

2007 MASTER PLAN/PROGRESS REPORT

Academic Program: AS Engineering Technology, Electronics and Instrumentation Concentration

Person Responsible: Brent Garner, Electronics and Instrumentation Program Coordinator

Date Submitted: 6/28/07

Mission: The Associate of Science in Engineering Technology with concentrations in Electronics and Instrumentation serves the needs of both students and industry, as it prepares graduates for employment as entry-level technicians in the electronics and process control industries and related fields. Because these concentrations share many courses and instructors, they have been considered to be “closely related” by Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC of ABET), and will be treated as such for this document. In order to prepare students for employment in these areas, students will meet the following program outcomes, which indicate the skills developed by the program.

Institutional Mission Reference: These concentrations are related to the institutional mission in that they offer an associate degrees that leads directly to employment as an entry-level electronics or instrumentation technicians in local industry, providing them with the skilled technicians needed for their economic growth.

Assessment Methods Utilized:

- Standardized Exam (nationally normed)
- Standardized Exam (state-normed)
- Major Field Examination
- Internally-developed Examination
- Student Opinion Survey (SOS)
- National Survey of Student Engagement (NSSE)
- Employer Survey
- Graduate Survey
- Alumni Survey
- Exit Survey/Interview/Exam
- Program-specific Survey
- Scoring of Essay
- Portfolio Evaluation
- Capstone Project
- Presentation
- Research Paper
- Research Project
- Course Summary
- Excel Spreadsheet
- Access Database
- Other - Please describe: Lab exercises, Lab average

Data Repository Location:

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Student Learning Outcome 1: Graduates apply critical thinking in academic and professional environments.

<u>Expected Level of Achievement</u>	<u>Actual Data From Assessment</u>	<u>Actions/Decisions</u>
<p>75% of co-op students score at 75% or higher on Questions 2 and 5 from TECH 250 Supervisor's Review.</p> <p>75% of students enrolled in ELTR290, a second-year projects course, score a 75% on the project performance portion of the course grade.</p> <p>75% of students will be able to apply critical thinking as demonstrated by troubleshooting electronics and instrumentation systems using current equipment and systems by scoring a 75% or higher on the following assessment methods: * Lab average or lab troubleshooting exercises from ELTR172, ELTR209, ELTR214, INST101, and INST234. * Course survey questions relating to troubleshooting and critical thinking from the classes listed above.</p> <p>75% of students will be able to apply critical thinking by analyzing and solving problems in electronics and instrumentation systems – in particular those dealing with analog and digital circuits, meters and instruments, and process control by scoring a 75% or higher on the following assessment methods: * Final Exam or Test Average from ELTR209, ELTR210, ELTR214, INST244, INST102, and INST234. * Course survey questions relating to analyzing problems and critical thinking from the classes listed above.</p> <p>Comment: The third achievement item was Outcome 1 and the fourth item was Outcome 2 on the 2006 MP/PR for the A.S. concentration in ELTR/INST.</p>	<p>In the 2006-07 academic year, 100% of students scored at 75% or higher on the assessed questions from the Supervisor's Review.</p> <p>In the 2006-07 academic year, 80% of students scored a 75% or higher on the project performance score.</p> <p>In the 2006-07 academic year, 83.9% of students scored at 75% or higher. A total of 10 assessments from 5 courses was used for this outcome. Three assessments had a fewer than 75% of students scoring less than 75%. These classes and assessed items are: ELTR209 Lab Average, ELTR214 Lab Average, and the INST101 Lab Average.</p> <p>In the 2006-07 academic year, 89.7% of students scored at or above 75% and thus have met the goals relating to this outcome.</p>	<p>Continue to monitor student outcomes during the 2007-08 academic year. No actions will be taken based on the results from the 2006-07 academic year.</p> <p>Continue to monitor student outcomes during the 2007-08 academic year. No actions will be taken based on the results from the 2006-07 academic year.</p> <ol style="list-style-type: none"> 1. Efforts to improve lab averages and the quality of lab reports during the 2007-08 academic year will include: creating sample lab reports for students to reference, grade and return lab reports more during semesters, and provide feedback on students' current lab grades through Blackboard. 2. Extend the usage of troubleshooting end-of-the-semester labs where possible and use these scores for assessments. <p>Continue to monitor student outcomes. No action will be taken in the 2007-08 academic year based on the results from 2006-07.</p>

Student Learning Outcome 2: Graduates formulate and express ideas effectively through oral, written, and/or technological communications in academic and professional environments.

<u>Expected Level of Achievement</u>	<u>Actual Data From Assessment</u>	<u>Actions/Decisions</u>
75% of co-op students score at 75% or higher on Questions 1 and 4 from TECH 250 Supervisor's Review.	In the 2006-07 academic year, 100% of students scored at 75% or higher on the assessed questions from the Supervisor's Review.	Continue to monitor student outcomes during the 2007-08 academic year. No actions will be taken based on the results from the 2006-07 academic year.
75% of students enrolled in TECH250 score a 75% or higher on the final report.	In the 2006-07 academic year, 100% of students scored a 75% or higher on the course report for TECH250.	Continue to monitor student outcomes during the 2007-08 academic year. No actions will be taken based on the results from the 2006-07 academic year.
75% of students enrolled in ETLR290, a second-year projects course, score a 75% or higher on the final report.	In the 2006-07 academic year, 80% of students scored a 75% or higher on the final report for ELTR290.	Continue to monitor student outcomes during the 2007-08 academic year. No actions will be taken based on the results from the 2006-07 academic year.
75% of students enrolled in ETLR290, a second-year projects course, score a 75% or higher on the oral presentation of the project.	In the 2006-07 academic year, 60% of students scored a 75% or higher on the assessed items from ELTR290. The ELTR290 oral presentation had only 40%	Faculty will discuss ideas about how to improve student performance – especially oral presentation skills - in project courses such as ELTR290.
75% of students score a 75% or higher on the lab report average in ELTR171 and ELTR172.	In the 2006-07 academic year, 75.7% of students scored a 75% or higher on the lab report average, minimally meeting the expected level of achievement. The ELTR172 Lab Average assessment item had 71.4% of students scoring 75% or higher.	Efforts to improve lab averages and the quality of lab reports during the 2007-08 academic year will include: creating sample lab reports for students to reference, grading and returning lab reports more often during semesters, and providing feedback on students' current lab grades through Blackboard.
<p>Comment: This was Outcome 4 on the 2006 MP/PR for the A.S. concentration in ELTR/INST, with some modifications to the assessed items for 2007-08.</p>		

Student Learning Outcome 3: Graduates analyze the global community to make sound judgments in academic and professional environments.

<u>Expected Level of Achievement</u>	<u>Actual Data From Assessment</u>	<u>Actions/Decisions</u>
<p>75% of students will work effectively in lab teams to better prepare themselves for working in the global marketplace by scoring a 75% or higher on lab teamwork surveys in the following classes: ELTR171, ELTR172, ELTR209, and INST244.</p> <p>Comment: This was Outcome 5 on the 2006 MP/PR for the A.S. concentration in ELTR/INST.</p>	<p>In the 2006-07 academic year, 90.4% of students met the expected level of achievement by scoring a 75% or higher on the lab survey.</p>	<p>Continue to monitor student outcomes during the 2007-08 academic year. No actions will be taken based on the results from the 2006-07 academic year.</p>

Student Learning Outcome 4: Graduates will understand the fundamental principles of electrical and electronics circuits enabling them to understand current technology and to adapt to new devices and technologies.

<u>Expected Level of Achievement</u>	<u>Actual Data From Assessment</u>	<u>Actions/Decisions</u>
<p>75% of students will score a 75% or higher on the following assessment methods:</p> <ul style="list-style-type: none">* Final Exam or Test Average from ELTR151, ELTR171, ELTR172, and INST101.* Course survey questions relating to principles of circuits from the classes listed above. <p>Comment: This was Outcome 3 on the 2006 MP/PR for the A.S. concentration in ELTR/INST.</p>	<p>In the 2006-07 academic year, 71.5% of students scored at or above 75%. <u>Since the goal was for 75% of students to meet the expected level of achievement, the outcome was not met.</u> A total of 8 assessments from 4 courses was used for this outcome. Four assessments had a fewer than 75% of students scoring less than 75%. These classes and assessed items are: ELTR151 Final Exam and Test Average, the ETR171 Final Exam, and the ELTR172 Final Exam. The average assessed item score of these four classes is 75.85%, which is higher than the % of students at or above 75%. This points to a number of students scoring close enough to 75% to create a stronger average score than the 71.5% reaching the goal would indicate.</p>	<p>Continue to monitor student outcomes in the 2007-08 academic year. Faculty will discuss ideas about how to improve student performance in the courses.</p>