

# Fayetteville Technical Community College

## Academic Program Review

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Proponent: Vice President for Academic and Student Services

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Available online at:  
[http://www.faytechcc.edu/institutional\\_effectiveness/handbookmanualplans.aspx](http://www.faytechcc.edu/institutional_effectiveness/handbookmanualplans.aspx)

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Fayetteville Technical Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award associate degrees, diplomas and certificates. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Fayetteville Technical Community College.

# FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE

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## **X-1 Mission**

The mission of Fayetteville Technical Community College (FTCC) is to serve our community as a learning-centered institution to build a globally competitive workforce supporting economic development. FTCC promotes the growth of the whole person in a caring environment that encourages strong ethical values, personal integrity, and a sense of responsibility to the needs of society.

## **X-2 Purpose of Review**

The purpose of program review is to strengthen department programs and increase department efficiencies and effectiveness. The review assesses and critically evaluates a program's stated outcomes and use of supporting resources to measure if the program is fulfilling its goals and adequately supports the College mission. The process necessitates documenting successful and unsuccessful efforts, identifying future needs, and verifying compliance with accreditation and college standards. The results of the review process will serve as a tool for continuous program improvements and will impact the institutional and program-level planning and budgeting activities. Program review becomes the baseline measurement of where the program is right now, where program managers would like for it to be in the next one to five years and planned achievement targets, qualitative and quantitative measurements, analysis of those measurements to report findings, and projected action plans and dates for reaching those future objectives. Program review is not intended to replace formal assessment activities in the WEAVE Assessment Management System and is intended to provide additional support and quantitative/qualitative evidence to further support the outcomes and findings housed in WEAVE.

## **X-3 Overview of Program Review Process**

1. The Program Review Process (PRP) begins with a Program Self-Study. The Department Chair organizes a team to conduct the Self-Study. The team must include the Department Chair (or Program Coordinator), all full time faculty members regularly teaching program courses and at least one part-time faculty member that has taught in the program for two or more semesters. All required historical statistical and numerical data will be provided by the Human Resources, Workforce Development, and Institutional Effectiveness (HR/WFD/IE) Office.
2. Teams shall use the current electronic version of the Program Review Self-Study template (Fill-in form P-1). Supplemental information and supporting documentation is highly encouraged to adequately support the program review findings.
3. A full Self-Study shall be submitted to the Chief Academic Officer (CAO) every three (3) years with annual updates submitted by March 15 of the academic year during the subsequent two years. Timely submission and quality of analysis will

be addressed as part of the Department Chair/Program Coordinator's annual performance appraisal.

4. Upon submission of the full 3-year program review, the departmental Program Review Team will meet to prepare a presentation of their self-assessment findings and recommendations to the CAO, AVP for Curriculum Programs, and the appropriate Academic Program Dean. The presentation must include the Self-Study Team's recommendations for continuous improvement and required program support to implement those improvements. These recommendations shall be considered during future budgets and personnel decisions. Department Chairs/Program Coordinators shall submit necessary budget decision packages (see fill-in forms E-5, E-6, E-28, E-15, F-2, I-11, and O-1).
5. The remainder of this publication reflects items that must be included in the program review and mirror the contents of the program review fill-in form (P-1).

### **X-3.1 Program Description, Policies, and Affiliations** **(Self-Study Team's assessment)**

#### **A. Provide a description of the program.**

The Computer Programming curriculum prepares individuals for employment as computer programmers and related positions through study and applications in computer concepts, logic, programming procedures, languages, generators, operating systems, networking, data management, and business operations.

Students will solve business computer problems through programming techniques and procedures, using appropriate languages and software. The primary emphasis of the curriculum is hands-on training in programming and related computer areas that provide the ability to adapt as systems evolve.

Graduates should qualify for employment in business, industry, and government organizations as programmers, programmer trainees, programmer/analysts, software developers, computer operators, systems technicians, database specialists, computer specialists, software specialists, or information systems managers.

In addition to the degree program, Computer Programming offers a variety of specialized certificates such as Visual Basic Programming, JAVA Programming, Database Programming, C# Programming, and Mobile Application Development. A Visual Basic Programming certificate is available for high school students in the Career and College Promise program.

**B. Discuss how the program supports the College in fulfilling its mission. List your program's mission, targeted future goals and objectives and how those goals/objectives are linked to the College's Institutional Goals and Strategies located in the FTCC Strategic Plan.**

Our program's mission: Serve our community as a learning-centered department to build a globally competitive workforce supporting economic development. We train our graduates for positions within the local community who have a need for programmers. Recent graduates have found employment opportunities at: Immersion Media, City Hall, Pantry Corporation and government contractors on Ft. Bragg military base. FTCC graduates Barb Duncan and Nathan Michalski joined Immersion Media to aid in a programming project for Verizon Wireless. FTCC graduate Nicholas Belden recently joined the City of Fayetteville, providing expertise and technical support for a programming project currently underway. FTCC graduate Timothy Davis was hired in the IT department for the Pantry Corporation based in Sanford.

Target and future goals are to increase enrollment in the mobile application program to meet the needs of industry. According to <http://www.bls.gov/ooh/computer-and-information-technology/computer-programmers.htm>, employment of computer programmers is projected to grow 8 percent from 2012 to 2022. The median annual wage for computer programmers was \$74,280 in May 2012.

Our department is continuing to experience growth due to necessary departmental changes to adapt to industry and economic trends. Changes include the elimination of COBOL, the addition of Alice software, and the addition of new courses such C# and mobile application development. We saw a declining trend of enrollment in our department back in 2008. Drastic changes were made in an attempt to salvage the department due to several factors:

- economic factors of the Great Recession which began in December 2007
- erupting war between Sun Microsystems and Microsoft due to the introduction of new programming language, C#
- Increase in Android mobile applications

We took a substantial hit, but took steps to increase enrollment and adapt to the changing marketplace and industry. For example, in 2008 we had one section of COBOL. The program was essentially dying. The capstone course had one potential graduate. Today, we have fourteen potential graduates in our capstone class. Reviewing the curriculum and making the necessary changes aligns the department with FTCC's institutional goals of focusing on workforce preparedness to support economic development and responding to the needs of both student and community through measurable goals.

We have the MSDNAA program, which supports the college's goal of ensuring fiscal responsibility, accountability, and financial stability. As little as 5 years ago, the computer programming department spent over \$15,000 annually the support and licenses for the AS400 server and printer to support teaching COBOL and RPG. By having the MSDNAA, we've cut out the \$1,000 license fee per computer for Visual Studio. We have strived to incorporate free software, such as Alice and the NetBeans

IDE (Integrated Development Environment) and the Eclipse IDE. We phased out SmartDraw, utilizing Microsoft Visio instead, saving the college \$5,000 annually. Due to the implementation cost-saving measures, our department has saved the college \$100,000+ annually.

We have an academic agreement with Oracle supplying our database classes with free Oracle licenses, which would cost \$10,000 - \$12,000 each without the Oracle academic Academy initiative agreement.

Additionally, we use Measure Up to provide the necessary tools to reinforce learning and validate knowledge for certification. MeasureUp is the leading provider of certification practice tests and assessments for IT professionals. In addition to being a Microsoft® Certified Practice Test Partner, MeasureUp is now part of Certiport, and linked to an expansive network of more than 10,000 centers in 142 countries worldwide.

**C. Beyond general College admission policies, list any special requirements pertaining to program admission (i.e. passing a background check, GPA requirement, etc).**

The Computer Programming Department does not have any special admission requirement other than the FTCC requirements: Prerequisite: High School Diploma, Placement Test Equivalent

**D. List articulation or other such agreements that the program currently has with other community colleges or four-year institutions. Briefly describe the details of such agreements, including when the agreements were last reviewed, updated and approved by the partnering colleges.**

Articulation Agreement with Franklin University, Effective Date March 2003. Review Date: March 19, 2013. Automatic Renewal.

Memoranda of Understanding with Mount Olive College. Effective Date July 2010. Review Date: March 19, 2013. Automatic Renewal.

Memoranda of Understanding with Fayetteville State University. Effective Date February 14, 2013. Review Date: March 19, 2013. Automatic Renewal.

The Computer Programming Department would like to pursue an Articulation Agreement with Campbell University, University of North Carolina at Wilmington, and East Carolina University.

**E. List specific linkages or partnerships the program has with local businesses, community or civic organizations, K-12 schools, etc. Briefly describe the nature of such partnerships. Include relevant contact information for partnering businesses, organizations, etc.**

High School Connections: A Visual Basic Programming certificate is available for high school students in the Career and College Promise program. Career and College Promise provides seamless dual enrollment educational opportunities for eligible North Carolina high school students in order to accelerate completion of college certificates, diplomas, and associate degrees that lead to college transfer or provide entry-level job skills.

The department is pursuing a partnership with Immersion Media, to offer internship opportunities for FTCC programming students. Andrew Nystrom, Lead Game Developer, Web Developer, and Project Manager, extended the offer during the February 4<sup>th</sup> Advisory Meeting. Faculty-recommended first year programming students would be encouraged to participate in this opportunity that could potentially lead to full-time employment. During the Advisory Board meeting on February 4<sup>th</sup>, 2014, it was suggested that City Hall would benefit from a co-op/internship arrangement as well.

Additionally, Thomas Hobgood, Applications Development Manager MIS, and Jenneth Honeycutt, Department Chair, have met to discuss internship opportunities for FTCC programming students within the MIS department. Security issues with sensitive college data must be addressed before the implementation of the co-op opportunity.

## X-3.2 Program Curriculum

### (Self-Study Team's assessment)

**A. List the program's approved plan of study. Provide the suggested sequence of course numbers, titles, and credits.**

FAYETTEVILLE TECHNICAL COMMUNITY COLLEGE					
COMPUTER PROGRAMMING (A25130)					
Effective: Fall 2013					
Revised: 02/19/13					
Length: 5 Semesters					
Prerequisite: High School Diploma, Placement Test Equivalent					
Award: Associate in Applied Science					
<b>FALL SEMESTER 1</b>					
Prefix No.	Title	Class	Lab	Work Exp.	Credit
	ACA Elective	1	0	0	1
ACC111	Financial Accounting	3	0	0	3
CIS110	Introduction to Computers	2	2	0	3
CIS115	Intro to Prog & Logic	2	2	0	3
ENG111	Expository Writing	3	0	0	3
MAT161	College Algebra	3	0	0	3
MAT161A	College Algebra Lab	0	2	0	1
<b>Totals</b>		<b>14</b>	<b>6</b>	<b>0</b>	<b>17</b>
<b>SPRING SEMESTER 1</b>					
Prefix No.	Title	Class	Lab	Work Exp.	Credit
COM231	Public Speaking	3	0	0	3
CSC139	Visual BASIC Prog	2	3	0	3
CSC151	JAVA Programming	2	3	0	3
DBA110	Database Concepts	2	3	0	3
NOS110	Operating System Concepts	2	3	0	3
SEC110	Security Concepts	3	0	0	3
<b>Totals</b>		<b>14</b>	<b>12</b>	<b>0</b>	<b>18</b>
<b>SUMMER SEMESTER 1</b>					
Prefix No.	Title	Class	Lab	Work Exp.	Credit
	Humanities/Fine Arts Elective	3	0	0	3
	Social/Behavioral Science Elective	3	0	0	3
<b>Totals</b>		<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>



**FALL SEMESTER 2**

Prefix No.	Title	Class	Lab	Work Exp.	Credit
CSC239	Adv Visual BASIC Prog	2	3	0	3
CSC251	Adv JAVA Programming	2	3	0	3
CTS115	Info Sys Business Concept	3	0	0	3
CTS285	Systems analysis & Design	3	0	0	3
	Major Elective	2	0	0	2
<b>Totals</b>		<b>12</b>	<b>6</b>	<b>0</b>	<b>14</b>

**SPRING SEMESTER 2**

Prefix No.	Title	Class	Lab	Work Exp.	Credit
CSC289	Programming Capstone Project	1	4	0	3
DBA120	Database Programming I	2	2	0	3
NET110	Networking Concepts	2	2	0	3
NOS120	Linux/UNIX Single User	2	2	0	3
<b>Totals</b>		<b>7</b>	<b>10</b>	<b>0</b>	<b>12</b>

**TOTAL REQUIRED CREDITS...67**

**Co-op Option:** Qualified students may elect to take up to two (2) credit hours of Cooperative Education in lieu of a Major elective provided they acquire approval from the Co-op Director and the Department Chairperson.

**\*Note:** Students **may not** take an introductory foreign language to fulfill the Humanities/Fine Arts requirement.

**B. State the specific student learning outcomes and graduation competencies of the program. Describe them in measurable terms including discussion of the department approved metrics/rubrics used to assess those competencies. Include references to the program's general education outcomes and career-related skills. For example, link program outcomes to the approved FTCC General Education Competencies located on the College's Human Resources, Workforce Development and Institutional Effectiveness website.**

**Develop computer programming system solution**

Students will use information to analyze and make logical decisions in the development of a computer programming system solution using the Systems Development Life Cycle. Rubric: CriticalThinkingRubric\_ISCP.doc (see document in Weave)

**Demonstrate Effective Oral Communication Skills**

CT Division students will demonstrate effective oral communication skills. Rubric: Oral Communication Rubric.pdf (see document in Weave)

**Demonstrate Computer Literacy**

Students will exhibit competency with many aspects of technology, to include: word-processing software (all CSC courses) the use of SQL databases (CSC 239, CSC 251, DBA 110, DBA 120), IDE (Integration Development Environment) software (CSC 139, CSC 239, CSC 151, CSC 251, WEB 151, WEB 251), presentation software (CSC 239, CSC 251, CSC 289) Students will also use Violet or similar UML software in CSC 289 project presentations to demonstrate the ability to diagram class structure with

respect to inheritance.

**Increase Global Awareness and Cultural Diversity**

Increase cultural awareness activities in the computer programming program. Rubric: INTERCULTURAL KNOWLEDGE AND COMPETENCE VALUE RUBRIC.pdf

**Demonstrate Quantitative Competencies**

Students in the Computer Programming degree program must demonstrate quantitative competencies by successfully completing one of the following courses, either by taking the course at FTCC or transferring the course from another institution (provided the transfer credit has been approved by FTCC evaluators). 1. MAT 161-College Algebra (or higher-level MAT or equivalent) 2. CIS 115-Introduction to Programming and Logic (or equivalent)

These FTCC core competencies are defined as follows:

Communicate effectively using the conventions of American Standard English in professional and academic environments.

Use critical thinking to analyze problems and make logical decisions.

Demonstrate socialization skills that support cultural awareness and a global perspective.

Demonstrate quantitative competencies.

Demonstrate computer literacy.

**C. How does the curriculum ensure that it is and/or remains relevant to students in the 21st century and the expected challenges and opportunities they will face upon graduation?**

The Computer Programming department utilizes the input and advice of the Advisory Board to ensure that it remains relevant to students in the 21<sup>st</sup> century. Advisory committees assess specific areas of the Computer programming department. Suggestions are designed to improve specific content areas. Such suggestions could include industry standards, the updating of curriculum, purchase of new instructional materials or equipment to modernize the classroom and to adopt safety policies.

Our students are able to utilize up-to-date technologies being integrated in each course due to use of MSDNAA program and the Oracle Academy Membership. Schools and school systems must outfit classrooms with resources vital to the learning needs of 21st century students to meet the challenges and opportunities they will face upon graduation. In addition to hardware, software and infrastructure, ongoing technical support and maintenance is crucial. Ideally, a “presentation station” with a teacher’s workstation, data projector, interactive whiteboard, printer, tablet, and digital camera can be created to aid in teaching endeavors.

Exposure to computers in the classroom or at home and use of mobile technology does not always equal understanding or efficient use of ICT (information and communications technology). Core digital literacy must be taught and validated to ensure students have current and relevant skills to enter institutions of higher learning and perform productively in the workplace.

**D. Describe the methods (formal and/or informal) used to ensure continued program currency. How the faculty is involved in the process to maintain program currency? How is the program advisory committee involved? How have outside consultants been used?**

Informal methods:

The computer programming field of study is constantly changing and evolving. Faculty attempt to cross-train in other programming languages and computer-related disciplines by sitting in on classes taught by other instructors. This is an increasing hardship in that the cross-training is done above and beyond the regular workload (18-20 hours), office hours (5 hours) and divisional hours (5 hours). Lack of funding and training opportunities force existing faculty to continually learn new technologies on their own time and by using their personal funds. This is not an ideal situation for adequate training as faculty can only learn so much on their own.

Formal methods:

The Computer Programming department relies on the advice and counsel of the Advisory Board to guide the direction of the department. In the past, the Computer Technologies Division held a joined advisory board meeting for all departments (Web Technologies, Networking, Security, Computer Information Technology and Computer Programming). As a result, this format did not lead to in-depth, specific recommendations for the Computer Programming department. Thus, our department has elected to conduct separate meetings to discuss program currency and relevant issues.

The Computer Programming had an Advisory Board meeting on February 4<sup>th</sup>, 2014. Invited members and guests included Rick Perko, CEO & President of Immersion Media, a local Fayetteville company; Nicholas Aucutt, a software engineer from FORSCOM, Al Hildreth, a database manager from ARMA, Ryan Pretlow, a systems programmer from Methodist University, and Andrew Nystrom, lead project manager for Immersion Media. Minutes from the meeting are listed below.

Fayetteville Technical Community College  
Committee/Subcommittee: Computer Programming Advisory Board

Meeting Minutes  
Date: 4 February 2014

- I. Call to order
  - A. Meeting facilitator Jenneth Honeycutt called the meeting to order.
  - B. The date of the meeting was February 4, 2014, the time was 5:30pm, and the meeting was held in ATC 219.
- II. Roll call
  - A. The following committee members were present: Jenneth Honeycutt, Nicholas Aucutt, Darlene Wood, Andrew Nystrom, Anthony Cameron, Charles Bryan, Al Hildreth, David Teter.
  - B. The following committee members were unable to attend: Ryan Pretlow.
  - C. The following guests were present:
- III. Approval of minutes from previous meeting
  - A. Committee secretary read the minutes from the previous meeting.
  - B.  The minutes of the previous meeting were approved as read.  
 The minutes of the previous meeting were approved as read but with recommended changes (formatting, grammar, punctuation) that do not materially affect the content of the minutes.
  - C. The following content changes to the minutes were recommended:
    - 1.
- IV. Old business
  - A. No old business
- V. New business
  - Discussion of the following new business occurred.
    1. Reduction to 65 credit hours for degree, as mandated by the state.
    2. Recommendation to eliminate Visual Basic by 2015 as industry moves toward C#. Recommendation to replace Visual Basic with a scripting language such as Python. Local industry supports Python as a scripting language, as it is more widely-used.
    3. New certificate: Mobile application development
    4. What to teach? Primary languages to teach: Java and C#
    5. SQL tract in new curriculum. No preference between mySql and Oracle as the focus should be on teaching database concepts and fundamentals.
    6. Co-op/Internships: Andrew Nystrom recommended sending 1<sup>st</sup> year programming students for internship opportunities with Immersion Media. Also recommended City Hall.
- VI. Next meeting: To be announced.
- VII. Adjournment – meeting facilitator Jenneth Honeycutt closed the meeting at 7:00pm.

Minutes prepared by: JH

**E. What changes have been made to the curriculum program of study during the past three years? Why were these changes made? Did the changes result in anticipated outcomes originally driving the change?**

The computer programming field of study is constantly changing and evolving. In the last three years, significant changes were incorporated into the program to ensure continued program currency. Changes include the:

- 1) Migration from COBOL as the introductory programming language to Java, as recommended by the Advisory Board. This change resulted in a 50% increase of course offerings for CIS 115.
- 2) Addition of mobile application development courses and certificate due to industry demand and trends. We have nine students in our pilot mobile application course which will lead to an additional nine certificates being issued for our department.
- 3) Addition of High School Connections Visual Basic certificate. Current enrollment for the pilot program is six students, which will lead to an additional six certificates for our department.
- 4) Reduction in course hours due to state requirements. As a department focused on producing qualified candidates for employment, this change was not fully embraced. Reducing the hours from 76 down to 65 significantly impairs our ability to train competent programmers with exposure to vital skillsets. We are no longer able to offer the same level of educational training due to these changes. For example, programming students are not exposed to Perl (a scripting language) or ASP.net, a web-development tool.

## **F. What curriculum changes are currently being considered? Why?**

Due to the reduction in course hours as mandated by the state, our department will strive to teach fundamental programming concepts, equipping our students with the necessary skillset for entry-level employment. These fundamentals concepts will help students adapt to learning more advanced topics of study and training on the job.

Our department will be phasing out the Visual Basic programming language, per the Advisory Board recommendation. VB is being replaced by C#, which is currently taught in our curriculum. To replace VB, the Advisory Board recommended adding a Python course. Python is object-oriented language, but it can be used as a scripting language as well. However, no such course exists within the State catalog. We will need to develop the course through the NCCCS procedures.

Since their introduction in the 1980s, relational database management systems (RDBMS) have become the standard database type for a variety of industries. Two of the most popular RDBMS are Oracle and MySQL. The department is comparing the advantages and disadvantages of Oracle or MySQL to teach SQL (Structured Query Language). SQL is used to communicate with a database. According to ANSI (American National Standards Institute), it is the standard language for relational database management systems. Although most database systems use SQL, most of them also have their own additional proprietary extensions that are usually only used on their system. However, the standard SQL commands such as "Select", "Insert", "Update", "Delete", "Create", and "Drop" can be used to accomplish almost everything that one needs to do with a database. The department has an academy membership with Oracle that provides access to software, curriculum, training, certification resources. MySQL is a free resource that appeals most often to individuals interested in managing databases associated with their websites.

Addition of database tract with the proposed CTI curriculum. The CTI curriculum has not yet been approved.

**G. List members of the program's advisory committee (if one exists). Include names, titles, and backgrounds, how long members have served, and any criteria used by the program leadership to select members.**

Rick Perko, President & CEO of Immersion Media (new member). Immersion Media is a locally-owned business that provides stunning media for Web, TV, Mobile, Tablet and Software applications.

Al Hildreth, Database Manager of ARMA (new member). ARMA International is a not-for-profit professional association and the authority on governing information as a strategic asset.

Ryan Pretlow, Systems Programmer of Methodist University (3 years) The Systems Programmer creates computer programs for various departments such as Police & Public Safety, the Registrar, and Admissions.

Nicholas Aucutt, Software/Database Developer of FORSCOM. (2 years) Nicholas Aucutt is a FTCC graduate who began his career with the City Of Fayetteville as a programmer. After being employed for two years, Nicholas acquired a better position at Ft. Bragg with FORSCOM where he earned the prestigious award of Employee of the Quarter.

Andrew Nystrom, Lead Game Developer, Web Developer, and Project Manager of Immersion Media.

Faculty Members:

Darlene Wood, Interim Division Chair for Computer Technologies

Jenneth Honeycutt, Computer Programming Department Chair

Anthony Cameron, Computer Programming instructor

David Teter, Computer Programming instructor

Charles Bryan, Computer Programming instructor

Criteria in selecting members:

- Members who can advocate for our department and increase its visibility, both internally and externally
- Local professionals who can provide informed input of industry trends and recommendations
- Those who serve the role as advisory committee members may represent:
  - Business
  - Industry
  - CEO's, business owners, managers, supervisors
  - Agencies or governmental entities
  - The College, as a graduated student of the program



**H. How often does the advisory committee meet? Describe how active the committee is as issues are discussed related to the program. Identify how meetings are conducted and how recommendations are put forward for consideration of approval. Attach a copy of the last advisory committee meeting minutes as supporting documentation.**

Advisory committees must meet at least three times per year. The Kick-off Meeting/Dinner and second working meeting are physical working meetings, while the third (feedback) meeting may be physical or virtual. The first meeting will serve as a Kick-off Meeting/Dinner, which will be officiated by college administration. The meeting should include ice-breaker activities, the election of the chair and vice-chair, and discussion to plan the second /working meeting. Discussion should include the best time and place to conduct the meeting. The second/working meeting must be held before annual program review. The third and final meeting can be held any time after administration feedback is provided to the division chair, department chair, or program coordinator. This serves as a meeting/informational follow-up to the recommendations of the committee and closes the continuous loop of communication. The third meeting may be virtual, to include email or phone conference.

Our last meeting was conducted February 4<sup>th</sup>, 2014. (see minutes below)

Fayetteville Technical Community College  
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- VI. Next meeting: To be announced.
- VII. Adjournment – meeting facilitator Jenneth Honeycutt closed the meeting at 7:00pm.

Minutes prepared by: JH

**I. What specific issues or concerns have been addressed by the advisory committee during the past three years? Describe any activities the department has used over the last 3 years suggested by the committee related to keeping the curriculum current. Relate how effective the committee is at communicating its concerns and how the advisory committee's effectiveness might be improved.**

Specific issues and concerns addressed by the advisory committee:

- What technical skills to teach? Due to the reduction in course hours as mandated by the state, our department will strive to teach fundamental programming concepts, equipping our students with the necessary skillset for entry-level employment. These fundamentals concepts will help students adapt to learning more advanced topics of study and training on the job.
- Migration from COBOL to Java. COBOL was phased out completely in 2010, replaced with Java as the first programming language exposure for students. Alice software was incorporated as learning the fundamentals of programming languages has always been a difficult task for students. Research results shows that Alice is very effective for teaching students programming concepts. (Alice Reference: <http://www.youtube.com/watch?v=Nm7bv4wduTI>)
- Industry trends. Our department will be phasing out the Visual Basic programming language, per the Advisory Board recommendation. VB is being replaced by C#, which is currently taught in our curriculum. To replace VB, the Advisory Board recommended adding a Python course. Python is object-oriented language, but it can be used as a scripting language as well. However, no such course exists within the State catalog.
- Since their introduction in the 1980s, relational database management systems (RDBMS) have become the standard database type for a variety of industries. Two of the most popular RDBMS are Oracle and MySQL. The department is comparing the advantages and disadvantages of Oracle or MySQL to teach SQL (Structured Query Language). SQL is used to communicate with a database. According to ANSI (American National Standards Institute), it is the standard language for relational database management systems. Although most database systems use SQL, most of them also have their own additional proprietary extensions that are usually only used on their system. However, the standard SQL commands such as "Select", "Insert", "Update", "Delete", "Create", and "Drop" can be used to accomplish almost everything that one needs to do with a database. The department has an academy membership with Oracle that provides access to software, curriculum, training, certification resources. MySQL is a free resource that appeals most often to individuals interested in managing databases associated with their websites.
- Addition of database tract with the proposed CTI curriculum

- Soft skills are essential! Each company looks for a different mix of skills and experience depending on the business. While technical skills may get a foot in the door, people skills are what open most of the doors to come. Work ethic, attitude, communication skills, emotional intelligence and a whole host of other personal attributes are the soft skills that are crucial for career success. Problem solving, delegating, motivating, and team building are all much easier if you have good soft skills. Knowing how to get along with people – and displaying a positive attitude – are crucial for success. It is no longer enough to be a functional expert. Companies value soft skills because research suggests and experience shows that they can be just as important an indicator of job performance as hard skills.

The Advisory Board's effectiveness can be improved by cultivating more members from the community.

## **X-3.3 Faculty**

**(Self-Study Team's assessment)**

**A. For the past three (3) academic years, provide the total number of sections, by course number, run by the program and the percentage of those that were taught by full-time faculty members.**

**Computer Programming Core Courses by Section**

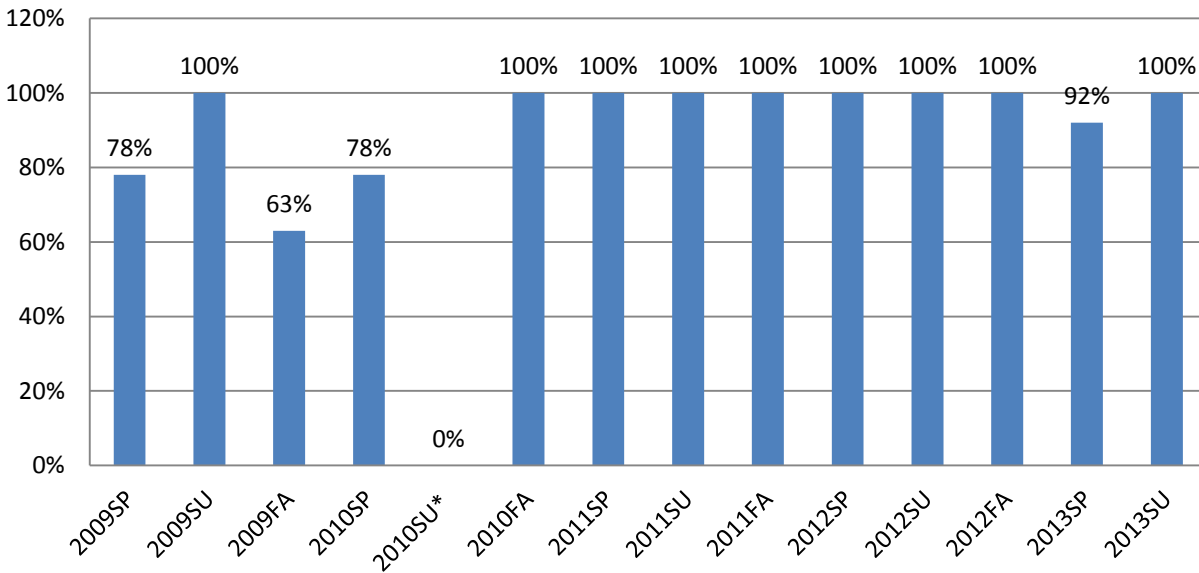
	2009SP	2009SU	2009FA	2010SP	2010SU	2010FA	2011SP
CIS-115	4	*	5	4	*	4	4
CSC-135	2	**	**	1	**	**	1
CSC-151	*****	*****	***	***	***	***	***
CSC-139	2	****	****	2	****	1	2
CSC-151	****	****	1	****	****	1	1
CSC-191	****	****	****	****	****	****	****
CSC-235	****	****	1	****	****	****	****
CSC-239	****	1	****	****	****	1	****
CSC-251	*****	*****	*****	*****	*****	*****	*****
CSC-253	*****	*****	*****	*****	*****	*****	*****
CSC-258	****	****	****	1	***	***	***
CSC-289	1	**	**	1	**	**	1
CTS-285	*****	*****	1	*****	*****	1	*****
DBA-120	*****	*****	*****	*****	*****	*****	*****
* Course offered in Summer based upon decision of Department Chair ** Course offered only in the Spring semester *** Course no longer offered **** Course offered based upon course sequencing and student educational plans ***** Course added to core curriculum in 2011 ***** Course offered only in Fall term ***** Course offered during Fall and Spring terms only							

**Computer Programming Core Courses by Section**

	2011SU	2011FA	2012SP	2012SU	2012FA	2013SP	2013SU
CIS-115	2	5	5	2	5	5	2
CSC-135	***	***	***	***	***	***	***
CSC-151	***	***	***	***	***	***	***
CSC-139	****	****	2	****	****	2	****
CSC-151	****	****	1	****	****	2	****
CSC-191	1	****	****	1	***	***	***
CSC-235	****	1	***	***	***	***	***
CSC-239	****	1	****	****	1	****	****
CSC-251	*****	1	*****	*****	1	*****	*****
CSC-253	*****	*****	1	**	**	1	**
CSC-258	***	***	***	***	***	***	***
CSC-289	**	**	1	**	**	1	**
CTS-285	*****	2	*****	*****	2	*****	*****
DBA-120	*****	1	1	*****	1	1	*****

\* Course offered in Summer based upon decision of Department Chair  
 \*\* Course offered only in the Spring semester  
 \*\*\* Course no longer offered  
 \*\*\*\* Course offered based upon course sequencing and student educational plans  
 \*\*\*\*\* Course added to core curriculum in 2011  
 \*\*\*\*\* Course offered only in Fall term  
 \*\*\*\*\* Course offered during Fall and Spring terms only

**Percentage of Sections Taught by Computer Programming Full-Time Faculty (Spring 2009-Summer 2013)**



\* Note: There were no Core Computer Programming Courses Taught

**B. Define the criteria used to determine faculty qualification to teach in the program. List any degree requirements, as well as relevant certification, licensure, and experience used to evaluate candidates during the hiring process.**

A Master's Degree with at least 18 hours of programming is required to teach in the program. Industry certifications are not required but are used to enhance required qualifications.

**C. Are all faculty (full-time and part-time) appropriately credentialed and qualified to teach in the program? Please explain and provide a list of faculty (including their rank, length of service, highest degree, areas of specialization, and relevant experience).**

All faculty are appropriately credentialed and qualified to teach in the program.

Anthony Cameron, Start Date: August 1999  
B.S., Pharmacy, University of North Carolina at Chapel Hill, 1985  
A.A.S., Information Systems Programming, FTCC, 1998  
M.S., Vocational Education/Digital Communications, ECU, 2003

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Jenneth Honeycutt, Start Date: January 2003  
B.S., Business Administration, University of North Carolina at Wilmington, 1992  
A.A.S, Computer Programming, FTCC, 2000  
M.S., Vocational Education/ Information Technologies, ECU, 2006  
Systems Programmer for Methodist University 2000-2002

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David Teter, Start Date: November 2006  
A.A.S., Network Administration And Support, FTCC, 2003  
B.S., Applied Science, Campbell University, 2004  
M.S., Vocational Education, ECU, 2009

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Charles Bryan, Start Date: August 2009  
B.S. Computer Science, Virginia Military Institute, 2000  
M.S, Computing And Software Systems, University of Washington, 2010  
Oracle Certified Associate Java SE 7 Programmer, December 2013  
6 years as a Computer Scientist for the Department of the Navy

**D. Are all faculty, including adjuncts, evaluated on a periodic basis? If so, what is the schedule for the process? Is the program up-to-date on the completion of faculty evaluation? Why or why not? What have been the general findings of the evaluations?**

All faculties are evaluated annually in March. The program is up-to-date on the completion of faculty evaluations.

One issue that needs to be addressed is the organization of the department “on paper”. Officially, there are instructors listed for the Computer Programming department that do not teach any courses for our area. However, those instructors who actually teach for the Computer Programming department **are** evaluated by the Computer Programming department chair annually. This inconsistency makes it difficult for the department chair to manage the department and delegate responsibility effectively. The current organization leaves the Computer Programming department short one instructor, significantly reducing the ability to offer additional course sections such as 2<sup>nd</sup> 8 week classes.

**“ON PAPER” COMPUTER PROGRAMMING DEPARTMENT (5 instructors)**

Jenneth Honeycutt\*\* .....H: 567-2109 / C: 624-0582  
Carlos Bodden .....C: (781) 307-3667  
Anthony Cameron .....H: 483-5370 / C: 624-3169  
Valerie Johnson ..... H: (919) 718-7754 / C: (248) 943-4084  
Torie Quismundo..... C: 705-1726-T

**“ACTUAL” COMPUTER PROGRAMMING DEPARTMENT (4 instructors)**

Jenneth Honeycutt\*\* .....H: 567-2109 / C: 624-0582  
Anthony Cameron .....H: 483-5370 / C: 624-3169  
David Teter ..... H: 860-7530  
Charles Bryan ..... C: (360) 704-0030



**E. Describe full-time faculty participation in professional development opportunities. Explain how professional development contributes to the overall effectiveness of the program. Provide a list of faculty and their professional development experiences for the past three (3) years.**

David Teter:

- Chair of the Professional Development Committee
- Participated as an instructor for the STEM camp, as part of the recruitment process for our department. The STEM Camp is a Summer Program hosted at Fayetteville Technical Community College. The camp exposes students to Science, Technology, Engineering, and Mathematics instruction. Participants engage in STEM activities designed to stimulate learning and retention of material. Students have the opportunity to enhance their knowledge of STEM fields to become more global competitive.
- Cross-trained in CIS 115 Introduction to Programming & Logic. Instructor is currently teaching a section of CIS 115 this semester due to these efforts. As our department has continued to experience growth, additional instructors are needed to teach the introductory programming course.
- Oracle University Knowledge Center Training

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Anthony Cameron

- Head of the Curriculum Review Committee
- Head of Steering Committee (now defunct)
- Conducted an Adobe Acrobat Presentation for NCOAP (NC Association of Educational Office Professionals) members at their District 9 Annual Fall Meeting.
- Cross-trained in CIS 115 Introduction to Programming & Logic. Instructor is currently teaching a section of CIS 115 this semester due to these efforts. As our department has continued to experience growth, additional instructors are needed to teach the introductory programming course.
- Retention Efforts: CIS 115 Help Lab. Instructor is using required five Divisional Hours to provide assistance to CIS 115 students.
- Instructor observed multiple webinars:
  - Blend and Flip New Approaches for Building Student Success
  - Improving Student Learning Outcomes

- Fostering Online Education
  - Your Course With Windows 8
  - Appealing to Diverse Learners
  - Connecting with the Connected Learner
  - Effectively Leading and Managing the Online Course
  - Cisco Packet Tracer
  - Online Trends and Topics in Online Education
  - Stereotypes in the Online Classroom
  - Feedback in the Gradebook
  - Rubrics 1,2
  - Academic Integrity
  - How Adults Learn
  - Jing Software
- 

#### Charles Bryan

- Vice Chairperson, Enrollment Management Committee
  - Will be presenting at the upcoming NCCIA (NC Computer Instruction Association) conference in March 2014 on Derby databases using Java.
  - Attended the Mid-Atlantic Working Connections (MAWC) conference in 2011 and 2012. MAWC is a community of IT faculty across the region dedicated to working together to develop new curriculum and share best practices.
  - Attended Alice 3 Workshops at Carnegie Mellon University (paid out-of-pocket, \$900. This does not include travel or lodging expenses).
  - Studied for his Oracle Certified Associate, Java SE 7 Programmer and passed in December 2013. (paid out-of-pocket. Study material was \$30 and the test was \$150.)
- 

#### Jenneth Honeycutt

- Future Seekers Committee, Secretary. Instructor was a member of the committee for several years, serving as both Secretary and participating in programming demonstration tours each year for disadvantage and troubled youth.
- Conducted Facebook security presentation for NCOAP (NC Association of Educational Office Professionals)
- Attended the Mid-Atlantic Working Connections (MAWC) conference in May of 2012. This week-long conference was attended on personal vacation time from the college, as there was no other affordable face-to-face training provided for mobile application development. MAWC is a community of IT faculty across the region dedicated to working together to develop new curriculum and share best practices.

- Participated as an instructor for the STEM camp, as part of the recruitment process for our department. The STEM Camp is a Summer Program hosted at Fayetteville Technical Community College. The camp exposes students to Science, Technology, Engineering, and Mathematics instruction. Participants engage in STEM activities designed to stimulate learning and retention of material. Students have the opportunity to enhance their knowledge of STEM fields to become more global competitive.
- Retention efforts: Created multiple Camtasia videos deployed on YouTube.com as visual teaching aids in CIS 115 Intro to Programming & Logic. This resource has proven to be especially helpful for our online students who do not receive the traditional face-to-face instruction.
- Retention efforts: Created assignment help files with detailed instructions and screen shots to assist online CIS 115 students. This resource has proven to be especially helpful for our online students who do not receive the traditional face-to-face instruction.
- Retention Efforts: CIS 115 Help Lab. Instructor is using required five Divisional Hours to provide assistance to CIS 115 students.
- Developed new CIS 115 course material, completely overhauling the course in regards to the Blackboard site, course calendar, course assignments, tests, and the textbook. This was completed with no reduction in workload.
- Developed new course offering: WEB 151 (Mobile Application Development) course. This was completed with no reduction in workload.
- Cross-trained in CSC 151 (Java Programming) in Spring 2013. Instructor attended class an additional 4 hours each week, in addition to the regular workload, office hours, and divisional hours.
- Cross-trained in CSC 251 (Advanced Java Programming) in Fall 2013. Instructor attended class an additional 4 hours each week, in addition to the regular workload, in addition to the regular workload, office hours, and divisional hours.
- Recruitment Efforts: As requested by Angela Smith, Admissions Recruiter, Jenneth Honeycutt has conducted multiple programming demonstrations. The last programming demonstration was conducted October 28, 2013 for a group of approximately 7-10 students.
- Recruitment Efforts: As requested by Pam Gibson, Coordinator for College Tech Prep, a programming demonstration was scheduled for the Adult Leadership Fayetteville Education Day on February 13, 2014. Due to inclement weather, this tour has been rescheduled for March 3, 2014.
- Recruitment Efforts: As requested by Brenda DuHon, Director of the Academy of Information Technology, a programming demonstration was scheduled for Gray's Creek High School students. Due to inclement weather, this tour is rescheduled for Friday, March 7, 2014.
- Recruitment Efforts: Jenneth Honeycutt attended the High School Connections Open House last year as we launched our pilot program offering high school students a certificate in Visual Basic programming. Both Mrs. Honeycutt and Mr. Cameron attended the most recent Open House on February 27, 2014.
- Additional training and webinars:
  - SmartBoard Training for GCB classrooms
  - Google Mobile App Training

- Measure Up Certification Training
  - PeopleAdmin Training
  - DDI Training
  - Mini Grant Training
  - Veterans on Campus Training
  - Oracle University Knowledge Center Training
  - Cengage Professional Development Day
- 

Computer Programming instructors continue to use Measure Up, the Microsoft Virtual Academy, webinars, and [www.lynda.com](http://www.lynda.com) training as professional development pertaining to what we teach.

**F. Describe full-time faculty research initiatives, conference or other presentations, and publishing ventures. Explain how faculty research projects contribute to the overall effectiveness of the program. Provide a list of faculty, their research projects, and presentations/publications.**

Due to workload constraints, full-time faculty do not have adequate time to devote to research projects or publishing ventures. However, computer programming instructors perform presentations from time to time for FTCC faculty, local businesses and organizations such as NCOAP, and local area high schools.

## **X-3.4 Resources and Support Services**

### **(Self-Study Team's assessment)**

**A. Does the program use labs, unique classroom spaces such as clinical sites, or specialized equipment or supplies? If so, please provide details.**

Our program does require labs and unique classroom setups. For example, Room 104B is considered to be the "programming" lab room. This lab room has most of the needed software for students to complete their assignments.

Specialized software is provided through MSDNAA program agreement and through direct purchases by college.

The department requires lab rooms such as ATC111 and ATC156 as well as ATC104B. Labs to have Windows 7, Visual Studio 2012, Java SE 7 JDK, Visible Analyst, Oracle 11g, Alice, Office 2010, Project 2010, Visio 2010, NetBeans, and Eclipse installed on each of the student computers

Additionally, Nexus Tablets are being utilized in the new mobile apps certificate courses. However, we were only able to purchase four (4) tablets. Students must share them.

Ideally, a "presentation station" with a teacher's workstation, data projector, interactive whiteboard, printer, tablet, ELMO, and digital camera can be created to aid in teaching endeavors.

**B. Are the spaces and supplies mentioned above adequate in meeting the needs of the program and its students? Indicate the strengths and limitations of the resources provided. Please include recommendations for how their provision could be improved.**

Our department has endeavored to reduce expenditures wherever possible in keeping with the college's goal of ensuring fiscal responsibility, accountability, and financial stability. Currently, mandatory software required to teach our courses is adequate as we get most software through the MSDNAA program or through academic agreements with companies such as Oracle. Cost is our main limitation. Tablets are a prime example of this cost constraint. Our department could use at least 20 Nexus tablets but only received funding for 6 tablets this past year. The scenario is the same for Surface tablets. Our department needs more funding for necessary devices in the classroom such as tablets and software.

Instructor office computers have been problematic in allowing instructors to perform required duties. For example, Charles Bryan's office computer did not meet the minimum requirements to install Visual Studio 2012, software that is necessary to teach C#. Hyon VanLeeuwen, Labs Supervisor, contacted the MIS department and coordinated the switch to a spare computer, and the problem was resolved. However, this computer is five years old (from 2009) and runs very slowly, taxing the instructor in performing his duties in a timely manner.

Another example would be the issued laptops for instructors that taught CIS 110 a few years ago. A requirement of the course was Office 2010, which was not installed on faculty office workstations at that time. Current, up-to-date software was unavailable in instructor offices, necessitating the need to issue laptops that had Office 2010. There were 13 laptops issued, per Dr. Tansey's directive.

A source of frustration for our department stems from the lack of funding provided to acquire necessary technology and equipment to stay current with what we are required to teach. For example, the Nexus tablets that were purchased took a year to purchase. Multiple delays in approval led to the same paperwork being filed at least on four separate occasions.

Another source of frustration for our department stems from the lack of funding for proper training and the lack of time to properly train in new content areas. Computer Programming instructors are forced to learn new technology and develop new courses on their own time by using personal funds, with no reduction of workload. For example, Jenneth Honeycutt attended a weeklong conference in Radford, Virginia to acquire mobile application skills on her personal vacation time away from the college. She also cross-trained in CSC 151 and CSC 251 an extra 4 hours each week for 2 semesters (no compensation) while also teaching an overload of 27 hours. The same instructor also was responsible for developing a brand new course for mobile applications, all while teaching an overload. Charles Bryan paid \$900 in out-of-pocket expenses to attend an Alice workshop at Carnegie Mellon University. Mr. Bryan also paid approximately \$200 out-of-pocket to train and pass the Oracle Certified Associate Java Programmer. Anthony Cameron drove to Raleigh to train to teach C# classes, but had to pay his own gas while still carrying a full-time load. Requests for training have been declined or not encouraged. There has been a lack of support from the administration to aid and equip faculty with the ever-changing skillset required to perform the job. Any suggestions to alleviate this problem would be greatly appreciated.

In the past, grant money was never available to our department. We will, however, pursue future opportunities with the new full-time grant writer at FTCC



**C. Does the program receive support services from the Library, Information Technology, Student Development, or any other offices or departments? Please list the service providers and their contributions to the program. Be sure to include other academic departments that contribute to the success of the program.**

Our department works concurrently with other academic programs to provide instruction and direction to Computer Programming students. FTCC's IT department maintains computers and installs software needed for the instruction of CP courses.

Thomas Hobgood, Applications Development Manager MIS, and Jenneth Honeycutt, Department Chair, have met to discuss internship opportunities for FTCC programming students within the MIS department. Security issues with sensitive college data must be addressed before the implementation of the co-op opportunity.

Hyon VanLeeuwen, Labs Supervisor, has been helpful in creating guest accounts for scheduled programming demonstration tours. Additionally, Ms. VanLeeuwen contacted the MIS department and coordinated an urgent computer need for a programming instructor.

Media Services has been gracious in aiding our department with requests to move equipment such as the video projectors and screen in multiple classrooms. These requests have always been handled in a very timely manner.

Billy Whitehead, Instructional Lab Technician, was very supportive in installing Visual Studio 2012 in the classroom and the programming lab on very late notice. Over the summer, the bookstore informed the department that they were forced to purchase a newer edition of the CSC 153 and CSC 253 textbook, which necessitated the switch to new software for the course. Mr. Whitehead worked diligently to overcome software compatibility issues and fix the problem.

Karen Williams and Laura Cumins have been helpful in accommodating available classrooms for instruction due a scheduling mishap. Due to the structure of our classes, it is necessary to teach in rooms that have computers.

**D. Are the support services mentioned above adequate in meeting the needs of the program and its students? Indicate the strengths and limitations of the**

**services provided. Please include recommendations for how services could be improved.**

Support services are adequate in meeting the needs of the program and its students.

**E. Does the program anticipate needing any non-routine budget allocations during the next three years? If so, please provide details. For example, will more faculty be required based on enrollment projections or will inadequate or outdated equipment or classroom space need to be replaced or improved?**

Our program anticipates the need for new computers for each of the labs rooms to handle the software necessary to teach programming courses. Additionally, we will need new computers for Computer Programming faculty as current office computers are becoming outdated.

Additional needed equipment requests include:

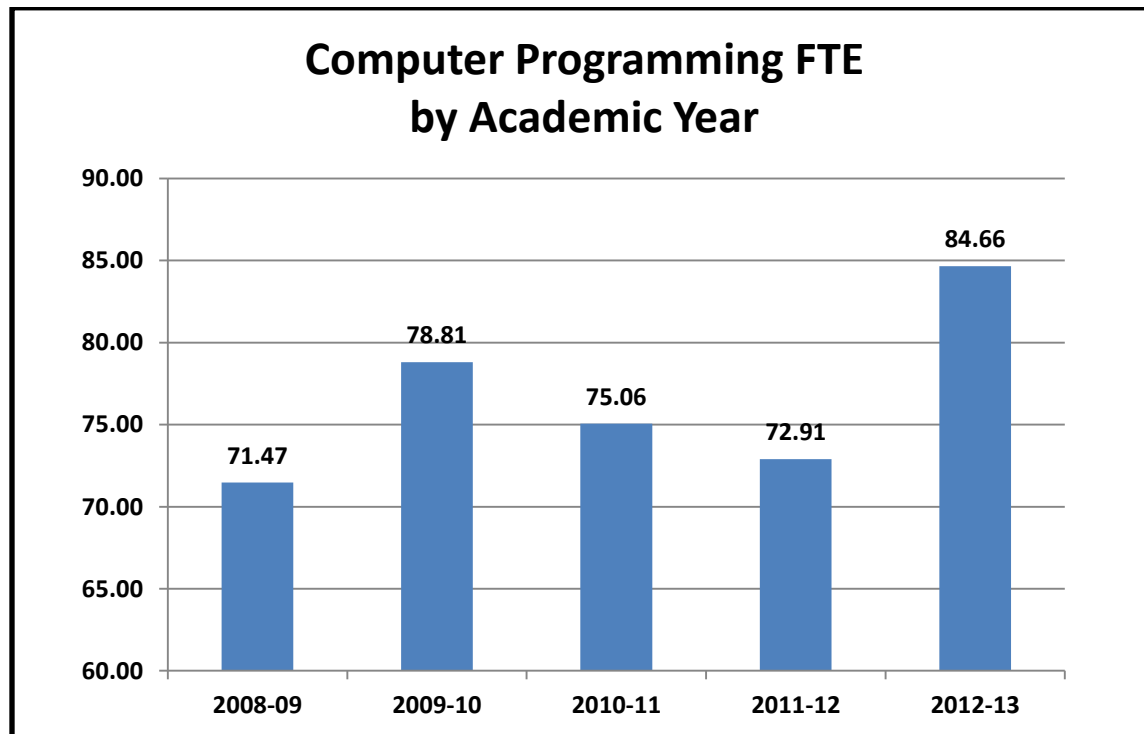
- Larger monitors
- Android tablets
- Windows tablets

Because of the current structure of the programming department, we are already short one instructor. A new faculty member will be necessary as the growth of the program dictates the demand for additional course offerings.

**G. Please describe your relationship with the FTCC Grants Department. Please describe all activities your department has engaged in to receive grants during the past three (3) years.**

In the last three years, our department has not engaged in activity with the FTCC Grants Department to receive grants. Jenneth Honeycutt attended a mini-grant professional development training meeting in an effort to learn more about how this process works.

## X-3.5 Enrollment, Recruitment, and Outcomes Assessment



**A. Analyze the number of FTE generated by courses in the program for the past three (3) academic years. What are the specific causes for upward and downward trend lines?**

Our department is continuing to experience growth due to necessary departmental changes that have allowed us to adapt to industry and economic trends. Changes include the elimination of COBOL, the addition of Alice software, and the addition of new courses such C# and mobile application development. We saw a declining trend of enrollment in our department back in 2008 and took drastic steps to improve the situation: We saw an initial decline due to several factors:

- economic factors of the Great Recession which began in December 2007
- erupting war between Sun Microsystems and Microsoft due to the introduction of new programming language, C#
- Increase in Android mobile applications

FTE generated by our department has risen and will continue to rise due to the persistent and tireless measures undertaken to prevent decline. For example, due to increased enrollment, we now offer an evening class for CSC 151 (Java Programming). The last time we were able to offer an evening class for our Java students was 2007. Additionally, we are now offering 6 sections of our introductory programming course,

CIS 115 to meet the rising demand. If we had more qualified instructors available, we could increase the number of this course offering. Most of our classes are at full capacity, straining our current resources. It is a good problem to have!

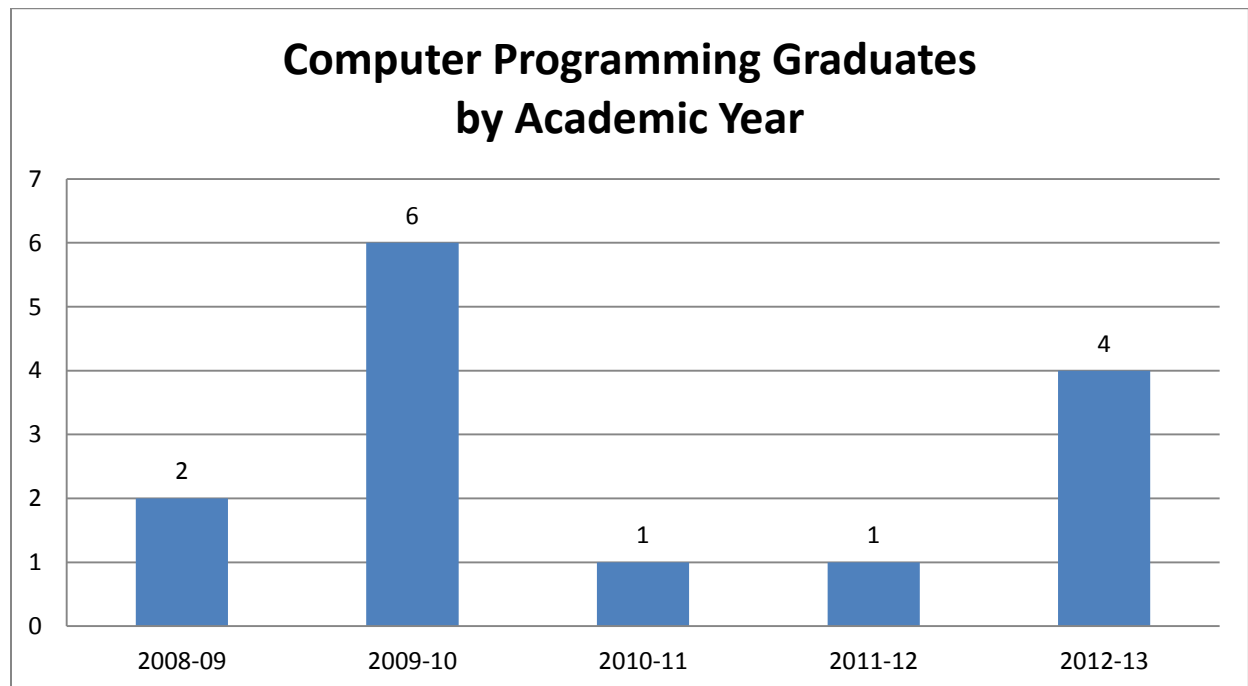
**B. Identify the program’s primary competitors. Beyond general College-wide advertising, what concrete marketing strategies have been used by the Department to promote the program and attract students that might otherwise enroll elsewhere? What exceptional program characteristics could be leveraged to distinguish the program from competing programs (e.g., faculty credentials, unique course offerings, work-based or other innovative learning opportunities, and so on)? In what ways does the program faculty work with the admissions staff to recruit students for the program?**

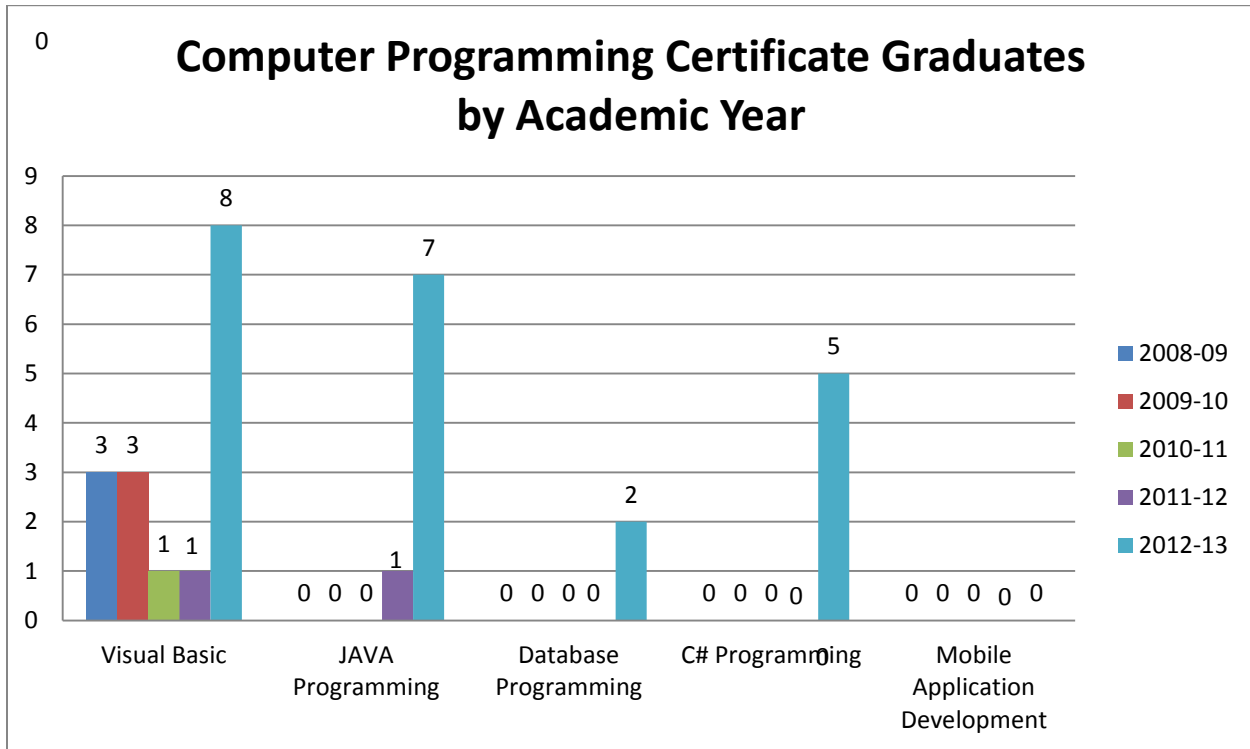
Our primary competitors are 4-year institutions such as Fayetteville State and for-profit schools such as Miller-Motte. We are able to compete by offering unique courses such as Oracle and Mobile Application Development. Certificate offerings enable us to attract students who may not want the degree, but would rather focus on a specialized niche of programming. These courses and certificates could be used as leverage to distinguish our program from competing programs.

Beyond the general college-wide advertising, there is no marketing strategy in place to promote the program and attract students. The department is open to suggestions and realizes there is a need to develop a more effective way to promote the curriculum.

Jenneth Honeycutt has worked with Admissions Recruiter, Angela Smith, to coordinate programming demonstrations for potential programming scholars.

**C. Provide the number of students who graduated with a major or minor from the program in the past three years.**





**D. Does the program have a retention plan? If so, please describe retention efforts. List all instructors with their retention rates for the past 3 Semesters. What efforts are made to address faculty members with a retention rate that is less than the program’s overall retention rate and the overall FTCC retention rate? What efforts are made to capitalize on the successes of those instructors with a retention rate higher than the Program retention rate?**

The program strives to be diligent in retention efforts, realizing the success of the department rests on keeping our enrolled students. Our retention is a deliberate result of faculty connecting with students in ways that create welcoming and supportive environments which fosters their success. Major areas of concentration include: academic advising, recruitment, and academically at-risk students.

Proper academic advising is crucial in keeping our programming students on schedule with the suggested sequence of courses. Efforts are made through email, phone calls, and in-class discussion to encourage students to meet with their academic advisors when registering for classes.

The department has increased its recruitment efforts through college-sponsored Open House events, tours, and programming demonstrations.

Faculty are attentive in identifying students who have irregular attendance in classes, demonstrate weak performance, or appear to have some other problems (including financial worries) that may detract from the academic focus. Such students are referred to appropriate College resources, such as the Success Center or instructor-aided Help Labs. Faculty provide on-going coaching, helping students get back on track through personal interaction and utilizing our email communication system. Email reminders with

helpful information often provide the nudge students need to complete tasks on time and stay on top of their educational responsibilities.

Retention rates for programming courses and individual instructors of the department are consistently higher than 80%, proving our strategies have been successful.

**Computer Programming Student Retention Rates by Instructor**

Instructor *	2009SP	2009SU	2009FA	2010SP	2010SU	2010FA	2011SP
Britt, Brenda K	92%	***	71%	74%	****	***	***
Bryan, Charles	*	*	***	50%	****	84%	85%
Cameron, Anthony	50%	100%	92%	72%	****	94%	67%
Honeycutt, Jenneth	90%	***	89%	90%	****	90%	89%
Ivey, Connie	*	*	*	***	****	***	***
Kleiner, Kenneth	***	***	***	***	****	***	***
Pait, Rudy	64%	***	***	***	****	**	**
Ralph, Robert *****	76%	***	92%	57%	****	**	**
Teter, David	***	***	***	***	****	***	***

\* Not Yet Hired

\*\* Terminated Employment

\*\*\* Did not teach Computer Program Core Course

\*\*\*\* No Core Computer Programming Courses Taught

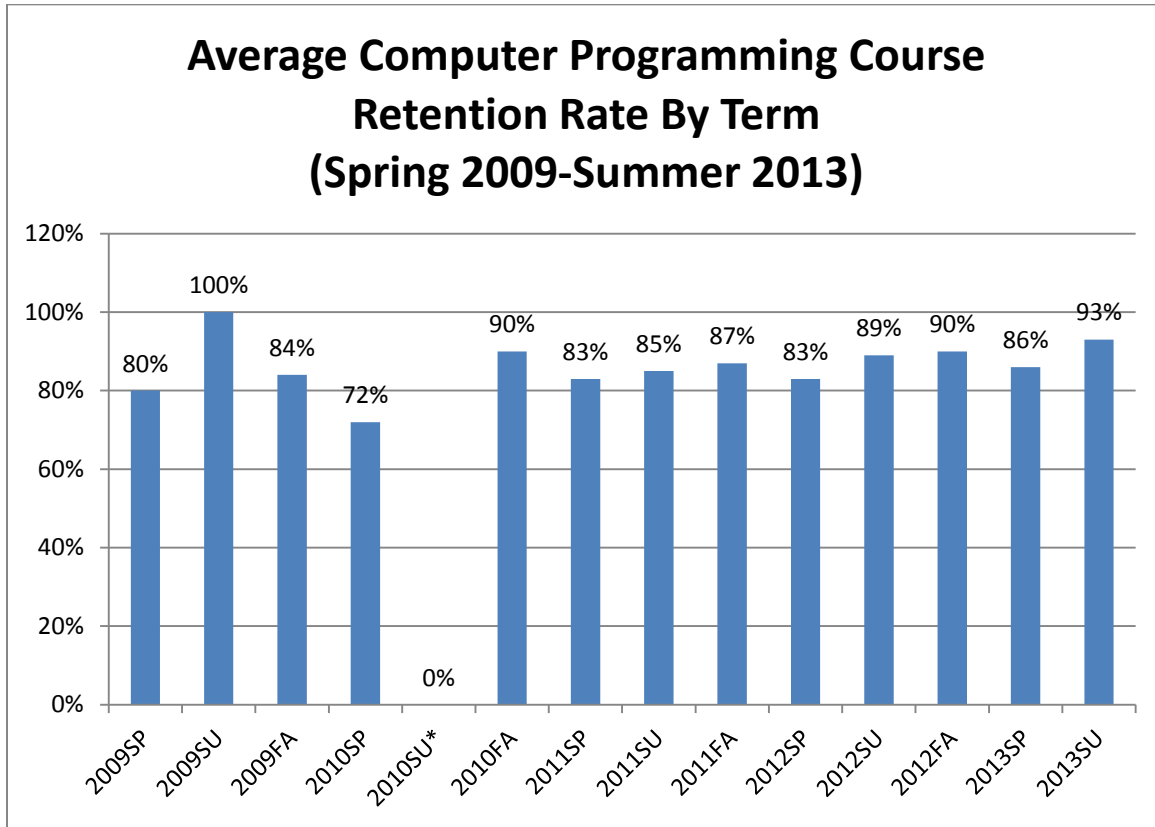
\*\*\*\*\* Instructor Retired in 2005 but came back to teach part-time

**Computer Programming Student Retention Rates by Instructor**

Instructor *	2011SU	2011FA	2012SP	2012SU	2012FA	2013SP	2013SU
Britt, Brenda K	***	***	***	***	***	***	**
Bryan, Charles	***	90%	84%	***	89%	88%	***
Cameron, Anthony	87%	100%	80%	92%	92%	89%	***
Honeycutt, Jenneth	85%	92%	88%	87%	94%	89%	93%
Ivey, Connie	***	***	***	***	***	88%	***
Kleiner, Kenneth	***	33%	***	***	***	***	***
Pait, Rudy	**	**	**	**	**	**	**
Ralph, Robert *****	**	**	**	**	**	**	**
Teter, David	***	73%	50%	***	73%	57%	***



- \* Not Yet Hired
- \*\* Terminated Employment
- \*\*\* Did not teach Computer Program Core Course
- \*\*\*\* No Core Computer Programming Courses Taught
- \*\*\*\*\* Instructor Retired in 2005 but came back to teach part-time



\* Note: No Core Computer Programming Courses Taught

**E. Does the program lead to certification or licensure exams? If so, please list the exams. What were the pass rates of graduates for the past three years?**

No certification or licensure exams are offered. However, the department does offer Measure Up software to help students train and pass industry certifications such as Visual Basic.NET development.

**F. If the program prepares students for the labor force, provide an overview of the relevant local, state and national job market. Include potential careers and whether job growth is expected in those areas. Address how program outcomes relate to the skills employers seek in those areas.**

Graduates should qualify for employment in business, industry, and government organizations as programmers, programmer trainees, programmer/analysts, software developers, computer operators, systems technicians, system analysts, database specialists, computer specialists, software specialist, or information systems managers.

**G. What is the process for assessing student outcomes and competencies (e.g., student portfolios, written or verbal comprehensive exams, senior or master's**

**theses, review by faculty panel, or capstone projects)? Attach any relevant assessment templates.**

As mentioned previously, formal assessment is documented in WeaveOnline. Metrics for student outcomes and rubrics are uploaded documented annually. Additionally, the Capstone projects in CSC-289 are designed as real-world scenarios for students to utilize both technical and critical thinking skills to solve the issues/problems.

**H. Detail the last formal assessment plan completed by the program. Summarize the results. With the goal of improving student learning outcomes, what changes to the program are/were suggested after analysis of the data outcomes, findings and action planning related to the assessment? How are these improvements being implemented? Please indicate how much progress has been made and what needs further attention.**

Tip: Some potential changes are different program admission requirements, incorporating internships or work-based learning experiences, varying instructional methods, enhancing student assessment strategies, integrating technology, better coordinating faculty efforts, and seeking external program accreditation.

The Computer Programming department's formal assessment plan is conducted annually and documented through the Weave software program. The department continues to meet its stated goals and objectives. The following changes were implemented in keeping with department objectives:

Objective: Communicate effectively using the conventions of American Standard English in professional and academic environments. Action: Student presentations are required in CSC 151 and CSC 251. Students must cover selected topics by addressing their peers and invited faculty.

## **X-3.6 Constituency Satisfaction**

**(Self-Study Team's assessment)**

**A. What inquiries have been taken in the past three (3) years to determine the level of satisfaction from current students, alumnae, employers, and other relevant groups? Describe the data collected by the program and how it relates to issues such as learning outcomes, employability, and preparation for life after college.**

Currently, the department relies on surveys conducted by the Institutional Effectiveness department. The department does assist in graduate surveys. After reviewing information to provide for this program review, it is evident that going forward, we must participate actively in collecting data from students, employers, and alumnae to incorporate into our yearly review.

**B. What were the results of these inquiries based upon the faculty review and analysis of the reported data? Please attach any relevant reports, survey analysis instruments, etc. How has the program responded to suggestions for improvement or findings of dissatisfaction?**

We will work on gathering and analyzing survey data to determine improvements for the Computer Programming Department.

## **X-3.7 Appraisal and Direction for the Future**

### **A. What are the projected enrollments for this program for the next three years?**

The Department would like to increase our enrollment by 5% each year over the next three years. We have been working with Mary Schmidt and local high schools to increase interest in computer programming. We will also work with Admissions counselors to keep them up to date on program changes and enhancements.

### **B. Are there opportunities to expand this program (e.g., increase enrollments, add new concentrations, offer distance-learning courses, or increase assistance to graduates of the program with job placement support during program attendance and after graduation)? Please explain. What resources would be required to expand the program successfully?**

There are opportunities to expand the program. As previously mentioned, developing a Python course (not available in the State CCL) would be an example. Also, creating new concentrations under the Computer Technologies Integration program is another example. Expanding the mobile application development course is yet another example.

Resources required to expand would include additional software labs as required. Additional mobile devices may be required. Although students have their own tablets and can BYOD (bring your own devices), device requirements for classroom programs must be standardized, which is why we may have to be able to provide a device if the student's device is not compatible.

**C. As you reflect on this program review, how would you describe the current health and vitality of the program? What are its strengths? What are some untapped opportunities? Are you optimistic about its future? Why?**

The Computer Programming department is thriving and continuing to grow, in spite of the economic recession and other internal hardships. Our success is mostly credited to the quality instructors of our department, who consistently go above and beyond minimum expectations.

The department could benefit from professional marketing strategies, in an effort to increase our public awareness and community exposure.

We are optimistic about the future, as we have taken great strides to create an atmosphere for learning. We gain further satisfaction from successfully helping our graduates obtain employment in a timely manner.

**D. As you reflect on the assessment of student learning outcomes, measures of constituency satisfaction, deliberations of faculty or advisory committees, or any other indicators of program efficiency and effectiveness, what areas require the most immediate attention? What are the program's existing weaknesses and possible threats? Please explain.**

The program's existing weakness is that we are stretched too thinly in regards to adequate number of instructors, training, and lack of funding. Additionally, in the next year we will be losing one of our valued instructors due to a forced relocation of a spouse's military career. We must hire qualified instructors who exhibit the same dedication, loyalty and support as our current team. We are already advertising a specific computer programming instructor pool; however, it is going to be difficult to find qualified instructors in this area due to Ft. Bragg's current salaries for programmers.

**E. What specific initiatives are planned as a result of this program review? How will the program take advantage of the strengths and opportunities and also and redress weaknesses and threats?**

We must advertise for an opening within our department as a proactive measure to keep pace with the growth demands.

We must increase our recruiting efforts to attract students to our curriculum.

We must find the time and resources necessary to learn a new language, Python, per the Advisory Board recommendation.

**F. What is the anticipated timetable for completing these initiatives? Who will be involved? Who will take the leadership role during these initiatives?**

We hope to accomplish these initiatives within the next year. The department chair will take the leadership role for these initiatives, with the aid of all department instructors.



**G. Please provide any long term major resource planning.**

Long term major resource planning includes the following:

- Hire 2 full-time additional instructors to meet the demand/growth of the department
- Provide funded training opportunities for all instructors, as needed
- Reduction of workload as needed for those instructors developing new courses or cross-training
- Specialized equipment and software such as tablets
- Increased recruiting efforts to attract students to the department

**H. Conclusions.**

This review process has been valuable. Previous program reviews were a few pages long, and did not require the department to examine itself too deeply. However, this new process requires each of the members to review and reflect upon where we have been and where we are going, It has been a good self-reflecting process and one that has forced each member to look honestly at what we do well, and what we can improve. We are excited about where we are going as a department, and looking forward to growing interest in enrollment as well as interest in hiring our graduates in the community.

## X-4 Appendices

### List of Attachments

Please indicate any supplemental materials submitted with this review document.

<b>Computer Programming Comparison Chart Employer Survey</b>					
QUESTIONS	2009 1 Respondents	2010 1 Respondents	2011 1 Respondents	2012 0 Respondents	2013 0 Respondents
1. Please mark the response that most closely reflects your overall opinion of FTCC graduates employed by your organization using the scale below: Very Satisfied – Satisfied – Dissatisfied – Very Dissatisfied – N/A					
a) Specific job-related knowledge	100%	100%	100%	*	*
b) Specific job-related skills	100%	100%	100%	*	*
c) Oral communication skills	100%	100%	100%	*	*
d) Written communication skills	100%	100%	100%	*	*
e) Problem solving skills	100%	100%	100%	*	*
f) Organization and planning	100%	100%	100%	*	*
g) Quality of work	100%	100%	100%	*	*
h) Overall job preparation	100%	100%	100%	*	*
i) Socialization skills	**	100%	100%	*	*
j) Quantitative skills	**	100%	100%	*	*
k) Computer skills	**	100%	100%	*	*
2. Based on your experience with hiring FTCC graduates or students, would you consider hiring more?	<b>Yes</b> 100%	<b>Yes</b> 100%	<b>Yes</b> 100%	*	*
<b>Average Satisfaction Rates</b>	<b>800.0/8</b> = <b>100%</b>	<b>1100.0/11</b> = <b>100%</b>	<b>1100.0/11</b> = <b>100%</b>	*	*

\* No respondents during this year.

\*\* Questions were not asked during this year.

<b>Computer Programming Comparison Chart Alumni Graduate Survey</b>					
<b>QUESTIONS</b>	<b>2009 2 Respondents</b>	<b>2010 4 Respondents</b>	<b>2011 1 Respondents</b>	<b>2012 0 Respondents</b>	<b>2013 1 Respondents</b>
1. Quality of instruction in program area courses	100%	100%	100%	*	100%
2. Quality of instruction in other courses	100%	100%	100%	*	100%
3. Overall quality of academic program	100%	100%	100%	*	100%
4. Quality of Academic Advising (Faculty Academic Advising)	50.0%	100%	100%	*	100%
5. Quality of Admissions (entering College)	100%	100%	100%	*	100%
6. Quality of Registration Process	50.0%	100%	100%	*	100%
7. Quality of One Stop Shop	**	**	100%	*	100%
8. Quality of WebAdvisor	**	100%	100%	*	100%
9. Counseling Information Desk – Lobby of Student Center	50.0%	100%	100%	*	100%
10. Quality of Financial Aid Services	100%	100%	100%	*	100%
11. Quality of Counseling Services	50.0%	100%	100%	*	100%
12. Quality of Student Activities	50.0%	100%	100%	*	100%
13. Quality of Campus Security	100%	100%	100%	*	100%
14. Quality of Cashiering Services (Administration Building)	100%	100%	100%	*	100%
15. Quality of Success Center Services and Resources	100%	100%	100%	*	100%
16. Quality of Career Center Services	100%	100%	100%	*	100%
17. Quality of Media Services	100%	100%	100%	*	100%
18. Quality of the Library	100%	100%	100%	*	100%
19. Quality of Internet Access/Computing Services	50.0%	100%	100%	*	100%
20. Quality of Blackboard System for online class delivery	100%	100%	100%	*	100%
21. Overall quality of the College	100%	100%	**	*	100%
<b>Average Satisfaction Rate</b>	1,600/19 = 84.2%	2,000/20 = 100%	2,000/20 = 100%	*	2,100/21 = 100%

\* No respondents during this year.

\*\* Questions were not asked during this year.

### Computer Programming Core Competencies Questions

QUESTIONS	2009 2 Respondents	2010 4 Respondents	2011 1 Respondents	2012 0 Respondents	2013 1 Respondents
4a. I feel confident in my ability to communicate effectively in speaking, writing, reading and listening.	**	**	100%	*	100%
4b. I feel confident in my ability to think critically when analyzing problems and making decisions.	**	**	100%	*	100%
4c. My cultural awareness and socialization skills have prepared me for the changing global environment of the 21st century.	**	**	100%	*	100%
4d. I feel confident in my ability to use and process quantitative information.	**	**	100%	*	100%
4e. I consider myself to be computer literate.	**	**	100%	*	100%
* No respondents during this year.					
** Questions were not asked during these years.					

### Job Placement Rates for Computer Programming

Year	# Graduates	# Graduates Continuing Education	# Graduates Not Seeking Employment	# Graduates Unable to Locate	# Graduates Available to Work	# Graduates Working	% of Available Graduates Working	# Available Graduates Who are <u>NOT</u> Employed but looking	% of Graduates Working <u>in</u> Cumberland County ( <i>Hand counted surveys</i> )	% of Graduates Working <u>Outside</u> Cumberland County ( <i>Hand counted surveys</i> )	% of Working Graduates in a Curriculum-Related Job ( <i>Hand counted surveys</i> )	Salaries Reported (Curriculum-Related/ Full-time) ( <i>Averages only those working in career field</i> )	SALARY AVERAGE (ANNUAL)
<b>2009</b>	2	0	0	1	1	0	0%	1	0%	0%	0%	0	N/A
<b>2010</b>	6	0	0	0	6	2	33%	4	100%	0%	100%	1	\$45,000
<b>2011</b>	1	0	0	1	1	1	100%	0	100%	0%	0%	0	N/A
<b>2012</b>	1	0	0	0	1	0	0%	1	0%	0%	0%	0	N/A
<b>2013</b>	4	1	0	0	3	1	33.3%	2	100%	0%	0%	0	N/A

Visual Basic Certificate Comparison Chart Alumni Graduate Survey					
QUESTIONS	2009 2 Respondents	2010 3 Respondents	2011 0 Respondents	2012 0 Respondents	2013 1 Respondents
1. Quality of instruction in program area courses	100%	100%	*	*	100%
2. Quality of instruction in other courses	100%	100%	*	*	100%
3. Overall quality of academic program	100%	100%	*	*	100%
4. Quality of Academic Advising (Faculty Academic Advising)	50.0%	100%	*	*	100%
5. Quality of Admissions (entering College)	0%	100%	*	*	100%
6. Quality of Registration Process	0%	100%	*	*	100%
7. Quality of One Stop Shop	**	**	*	*	100%
8. Quality of WebAdvisor	**	100%	*	*	100%
9. Counseling Information Desk – Lobby of Student Center	0%	100%	*	*	100%
10. Quality of Financial Aid Services	No Response	100%	*	*	100%
11. Quality of Counseling Services	0%	100%	*	*	100%
12. Quality of Student Activities	100%	100%	*	*	100%
13. Quality of Campus Security	100%	100%	*	*	100%
14. Quality of Cashiering Services (Administration Building)	100%	100%	*	*	100%
15. Quality of Success Center Services and Resources	100%	100%	*	*	100%
16. Quality of Career Center Services	100%	100%	*	*	100%
17. Quality of Media Services	100%	100%	*	*	100%
18. Quality of the Library	100%	100%	*	*	100%
19. Quality of Internet Access/Computing Services	100%	100%	*	*	100%
20. Quality of Blackboard System for online class delivery	100%	100%	*	*	100%
21. Overall quality of the College	100%	100%	*	*	100%
<b>Average Satisfaction Rate</b>	1,350/18 = 75.0%	2,100/21 = 100%	*	*	2,100/21 = 100%

\* No respondents during this year.

\*\* Questions were not asked during this year.

### Visual Basic Certificate Employer Survey

**NOTE:** While there were some graduates in the Visual Basic certificate program, employers of these graduates did not choose to reply to the Employer Survey.

### Visual Basic Certificate Core Competencies Questions

QUESTIONS	2009 2 Respondents	2010 3 Respondents	2011 0 Respondents	2012 0 Respondents	2013 1 Respondents
4a. I feel confident in my ability to communicate effectively in speaking, writing, reading and listening.	**	**	*	*	100%
4b. I feel confident in my ability to think critically when analyzing problems and making decisions.	**	**	*	*	100%
4c. My cultural awareness and socialization skills have prepared me for the changing global environment of the 21st century.	**	**	*	*	100%
4d. I feel confident in my ability to use and process quantitative information.	**	**	*	*	100%
4e. I consider myself to be computer literate.	**	**	*	*	100%
* No respondents during this year.					
** Questions not asked this year.					

### Job Placement Rates for Visual Basic Certificate

Year	# Graduates	# Graduates Continuing Education	# Graduates Not Seeking Employment	# Graduates Unable to Locate	# Graduates Available to Work	# Graduates Working	% of Available Graduates Working	# Available Graduates Who are <u>NOT</u> Employed but looking	% of Graduates Working in Cumberland County ( <i>Hand counted surveys</i> )	% of Graduates Working Outside Cumberland County ( <i>Hand counted surveys</i> )	% of Working Graduates in a Curriculum-Related Job ( <i>Hand counted surveys</i> )	Salaries Reported (Curriculum-Related/ Full-time) ( <i>Averages only those working in career field</i> )	SALARY AVERAGE (ANNUAL) *
<b>2009</b>	3	1	1	0	1	1	100%	0	100%	0%	100%	0	N/A
<b>2010</b>	1	0	0	0	3	1	33%	2	0%	100%	100%	0	N/A
<b>2011</b>	1	0	0	0	1	1	100%	0	100%	0%	0%	0	N/A
<b>2012</b>	3	0	0	0	1	0	100%	1	0%	0%	0%	0	N/A
<b>2013</b>	8	3	0	0	5	2	40%	3	100%	0%	50%	1	\$35,000

JAVA Programming Certificate Comparison Chart Alumni Graduate Survey					
QUESTIONS	2009 0 Respondents	2010 0 Respondents	2011 0 Respondents	2012 0 Respondents	2013 1 Respondents
1. Quality of instruction in program area courses	*	*	*	*	100%
2. Quality of instruction in other courses	*	*	*	*	100%
3. Overall quality of academic program	*	*	*	*	100%
4. Quality of Academic Advising (Faculty Academic Advising)	*	*	*	*	100%
5. Quality of Admissions (entering College)	*	*	*	*	100%
6. Quality of Registration Process	*	*	*	*	100%
7. Quality of One Stop Shop	*	*	*	*	100%
8. Quality of WebAdvisor	*	*	*	*	100%
9. Counseling Information Desk – Lobby of Student Center	*	*	*	*	100%
10. Quality of Financial Aid Services	*	*	*	*	100%
11. Quality of Counseling Services	*	*	*	*	100%
12. Quality of Student Activities	*	*	*	*	100%
13. Quality of Campus Security	*	*	*	*	100%
14. Quality of Cashiering Services (Administration Building)	*	*	*	*	100%
15. Quality of Success Center Services and Resources	*	*	*	*	100%
16. Quality of Career Center Services	*	*	*	*	100%
17. Quality of Media Services	*	*	*	*	100%
18. Quality of the Library	*	*	*	*	100%
19. Quality of Internet Access/Computing Services	*	*	*	*	100%
20. Quality of Blackboard System for online class delivery	*	*	*	*	100%
21. Overall quality of the College	*	*	*	*	100%
<b>Average Satisfaction Rate</b>	*	*	*	*	2,100.0/21 = 100%

\* No respondents during this year.

\*\* Questions were not asked during this year.

### JAVA Programming Certificate Employer Survey

**NOTE:** While there were some graduates in the JAVA Programming certificate program, employers of these graduates did not choose to reply to the Employer Survey.

### JAVA Programming Certificate Core Competencies Questions

QUESTIONS	2009 0 Respondents	2010 0 Respondents	2011 0 Respondents	2012 0 Respondents	2013 1 Respondents
4a. I feel confident in my ability to communicate effectively in speaking, writing, reading and listening.	**	**	*	*	100%
4b. I feel confident in my ability to think critically when analyzing problems and making decisions.	**	**	*	*	100%
4c. My cultural awareness and socialization skills have prepared me for the changing global environment of the 21st century.	**	**	*	*	100%
4d. I feel confident in my ability to use and process quantitative information.	**	**	*	*	100%
4e. I consider myself to be computer literate.	**	**	*	*	100%
* No respondents during this year.					
** Questions were not asked during these years.					

### Job Placement Rates for JAVA Programming Certificate

Year	# Graduates	# Graduates Continuing Education	# Graduates Not Seeking Employment	# Graduates Unable to Locate	# Graduates Available to Work	# Graduates Working	% of Available Graduates Working	# Available Graduates Who are <u>NOT</u> Employed but looking	% of Graduates Working <u>in</u> Cumberland County ( <i>Hand counted surveys</i> )	% of Graduates Working <u>Outside</u> Cumberland County ( <i>Hand counted surveys</i> )	% of Working Graduates in a Curriculum-Related Job ( <i>Hand counted surveys</i> )	Salaries Reported (Curriculum-Related/ Full-time) ( <i>Averages only those working in career field</i> )	SALARY AVERAGE (ANNUAL) *
2009	*	*	*	*	*	*	*	*	*	*	*	*	*
2010	*	*	*	*	*	*	*	*	*	*	*	*	*
2011	*	*	*	*	*	*	*	*	*	*	*	*	*
2012	1	0	0	0	1	0	0%	1	0%	0%	0	0	N/A
2013	7	2	0	0	5	2	40%	3	100%	0%	1	1	\$35,000
* No graduates this year.													



Database Programming Certificate Comparison Chart Alumni Graduate Survey					
QUESTIONS	2009 0 Respondents	2010 0 Respondents	2011 0 Respondents	2012 0 Respondents	2013 0 Respondents
1. Quality of instruction in program area courses	*	*	*	*	*
2. Quality of instruction in other courses	*	*	*	*	*
3. Overall quality of academic program	*	*	*	*	*
4. Quality of Academic Advising (Faculty Academic Advising)	*	*	*	*	*
5. Quality of Admissions (entering College)	*	*	*	*	*
6. Quality of Registration Process	*	*	*	*	*
7. Quality of One Stop Shop	**	**	*	*	*
8. Quality of WebAdvisor	*	*	*	*	*
9. Counseling Information Desk – Lobby of Student Center	*	*	*	*	*
10. Quality of Financial Aid Services	*	*	*	*	*
11. Quality of Counseling Services	*	*	*	*	*
12. Quality of Student Activities	*	*	*	*	*
13. Quality of Campus Security	*	*	*	*	*
14. Quality of Cashiering Services (Administration Building)	*	*	*	*	*
15. Quality of Success Center Services and Resources	*	*	*	*	*
16. Quality of Career Center Services	*	*	*	*	*
17. Quality of Media Services	*	*	*	*	*
18. Quality of the Library	*	*	*	*	*
19. Quality of Internet Access/Computing Services	*	*	*	*	*
20. Quality of Blackboard System for online class delivery	*	*	*	*	*
21. Overall quality of the College	*	*	*	*	*
<b>Average Satisfaction Rate</b>	*	*	*	*	*

\* No respondents during this year.

\*\* Questions were not asked during this year.

### Database Programming Certificate Employer Survey

**NOTE:** While there were some graduates in the Database Programming certificate program, employers of these graduates did not choose to reply to the Employer Survey.

### Database Programming Certificate Core Competencies Questions

QUESTIONS	2009 0 Respondents	2010 0 Respondents	2011 0 Respondents	2012 0 Respondents	2013 0 Respo0dents
4a. I feel confident in my ability to communicate effectively in speaking, writing, reading and listening.	**	**	*	*	*
4b. I feel confident in my ability to think critically when analyzing problems and making decisions.	**	**	*	*	*
4c. My cultural awareness and socialization skills have prepared me for the changing global environment of the 21st century.	**	**	*	*	*
4d. I feel confident in my ability to use and process quantitative information.	**	**	*	*	*
4e. I consider myself to be computer literate.	**	**	*	*	*
* No respondents during this year.					
** Questions were not asked during these years.					

### Job Placement Rates for Database Programming Certificate

Year	# Graduates	# Graduates Continuing Education	# Graduates Not Seeking Employment	# Graduates Unable to Locate	# Graduates Available to Work	# Graduates Working	% of Available Graduates Working	# Available Graduates Who are <u>NOT</u> Employed but looking	% of Graduates Working <u>in</u> Cumberland County ( <i>Hand counted surveys</i> )	% of Graduates Working <u>Outside</u> Cumberland County ( <i>Hand counted surveys</i> )	% of Working Graduates in a Curriculum-Related Job ( <i>Hand counted surveys</i> )	Salaries Reported (Curriculum-Related/ Full-time) ( <i>Averages only those working in career field</i> )	SALARY AVERAGE (ANNUAL) *
2009	0	*	*	*	*	*	*	*	*	*	*	*	*
2010	0	*	*	*	*	*	*	*	*	*	*	*	*
2011	0	*	*	*	*	*	*	*	*	*	*	*	*
2012	0	*	*	*	*	*	*	*	*	*	*	*	*
2013	2	0	0	0	2	2	100%	0	0%	100%	50%	1	\$41,600

\* No graduates this year.

<b>C# Programming Certificate Comparison Chart Alumni Graduate Survey</b>					
<b>QUESTIONS</b>	<b>2009 0 Respondents</b>	<b>2010 0 Respondents</b>	<b>2011 0 Respondents</b>	<b>2012 0 Respondents</b>	<b>2013 2 Respondents</b>
1. Quality of instruction in program area courses	*	*	*	*	100%
2. Quality of instruction in other courses	*	*	*	*	100%
3. Overall quality of academic program	*	*	*	*	100%
4. Quality of Academic Advising (Faculty Academic Advising)	*	*	*	*	100%
5. Quality of Admissions (entering College)	*	*	*	*	50.0%
6. Quality of Registration Process	*	*	*	*	50.0%
7. Quality of One Stop Shop	*	*	*	*	100%
8. Quality of WebAdvisor	*	*	*	*	100%
9. Counseling Information Desk – Lobby of Student Center	*	*	*	*	50.0%
10. Quality of Financial Aid Services	*	*	*	*	100%
11. Quality of Counseling Services	*	*	*	*	100%
12. Quality of Student Activities	*	*	*	*	100%
13. Quality of Campus Security	*	*	*	*	100%
14. Quality of Cashiering Services (Administration Building)	*	*	*	*	100%
15. Quality of Success Center Services and Resources	*	*	*	*	100%
16. Quality of Career Center Services	*	*	*	*	100%
17. Quality of Media Services	*	*	*	*	100%
18. Quality of the Library	*	*	*	*	100%
19. Quality of Internet Access/Computing Services	*	*	*	*	100%
20. Quality of Blackboard System for online class delivery	*	*	*	*	100%
21. Overall quality of the College	*	*	*	*	100%
<b>Average Satisfaction Rate</b>	*	*	*	*	1,950/20 = 92.9%

\* No respondents during this year.

\*\* Questions were not asked during this year.

### **C# Programming Certificate Employer Survey**

**NOTE:** While there were some graduates in the C# Programming certificate program, employers of these graduates did not choose to reply to the Employer Survey.

### C# Programming Certificate Core Competencies Questions

QUESTIONS	2009 0 Respondents	2010 0 Respondents	2011 0 Respondents	2012 0 Respondents	2013 2 Respo0dents
4a. I feel confident in my ability to communicate effectively in speaking, writing, reading and listening.	**	**	*	*	100%
4b. I feel confident in my ability to think critically when analyzing problems and making decisions.	**	**	*	*	100%
4c. My cultural awareness and socialization skills have prepared me for the changing global environment of the 21st century.	**	**	*	*	100%
4d. I feel confident in my ability to use and process quantitative information.	**	**	*	*	100%
4e. I consider myself to be computer literate.	**	**	*	*	100%
* No respondents during this year.					
** Questions were not asked during these years.					

### Job Placement Rates for C# Programming Certificate

Year	# Graduates	# Graduates Continuing Education	# Graduates Not Seeking Employment	# Graduates Unable to Locate	# Graduates Available to Work	# Graduates Working	% of Available Graduates Working	# Available Graduates Who are <u>NOT</u> Employed but looking	% of Graduates Working <u>in</u> Cumberland County ( <i>Hand counted surveys</i> )	% of Graduates Working <u>Outside</u> Cumberland County ( <i>Hand counted surveys</i> )	% of Working Graduates in a Curriculum-Related Job ( <i>Hand counted surveys</i> )	Salaries Reported (Curriculum-Related/ Full-time) ( <i>Averages only those working in career field</i> )	SALARY AVERAGE (ANNUAL) *
2009	0	*	*	*	*	*	*	*	*	*	*	*	*
2010	0	*	*	*	*	*	*	*	*	*	*	*	*
2011	0	*	*	*	*	*	*	*	*	*	*	*	*
2012	0	*	*	*	*	*	*	*	*	*	*	*	*
2013	5	2	0	0	3	1	33.3%	2	100%	0%	100%	1	\$35,000
* No graduates this year.													