

South Central Tennessee Development District

2014 Labor and Education Alignment Program (LEAP)

Filling Gaps between Industry and Employees with Manufacturing Technology

South Central Tennessee Development District

IN PARTNERSHIP WITH

Tennessee College of Applied Technology-Shelbyville

Bedford County Schools, Fayetteville City Schools, Lincoln County Schools, Marshall County Schools

Area Manufacturing Companies in Bedford, Franklin, Lincoln, and Marshall Counties

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\$1,000,000





President/Director of Higher Education Institution



Project Director

ABSTRACT

In the South Central Tennessee area local industries have an acute need for skilled workers. There are a number of programs available to develop workers, but job training is not always aligned with industry's hiring needs. There is a gap between what students have in skills and what is needed for entry-level positions. Likewise, the gap extends to the skills of workers already employed in the industry. However, there is a program which is filling the gap, namely The Industrial Maintenance Program at the Tennessee College of Applied Technology-Shelbyville. This Program is currently offered, but is backlogged with applicants because there are not enough classes and classrooms. This Program provides instruction to develop the skills needed to succeed in the repair and maintenance of machinery and equipment in industrial environment. Traditionally, the students of this Program have a job waiting on them once they graduate. This LEAP Proposal seeks to provide the equipment and materials to expand the classes and equip new additional classrooms for the TCAT Program, specifically in Bedford County, Lincoln County, Franklin County and Marshall County. This is a very versatile Program that is utilized by employers in successfully filling their critical job openings. The service area for this project includes a wide range of manufacturing companies, as well as the aerospace/defense research, testing and military related activities in the High Tech Tennessee Valley Corridor.

Tennessee LEAP Grant Proposal

Section 1. Program Need

South Central Tennessee Development District (SCTDD) and the Tennessee College of Applied Technology-Shelbyville (TCAT-S) propose an expansion of the Industrial Maintenance (IM) Program to ensure a strong future workforce in Middle Tennessee. The proposal calls for establishing an Industrial Maintenance program at facilities in Bedford, Marshall, Franklin and Lincoln counties. These counties have a desperate need for maintenance technicians with fundamental competencies in basic electricity, motors, mechanical drives, hydraulics and pneumatics, programmable logic controllers (PLCs), programmable action controllers (PACs) and robotics. Graduates from the IM will be used to fill entry level maintenance technician positions at Calsonic, Tyson, Nichirin and many other local industries. The grant will be utilized to purchase training equipment and update classrooms/labs at all four new locations which will address the current skill gap in this region.

According to the Tennessee Department of Economic and Community Development, training the work force of today and educating the work force of tomorrow is one of the state's top priorities. Tennessee has placed a special emphasis on science, technology, engineering and mathematics (STEM) disciplines to ensure companies with advanced manufacturing and energy technology have a steady pipeline of well-prepared applicants.

The curriculum for the Industrial Maintenance program at TCAT-S includes advanced manufacturing. Enrollment in this program is in great demand; graduates are highly skilled and earn top wages. Since 1984, TCAT-S has a full-time day and a part-time evening program at the Shelbyville campus, and full-time day programs at the Fayetteville and Winchester campuses. Despite the current combined enrollment for Fall 2014 of 104 students, there remains an interest list of 144 prospective applicants from our service area that desire to enroll in the program. This includes approximately

twenty-five 2015 graduating seniors who have enrolled for the Tennessee Promise. With the new TN Promise initiative, the number on the interest list is anticipated to increase for the Fall 2015 trimester.

The 2013 LEAP Report by the Tennessee Department of Economic and Community Development states the educational programs for the grant include occupational skills training, basic skills/workforce readiness training as well as career preparation and guidance. The Industrial Maintenance program provides each of those components with high skills training to achieve these competencies; an integrated math and worker ethics concentration is embedded in the curriculum, and career guidance is provided through Student Services.

The report lists Industrial Machinery Mechanics and Industrial Electrical Repairers as hard to fill occupations for Tennessee employers in the automotive industry. With the expansions at Calsonic and other manufacturers, as well as the location of new industries in the region, the lack of skilled workers to fill these positions require an expansion of the Industrial Maintenance program into these counties. The Industrial Maintenance program is directly within the Advanced Manufacturing ECD focus areas and is involved in local/regional ECD recruitment activities. The IM program is routinely featured as providing skilled workers in the recruitment of prospective industries in the region.

According to the Tennessee Statewide Supply and Demand Analysis, the Jobs4tn.gov website and the Tennessee Department of Labor's Occupational Trends in Tennessee Employment Report (OTTER), a shortage of maintenance technicians exist in both LWIA6 and LWIA10. The long term (2008-2018) projected annual average growth for the occupational title of Industrial Machinery Mechanics is 0.7% in LWIA6 and 2.4% in LWIA 10. The total annual change is 5.3% in LWIA6 and 20.9% in LWIA10. Under the occupational title of Maintenance Worker Machinists, the projected annual change is 3.9% in LWIA6 and 10.7% in LWIA10. OTTER data indicates a statewide average annual growth of 1.0%. Industrial machinery mechanics are listed as one of the thirty middle-skill Jobs by the Southern Governor's Association but the program also includes technology intensive or specialized technology

skills in PLCs', PACs' and robotics. *Tennessee's Business*, a publication by the Business & Economic Research Center at Middle Tennessee State University, states "there are literally thousands of jobs available in the manufacturing and industrial sectors in Tennessee," and a "particular demand for skilled maintenance workers." According to Jobs4tn.gov, in the southern Middle Tennessee region graduates of the Industrial Maintenance program earn \$30,563 in entry level jobs. The median average salary was \$47,534 and the experienced maintenance technician average salary was \$53,419.

The Academic Program Supply and Occupational Demand Projections: 2008-2018 by THEC/UT notes "industries are characterized by employment growth through new business starts and firm expansion as well as employment decline through firm contraction and business closure." It also states "employer demand and annual position openings will also be affected by workplace dynamics like worker promotions and various forms of separation . . ." While study data is vital, the current demand by local industry is critical.

The IM program at the TCAT-Shelbyville currently has partnerships with Nissan, Calsonic, Viam, M-Tech, and Van-Robb to provide relevant training of the workforce as well as training for an on-going supply of workers. The IM program has an articulation agreement with Motlow State Community College to receive 30 semester hours credit toward an Associate of Applied Science degree with the IM diploma. Over forty companies have benefited from trained completers in the Industrial Maintenance program. According to the Student Information Management system, the following companies benefited last year: Calsonic Kansei-Shelbyville, Calsonic Kansei-Lewisburg, Nissan-Decherd, Albea-Shelbyville, Pillsbury Foods-Murfreesboro, Nissan-Smyrna, Jack Daniels Distillery-Lynchburg, Volkswagen-Chattanooga, Fisher USA-Manchester, Chassis-Shelbyville, Goodrich-Tullahoma, Tyson Foods-Shelbyville, Arnold Engineering Development Center, Nichirin-Lewisburg, and Batesville Manchester.

The proposal aligns perfectly with the state's *Drive to 55* goals. Upon the completion of the twenty month program of study, graduates receive the industry recognized Industrial Maintenance Technician Diploma and certifications for training in PLCs. Both credentials are sought after by industries in the region. Enrolling and graduating an additional 80 students will support the *Drive to 55* goals by increasing the overall higher education attainment in the region and will meet the needs of employers. Continuing the established programs on a long term basis will also increase higher educational attainment to achieve the *Drive to 55* goals.

The completion and placement rate for the Industrial Maintenance program in Shelbyville over the last five years document the success of the program. The average completion rate for 2008-2013 is 85% and the average placement rate for the same years is 90%. The institution graduated an average of 39 Industrial Maintenance Technicians over the same period of years.

The IM program not only aligns with business/industry workforce needs, but it also provides a much needed opportunity to train and upgrade skills of those living in the four-county area. The achievement of an Industrial Maintenance diploma will afford workers a better paying job and a higher standard of living. Finally, the IM program with its long and strong history of success has the potential to be a great kick start on a path to an associate degree at a community college and/or ultimately complete a BS degree at MTSU in the advanced manufacturing field.

Section 2. Program Plan

The project timeline will follow the schedule below after the award announced in December with the goal of opening the four programs for full enrollment in September 2015.

January:

1. Begin renovation and preparation of classrooms and labs at the four off-campus locations.
2. Preparation of equipment specifications for bids to vendors.
3. Establish memo of understanding at the four off campus locations with local officials.

February:

1. Submit applications to the TCAT-S accreditation agency, Council of Occupational Education (COE), for approval of off-campus sites.
2. Form Craft Advisory Committees for each county by inviting industry and community leaders to serve.
3. Submit equipment proposals for bid.

March:

1. Prepare letters to prospective students from existing contact list to determine interest in each program.
2. Visit local high schools to recruit graduating seniors into the IM program in each county.
3. All Craft Advisory committees will meet to review Industrial Maintenance curriculum.
4. Solicit additional donated equipment from various industries to support the new programs.

April:

1. Open bids for all equipment and award to lowest bidder.
2. Place order for all training equipment and classroom

June:

1. Send letters to prospective students inviting to orientation for Fall Trimester.
2. Receive equipment and begin to set up classroom and lab areas.
3. Advertise for Industrial Maintenance instructors for each location.

July:

1. Conduct orientation for 80 new students in the Industrial Maintenance program.
2. Hire and begin training 4 new Industrial Maintenance instructors.

August:

1. Continue training of 4 New Industrial Maintenance instructors.

September:

1. Begin training at all four new locations.

September 2015-April 2017:

1. Train on a continuing basis 20 Industrial Maintenance students at each of the four off-campus sites.
2. Graduate and award an Industrial Maintenance Diploma to the first 80 students in April 2017.

Beyond the documentation each monthly progress in establishing the four Industrial Maintenance training locations, ordering and receiving equipment, and quarterly meetings minutes of the steering

committee, the measurable objectives will be the following:

1. Enrollment at each training location each trimester with a goal to enroll and retain 20 students in each program.
2. Retention rates at each training location at the end of each trimester.
3. The number of certificates awarded to students at each training location at the end of each trimester for completion of a portion of the curriculum.
4. The number of diplomas awarded at the end of the 20 month training program.
5. The number of prospective students on the interest list for each program at each location.

The Collaborative will ensure that the mentorship program is a key component of the project. The Tennessee Promise program has established a mentor program for all 2015 graduates who are enrolled in a higher education program. Mentor roles will provide guidance and assist the students to ensure that students meet deadlines and stay on track to successfully complete the Industrial Maintenance program. The Leap Grant will provide opportunities for approximately 80 additional students to achieve their goals.

The project governance and accountability will be a joint responsibility of the South Central Tennessee Development District (SCTDD) and the Tennessee College of Applied Technology-Shelbyville (TCAT-S). The project director will be Jerry Mansfield, the Executive Director of SCTDD in partnership and collaboration with the Director of the TCAT-S, Ivan Jones. The project steering committee responsible for maintaining oversight will consist of individuals from industries from the four participating counties made up of no less than 12 but no more than 16 members and will meet quarterly for twenty-four months. The TCAT-S will present to the committee a quarterly budget report, enrollment data, completion rate, number of hours of training, and graduation and placement of students enrolled in the program.

A key component to the success of *Filling Gaps* between industry and employees with the manufacturing technology project will be purchasing high-tech training equipment to address local labor market needs. The training equipment will be used to instruct and train through hands-on project based activities. The specific skills and competencies will include electric motors, mechanical systems,

hydraulics and pneumatics, programmable logic controllers and robotics. The equipment purchased will be specific for the training needs at each county location to expand, enhance and improve the equipment in the IM program available at the TCAT-S. Each location will create both a classroom and a lab. A portion of the equipment request will purchase laptops for the classrooms which will network to the training equipment. The TCAT-S will aggressively seek donated equipment from industry that will be used to build additional training stations.

Section 3. Strength of Partnership

A strong partnership has been established for the LEAP Proposal *Filling Gaps between Industry and Employees with Manufacturing Technology*. This project seeks to enable the Tennessee College of Applied Technology in Shelbyville (TCAT-S) students to participate in technical training developed with input from area employers, school systems, and the local industries.

The Local Collaborative Partnership includes four Tennessee Counties. Each County Mayor is a participant including Bedford County Mayor Eugene Ray, Franklin County Mayor Richard Stewart, Lincoln County Mayor Bill Newman, and Marshall County Mayor Joe Boyd Liggett. All four mayors have many years of experience in the administration of county government.

The lead entity for the grant is the South Central Tennessee Development District, a regional development authority established in 1972, serving thirteen counties, with extensive involvement in grant administration and economic development. The Development District's staff will participate as an active in the grant and has several decades of successful practice in community & economic development, public administration, workforce development, business/industry retention, and grants management.

The higher education institution for the project is the Tennessee College of Applied Technology in Shelbyville. TCAT-S has a fifty-year history in successfully meeting the education and training needs of area companies. Currently the college has an outstanding Industrial Maintenance Program developed

with the support of local manufacturing industries. The LEAP Grant will assist in continuing to provide individuals with the opportunity to learn key occupational skills. In addition, the two expanded classrooms proposed in each county will provide industry with skilled individuals ready for employment. Finally, the program can also be used by industry to upgrade the skills of current employees. TCAT-S has an excellent record of successful fiscal management of education grant programs, and will apply this experience to the LEAP Grant.

The local school systems participating in the collaborative include Bedford County, Lincoln County, Fayetteville City, Franklin County, and Marshall County. All the systems currently have a very active Career and Technical Education Program, as well as articulation with the TCAT-S in dual enrollment activities for students. The superintendent of each school system will participate in the project.

Industry partners include: Jostens, Fushi Copperweld, C&S Plastics, CKNA Shelbyville & Lewisburg, Tyson, Chassix, Franke, ADC, Meiwa, Nichirin, Talos, Berry Plastics, Walker Die Casting, Chassix, and several others. All of the companies have openings for industrial maintenance technicians as well as significant future needs in this area. They all have used TCAT-S in hiring employees and also for incumbent worker training. Most of the companies currently serve on TCAT-S General Advisory Committee and numerous Craft Committees advising on programs and curricula.

For the purposes of this LEAP Grant Proposal, these four counties, the local school systems, TCAT-S, local industries, and the SCTDD have a strong partnership. This Collaborative continues the successful history of the region in meeting student and employer needs in the area of manufacturing.

Section 4. Budget Plan

The largest portion of the funding request is for training equipment the four new locations. The equipment will be used to teach competencies and skills required to earn a Maintenance Technician diploma which are the goals and anticipated outcomes of the grant. Laptops are included in the

equipment costs for instructional purposes and are necessary for the instructional software networked to the training equipment. Each classroom will need tables, chairs, and LCD projectors for classroom instruction. Other equipment needs are specific to the Industrial Maintenance curriculum.

Salaries are requested for the first year for the four new IM instructors. After the first year, student tuition will be utilized to pay salaries to help sustain the program.

The project also requests administrative costs to cover the work of the project director. Expenses covered include phone, internet service, copies, correspondence mailings, and travel and meeting expenses for the steering committees at the four counties. Administrative costs for the TCAT-S will be utilized for training for the instructors.

The local match will meet the maximum cap of \$50,000 with a cash donation from CKNA. Additional cash donations include: \$2500 from Berry Plastics; \$1200 from Nichirin; \$1,000 from Lewisburg IDB and \$5,000 from Marshall County, \$1,000 from Franklin County, \$5,000 from Lincoln County, and \$20,000 from South Central Tennessee Development District.

Section 5: Sustainability

The Tennessee College of Applied Technology-Shelbyville will sustain the program beyond the 24 months funding period by continuing the Industrial Maintenance program at each of the four county locations. The operation of the programs will become self-sustaining in operational costs through tuition and state appropriations received by the institution. As students graduate from the program or withdraw from training, new students will be enrolled to maintain a full class. The institution will continue to partner with the high schools in each county and open dual enrollment opportunities for seniors. As technology changes and needed employee skills develop, the College will coordinate and establish customized training to meet the needs of the workforce.

The Tennessee College of Applied Technology will continue to partner with the South Central Tennessee Development District to address future training needs in the region, seek additional funding

sources to supplement equipment and apply for grants, and coordinate other technical programs that local industry demands. The steering committee in each county, consisting of industry partners and community leaders, will continue to meet to address curriculum and equipment modifications.

The TCAT-S has successfully operated an Industrial Maintenance program for 30 years and strategically plans for equipment maintenance and renewal, maintaining plant funds for that purpose. The Industrial Maintenance programs at the four locations will be supported by the institution's budget and resources, specifically for the upkeep and maintenance of the equipment. Additionally, the College will collaborate with local industrial boards, chambers of commerce, the area's LWIA Program, and city/county officials to prepare the local workforce for prospective industries.