***STUDENT LEARNING ASSESSMENT PROGRAM***

***SUMMARY FORM AY 2015-2016***

Please complete a separate worksheet for each academic program (major, minor) at each level (undergraduate, graduate) in your department. Worksheets are due to CASA this year. Worksheets should be sent electronically to [kjsanders@eiu.edu](mailto:kjsanders@eiu.edu) and should also be submitted to your college dean. For information about assessment or help with your assessment plans, visit the Assessment webpage at <http://www.eiu.edu/~assess/> or contact Karla Sanders in CASA at 581-6056.

B.S. in Applied Engineering and Technology

**Degree and**

**Program Name:**

# Submitted By:

**Isaac Slaven, AET Program Coordinator**

**Please use size 10 font or larger.**

**PART ONE**

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| What are the learning objectives? | How, where, and when are they assessed? | What are the expectations? | What are the results? | Committee/person responsible? How are results shared? |
| 1. Demonstrate effective technical writing skills. | 1. Students are assessed within the context of the individual course offered.  2. Instructors are encouraged to provide a rubric or instruction to students that promote and imply that the individual student has knowledge of the subject matter and can exhibit that knowledge thru the written word.  3. Assessment factors are based on the following ideas:  • Establishing and maintaining focus and appropriate voice;  • Awareness of audience;  • Development of ideas supported by details;  • Use of effective sentence structure, syntax, and diction;  • Use of correct mechanics; and  • Proper use and documentation of sources. | Students who submit a EWP submission in an AET course are expected to meet the specific assignment criteria and fall within the rubrics provided by the EWP. A score of 3 is the expectation of AET students, and a score of 4 exceeds these expectations.  Expectations are:  - 15% exceed the expectations  - 85% meet expectations  - 0% do not meet expectations | Technical reports that are submitted must meet the criteria provided in the Guide to Lab Evaluation Criteria which is distributed to students during the term.  Students are encouraged to submitting their technical papers to EWP. Those students who participate either meet or exceed the satisfactory rating set forth by EWP. Out of the 22 EWP submissions to AET courses by AET students, all met or exceeded expectations  Students meet the following levels in fulfilling their commitment to the course:  - 41% exceed expectations  - 59% meet expectations  - 0% did not meet expectations | Results can be shared with the AET Faculty, which support the improvement of the AET program as a whole. |
| 2. Students will demonstrate the ability to speak effectively | 1. Students are assessed within the context of the individual course offered.  2. The student should demonstrate the ability to complete the steps necessary for an oral presentation or formal speaking activity including:  • Collect, analyze, and synthesize source material;  • Recognize the audience, and shape the presentation appropriately;  • Organize ideas effectively;  • Use effective language skills, including appropriate grammar, diction, and sentence structure;  • Use effective verbal communication skills, including volume, rate of speech, and pronunciation, and;  • Employ effective nonverbal communication skills, including eye contact and gestures.  Cognitive objectives: Quality speaking naturally exhibits content. Assessment of the content of the oral presentations will be the responsibility of the instructors. | 1. Students are expected to review, organize, develop, and delivery data gathered for a verbal presentation. These presentations are delivered in both group and individual settings either on an assigned topic or case study.  2. Each individual or group presentation is measured on a provided course and University rubrics.  3. Students are provided with an opportunity and encouraged to present in the Student Research and Creative Discovery Conference | Typical of many verbally delivered assignments from courses in AET, students must submit their presentation in an electronic format. This is followed by the presentation of the gathered data in a setting that is followed by an open Q&A session of their peers on the data presented.  The undergraduate speaking score for AET students was 3.8 (vs. 3.6 for LCBAS) in the Fall 2016, and in the Spring 2017 was 3.4 (vs. 3.1 for LCBAS).  Students are encouraged to participate in the campus wide Student Research and Creative Discovery Conference. AET had over 30 entrants into the conference this year, more than any other department on campus. Student research projects are selected for oral and poster presentations for this event. | Course instructors are encouraged to review the results of the course rubric, identify the trends, and make desired changes periodically on how to continuously improve critical thinking associated with the AET programs.  Potential data can be collected, analyzed, and shared with other faculty members of the AET Program Committee as designated appropriate. |
| 3. Students will demonstrate the ability to think critically | The students within the Applied Engineering and Technology program should demonstrate the ability to:  • Sort, evaluate, and interpret information;  • Formulate hypotheses and strategies for analysis;  • Comprehend and extract significant evidence;  • Recognize and evaluate assumptions, evidence, and reasoning;  • Detect fallacious arguments;  • Reason deductively; and  • Apply techniques, rules, and models to solve problems. | Students are encouraged to utilize the six basic research analysis steps in determining the outcomes of all laboratory assignment and projects. These steps are 1) develop a research question; 2) articulate a goal; 3) divide into sub-problems; 4) develop a hypothesis; 5) collect and analysis the data; and 6) interpretation rejection or acceptance.  Students are to present their findings in both an oral and written display, which promotes understanding of the process and concepts learned.  Students participate in the Watson Glaser exam. | a) Students analysis, discussed, interpreted, organized, and presented the initial project management criteria through class research projects and a special topics course called Applied Research in Engineering and Technology.  Students are encouraged to participate in the campus wide Student Research and Creative Discovery Conference. AET had over 30 entrants into the conference this year, more than any other department on campus. Student research projects are selected for oral and poster presentations for this event.  There were 22 AET students who participated in the Watson Glaser test. The average composite score was 59.7%, with the University average being slightly higher at 63% | Each faculty member collects data on student performance in specific classes. If problems arise, faculty discusses this in the AET Program Committee meetings or individually depending on the circumstances.  Results can be shared with the AET Faculty, which support the improvement of the AET program as a whole.  Data is collected and analyzed by faculty members and shared with AET program committee as deem appropriate.  Finally, the program coordinator is responsible for collecting data from AET Instructors. |
| 4. Students will demonstrate to function as responsible global citizens | AET Students are encouraged to demonstrate the abilities to:  • Display civic engagement  • Convey an understanding of history, including an ability to comprehend world-shaping forces and events that have affected human culture  • Exhibit an appreciation of diversity both at home and abroad  • Make objective decisions informed by multiple perspectives | Students are continually encourage to participate in internships that delivery a diverse experience that leads to a greater understanding of the work environment and the diversity that is associated within the organizations they intern within. Those who intern report directly to the AET Internship Coordinator who is responsible for reporting these experience to the AET Program Committee.  Students participate in student organizations such as TAGA, SME, EIU Construction Club, and others that help students experience association with other students within the AET program, non-AET Programs, the academic community, and surrounding community. Habitat for Humanity, Diversity Wall, and TAGA based projects and conferences support the global experiences of the student and faculty  Students are encouraged to participate within their course with the international students who are in those upper credit courses. Students further their understanding of issues and concerns associated with an international flavor in concepts and difference in operation, supply chain, project, manufacturing management, facility security, and etc. | International agreements have been developed with universities in both China (Zhijiange College – UofT and Shengyang Urban Construction Univerity – SUCU), Florence University of the Arts, and Sweden (Vaxjo University).  Community projects such as Habitat for Humanity, EIU Diversity Wall and other such projects have students participating through their SRO’s or as student volunteers.  Students have the opportunity in the classroom to collaborate with international students on course projects and in classroom discussions which allow all participants to experience, develop and appreciate the culture that they are familiar with.  Students are encouraged to participate in Internships and Study Aboard programs that provide both a diverse and enriching learning experience. Ten AET students participated in the study abroad program in Florence, Italy.  It is estimated that nearly all graduating AET students have participated in some diverse or global experience that provided them with a greater understanding of the impact they can have influence in regards to their personal program of study. | The AET Program Committee meetings occasionally focus on ideas that support students in diverse and global opportunities and practices within the classroom, student lead SROs, internships, and study aboard programs.  Results of these experiences are shared with the AET Faculty, which are support the improvement of the AET program as a whole.  Data is collected and analyzed by faculty members and shared with AET program committee as deem appropriate. |

**PART TWO**

Describe your program’s assessment accomplishments since your last report was submitted. Discuss ways in which you have responded to the CASA Director’s comments on last year’s report or simply describe what assessment work was initiated, continued, or completed.

* The AET Program has received accreditation in FALL 2011 for a five-year period with the Association of Technology, Management, and Applied Engineering (ATMAE) [formerly National Association of Industrial Technology (NAIT)]. An extension was granted to EIU for this accreditation in light of current financial strains. ATMAE sets standards for academic program accreditation, personal certification, and professional development for educators and industry professionals involved in integrating technology, leadership and design. The School of Technology has formally requested that this accreditation be extended one year so that we can begin to address program development issues. Much of the following will be based on both the CASA Director’s comments and requirements associated with the accreditation criteria.
* Nationally recognized certifications from the United States Department of Labor have been added to a core course: OSHA 10-hr Construction and OSHA 10-hr General Industry. Additionally, two courses have been added to two new upper-level elective courses for OSHA 30-hr Construction (AET 4913) and OSHA 30-hr General Industry (AET 4903).
* Data continues to be collected from students as they complete the teaching methods courses, cooperating teachers, and student teachers to determine how well the program is preparing students for careers in teaching.
* Rubrics for students’ work assessment were reviewed and emphasized as standards by which work must be completed. The rubrics and rating scales continue to help faculty determine the level of competency of students in the areas being assessed. The rubrics serve as a guide to what constitutes a well-developed paper, lesson plan, unit plan, etc.
* Monitoring employment opportunities through EIU Career Services, Career Days, and industry recruiters. This is also done through input from critical industrial sources such as the Technology Advisory Board, Industrial Technology graduates, industrial employers of AET graduates, professional organizations such as ATMAE, and the constant faculty contact with industries.
* Faculty members have been constantly working to ensure that the curriculum of the AET program is relevant to effectively serve the interests and fulfill the needs of both our students and the organizations that employ them locally, regionally, and nationally. This includes revising existing courses and adding new topics to their contents to keep them at the cutting edge in the ever-changing technological applications, dropping courses that no more serve the learning objectives of the curriculum due to technological progress and market needs, and developing new courses to cover new areas of technology.
* Enhancing in-class, in-lab instructional resources, implementing new methods of delivery, and maintaining on-line, technology assisted, and technology enhanced courses.
* Students who do not meet expectations are identified, given special attention and assistance, and sometimes directed to take other complementary studies or courses to help upgrade their learning.
* Bringing real-life experiences to students through organizing plant tours and field trips to manufacturing facilities and construction sites, inviting guest speakers from industry, and holding special seminars and workshops.
* Organizing hands-on training workshops where tradesmen would come and offer their experiences to students and have them do what they learn under their supervision.
* Upgrading labs and computer labs through available budgets, through gifts from industry, or AET Friend’s gifts and donations.
* Sponsoring student chapters and providing free memberships in professional societies.
* Encouraging professional students’ EIU recognized organizations where students can apply what they learned in an out-of-class platform initiated by students and supervised by faculty advisers.
* Fostering students’ oral presentations and technical writing in classes.
* Sponsoring projects such as Undergraduate Research Publications and School of Technology Research Symposium for undergraduates and graduate students to present their work
* Facilitating students’ industrial internships.
* Continuing to develop instructional methods and tools such as Show And Tell And Let Apply (SATALA) utilizing available software to enhance the learning process.

**PART THREE**

Summarize changes and improvements in **curriculum, instruction, and learning** that have resulted from the implementation of your assessment program. How have you used the data? What have you learned? In light of what you have learned through your assessment efforts this year and in past years, what are your plans for the future?

How have we used the data received?

* The AET curriculum is currently being reviewed and updated to reflect the feedback received from students and industrial leaders. Even though are students are prepared to engage in the workforce we must practice the principles we teach regarding lean principles, continuous improvement, and feedback from our clientele.
* The Curriculum is subject to ongoing revisions that include updating existing courses, eliminating those which may become irrelevant to the job market needs, and adding new ones that better serve the graduates’ career goals as well as the job market needs. This includes both of course content and delivery method.
* The special Undergraduate Research Publications project using research as a teaching tool is being further pursued to enhance to support the interest of the student, the AET department and the facility.
* New lab equipment was acquired to enhance the hands-on experiences of students and more contributions to support lab equipment will be sought.
* Student organizations and their participation in the community are being pushed forward to support the student learning experience.
* More industry-academia collaboration will be cultivated.
* The data have been used to determine if additional assessments need to be included or revisions in instruction and expectations need to be revised.

What have we learned?

* Based on the results of our assessments, the program is doing well in achieving its objectives.
* Applied Engineering and Technology curriculum is being revised based on discussions and feedback from the SOT Advisory Board, industrial leaders and community college input.

What are our plans for the future?

* Program plans for the future are to continue collecting the current data and to improve our assessment strategies based on student performance and program needs.
* AET Curriculum changes that reflect the new technologies and trends
* The establishment of a two semester CAPSTONE course that encapsulates written or oral communications, critical thinking and corroboration, and demonstrates the global responsibilities of the students who complete the AET program.