

Electrical Distribution Technician Training System



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Thank a Lineman.



Pearl River Community College

Evaluation Report Year 3

Reporting period July 1, 2010 – June 30, 2011

Submitted to [Pearl River Community College](#) by
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Executive Summary

With considerable in-kind contributions from industry partners, totaling \$880,000, the Electrical Distribution Technician Training System (EDTTS) develops electrical linemen to replace a rapidly aging and dwindling workforce. In its final year of National Science Foundation (NSF) funding, the Pearl River Community College (PRCC) utility lineman associates degree and career pathway, including a route to national certification, have been approved by the State. Continued high demand for linemen, regionally, has led EDTTS to expand to a second site at the Woodall Center in Hattiesburg; also heavily supported by industry partners. Industry support is expected to continue, as most of the 339 of 439 of the partners' total projected vacancies in the next 5-years will have to be filled by EDTTS graduates.

Participating organizations report that EDTTS is significant because it allows employers to put program participants to work as soon as they are hired. To date, 40 participants have either completed or graduated the program, and 81 were placed into jobs. Moreover, EDTTS saves participating organizations between 1 and 2-years of on-the-job training time and averages \$9,500 in training costs avoided per participant hired. Further, the program remains important because new smart grids, meters and other evolving technologies demand smarter, more highly skilled linemen. The program's innovative block training format allows participating organizations to employ and train technicians while they are still attending PRCC, and it ensures a smoother transition into the workforce. Employers report that program participants are more apt to stay on the job, compared to new hires who did not participate in the program.

Participants have high praises for the opportunities provided by the program. Twenty-four-year-old Will Gipson, for example, maintains that he turned his life around when he enrolled the utility lineman program. Gipson, a husband and father of 4-year-old twin sons, had worked offshore for three years until layoffs hit the industry. He faced a choice of going to Israel to work offshore or finding another career path. After completing the PRCC program, he loves his job with Pearl River Valley Electric Power Association. "I'm home every night," he said. "I love it. When you hire on with a co-op like Pearl River Valley that makes it worth it, the benefits, the safety." Gipson started with Pearl River Valley as an operator, running the digger truck to set utility poles, and has advanced to apprentice lineman. "It was worth me pulling everything I had saved for three years and putting everything in," he said. "Working all night to get somebody's power back on and see them happy makes it worthwhile, even if you have to get out of bed."

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Introduction

The focus of the Electrical Distribution Technician Training System (EDTTS) was to develop career track, specialized technology training that encompasses science, technology, engineering, mathematics and physical skill sets required for energy sector technicians that lead to an Associates of Applied Science Degree. Pearl River Community College (PRCC) accomplished this through the:

1. Development and refinement of curricula;
2. Development of alternative delivery strategies
3. Exploration of pathways into advanced training;
4. Development of instructors in new technologies for the energy sector; and
5. Development of an outdoor physical skills laboratory designed to simulate the actual transmission environment.

Evaluation Report Year 3 covers the reporting period from July 1, 2010 to June 30, 2011. The report also presents a summative evaluation of the project milestones completed, detailing progress toward specific objectives identified in the project proposal. It also discusses program outcomes, impacts and plans for sustainability and expansion.

Overall Evaluation Plan

The evaluation of the EDTTS incorporated formative and summative evaluation approaches. Summative evaluation occurred at the end of the project to address the overall outcomes and impacts of the project. Formative evaluation focused on project milestones, levels of quality and implementation. Evaluation follows recommended NSF practices of logic models, success indicators and standards of performance identified by the Evaluation Resource Center for Advanced Technological Education, *Evaluation/e*.

Pearl River Community College contracted with GeoWDC Solutions, Inc. to manage the external evaluation process. The evaluation team was responsible to communicate the evaluation plan to the EDTTS staff and for managing data collection within the projected time frames. The evaluator communicated regularly with the Dr. Scott Alsobrooks, the Principal Investigator at PRCC, in order to monitor the implementation process and to provide feedback on project outcomes. The GeoWDC team was responsible for evaluation of the project.

Integrated Evaluation Models

The GeoWDC team developed a logic model for this project in close coordination with the Principal Investigator, instructor and industry partners (See Appendix 1). Appendix 2 is the data collection plan and Appendix 3 is the data analysis plan for the EDTTS program. These plans are based on Phillips ROI Methodology. Phillips ROI Methodology was integrated with ATE best practices to complete the evaluation framework. The ROI Methodology is a critical tool for measuring and evaluating programs in 18 different applications in more than 40 countries. Dr. Jack J. Phillips developed the ROI Methodology in the 1970s, refined it through application and use in the 1980s and implemented it globally during the 1990s. With a combined 50 years experience in measuring and evaluating training, human resources, technology and quality programs and initiatives, ROI Institute founders and owners Jack J. Phillips, Ph.D. and Patti P. Phillips, Ph.D., are the leading experts in return on investment (ROI). Today, more than 2,000 organizations have implemented the ROI Methodology and 3,000 professionals have attended ROI Certification Workshops worldwide. All members of the evaluation team earned the ROI Certification from the ROI Institute.

Methodology for Year 3 Evaluation

GeoWDC site visits provided the opportunity for first-hand observation and face to face discussions with key project team members at PRCC. Visits to both the PRCC Poplarville, MS campus and the Woodall Advanced Technology Center, Hattiesburg, MS campus yielded valuable information regarding EDTTS curriculum development and implementation, as well as industry/education partnerships key to the success of the project. Data and information were provided by the principal investigator, Dr. Scott Alsobrooks; program director, Susan Anderson; lineman instructor, Randy Henry; and the industry representatives on the EDTTS Advisory Board:

- Chain Electric Company
- Coast Electric Power Association
- Electric Power Association of Mississippi
- Mississippi Office of the Occupational Safety and Health Administration
- Mississippi Power Company
- Pearl River Community College
- South Mississippi Electric Power Association
- The University of Southern Mississippi

The Board provides PRCC crucial technical and business information to ensure industry needs are met by EDTTS; employment for students, including on-the-job training and evaluations of performance, used to assess individualized training and development strategies; and, physical resources and equipment needed to outfit the program for realistic training and development. All advisory board members were supportive of the evaluation framework and provided required information, as requested. Throughout the project year, GeoWDC evaluators also communicated via e-mail and telecom to the principal investigator, Dr. Scott Alsobrooks; program director, Susan Anderson; and senior lineman instructor, Randy Henry.

Success Indicators

The main goal of this project was to address the need for energy industry technicians in the gulf region by creating a modular curriculum available to traditional and nontraditional students, including the incumbent workforce. Four sets of success indicators defined in the proposal are discussed below:

1. Objectives for building modules (certifications) leading to AAS degree program for the energy industry. See pages 4 and 5 of the proposal.
2. Objectives for instructor and instructional support for the EDTTS program. See pages 6 and 7 of the proposal.
3. Deliverables. See page 7 of the proposal.
4. Other Evaluation Items. See page 9 of the proposal.



Objectives for Building Modules (Certifications)

Table 1 presents a discussion of the objectives outlined on pages 4-5 of the project proposal for building modules (certifications) leading to an AAS degree program for the energy industry. The modules and curriculum have been developed, approved by the State of Mississippi, and implemented, as indicated.

Table 1. Objectives for Building Modules (Certifications)

Item	Discussion
<p>1. Providing a path for seamless transition from High School graduation into the community college AAS degree program for the energy industry.</p> <p>a. Integration of drop out recovery into the training plan, by offering some modules at high school or college locations as dual enrollment opportunities for the student.</p>	<p>The project team collaborated with the Research and Curriculum Unit (RCU) for Workforce Development, Office of Vocational Education and Workforce Development, Mississippi Department of Education to produce a validated EDTTS curriculum. RCU is responsible for the development or acquisition of a broad range of curriculum materials and media for use in Mississippi secondary schools, community/junior colleges, and vocational centers. State curriculum frameworks are developed and revised to provide the most current curricula possible to local schools. RCU develops vocational assessments that determine student mastery of technical skills in each program area. Finally, the unit collects, analyzes, reports, and disseminates usable information regarding student progress to vocational and technical program directors (http://info.rcu.msstate.edu/).</p>
 	<p>The PRCC Workforce Education team is working to integrate the EDTTS with ongoing development efforts for dual enrollment. Instructional staff has traveled to area secondary high schools and career technical centers to offer short modules to student groups. These modules allow the secondary students to gain an understanding of the technical competencies and physical demands of working as a utility electrical line worker.</p>
<p>2. Upward training of employees at low end positions to achieve energy technician status.</p>	<p>The EDTTS program greatly shortened the on-the-job training process by allowing employers to put program participants to work as energy technicians as soon as they were hired. Program participants learned state-of-the art technologies, making them more attractive to employers while participating in the program, and more competitive for advancement during and after the EDTTS program. EDTTS students received advanced training and development providing career progression opportunities, both internal and external to organizations supporting this project.</p>
	

Table 1 (continued).

Objectives for Building Modules (Certifications)

Item	Discussion
3. Blend new students with incumbent workers.	According to interviews with industry partners, EDTTS students were paired with experienced, incumbent workers, who monitored the students' on-the-job learning and performance. EDTTS, a cooperative program between industry and education, was designed to integrate the student's technical studies with industrial experience. Students were evaluated by experienced personnel, and feedback provided to the instructor, Randy Henry, to ensure seamless coordination of participant learning needs. This partnership allowed the organizations to gauge the fit of new employees attending the EDTTS program at PRCC.
4. Develop a process to share resources such as instructors, facilities, and materials with industry partners.	Monthly meetings of the advisory board allowed for the sharing of information and resources. Resource needs for the physical skills laboratories and learning needs were discussed at monthly board meetings. Close coordination between the EDTTS partners, training specialists, supervisors, managers and PRCC ensured that on-the-job training plans remained consistent with the EDTTS curriculum.
5. Development of digital delivery of many, if not all, training sessions. a. Develop on-line power industry-related accredited programs.	Instructional staff has created supplemental digital material that has been incorporated into the curriculum. This digital material is used as an online component that is delivered via BlackBoard.
6. Develop people/life friendly courses and schedules.	The innovative PRCC block training format <ul style="list-style-type: none"> • permitted students to earn while they learn as employees in a partner organization • allowed participating organizations to employ, train and assess technicians while enrolled in EDTTS • allowed smoother transition from the schoolhouse to the workplace
7. Design course curriculum to be job specific.	The project team worked with the RCU to develop a validated, job specific, and state standardized curricula based on industry standards. As a 30 year veteran of the electrical power distribution industry, the PRCC EDTTS instructor developed mature relationships with industry leaders in the gulf region. His experience and relationships were key success indicators for a job specific curriculum approved by the State Board for Community and Junior Colleges, making it available to all 15 Mississippi community colleges.



Table 1 (continued).

Objectives for Building Modules (Certifications)

Item	Discussion
<p>8. Develop internships/apprenticeships with industry partners.</p>	<p>Changes to the internship are ongoing because of the downturn in the economy. Because placement of students in paid internships became challenging, students were given the option for an internship or a capstone project with a participating organization. Students work closely with experienced, incumbent workers in internships and capstone projects. Formal evaluation by experienced personnel ensured seamless coordination of participant learning needs. A bonus for participating organizations is that the program allowed them to gauge the fit of EDTTS students for their organizations.</p>



Note: See pages 4 and 5 of the proposal.

Objectives for Instructor and Instructional Support

Table 2 presents a discussion of the objectives outlined on pages 6-7 of the project proposal for instructor and instructional support. Of particular interest is that industry partners have provided land, vehicles, equipment, materials and supplies totaling \$880,000, or 49.8% of the total program cost of \$1,766,045. This was in addition to the \$886,045, or 50.2% of the total program cost, provided by the National Science Foundation Advanced Technological Education Grant for EDTTS. Moreover, industry partner support continues to be a major factor in the continuance of the program (Appendix 4).

Table 2. Objectives for Instructor and Instructional Support

Item	Discussion
<p>1. Hiring of qualified instructors. Existing PRCC instructors have worked with industry trainers from Chain Electric and Coast EPA to conduct the one module that has been conducted. However, to achieve the high expectations of the proposal, qualified personnel must be hired on a full time basis to fully establish this program. This would include a Project Manager and one instructor. Industry personnel will be utilized on an adjunct/contact basis to balance the demand and to ensure the integrity and portability of the skills.</p> <p>a. Develop instructor training. This will be a joint effort between the energy companies, the community college and the Department of Economic and Workforce Development at the University of Southern Mississippi for industry specific training and professional development.</p>	<p>In addition to the project manager, a full-time instructor with more than 30 years electrical power distribution experience was hired. The instructor is highly effective in working with industry partners to design, develop and implement the EDTTS program. Representatives from industry partner organizations work on an adjunct/contract basis as needed to ensure the quality and integrity of the program.</p> <p>The instructor has completed the American Society of Training and Development Competent Trainer Certification through the University of Southern Mississippi’s Department of Economic of Workforce Development. The instructor also completed the OSHA 10 hour course, the Competent Person training for Trenching and Shoring offered through the Mississippi Association of Builders and Contractors. The instructor has completed several training modules through American Public Power Association as well.</p>

Table 2 (continued).

Objectives for Instructor and Instructional Support

Item	Discussion
<p>2. Develop the outdoor physical skills laboratory. PRCC is in negotiations with the Forrest County Industrial Park Commission to obtain approximately 20 acres of land adjacent to the Advanced Technology Center. A donation or minimal long term lease agreement is sought. The Mississippi Power Company has provided engineering support in creating a staking diagram of the proposed facility.</p>	<p>Coordinating with industry partners, PRCC</p> <ul style="list-style-type: none"> • acquired EDTTS equipment • constructed an outdoor physical skills laboratory. • equipped a fully functional outdoor physical skills laboratory at the Poplarville campus • Woodall Advanced Technology Center in Hattiesburg facility – classroom (modular trailer) has been set-up and 2 classes have been offered onsite. Outdoor lab – underground is 90% complete; overhead construction lab is 100% complete; other parts are 15% complete. Completion Date – 1 to 1.5 years for our identical lab not a specialized lab 2 to 3 years.
<p>3. Seek out industry-defined, portable credentials. A set of portable credentials will be determined and/or developed in the energy industry. As credentials are uncovered, or developed, an ambiguous career ladder will be visible.</p>	<p>Industry driven certifications were embedded into the EDTTS curriculum, a modular program which equips students with portable credentials. RCU developed career ladders as part of their curriculum validation process.</p> <ul style="list-style-type: none"> • Class A Commercial Driver's License (CDL) Permit – required by all students before school begins and the ability to obtain the License. • OSHA 10 hour Training Courses • First Aid & CPR • Each Electrical Utility Class is offered as a one or two week module. While there is not a nationally recognized credential, our industry partners recognize these skills as critical skills needed by a line worker. These modules were developed in congruence with the Department of Labor's Line Workers Certificate as part of the recognized apprenticeship program. These modules help the student build their career lattice to gain a DoL Certificate. • Further, the program is in the process of creating an MS-CPAS2 test. MS-CPAS2 tests are created by program instructors and the Research Curriculum Unit (RCU) at Mississippi State. These tests are used as exit exams for Career and Technical Education (CTE) programs across the state of Mississippi. • Starting in 2011, the program is implementing Level-1 and Level-2 National Center for Construction Education and Research (NCCER) Certification. The NCCER Certification is an important milestone leading to The Department of Labor Journeyman Certification.



Table 2 (continued).

Objectives for Instructor and Instructional Support

Item	Discussion
<p>4. Work with the State Department of Education on their K-12 redesign project. In this project the Department of Education plans to offer career pathways starting in the secondary setting.</p>	<p>The EDTTS validated curriculum falls under the oversight of the RCU for ongoing review. RCU is an integral link between EDTTS and the Mississippi Department of Education’s Career Pathways Curriculum Redesign initiative (http://redesign.rcu.msstate.edu/). The project team customized the career pathways for the gulf region.</p>
<p>5. Marketing plan development. a. Partnerships such as this with industry will be expanded in an effort to reach the existing worker.</p>	<p>PRCC participated in</p> <ul style="list-style-type: none"> • career fairs • college recruitment activities • local employment offices
 <div style="border: 1px solid black; padding: 5px;"> <p>Tuesday, May 04, 2010</p> <p>High school students get preview of PRCC lineman program</p> <p>POPLARVILLE - Students from 10 area high school career centers got an up-close look at Pearl River Community College’s Utility Lineman Technology program recently. (http://www.prcc.edu/press/)</p> </div>	<p>A website was developed and is modified regularly to allow the public to inquire about this program. The college PR department releases information regularly on this program as well.</p>
	<p>During FY 2011 PRCC initiated a partnership agreement with Mississippi Power Company and MDR Corp. These companies are entering into a memorandum of understanding with PRCC in which existing workers that do not have a college degree or certificate can enter the PRCC program to obtain a credential.</p>
	<p>PRCC hosted its first Utility Lineman Field Day for High School Students on April 22, 2010, boasting more than 70 juniors and seniors and 18 advisors from:</p> <ul style="list-style-type: none"> • Pearl River Central • Hattiesburg High School • Hancock High School • Petal High School • Picayune High School • North Forrest High School • Forrest County Agricultural High School • Oak Grove County High School • Jefferson Davis County • Carl Loftin Career Technical Center

Note: See pages 6 and 7 of the proposal.

Deliverables

Table 3 presents a discussion of the deliverables outlined on page 7 of the project proposal. All planned objectives for this project have been met. More importantly, the program has been highly successful and will continue to operate indefinitely. Appendix 5 provides participant enrollment, completion, graduation and job placement data; evidence of the viable, sustainable program that has emerged from this project.

As of this report, 40, or 32.5%, of the 123 participants have completed or graduated the program. Of those 40, 29 (23.6%) graduated with either a certificate of proficiency (8 CP; 6.5%) or an associate in applied science degree (21 AAS; 17.1%). 81, or 66.0%, of the 123 participants enrolled in the program were placed into jobs. Industry partners accounted for 50 of the 81 job placements, or 62.0%. Industry non-partners absorbed the other 31 job placements, or 38.0% of the program participants placed. Moreover, the demand for skilled linemen among participating organizations is expected to increase dramatically over the next 5-years. In that time, 339 of 439 of the total projected vacancies for linemen will have to be filled from outside these participating organizations.

Local estimates far exceed the conservative projections provided by the Mississippi Department of Employment Security (MDES) for Electrical Power-Line Installers and Repairers ([SOC 49-9051](#)) in both the [Pearl River Community College District](#) and the State of Mississippi. Regardless, the labor market information provided by MDES puts the occupation in the States’ [Top 20 Job Zone Four Occupations](#) based on annual demand and the amount of [training and experience](#) required. State labor market data also lists Electrical Power-Line Installers and Repairers among the [50 “Hottest” Jobs](#) in Mississippi. Further, this occupation is a [Green Increased Demand](#) occupation. Green economy activities and technologies are predicted to increase employment demand. Consequently, the number of enrollments and faculty is expected to increase with the increased demand for a skilled workforce in this occupation.

Another indication of the program’s success and sustainability can be seen in Appendix 6. Appendix 6 suggests the program is providing significant value to employers. Participating organizations report that the program greatly shortens the on-the-job training process by allowing employers to put program participants to work as soon as they are hired. The program saves participating organizations between 1 and 2-years of on-the-job training time, and between \$9,000 and 10,000 in training costs, per participant hired/placed. Based on the industry partners’ cost avoidance estimates per participant hired, the 81 participants placed during Years 1-3 represent between 41.3% and 45.9% of the total program cost of \$1,766,045. These 81 participants also signify between 82.8% and 92.0% of the \$880,000 in-kind support provided by the industry partners. Continued partner support for the program is highly likely.

Table 3. Deliverables

Item	Discussion
1. Curriculum development. Curriculum will be developed in modules or blocks with attached industry certificates for many modules. Many courses will be merged into a digital format and an on-line version for testing with student and incumbent workers.	Module, block design was utilized to allow participants to earn on the job while enrolled in the EDTTS program. According to industry partners, the block training format at PRCC allows participating organizations to employ and train technicians while they are still attending the EDTTS program, allowing for a smoother transition from the schoolhouse to the workforce.
2. Research and development for existing, industry recognized curriculum and modules and training approaches for the energy industry.	The EDTTS program is a research-based and practitioner focused energy industry program built upon industry recognized curriculum modules and performance standards.

Table 3 (continued).

Deliverables

Item	Discussion
3. Development of an AAS degree program with career tracks (majors within the degree program). These training tracks will include widely mentioned Utility Electrical Technician. Specific training tracks for the AAS degree will be developed by PRCC and the Advisory Board. As in a regular degreed program there will be shared instructional modules between the various tracks of the AAS degree.	Curriculum was designed and developed by PRCC and the EDTTS Advisory Board, and validated by educational and industry experts under the direction of the Research and Curriculum Unit for Workforce Development, Office of Vocational Education and Workforce Development, Mississippi Department of Education.

Note: See page 7 of the proposal.

Other Evaluation Items

Other evaluation items are indicated in Table 4. These include curriculum design and development, recruitment effectiveness, employment availability and student satisfaction. At present, there are more applicants than the program can currently handle, although this is being addressed. With the second training site still being constructed in Hattiesburg to meet the increasing demand for skilled electrical distribution technicians, new enrollments have been capped at 22 freshmen each August. Even so, conservative estimates are that 35 participants will be graduating the program in the next two years. Once the Hattiesburg site is fully operational, however, enrollment capacity will increase. This will be important since 339 of 439 of the total projected vacancies for linemen in the next 5-years will have to be filled from outside the participating organizations. It is also important to note that the design and development of the curriculum continues to evolve to meet industry needs.

Appendixes 7-10 show the most recent program and instructional assessment charts. During the annual planning and evaluation cycle at PRCC, analysis of assessment charts helps decision-makers define and refine goals and targeted outcomes for the coming year. Decision-makers assess the effectiveness of changes and devise plans to scale and sustain changes. Learning outcomes are established for each program and instructional area, and progress towards the attainment of these outcomes is reviewed annually by the completion and analysis of assessment charts. Assessment charts and program reviews are completed by faculty, with extensive input from industry partners, and by the department chairs. Outcomes and changes are integrated into the annual planning and evaluation cycle, as part of the overall strategic planning process.

Table 4. Other Evaluation Items

Item	Discussion
Curriculum Design and Development	Curriculum was designed and developed by PRCC and the EDTTS Advisory Board, and validated by educational and industry experts under the direction of the Research and Curriculum Unit for Workforce Development, Office of Vocational Education and Workforce Development, Mississippi Department of Education.
Effectiveness of Recruitment	PRCC and its strategic partners established articulation agreements, provided marketing and recruiting programs, and developed a pipeline of EDTTS participants.

Table 4. Other Evaluation Items

Item	Discussion
Apprenticeship and Employment Availability	<p>Conservative estimates are that 35 participants will be graduating the program in the next two years. To date, 40 students have completed the program with a degree or certificate. Of that group, 2 have moved on to university level studies, while 36 are working in the utility industry.</p>
	<p>Participating organizations reported that the EDTTS program is significant because it greatly shortens the on-the-job training process by allowing employers to put program participants to work as soon as they are hired. Moreover, the block training format at PRCC allows participating organizations to employ and train technicians while they are still attending the EDTTS program, allowing for a smoother transition from the schoolhouse to the job. Finally, program completers were reported to be more apt to stay on the job, compared to new hires who did not participate in the EDTTS program.</p>
Student Satisfaction	<p>EDTTS participants completed evaluations at the end of each course to assess their satisfaction with instructor effectiveness, course materials, course content, facilities, and scheduling.</p>
	<p>Further, a July 2011 survey of program graduates explored (1) the relevance and importance of the learning to successful job performance; (2) whether the graduates would recommend the program to others; and (3) the graduates' overall satisfaction with the program. The 15 respondents who graduated with either a Certificate of Proficiency or an Associate's Degree, Agreed or Strongly Agreed to the following statements:</p>
	<ul style="list-style-type: none"> • What I learned in the program is relevant to my performance on-the-job. • What I learned in the program is important to my performance on-the-job. • I would recommend this program to others. • Overall, I am satisfied with the Utility Lineman Technology program
	<p>Another indication of student satisfaction with the program was the formation, in 2011, of a Lineman Graduate Council, consisting of program participants who have graduated and are now working in the industry. This council meets twice a year with the program director and lead instructor to discuss how the program learning is being applied, and to explore areas for improvement.</p>

Note: See page 9 of the proposal.

Conclusion

The EDTTS has made considerable progress. Pearl River Community College (PRCC) contacted potential partners, promoted program benefits and objectives, and negotiated terms of membership in the EDTTS program. This resulted in a strong strategic partnership that comprises an industry specific advisory board. From the start, the board provided PRCC crucial technical and business information to ensure industry needs are met by EDTTS; employment for students, including on-the-job training and evaluations of performance, used to assess individualized training and development strategies; and, physical resources and equipment needed to outfit the program for realistic training and development. The board includes PRCC, Chain Electric, Coast Electric Power Association, Electric Power Association of Mississippi, Mississippi Power Company, South Mississippi Electric Power Association, and the Mississippi Office of the Occupational Safety and Health Administration.

EDTTS program curriculum was designed, developed, piloted and validated. PRCC coordinated with partners the acquisition of EDTTS equipment and the construction of an outdoor laboratory. This resulted in the establishment of a fully equipped, fully functional outdoor physical laboratory at Pearl River Community College campus in Poplarville, MS. A second outdoor physical laboratory is being constructed at Pearl River Community College campus in Hattiesburg, MS, in order to meet a growing demand for Electrical Distribution Technicians.

PRCC and its strategic partners established articulation agreements, provided marketing and recruiting programs, and developed a pipeline of EDTTS participants. To date, 40 participants have either completed or graduated the program, and 81 were placed into jobs. As of this report, conservative estimates are that 35 more participants will receive their AAS degree within the next two years.

Participating organizations report that the EDTTS program is significant because it greatly shortens the on-the-job training process by allowing employers to put program participants to work as soon as they are hired. The EDTTS saves participating organizations between 1 and 2-years of on-the-job training time, and between \$9,000 and 10,000 in training costs, per participant hired. Further, the program is important because new smart grids, meters and other evolving technologies demand smarter, more highly skilled linemen. Moreover, the block training format at PRCC allows participating organizations to employ and train technicians while they are still attending the EDTTS program, allowing for a smoother transition from the schoolhouse to the workforce. Program completers are reported by employers to be more apt to stay on the job, compared to new hires who did not participate in the EDTTS program.

With considerable in-kind contributions from industry partners, totaling some \$880,000, the Electrical Distribution Technician Training System (EDTTS) develops electrical linemen to replace a rapidly aging and dwindling workforce. In its final year of National Science Foundation (NSF) funding, the Pearl River Community College (PRCC) utility lineman associates degree and career pathway, including a route to national certification, have been approved by the State. Continued high demand for linemen, regionally, has led EDTTS to expand to a second site at the Woodall Center in Hattiesburg; also heavily supported by industry partners. Industry support is expected to continue, as most of the 339 of 439 of the partners' total projected vacancies in the next 5-years will have to be filled by EDTTS graduates.



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Electrical Distribution Technician Training System

Pearl River Community College



David Scott Alsobrooks, Ph.D., is the Vice President for Economic and Community Development at Pearl River Community College. He is also the Principal Investigator for the National Science Foundation Advanced Technological Education grant that helped fund the *Electrical Distribution Technician Training System*. Scott oversees and collaboratively manages PRCC Career Technical Education, Associate Degree Nursing, Allied Health, Workforce Education, Adult Basic Education, Public Relations, and the Alumni Foundation. He graduated from The University of Southern Mississippi Human Capital Development doctoral program in 2010. Scott has extensive experience managing and coordinating workforce education and training programs for many different industries throughout South Mississippi. These ranged from skills based training to professional development and include construction equipment operations, instrumentation, automation, lean manufacturing, six sigma, leadership, computer skills, computer networking and many others. salsobrooks@prcc.edu / 601-403-1260



Randy Henry is the Senior Lineman Instructor at Pearl River Community College. Randy has 32 years work experience in the Utility industry, including four years experience teaching college-level courses. He is the Pearl River Community College Construction and Transportation Department Chair, and a member of the Safety Committee. Randy was a member of the Research and Curriculum Unit writing team that was responsible for the Utility Line Worker Technology curriculum. In this capacity, Randy helped write the standardized curriculum for the State of Mississippi. He holds an associate in applied science degree in Utility Lineman Technology from Pearl River Community College. Randy served 10 years in the United States Army, and he has 32 years experience teaching boys camping and survival skills with the Royal Rangers. rhenry@prcc.edu / 601.403.8288



Susan Anderson has been the Utility Lineman Technical Manager at Pearl River Community College for the past three years. Susan has 27 years teaching experience in Computer Programming & Web Development, and she has two years experience as a computer programmer. She is also the Business & Commerce Technology Department Chair. Susan was a member of the Research and Curriculum Unit team that designed and developed the Utility Line Worker Technology curriculum. In this capacity, Susan helped write the standardized curriculum for the State of Mississippi. She is a graduate of both Pearl River Community College and The University of Southern Mississippi. Susan earned the Internet and Computing Core Certification (IC³) and the Certification of Online Learning (C.O.O.L). sanderson@prcc.edu / 601.403.1120

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Appendix 1. Electrical Distribution Technician Training System (EDTTS) Logic Model

Resources →	Activities →	Outputs →	Short Term Outcomes →	Long Term Outcomes →	Impact
<i>In order to accomplish our objectives we will need the following:</i>	<i>In order to address our problem or asset we will accomplish the following activities:</i>	<i>We expect that once accomplished these activities will produce the following evidence of service delivery:</i>	<i>We expect that if accomplished these activities will lead to the following changes in 1–3 years:</i>	<i>We expect that if accomplished these activities will lead to the following changes in 4–6 years:</i>	<i>We expect that if accomplished these activities will lead to the following changes in 7–10 years:</i>
<ul style="list-style-type: none"> • Strategic partnership of electrical generation and transmission companies, universities, community colleges and state agencies • Curriculum capable of effectively meeting the needs of industry and participants • Equipment and outdoor physical laboratory to support EDTTS learning programs • Pipeline of EDTTS participants 	<ul style="list-style-type: none"> • Contact potential partners • Promote program benefits and objectives • Negotiate terms of membership • Enlist member organizations • Assess industry and participant needs • Seek out industry-defined portable credentials • Design relevant competency model for entry level technicians • Design appropriate learning objectives and strategies • Coordinate with partners the acquisition of EDTTS equipment and outdoor laboratory • Establish marketing and recruiting programs 	<ul style="list-style-type: none"> • Industry specific advisory board established • Learning and development needs identified • Agreed-upon curriculum development plan • Curriculum modules, career tracks positioned • Portable credentials determined • Necessary equipment and outdoor laboratory secured and operational • EDTTS program curriculum developed, piloted, evaluated, refined • Articulation agreements signed • Student/participant enrollments 	<ul style="list-style-type: none"> • EDT included into MS Career Pathways for MDOE K-12 Redesign • Implementation of EDTTS program • First industry recognized certifications awarded • First Associate of Science (AS) Degrees Awarded • First technicians appropriately placed into jobs 	<ul style="list-style-type: none"> • First Bachelor of Science Degrees Awarded • Electrical Distribution Technician (EDT) Unemployment Rates and Occupational Projection Trends 	<ul style="list-style-type: none"> • Electrical Distribution Technician (EDT) Unemployment Rates and Occupational Projection Trends

Appendix 2. Electrical Distribution Technician Training System (EDTTS) Data Collection Plan

Level	Broad Objectives	Measures/Data	Data Collection	Data Sources	Timing	Responsibility
0	Program Inputs	<ul style="list-style-type: none"> • Resources • Curriculum • Instructors • Participants 	<ul style="list-style-type: none"> • Databases and historical records 	<ul style="list-style-type: none"> • Registrars 	<ul style="list-style-type: none"> • On going 	<ul style="list-style-type: none"> • Program Manager
1	Reaction	<ul style="list-style-type: none"> • Program relevance, importance and scheduling • Program materials, tools, equipment, facilities, safety • Quality of instruction 	<ul style="list-style-type: none"> • Reaction Surveys 	<ul style="list-style-type: none"> • Participants 	<ul style="list-style-type: none"> • End of course 	<ul style="list-style-type: none"> • Instructors
2	Learning	<ul style="list-style-type: none"> • Course exams • Performance evaluations • Certifications 	<ul style="list-style-type: none"> • Tests • Evaluations • Certifications 	<ul style="list-style-type: none"> • Participants 	<ul style="list-style-type: none"> • During the program 	<ul style="list-style-type: none"> • Instructors
3	Application	<ul style="list-style-type: none"> • Participants Placed (Hired) • Job Performance 	<ul style="list-style-type: none"> • Databases and historical records • Surveys 	<ul style="list-style-type: none"> • Graduates • Supervisors 	<ul style="list-style-type: none"> • 3-months • 6-months 	<ul style="list-style-type: none"> • Program Manager
4	Impact	<ul style="list-style-type: none"> • Electrical Distribution Technician (EDT) Unemployment Rates and Occupational Projections 	<ul style="list-style-type: none"> • State Labor Market Information 	<ul style="list-style-type: none"> • MDES 	<ul style="list-style-type: none"> • Annually 	<ul style="list-style-type: none"> • Program Manager

[Appendix 3. Electrical Distribution Technician Training System \(EDTTS\) Data Analysis Plan](#)

Data items (usually Level 4)	Methods for isolating the effects of the program/ process	Method for converting data to monetary values	Cost Categories	Intangible benefits	Communication targets for final report	Other influences/ issues during application	Comments
Electrical Distribution Technician (EDT) Unemployment Rates and Occupational Projections	Strategic partner estimates	Standard values Strategic partner estimates	Administrative Content design and development Evaluation Equipment, tools, supplies, facilities Course materials Certification testing Marketing Instructor salaries		NSF MDOE Community Colleges and Universities Industry Partners		

Appendix 4. In-Kind Donations/Contributions of Industry Partners/Employers

Partners/Employers	In-Kind Donations/Contributions			
	2009 (Y1)	2010 (Y2)	2011 (Y3)	Total (Y1-Y3)
Chain Electric Company	\$168,000	\$230,500	\$193,000	\$591,500
Coast Electric Power Association	\$30,000	\$19,000	\$7,000	\$56,000
Electric Power Association of Mississippi	\$0	\$0	\$0	\$0
Mississippi Power Company	\$0	\$0	\$12,000	\$12,000
South Mississippi Electric Power Association	\$0	\$0	\$0	\$0
Other ¹	\$220,000	\$0	\$500	\$220,500
Total In-Kind Donations/Contributions	\$418,000	\$249,500	\$212,500	\$880,000
			National Science Foundation Grant	\$886,045
			Total of In-Kind Support + Grant	\$1,766,045

Note: Industry partners donated land, vehicles, equipment, materials and supplies totaling \$880,000, or 49.8% of the total program cost of \$1,766,045. This was in addition to the \$886,045, or 50.2% of the total program cost, provided by the National Science Foundation Advanced Technological Education Grant for the Electrical Distribution Technician Training System. These figures represent the Level-0 inputs, or resources, needed to accomplish program objectives.

1. Industrial Partnership of Hattiesburg donated 22 acres valued at \$220,000 to build the Hattiesburg lab. H & D Supply donated \$500.

Appendix 5. Participant Enrollment, Completion, Graduation and Job Placement

Participants	2009 (Y1)	2010 (Y2)	2011 (Y3)	Total (Y1-Y3) ³	Percent of Enrolled
Enrolled	59	42	22	123	100.0%
Completed ¹	6	5	0	11	8.9%
Graduated (CP) ²	3	5	0	8	6.5%
Graduated (AAS)	15	6	0	21	17.1%
All Graduated (CP + AAS)	18	11	0	29	23.6%
Completed + All Graduated	24	16	0	40	32.5%
Placed into Jobs	48	25	8	81	66.0%

Employer	No. Placements	Percent of Total
Chain Electric Company	4	5%
Coast Electric Power Association	45	56%
Electric Power Association of Mississippi	0	0%
Mississippi Power Company	1	1%
South Mississippi Electric Power Association	0	0%
Other Employers (non-partners)	31	38%
Total Job Placements	81	100%

Note: 40, or 32.5%, of the 123 participants have completed or graduated the program thus far. Of those, 29 (23.6%) graduated with either a certificate of proficiency (8 CP; 6.5%) or an associate in applied science degree (21 AAS; 17.1%). 81, or 66.0%, of the 123 participants enrolled in the program were placed into jobs. Industry partners accounted for 50 of the 81 job placements, or 62.0%. Industry non-partners absorbed the other 31 job placements, or 38.0% of the program participants placed.

1. Supervised Work Experience was a mandatory course for the first two years of the program, and became an elective in 2011. Participants in the completed category are those students who completed all program requirements, except for the Supervised Work Experience. Consequently, these participants did not graduate, although they are successfully employed in the field. These individuals may return to complete the Supervised Work Experience and graduate. As of the fall semester of 2011, students may take either the Supervised Work Experience or Special Projects in Utility Lineman Technology courses to graduate.
2. The Certificate of Proficiency (CP) is a nationally recognized validation that the student has completed an intensive, full-time schedule of training in a specific skill area. The Certificate of Proficiency is awarded to a student who completes the prescribed career course of study in his or her chosen field as outlined in the college catalog and attains an overall grade point average of 2.0 or higher. In this case, the participant earns a CP as a Utility Lineman.
3. As of this report, new student enrollments are limited to 22 freshmen each August. However, the demand for skilled linemen among participating organizations is expected to increase dramatically over the next 5-years. In that time, 339 of 439 of the total projected vacancies for linemen will have to be filled from outside these participating organizations. Consequently, the number of enrollments and faculty is expected to increase.

Appendix 6. Estimated Employer Cost Avoidance

	Low	High	Average
Estimated Employer Cost Avoidance Per Participant Hired/Placed	\$9,000	\$10,000	\$9,500
Number of Job Placements during Years 1-3 (Multiplier)	81	81	81
Total Estimated Employer Cost Avoidance during Years 1-3	\$729,000	\$810,000	\$769,500
Total Program Costs	\$1,766,045	41.3%	45.9%
In-Kind Support	\$880,000	82.8%	92.0%
NSF Grant	\$886,045	82.3%	91.4%

Note: Participating organizations report that the program is significant because it greatly shortens the on-the-job training process by allowing employers to put program participants to work as soon as they are hired. The program saves participating organizations between 1 and 2-years of on-the-job training time, and between \$9,000 and 10,000 in training costs, per participant hired/placed. Based on the industry partners' cost avoidance estimates per participant hired, the 81 participants placed during Years 1-3 represent between 41.3% and 45.9% of the total program cost of \$1,766,045. These 81 participants also signify between 82.8% and 92.0% of the \$880,000 in-kind support provided by the industry partners. Finally, the costs avoided by placing 81 program participants into jobs represent between 82.3% and 91.4% of the \$886,045 provided by the National Science Foundation grant.

Appendix 7. Utility Lineman Technology Program Assessment Chart: 2010-2011

Program: Utility Lineman Technology Supports PRCC Strategic Goal(s): 1, 3, 7

MISSION STATEMENT: Pearl River Community College is a public institution committed to providing quality educational and service opportunities for all who seek them.

STRATEGIC GOALS:

1. To prepare students to transfer and be successful in their studies at baccalaureate institutions and/or to be successful in careers for which they have been prepared.
2. To provide quality student services.
3. To provide access to college courses and programs using various instructional methods, including distance education.
4. To employ qualified faculty and staff, compensate them well, and provide opportunities for their professional development.
5. To provide facilities, technology, and support staff in order to improve student learning, enhance faculty and staff performance, augment community services, And make College services available via the Internet.
6. To improve communication among campus personnel and community members regarding the College goals, objectives, and activities.
7. To recruit and retain students from a diverse population.
8. To provide workforce training programs that meet requirements of business, industry, educational, and public service agencies for basic skills, specific job skills, and technical skills training.

PURPOSE OF UNIT: To offer a technical program which, upon successful completion will qualify students for entry-level employment in business or industry and/or additional educational opportunities.

RELATIONSHIP OF UNIT TO PRCC MISSION: To provide industry based training in Utility Lineman Technology to students within the PRCC district.

PROGRAM OUTCOMES – Measurable indicators (More specific description of impact on student) WHAT should a student know, think, or be able to do upon completion of program/course?	ASSESSMENT CRITERIA – Criteria for Evaluation (Variables related to success of intended outcome) HOW will attainment of the outcome be measured?	ASSESSMENT RESULTS – Outcomes Assessment (States how well intended results were achieved) WHAT was level of attainment of outcome?	USE OF RESULTS – Actionable Knowledge (How knowledge gained will be used to improve program performance). Make a CHANGE or IMPROVE or state that no improvement is needed.
Students will be prepared with practical knowledge and skills in the curriculum of Utility Lineman Technology which include but are not limited to: <ul style="list-style-type: none"> • Being familiar with basic electrical/electronic circuits • Pole Climbing • National Electric Safety Code • Power Transmission and Distribution Grids • Overhead Construction • Underground Construction • Heavy Equipment Operation • Truck Driver Training. 	100% of students that complete the degree are eligible to pursue a Bachelor’s degree. 100% of students that have completed the certificate will enter have an easily access to the workforce.	100% of the students that finished 90% will enter the workforce, while the other 10% will pursue a higher degree.	With 100% of students either pursuing a higher degree or entering into the workforce, no improvement is needed.

Appendix 7 (continued). Utility Lineman Technology Program Assessment Chart: 2010-2011

PROGRAM OUTCOMES – Measurable indicators (More specific description of impact on student) WHAT should a student know, think, or be able to do upon completion of program/course?	ASSESSMENT CRITERIA – Criteria for Evaluation (Variables related to success of intended outcome) HOW will attainment of the outcome be measured?	ASSESSMENT RESULTS – Outcomes Assessment (States how well intended results were achieved) WHAT was level of attainment of outcome?	USE OF RESULTS – Actionable Knowledge (How knowledge gained will be used to improve program performance). Make a CHANGE or IMPROVE or state that no improvement is needed.
Students will meet or exceed the standards for the programs as set forth by the Utility Lineman Technology.	Instructors Evaluation of Students. Instructors Testing of Students.	100% students evaluated were successful in obtaining the necessary skill levels. 100% of the students were tested successfully.	The program is in the process of creating an MS-CPAS2 test ¹ . Also looking at National Center for Construction Education and Research (NCCER) certificate testing.

Note: During the annual planning and evaluation cycle, analysis of assessment charts helps decision-makers define and refine goals and targeted outcomes for the coming year. Decision-makers assess the effectiveness of changes and devise plans to scale and sustain changes. Learning outcomes are established for each program and instructional area, and progress towards the attainment of these outcomes is reviewed annually by the completion and analysis of assessment charts. Assessment charts and program reviews are completed by faculty and department chairs. Outcomes and changes are integrated into the annual planning and evaluation cycle, as part of the overall strategic planning process.

- The MS-CPAS2 tests are created by program instructors and the Research Curriculum Unit (RCU) at Mississippi State. MS-CPAS2 tests are used as exit exams for Career and Technical Education (CTE) programs across the state. “The MS-CPAS2 or the Mississippi Career Planning and Assessment System, Edition 2 is the test given to secondary and postsecondary CTE completers and the results are used to measure technical skill attainment which is one of core indicators of performance required for [Perkins IV](#) reporting” (Source: <http://portal.rcu.msstate.edu/>).

[Appendix 8. Utility Lineman Technology Instructional Area Assessment Chart: 2010-2011 Electric Power – ULT 1213](#)

PROGRAM: Utility Lineman Technology

Supports PRCC Strategic Goal(s): 1-3-7

INSTRUCTIONAL AREA: Electric Power - ULT 1213

MISSION STATEMENT: Pearl River Community College is a public institution committed to providing quality educational and service opportunities for all who seek them.

STRATEGIC GOALS:

1. To prepare students to transfer and be successful in their studies at baccalaureate institutions and/or to be successful in careers for which they have been prepared.
2. To provide quality student services.
3. To provide access to college courses and programs using various instructional methods, including distance education.
4. To employ qualified faculty and staff, compensate them well, and provide opportunities for their professional development.
5. To provide facilities, technology, and support staff in order to improve student learning, enhance faculty and staff performance, augment community services, And make College services available via the Internet.
6. To improve communication among campus personnel and community members regarding the College goals, objectives, and activities.
7. To recruit and retain students from a diverse population.
8. To provide workforce training programs that meet requirements of business, industry, educational, and public service agencies for basic skills, specific job skills, and technical skills training.

PURPOSE OF UNIT: To offer a technical program which upon successful completion will qualify students for entry-level employment in business or industry and/or additional educational opportunities.

RELATIONSHIP OF UNIT TO PRCC MISSION: To provide industry based training in Business and Commerce Technology to students within the PRCC district.

LEARNING OUTCOMES – Measurable indicators (More specific description of impact on student) WHAT should a student know, think, or be able to do upon completion of program/course?	ASSESSMENT CRITERIA –Criterion for Evaluation (Variables related to success of intended outcome) HOW will attainment of the outcome be measured?	ASSESSMENT RESULTS – Outcomes Assessment (States how well intended results were achieved) WHAT was level of attainment of outcome?	USE OF RESULTS – Actionable Knowledge (How knowledge gained will be used to improve program performance). Make a CHANGE or IMPROVE or state that no improvement is needed.
1. The students will properly identify all generation power plants.	70% of the student will understand and demonstrate and will be tested in each phase of operation through testing.	100% of the students successfully completed.	No Improvement needed at this time
2. The students will properly identify all transmission structures.	70% of the student will understand and demonstrate and will be tested in each phase of operation through testing.	100% of the students successfully completed.	No Improvement needed at this time
3. The students will demonstrate the ability to identify all distribution parts.	70% of the student will understand and demonstrate and will be tested in each phase of operation through testing.	100% of the students successfully completed.	No Improvement needed at this time
4. The student will demonstrate the ability to bank transformers.	70% of the student will understand and demonstrate and will be tested in each phase of operation through testing.	100% of the students successfully completed.	No Improvement needed at this time

Note: Progress towards the attainment of learning outcomes is reviewed annually by the completion and analysis of assessment charts. Assessment charts and program reviews are completed by faculty and department chairs, and outcomes and changes are integrated into the annual planning and evaluation cycle.

[Appendix 9. Utility Lineman Technology Instructional Area Assessment Chart: 2010-2011 Overhead Construction – ULT 2133](#)

PROGRAM: Utility Lineman Technology Supports PRCC Strategic Goal(s): 1, 3, 7

INSTRUCTIONAL AREA: Overhead Construction - ULT 2133

MISSION STATEMENT: Pearl River Community College is a public institution committed to providing quality educational and service opportunities for all who seek them.

STRATEGIC GOALS:

1. To prepare students to transfer and be successful in their studies at baccalaureate institutions and/or to be successful in careers for which they have been prepared.
2. To provide quality student services.
3. To provide access to college courses and programs using various instructional methods, including distance education.
4. To employ qualified faculty and staff, compensate them well, and provide opportunities for their professional development.
5. To provide facilities, technology, and support staff in order to improve student learning, enhance faculty and staff performance, augment community services, And make College services available via the Internet.
6. To improve communication among campus personnel and community members regarding the College goals, objectives, and activities.
7. To recruit and retain students from a diverse population.
8. To provide workforce training programs that meet requirements of business, industry, educational, and public service agencies for basic skills, specific job skills, and technical skills training.

PURPOSE OF UNIT: To offer a technical program which upon successful completion will qualify students for entry-level employment in business or industry and/or additional educational opportunities.

RELATIONSHIP OF UNIT TO PRCC MISSION: To provide industry based training in Business and Commerce Technology to students within the PRCC district.

LEARNING OUTCOMES – Measurable indicators (More specific description of impact on student) WHAT should a student know, think, or be able to do upon completion of program/course?	ASSESSMENT CRITERIA – Criterion for Evaluation (Variables related to success of intended outcome) HOW will attainment of the outcome be measured?	ASSESSMENT RESULTS – Outcomes Assessment (States how well intended results were achieved) WHAT was level of attainment of outcome?	USE OF RESULTS – Actionable Knowledge (How knowledge gained will be used to improve program performance). Make a CHANGE or IMPROVE or state that no improvement is needed.
1. The students will properly identify all components of the electrical system.	70 % of the students will understand and demonstrate all electrical components through testing.	100% of the students successfully completed.	No Improvement needed at this time.
2. The students will properly identify all different framings.	70 % of the students will understand and demonstrate and will be tested on different framing specifications through testing.	100% of the students successfully completed.	No Improvement needed at this time.
3. The students will demonstrate the ability to Identify all distribution parts.	70 % of the students will understand and demonstrate and will be tested in each phase of operation through testing.	100% of the students successfully completed.	No Improvement needed at this time.
4. The student will demonstrate the ability to bank transformers.	70 % of the students will understand and demonstrate and will be tested in each phase of operation through testing.	100% of the students successfully completed.	No Improvement needed at this time.

Note: Progress towards the attainment of learning outcomes is reviewed annually by the completion and analysis of assessment charts. Assessment charts and program reviews are completed by faculty and department chairs, and outcomes and changes are integrated into the annual planning and evaluation cycle.

Appendix 10. Utility Lineman Technology Instructional Area Assessment Chart: 2010-2011 Underground Construction – ULT 2143

PROGRAM: Utility Lineman Technology

Supports PRCC Strategic Goal(s): 1, 3, 7

INSTRUCTIONAL AREA: Underground Construction - ULT 2143

MISSION STATEMENT: Pearl River Community College is a public institution committed to providing quality educational and service opportunities for all who seek them.

STRATEGIC GOALS:

1. To prepare students to transfer and be successful in their studies at baccalaureate institutions and/or to be successful in careers for which they have been prepared.
2. To provide quality student services.
3. To provide access to college courses and programs using various instructional methods, including distance education.
4. To employ qualified faculty and staff, compensate them well, and provide opportunities for their professional development.
5. To provide facilities, technology, and support staff in order to improve student learning, enhance faculty and staff performance, augment community services, And make College services available via the Internet.
6. To improve communication among campus personnel and community members regarding the College goals, objectives, and activities.
7. To recruit and retain students from a diverse population.
8. To provide workforce training programs that meet requirements of business, industry, educational, and public service agencies for basic skills, specific job skills, and technical skills training.

PURPOSE OF UNIT: To offer a technical program which upon successful completion will qualify students for entry-level employment in business or industry and/or additional educational opportunities.

RELATIONSHIP OF UNIT TO PRCC MISSION: To provide industry based training in Business and Commerce Technology to students within the PRCC district.

LEARNING OUTCOMES – Measurable indicators (More specific description of impact on student) WHAT should a student know, think, or be able to do upon completion of program/course?	ASSESSMENT CRITERIA – Criterion for Evaluation (Variables related to success of intended outcome) HOW will attainment of the outcome be measured?	ASSESSMENT RESULTS – Outcomes Assessment (States how well intended results were achieved) WHAT was level of attainment of outcome?	USE OF RESULTS – Actionable Knowledge (How knowledge gained will be used to improve program performance). Make a CHANGE or IMPROVE or state that no improvement is needed.
1. The students will proper P.P.E. during normal work day.	70 % of the students will understand and demonstrate proper P.P.E in the field.	100% of the students successfully completed.	No Improvement needed at this time.
2. The student will demonstrate knowledge of the different specifications for underground framing.	70 % of the students will be able to demonstrate different specifications and framings through testing.	100% of the students successfully completed.	No Improvement needed at this time
3. The student will continue to improve on climbing abilities.	70% of students will continue to improve on climbing abilities through testing.	100% of the students successfully completed.	No Improvement needed at this time
4. The student will understand the principles of the make -up of underground wires.	70% of students will able to demonstrate different wire make-ups in the field through testing.	100% of the students successfully completed.	No Improvement needed at this time

Note: Progress towards the attainment of learning outcomes is reviewed annually by the completion and analysis of assessment charts. Assessment charts and program reviews are completed by faculty and department chairs, and outcomes and changes are integrated into the annual planning and evaluation cycle.