



SOUTH CAROLINA TECHNICAL COLLEGE SYSTEM New Program Planning Summary Submission Form

College Name Tri-County Technical College
Program Title Associate in Applied Science, with a major in CNC Programming and Operations
CIP Code 480501 **Credit Hours** 73
Academic Unit Engineering & Industrial Technology Division, Engineering Technology
Implementation Date (Proposed) Fall 2013
Local Area Commission Approval Date: December 12, 2011

Questions about this planning summary should be directed to Galen DeHay / Doug Allen

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CAO Signature _____ Date _____

I. Proposal Narrative: Justification

- a) State the purpose(s) and objectives of the program. Provide details on the employment for which graduates will be prepared.**

Tri-County Technical College (TCTC) proposes to offer an Associate in Applied Science, major in Computer Numerical Control (CNC) Programming and Operations. The CNC Programming and Operations program will prepare graduates to work as CNC programmers and operators with manufacturers requiring high production volumes or short run batches of discrete parts. In addition to writing CNC programs, students will learn how to create precision set-ups, select tooling, and operate a variety of CNC milling and turning centers.

- b) Explain how the program will support and/or complement the college's mission?**

The mission of TCTC is to provide opportunities that support the economic and lifelong development of the citizens of Anderson, Oconee, and Pickens counties. This program will provide high tech training for interested citizens and create a prepared workforce for the industrial sector.

- c) Discuss general student interest in the program.**

Students are very much aware that manufacturing has moved from manually operated machines to CNC centers to maintain competitiveness in today's global markets. Many prospective students have expressed the desire to receive advanced CNC training opportunities that match local manufacturers' requirements. Recent graduates of the existing associate degree program in Machine Tool Technology (MTT) have also expressed strong interest in learning more about computer controlled operations as they are finding employment with companies that require CNC knowledge and skills.

- d) Discuss local, state, and national employment trends for program-specific occupations. Include full-time and part-time wage information at the state and regional/national level.**

According to the US Department of Labor (2012), overall employment of computer controlled programmers and computer controlled machine operators is expected to increase by 4 percent to 7 percent nationally. Median hourly wages for programmers and operators ranged between \$15.34 and \$22.37 in 2010.

The national average is comparable with South Carolina's hourly mean wage of \$17.15 for computer controlled machine operators in metal and plastic. Regional wages in the Upstate range between \$14 and \$21. With an employment of 3,520, South Carolina ranks tenth in the states that have the highest level of employment in this field. (Occupational Outlook Handbook 2010-2011 Edition, Occupational Employment and Wages, May 2010).

e) Include a list of all related existing programs within the institution. Compare/contrast the proposed program to related programs.

The proposed program will be offered under the college's Engineering and Industrial Technology Division. Under this division, TCTC offers three related certificate programs – Introduction to CNC, CAD/CAM/CNC Fundamentals, and CNC Math and Print Reading.

Additionally, the college currently offers an Associate in Applied Science, major in Machine Tool Technology. The CNC program differs from MTT in that the focus is on computer controlled operations program versus those that are mostly manual.

f) Compare/contrast the program to those with similar objectives at other SC technical colleges. Where possible, summarize enrollment, graduates, and placement rates for existing programs. This information can be found in the State Board's annual Program Evaluation Report.

The proposed program will be the first model of its kind for the SC Technical College System. Eight colleges – Florence-Darlington, Greenville, Midlands, Northeastern, Orangeburg-Calhoun, Piedmont, Spartanburg, and Trident – offer associate degree programs in Machine Tool Technology.

g) Discuss any existing articulation or collaborative agreements in related program areas with other SC technical colleges.

There are no formal plans for articulation with other technical colleges at this time. However, students enrolled in the CNC program will receive transfer credit for coursework taken at another technical college within the SCTCS.

h) Indicate whether this is a terminal degree program (occupational in intent). If there is potential for students to transfer into a baccalaureate program, provide narrative on the progress to date concerning articulation agreements with potential transfer institutions.

The proposed degree is designed primarily as a terminal degree leading to employment upon graduation.

II. Proposal Narrative: Anticipated Program Demand and Productivity

a) Briefly summarize/analyze the needs survey results. For at least a three-year period, estimate the anticipated number of full-time and part-time openings. Discuss any specific employer interests and support for the program.

Nine companies from TCTC's three-county service area were surveyed. Approximately 78% of those surveyed offered tuition assistance. Employers indicated a total of 57 full-time job openings over the next three years (20 in year one, 19 in year two, and 18 in year three).

- b) **State the anticipated total number of enrollment for the first year of the program. Include the total number of transfer students from other internal programs and new students to the institution. Provide the estimated attrition rate. Also include the anticipated number of graduates from the program.**

Anticipated Total Enrollment:20 Total # of Transfer: 5 Total # of New: 15

Estimated Attrition Rate: 25%

Estimated Graduation Rate: 75%

- c) **Explain the rationale for determining the attrition rate. Include possible causes for attrition.**

The attrition rate is based on data from existing industrial programs at TCTC. All of these programs have similar attrition rates (i.e., 20%-30%). Financial considerations are typically the primary reason that students do not complete a program. Additionally, many of these students leave before completing the program of study because they find employment in their respective fields.

III. Proposal Narrative: Total Costs (General Estimates Only)

	1st Year	2nd Year	3rd Year
Salaries	\$20,000	\$20,000	\$20,000
Supplies and Materials	\$3,000	\$6,000	\$9,000
Library Resources	\$1,500	\$1,500	\$1,500
Equipment	\$250,000	\$0	\$100,000
Facilities	\$0	\$0	\$0
Accreditation	\$0	\$0	\$0
Totals*	\$274,500	\$27,500	\$130,500

With the exception of new equipment purchases, administrative costs for the proposed program are fairly low. Classroom and laboratory space will be shared with the existing MTT and Engineering Graphics Technology programs. Many of the library resources, supplies, and materials from the MTT program are applicable to the CNC curriculum. Furthermore, existing MTT faculty will also teach many of the CNC courses.

The college anticipates that the program will be 100% self-supporting during the first three years. Equipment costs will be supported by funds secured through SC Accelerate, a collaborative projected supported through a Department of Labor Trade Adjustment Assistance Community College Career Training grant.