**Industrial Engineering Technology Assessment Plan 2015-2016**

**East Central College**

**Department Level:**

All career and technical programs utilize Advisory Boards to insure that the program is meeting the needs of local industry. The IET Industrial Advisory Board (IAB) is comprised primarily of engineers, plant managers, and maintenance managers from regional industry. Maintaining a group of around ten members, representing different industries and cities is desired. Members of the IAB may remain on the board as long as they remain active (attend one meeting per year). When members leave, new members are recruited utilizing contacts of the IAB and IET Program Coordinator. Potential members are recommended based on their experience and ability to provide a diversity of manufacturing/industrial knowledge. The IAB meets at least two times per year and conducts additional business via email. Additionally, the effectiveness of the IAB will be assessed every other spring, beginning 2014, with the ECC advisory committee effectiveness rubric.

To maintain current and relevant curriculum, the IAB assesses two courses each year (one per meeting). These courses are assessed for text choice and content covered. Course content is updated based on industry feedback. Any updating of equipment is also discussed and, if recommended, placed on the enhancement grant list. Below is the course assessment rotation:

1. Motor Controls (FA12)
2. Maintenance Practices (SP13)
3. Process Controls (FA13)
4. PLC (SP14)
5. Advanced PLC (FA14)
6. Industrial Electricity (SP15)
7. Industrial Robotics (FA15)
8. Materials and Metallurgy (SP16)
9. Industrial Computer Applications (FA16)
10. Troubleshooting (SP17)
11. Intro to Manufacturing Processes (FA17)
12. Industrial Power Systems (SP18)
13. Industrial and Control Systems Wiring (FA18)

14. IET Internship (SP19)

Upon completing the fourteen courses, the IAB will begin again with the first. The IAB review is an excellent opportunity to update course content but it should be noted that courses are updated for changes in industry each time they are taught.

**Student Level:**

The National Occupational Competency Testing Institute (NOCTI) Exam is administered during the Industrial Troubleshooting (capstone) course or in the final weeks before graduation. This exam meets the DESE requirements for a Technical Skills Assessment (TSA). The test covers the following areas:

1. Couplings

2. Centrifugal Pumps

3. Hydraulics

4. Fluid Power

5. Pneumatics

6. Controls

7. Motor Controls

8. Symbols

9. Transformers and Lighting

10. Alternating Current

11. Direct Current

12. Programmable Controllers

13. National Electric Code

Results of the NOCTI exam are utilized to evaluate relevant courses for student learning and retention. For example, if most students scored poorly in one of the thirteen areas, it indicates that the course should allocate more time to the subject or the teaching method should be evaluated for effectiveness.

Students are also assessed annually for the communications Critical Learning Objective (CLO) attainment during the Industrial Computers course using ECC’s common embedded rubric. Assessment in this course was chosen because the course requires student presentations. The Ethics and Social Responsibility CLO will be assessed during the Materials and Metallurgy course because we discuss the importance of proper material selection, inspection and design to product safety. This CLO will be assessed annually using the assessment tool developed by the AQIP action project committee.

The IET department uses the Critical Thinking CLO exam for assessment. This exam is scheduled to take place during the Spring semester 2018 to test the improvement shown by students entering during the Fall of 2016.

**Program Level:**

ATMAE reaccreditation Site Visit occurred March 2014

The program was reaccredited in the fall of 2014 with an update due in the fall of 2016 for items in partial compliance. Subsequent reaccreditations occur every 7 years

Graduate follow-up survey: IET graduates are surveyed for job placement, salary and advancement at 180 days post-graduation and 2 years post-graduation. Student Service is responsible for the 180 day pot-graduation survey. The IET program coordinator is responsible for the 2 year follow-up survey.

The Employer Satisfaction with ECC Graduates Survey is performed every five years in accordance with ATMAE requirements. The survey will be sent to all known employers of IET graduates based on the 180 day and 2 year post-graduation surveys. Student Services and the IET program coordinator are jointly responsible for maintaining and sending out of the survey. Surveys will be conducted in 2015 and subsequently every five years.

An assessment report will be submitted to the college on a rotation of every other year, beginning 2014, containing averages of scores of learning outcomes and rationales (including common learning objective scoring and TSA test results). It will also include recommended course/program changes from the Industrial Advisory Board.

As part of the colleges Program Review process, the IET program will begin the review process in January of 2018 and every 5 years thereafter.

Upon the availability of data, the program will track and review student completion rates. The program will compare those students who declare IET as a major but do not return the subsequent semester with those who do. This should allow some measure of student persistence in the program without putting a time limit on completion (i.e. percentage of students who graduate within two years of starting the program)