STATE BOARD OF COMMUNITY COLLEGES
Curriculum Program Applications
Fast Track for Action [FTFA*]

Request: The State Board of Community Colleges is asked to approve the curriculum programs at the listed colleges on the condition that equipment funds are available to the colleges and operating funds generated by the budget formula will permit the offering of these programs without any special allocation of funds.

Central Carolina Community College
- Air Conditioning, Heating & Refrigeration Technology (A35100)
- Electrical Systems Technology (A35130)
- Mechanical Engineering Technology (A40320)

Forsyth Technical Community College
- Aviation Electronics (Avionics) Technology (A60150)
- Aviation Systems Technology (A60200)

Background: Program applications must meet the following criteria in order to be placed on the Fast Track For Action (FTFA) program approval request presented to the State Board of Community Colleges as part of the consent agenda:

- The curriculum program title currently exists within the System and does not require the creation of a new program title and new curriculum standard;
- The application is complete, requires no further analysis or documentation, and has the endorsement of Academic Programs;
- There are no negative impact assessments from other colleges; and
- The college does not go outside of its service area for planning purposes.

Contact(s):
Dr. Lisa Eads
Director

STATE BOARD OF COMMUNITY COLLEGES
Program Application
Summary Evaluation Report
Central Carolina Community College
Electrical Systems Technology (A35130)

Program Planning: Central Carolina Community College is seeking approval for the Electrical Systems Technology (A35130) program to begin Fall, 2019. The planning area is defined as the college's service area of Chatham, Harnett, and Lee counties. All colleges were notified of the planning process for this program.

The proposed program was approved by the Board of Trustees at Central Carolina Community College on January 14, 2019. Minutes from this Board meeting were attached to the program application. The President and the Board of Trustees of Central Carolina Community College have certified the following:

- The proposed program will enhance the workforce of North Carolina, will provide educational and training opportunities consistent with the mission of the college, and will not duplicate the opportunities currently offered.
- They have assessed the need for the proposed program and the resources required to maintain a viable program and certify that the college can operate the proposed program efficiently and effectively within the resources available to the college.
- The college will complete a program accountability report including student success measures, enrollment trends, completion rates, and employment data three years after implementation of the program.

Program Rationale: Central Carolina Community College (CCCC) indicates the following:

- Data from the U.S. Department of Labor O-NET website indicated an annual growth rate of 10% growth for electrical technician jobs between 2016-2026. According to data from NCWorks.gov, fifty-seven electrician job openings were posted for the Triangle-South Workforce Development Region.
- A search of the Department of Labor's CareerOneStop website indicated an increase of 10% job openings for electricians in North Carolina earning average wages of $15.20 to $29.03 per hour.
- NC Tower, a product of NC Commerce's Labor and Economic Analysis Division, showed that 99% of 2011-12 electrical systems graduates were employed or are continuing their education.
- Building permits in Chatham County have increased more than two-fold since 2010. One of the largest planned developments in the country, Chatham Park, will contain 27,000 residential units.

- Local employer J.S. Howard Electrical Company submitted a letter of support to the college for the program.

- Lee County Schools submitted a letter of support for the electrical systems technology program.

- CCCC currently offers several programs that contain popular electrical courses and equipment that will be used in the electrical systems program and should make the transition to the new program more manageable and cost effective.

Impact of the Proposed Program on Other Programs: Thirty-eight community colleges are approved to offer the Electrical Systems Technology program. An impact assessment was sent to colleges located in contiguous counties. **No negative impact responses were received.**

Implementation of Collaborative Plan: Not Applicable

Curriculum Design: The proposed program of study is in compliance with the State Board approved curriculum standard.

Curriculum Description as Designated on Curriculum Standard: This curriculum is designed to provide training for persons interested in the installation and maintenance of electrical systems found in residential, commercial, and industrial facilities. Coursework, most of which is hands-on, will include such topics as AC/DC theory, basic wiring practices, programmable logic controllers, industrial motor controls, applications of the National Electric Code, and other subjects as local needs require. Graduates should qualify for a variety of jobs in the electrical field as an on-the-job trainee or apprentice assisting in the layout, installation, and maintenance of electrical systems.

Contact(s):
Dr. Frank Scuiletti
Senior Program Administrator

STATE BOARD OF COMMUNITY COLLEGES
Program Application
Summary Evaluation Report
Central Carolina Community College
Air Conditioning, Heating, and Refrigeration Technology (A35100)

Program Planning: Central Carolina Community College is seeking approval for the Air Conditioning, Heating, and Refrigeration Technology (A35100) program to begin Fall, 2019. The planning area is defined as the college's service area of Chatham, Harnett, and Lee counties. All colleges were notified of the planning process for this program.

The proposed program was approved by the Board of Trustees at Central Carolina Community College on January 14, 2019. Minutes from this Board meeting were attached to the program application. The President and the Board of Trustees of Central Carolina Community College have certified the following:

- The proposed program will enhance the workforce of North Carolina, will provide educational and training opportunities consistent with the mission of the college, and will not duplicate the opportunities currently offered.
- They have assessed the need for the proposed program and the resources required to maintain a viable program and certify that the college can operate the proposed program efficiently and effectively within the resources available to the college.
- The college will complete a program accountability report including student success measures, enrollment trends, completion rates, and employment data three years after implementation of the program.

Program Rationale: Central Carolina Community College (CCCC) indicates the following:

- Data from the U.S. Department of Labor O-NET website indicated an annual growth rate between 2016-2026 of 15% growth for HVAC technician job openings.
- According to data from NCWorks, there were 546 HVAC technician job openings posted state-wide over the past year.
- A search of the Department of Labor's CareerOneStop website indicated a 16% increase in job openings for HVAC technicians in North Carolina with 1560 openings. Average wages of $13.22 to $29.49 per hour were reported.
- NC Tower, a product of NC Commerce's Labor and Economic Analysis Division, indicated that 93% of 2011-12 Air Conditioning, Heating, and Refrigeration Technology graduates were employed or are continuing their education.
- Local employer Yarborough Heating and Air submitted a letter of support to the college for the program.

- Lee County Schools submitted a letter of support for the Air Conditioning, Heating, and Refrigeration Technology program.

- CCCC currently offers popular HVAC courses within their industrial systems program and has the equipment and instructional staff that will be used to make the transition to the new program more manageable and cost effective.

Impact of the Proposed Program on Other Programs: Thirty-four community colleges are approved to offer the Air Conditioning, Heating, and Refrigeration Technology program. An impact assessment was sent to colleges located in contiguous counties. **No negative impact responses were received.**

Implementation of Collaborative Plan: Not Applicable

Curriculum Design: The proposed program of study is in compliance with the State Board approved curriculum standard.

Curriculum Description as Designated on Curriculum Standard: The Air Conditioning, Heating, and Refrigeration Technology curriculum provides the basic knowledge to develop skills necessary to work with residential and light commercial systems. Topics include mechanical refrigeration, heating and cooling theory, electricity, controls, and safety. The diploma program covers air conditioning, furnaces, heat pumps, tools and instruments. In addition, the AAS degree covers residential building codes, residential system sizing, and advanced comfort systems. Diploma graduates should be able to assist in the start-up, preventive maintenance, service, repair, and/or installation of residential and light commercial systems. AAS degree graduates should be able to demonstrate an understanding of system selection and balance and advanced systems.

Contact(s):
Dr. Frank Scuiletti
Senior Program Administrator

STATE BOARD OF COMMUNITY COLLEGES
Program Application
Summary Evaluation Report
Central Carolina Community College
Mechanical Engineering Technology (A40320)

Program Planning: Central Carolina Community College is seeking approval for the Mechanical Engineering Technology (A40320) program to begin Fall, 2019. The planning area is defined as the college's service area of Chatham, Harnett, and Lee counties. All colleges were notified of the planning process for this program.

The proposed program was approved by the Board of Trustees at Central Carolina Community College on January 14, 2019. Minutes from this Board meeting were attached to the program application. The President and the Board of Trustees of Central Carolina Community College have certified the following:

- The proposed program will enhance the workforce of North Carolina, will provide educational and training opportunities consistent with the mission of the college, and will not duplicate the opportunities currently offered.
- They have assessed the need for the proposed program and the resources required to maintain a viable program and certify that the college can operate the proposed program efficiently and effectively within the resources available to the college.
- The college will complete a program accountability report including student success measures, enrollment trends, completion rates, and employment data three years after implementation of the program.

Program Rationale: Central Carolina Community College (CCCC) indicates the following:

- Data from the U.S. Bureau of Labor Statistics indicated an annual growth rate of 5% for mechanical engineering technician jobs with a median salary of $55,360.
- A search of the Indeed jobs website indicated that there were approximately five hundred mechanical engineering-related positions available in North Carolina in 2018.
- Local employers Mertek Solutions and CTI Systems have submitted letters of support to the college for the program.
- Lee County Schools and the NC Department of Public Instruction, Division of Career and Technical Education have submitted letters of support for the mechanical engineering technology program.
- CCCC currently offers a CAD program which they will terminate in favor of the Mechanical Engineering Technology program. NC Commerce projects twice the growth

rate for mechanical engineering technicians over that of CAD technicians; therefore, graduates of the program would be better positioned in the job market.

- Lee County Schools Academy of Engineering, which is located at both high schools, will serve as a streamlined pathway into the MET program. The college will offer students the opportunity to dually-enroll in college courses as a means to facilitate their completion of the program while keeping the expense of postsecondary education at a minimum.

- Many of skill sets associated with mechanical engineering technology have crossover value beyond manufacturing within other types of service and repair industries.

Impact of the Proposed Program on Other Programs: Twenty-one community colleges are approved to offer the Mechanical Engineering Technology program. An impact assessment was sent to colleges located in contiguous counties. **No negative impact responses were received.**

Implementation of Collaborative Plan: Not Applicable

Curriculum Design: The proposed program of study is in compliance with the State Board approved curriculum standard.

Curriculum Description as Designated on Curriculum Standard: A course of study that prepares the students to use basic engineering principles and technical skills to design, develop, test, and troubleshoot projects involving mechanical systems. Includes instruction in principles of mechanics, applications to specific engineering systems, design testing procedures, prototype and operational testing and inspection procedures, manufacturing system-testing procedures, test equipment operation and maintenance, computer applications, critical thinking, planning and problem solving, and oral and written communications. Graduates of the curriculum will find employment opportunities in the manufacturing or service sectors of engineering technology. Engineering technicians may obtain professional certification by application to organizations such as ASQC, SME, and NICET.

Contact(s):
Dr. Frank Scuiletti
Senior Program Administrator

STATE BOARD OF COMMUNITY COLLEGES
Program Application
Summary Evaluation Report
Forsyth Technical Community College
Aviation Systems Technology (A60200)

Program Planning: Forsyth Technical Community College is seeking approval for the Aviation Systems Technology (A60200) program to begin Fall, 2020. The planning area is defined as the college's service area of Forsyth and Stokes counties. All colleges were notified of the planning process for this program.

The proposed program was approved by the Board of Trustees at Forsyth Technical Community College on December 19, 2018. Minutes from this Board meeting were attached to the program application. The President and the Board of Trustees of Forsyth Technical Community College have certified the following:

- The proposed program will enhance the workforce of North Carolina, will provide educational and training opportunities consistent with the mission of the college, and will not duplicate the opportunities currently offered.

- They have assessed the need for the proposed program and the resources required to maintain a viable program and certify that the college can operate the proposed program efficiently and effectively within the resources available to the college.

- The college will complete a program accountability report including student success measures, enrollment trends, completion rates, and employment data three years after implementation of the program.

Program Rationale: Forsyth Technical Community College (FTCC) indicates the following:

- The U.S. Department of Labor and Statistics projected a 5% increase in aviation mechanics jobs nationally and an increase of 7% state-wide for 2014-2024.

- A local jobs survey indicated that there were 35 aviation technician jobs available with area aviation employers.

- Projections Central Long-Term projected 9.7% growth in aviation technician jobs for 2016-26. Median wages are estimated to be $61,020 annually.

- The college received letters of support for the program from Aero8, Inc., North State Aviation, Piedmont Propulsion Systems, LLC, Signature Flight Support, Rockwell Collins, and Triumph Group Integrated Systems-Clemmons.

- FTCC is using $16.6 million from a bond allocation to build an aviation campus at or near Smith Reynolds Airport which is located only 13.4 miles from the college's main campus.

- The college is partnering with Jim Shaw's ACE (aviation career education) Academy with plans to bring over 100 middle and high school students to FTCC to introduce them to the types of careers that exist with aviation.

- The program will provide a career pathway for students attending Carver High School and Quality Education Academy which are conveniently located adjacent to the airport.

Impact of the Proposed Program on Other Programs: Four community colleges are approved to offer the Electrical Systems Technology program. An impact assessment was sent to colleges located in contiguous counties. **No negative impact responses were received.**

Implementation of Collaborative Plan: Not Applicable

Curriculum Design: The proposed program of study is in compliance with the State Board approved curriculum standard.

Curriculum Description as Designated on Curriculum Standard: The Aviation Systems Technology provides individuals with the knowledge and skills to qualify for an aircraft mechanic's certificate with airframe and/or powerplant ratings. The curriculum is approved by the Federal Aviation Administration (FAA) under 14 CFR Part 147, which governs aviation maintenance schools. Course work includes aviation mathematics, FAA regulations, basic electricity, aircraft drawings; aircraft structures, systems, and components; aircraft engines, theory, systems, and components; and engine inspections and maintenance. Employment opportunities exist as entry-level mechanics with air carriers, manufacturers, repair stations, fixed base operators, flight schools, and government aviation operations.

Contact(s):
Dr. Frank Scuiletti
Program Coordinator

STATE BOARD OF COMMUNITY COLLEGES
Program Application
Summary Evaluation Report
Forsyth Technical Community College
Aviation Electronics (Avionics) Technology (A60150)

Program Planning: Forsyth Technical Community College is seeking approval for the Aviation Electronics (Avionics) Technology (A60150) program to begin Fall, 2020. The planning area is defined as the college's service area of Forsyth and Stokes counties. All colleges were notified of the planning process for this program.

The proposed program was approved by the Board of Trustees at Forsyth Technical Community College on December 19, 2018. Minutes from this Board meeting were attached to the program application. The President and the Board of Trustees of Forsyth Technical Community College have certified the following:

- The proposed program will enhance the workforce of North Carolina, will provide educational and training opportunities consistent with the mission of the college, and will not duplicate the opportunities currently offered.

- They have assessed the need for the proposed program and the resources required to maintain a viable program and certify that the college can operate the proposed program efficiently and effectively within the resources available to the college.

- The college will complete a program accountability report including student success measures, enrollment trends, completion rates, and employment data three years after implementation of the program.

Program Rationale: Forsyth Technical Community College (FTCC) indicates the following:

- The U.S. Department of Labor and Statistics projected a 5% increase in avionics technician jobs nationally and an increase of 6% state-wide for 2014-2024.

- A local jobs survey indicated that there were 35 aviation/avionics technician jobs available with area aviation employers.

- Projections Central Long-Term projected 13% growth in avionics technician jobs for 2016-26. Median wages are estimated to be $62,650 annually.

- The college received letters of support for the program from Aero8, Inc., North State Aviation, Piedmont Propulsion Systems, LLC, Signature Flight Support, Rockwell Collins, and Triumph Group Integrated Systems-Clemmons.

- FTCC is using $16.6 million from a bond allocation to build an aviation campus at or near Smith Reynolds Airport which is located only 13.4 miles from the college's main campus.

- The college is partnering with Jim Shaw's ACE (aviation career education) Academy with plans to bring over 100 middle and high school students to FTCC to introduce them to the types of careers that exist with aviation.

- The program will provide a career pathway for students attending Carver High School and Quality Education Academy which are conveniently located adjacent to the airport.

Impact of the Proposed Program on Other Programs: Guilford Technical Community College is approved to offer the Aviation Electronics (Avionics) Technology (A60150) program. An impact assessment was sent to the college. **A negative impact response was not received.**

Implementation of Collaborative Plan: Not Applicable

Curriculum Design: The proposed program of study is in compliance with the State Board approved curriculum standard.

Curriculum Description as Designated on Curriculum Standard: This curriculum provides individuals with the basic knowledge and skills required to enter the avionics career field as a technician and prepares students for the current avionics licensing agency examination. Course work includes general avionics, sheet metal, airframe systems, electrical and electronic systems, practical wiring, navigation equipment, flight management and flight control systems, flight line testing and troubleshooting, and Federal Aviation Administration (FAA) regulations. Graduates should be prepared for the current avionics licensing agency examination and for entry-level employment as an avionics technician in an avionics repair station, an airfield fixed base operator's avionics facility, or an independent repair facility.

Contact(s):
Dr. Frank Scuiletti
Program Coordinator