classroom. Currently an adjunct instructor is helping to maintain an FTE of 12 credit hours of instruction for each of the three full time faculty members, however the adjunct instructor is not required to mentor or advise students with that work load being return to the full time faculty. The Architectural aspect of the program is managed by one (1) full time instructor. This will not allow growth in this area since there is only one instructor's point of view and course offering. Students should have at a minimum two different points of view from department instruction. Another concern is the lack of evidence of how the mission statement is reviewed through a process of self- assessment and improvement.

Recommendations for Change

There needs to be an allocation of funds to support the implantation and adaptation of new technology into the curriculum. Technology continues to advance as well as the software used in the program and a plan should be in place to continue with state-of-the-art software and equipment

The hiring of 1 additional full time instructor to assist with student capstone project, advising, and teaching in the architectural aspect of the degree.

ABET outcomes are only covered in the DET senior Project. Integration of these outcomes should be introduced and included in other DET coursework and projects.

Evidence of faculty/department meetings that address achievement of learning outcomes and areas for self-improvement through minuets are recommended.

Learning outcome 5 – work on teams is only present in the senior project. Examine areas in other courses and projects where students can experience and perfect working in a team environment prior to the capstone / senior project.

The meeting minutes provided for the most recent Industry Advisory Committee (IAC) is listed as October 24, 2012. It is recommended that the IAC be convened once again during the 2015-16 academic year. It is also recommend that the IAC be convened on an annual basis.

Additional Recommendations and Comments

Standards:

A- Mission

- a. The mission statement identifies the outcomes and the skills needed for the degree and future careers. It would serve better is more succinct, so that students could easily recognize it in their classes. What is currently written is more of a vision statement and is valuable but not fully transferable to the students for ownership.
- b. Includes a respect and awareness for the importance diversity and a knowledge of contemporary professional, societal, and global issues. However, there is not a specific reference to period or continual self-assessment and improvement.
- c. The objectives of the program are clearly defined.
- d. The mission of the Design Engineering Technology (DET) Program are consistent with the core themes of Access, Learning, and Community.

B- Curriculum

- a. Robust and complete with one course supporting and building to another. The courses within the program cover the appropriate topics for a Design Engineering Technology degree. CAD, Virtual Design, and Tool Design are offered, which covers both the breadth and depth of the field.
- b. The curriculum prepares students for future success.
- c. The DET program requires significant software/equipment support. Maintaining the quality of the program relies heavily on future efforts to acquire state-of-the-art technology.
- d. DET offers courses for its own majors and service courses for MFET and MET majors in a timely and appropriate schedule.

C- Student Learning Outcomes and Assessment

Learning Outcomes

- a. Strong evidence of continued improvement and growth. A constant achievement of 80% of the class or higher, scoring a 75% or high on exams. The breadth of the learning outcomes cover the program goals.
- b. The student outcomes emphasize mastery of the material presented in the program, as well as ongoing professional goals related to an awareness of broader global issues. However, there is room for improvement in the design and documentation of architectural plans using Revit, or other industry standard software.
- c. The curriculum map provides comprehensive information about the completion of learning outcomes for each course.

Assessment

- a. The measures are identical to ABET assessment criteria.
- b. The program provides “closed loop action forms” for courses that summarize student learning outcomes and continuous improvement. Measures of learning are contained on these forms.
- c. This data are being gathered and reported adequately by the department.
- d. Faculty responses and recommendations for improvement are provided individually. Documenting evidence of faculty meeting as a group to address the achievement of learning outcomes is recommended. This would show evidence and recognition of the student engaged in lifelong learning as well as program improvement.
- e. Continuous improvement is an integral part of the program’s efforts.

D- Academic Advising

- a. Students are required to meet annually with their advisor. In this way the program monitors the advising of students effectively.
- b. Incidences of mid-advising are rare. Students are required to meet with a faculty advisor at least once a year.
- c. Access to advising is ongoing and covers both career guidance and course selection.

E- Faculty

- a. Faculty size may not be sufficient to support the expected DET, MET, and MFET majors in the future.
- b. Full-time faculty is very competent and can sustain the stability of the program, with the caveat that growth should be handled by hiring new faculty as needed.
- c. The faculty have required and needed industry experience, academic credentials. The combined 2 Master’s and 1 (ABD) Doctorate faculty members are both academically and professionally qualified.
- d. The faculty demographic profile indicates an awareness of diversity.
- e. Sufficient mentoring activities are provided. Faculty are counseled by the program coordinator and by the program chair. Adjunct faculty also have access to mentors.
- f. Teaching workloads for current DET faculty are very high and compromise their ability to fulfill scholarship and service obligations.
- g. The DET program subscribes to good teaching standards, and offers professional development in the areas of innovative instruction.
- h. The DET program maintains an effective ongoing review of faculty. Tenure track faculty are reviewed informally once a year by the department chair and formally during their third and sixth years. Tenured faculty are reviewed every three years by the dept. chair.

F- Program Support

- a. The DET program has one and a half technicians, one secretary, and one student aide, which is adequate to meet the current needs of the program.
- b. Staff are supported and encouraged to seek professional development.
- c. There is evidence of funding to maintain the current facilities, equipment, and software. Equipment and facilities are an ongoing concern for technology programs. Establishing a consistent future funding strategy to keep the department supplied with state of the art PC's and software should be a high priority.

G- Relationships with External Communities

- a. The program has a strong, documented relationship with companies that employ its graduates.
- b. The DET program maintains an active and vibrant Industry Advisory Committee (IAC). The IAC helps the program to design and refine current curriculum.
- c. Meeting minutes are provided, but the most recent gathering is listed as October 24, 2012. It is recommended that the IAC be convened once again during the 2015-16 academic year. It is also recommend that the IAC be convened on an annual basis.

H- Results of Previous Program Reviews

- a. Previous program reviews were not available so there is no information about any actions taken based on those reviews. This area was not evaluated by the review team.