



Alabama Community College System *Application for a New Instructional Program*

A. General Information:

1. Name of Institution: Shelton State Community College
2. Program Title: Computer Science Prefix: CIS
3. Date of Application Submission: November 8, 2017
4. Proposed Program Implementation Date: Fall 2018
5. AAS CER STC CIP Code 11.0101
6. Marketing Name: Computer Science Technology
7. Options (List proposed options under appropriate award):

Short-Term Certificate		Certificate		Associate in Science/Technology	
CIP Code	Option	CIP Code	Option	CIP Code	Option
11.0101	Database Management	11.0101	Database Management	11.0101	Database Management
11.0101	Networking	11.0101	Networking	11.0101	Networking
11.0101	Programming	11.0101	Programming	11.0101	Programming

8. Location: Campus Fredd Instructional Site _____
Off-Campus Site _____ Clinical/Industrial Site _____
Agencies _____

B. Institutional Contacts:

Grant Cockrell Telephone 205.391.2384 E-mail gcockrell@sheltonstate.edu
Program Director or Department Head

Dr. Joye Jones Telephone 205.391.2283 E-mail jjones1@sheltonstate.edu
Instructional Dean

Rhonda Smith Telephone 205.391.2991 E-mail rsmith@sheltonstate.edu
Financial Aid Director

William J. Ashley, Ph.D. Telephone 205.391.2251 E-mail bashley@sheltonstate.edu
President

C. Program Objectives and Content

1. Program Description. (You may use program descriptions from the NCES Classification of CIP Codes <http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55>)

A general program that focuses on computing, computer science, and information science and systems. Such programs are undifferentiated as to title and content and are not to be confused with specific programs in computer science, information science, or related support services.

2. List objectives of the program as precisely as possible. The objectives should address specific needs the program will meet (institutional, societal, and employability) contiguous with expected learning outcomes and achievements. **Objectives must lend themselves to subsequent review and assessment of program accomplishments.**

The objectives of the Computer Science Technology program include: (a) providing accessible postsecondary computer science education and training for individuals residing in Shelton State Community College's (SSCC) service area, (b) establishing degree and certificate options that will qualify individuals for numerous computer related career options within Shelton State's service area, and (c) enhancing in-field employability by providing students opportunities to obtain industry specific certifications.

The effectiveness of the CIS program will include evaluation of the following student learning outcomes:

- Proper setup and maintenance of secure LANs including network architecture, IP protocol, and OSI implementation.
- Adeptness in Structured Query Language and relational database theoretical models.
- Fundamental understanding and operation of programmable computer software and operating systems.
- Student obtainment of industry specific certifications.

3. How will this program be related to other programs at your institution?

The SSCC academic inventory currently includes eleven CIS courses. These courses are included within Computer Science and Business advising guides provided for students who intend to transfer into a college or university baccalaureate degree program. Of the eleven courses, seven will be included across the Computer Science Technology Associate in Applied Science curriculum. As a result of the relationship between existing CIS courses and the proposed Computer Science Technology AAS curriculum, existing classroom space, equipment, and faculty can be utilized to support by the proposed program.

4. Identify any existing program, option, concentration, or track that this program will replace.

N/A; Shelton State Community College does not currently operate a Computer Science Technology program.

5. Program Completion Requirements:

- Total credit hours required in major (Area V):
 - AAS & Certificate options
 - Programming: 38-40 Hours
 - Networking: 38-40 Hours
 - Database Management: 40 Hours
 - Short-term Certificate options
 - Apple App Development: 23 Hours
 - Android App Development: 24 Hours
 - Networking: 26 Hours
 - Database Management: 28 Hours
- Total credit hours in institutional general education (Area I-IV):
 - 22 Credit Hours in each AAS option
 - 13 Credit Hours in each Certificate Option
 - N/A for Short-term Certificate Option
- Total credit hours for each option (AAS/CER/STC):
 - AAS options
 - Programming: 60-62 Hours
 - Networking: 60-62 Hours
 - Database Management: 62 Hours
 - Certificate options
 - Programming: 51-53 Hours
 - Networking: 51-53 Hours
 - Database Management: 53 Hours
 - Short-term Certificate options
 - Apple App Development: 23 Hours
 - Android App Development: 24 Hours
 - Networking: 26 Hours
 - Database Management: 28 Hours
- Total credit hours required for completion.
 - AAS completion: 60-62 Hours
 - Certificate completion: 51-53 Hours
 - Short-term Certificate completion: 23-28 Hours

NOTE: Work base learning will be a required function in a program to receive funding from different sources in the future.

D. Program Accreditation/Certification and Nationally Recognized Business and Industry Credentials:

1. Identify any programmatic conditions.

- a. Pre-accreditation: N/A
- b. Accreditation/Certification: Shelton State Community College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award the Associate in Arts, Associate in Science, and the Associate in Applied Science Degrees.

- c. Business and Industry Credentials: The Computer Science Technology program will provide students with opportunities to obtain multiple industry credentials. These credentials will include, but are not limited to various CompTIA, Cisco, and Microsoft credentials.
 - d. Licensing: N/A
2. Identify specific articulation agreements with four-year universities which will accept the transfer of skills-emphasis credits for this program.

Currently SSCC does not have a Computer Science articulation agreement with four-year universities. The addition of a Computer Science Technology program will create an opportunity to collaborate with four-year institutions and formal efforts to establish articulation agreements will be sought upon program establishment.

E. Attach the Associate Degree/Certificate/Short-Term Certificate curricula by semester (and by option) to this proposal as **APPENDIX A**. See sample below.

Program Requirements

	Course #	Course Name	Sem. Hours
Semester 1	ILT 160	DC Fundamentals (<i>ETA DC EM1 Exam</i>)	3
	ILT 161	AC Fundamentals (<i>ETA AC EM2 Exam</i>)	3
	ILT 109	Blueprint Reading	3
	CIS 146	Microcomputer Applications	3
		<i>Eligible for Short Term Certificate (STC) – Basic Industrial Electronics</i>	
Semester 2	ILT 197	Motor Controls	3
	ILT 162	Solid State Electronics (<i>ETA Analog EM3 Exam</i>)	3
	SPH 107	Fundamentals of Public Speaking	3
	MTH 100	MTH 100 or numerically higher	3
		<i>Eligible for Short Term Certificate (STC) – Intermediate Industrial Electronics</i>	
Semester 3	ILT 163	Digital Electronics (<i>ETA Digital EM4 Exam</i>)	3
	ILT 166	Motors & Transformers	3
	ILT 194	Programmable Logic Controls	3
	ENG 101	English Composition I	3
	Area III	Math, Science or Computer Science elective	3
		<i>Eligible for Short Term Certificate (STC) – Industrial Electrical Technician</i>	
Semester 4	ILT 195	Troubleshooting Techniques	3
	ILT 276	Advanced Industrial Controls (PLCs)	3
	ILT 277	Advanced Industrial Controls (PLCs) Lab	2
	Area IV	Social and Behavioral Science elective	3
	WKO 106	Workplace Essentials (<i>Alabama Career Readiness Certificate</i>) (<i>OSHA 10 Hour Card</i>)	3
		<i>Eligible for Certificate (CER) – Industrial Control Technician</i>	
Semester 5	ILT 192	Co-op in Industrial Electronics (<i>ETA Comprehensive EM5 Exam</i>)	3
	ILT 216	Industrial Robotics	3
	ILT 217	Industrial Robotics Lab	2
	ILT 108	Introduction to Instrumentation & Process Control	3
	Area II	Humanities & Fine Arts Elective	3
		<i>Eligible for AAS in Industrial Electronics</i>	
		Total Hours Required for Degree	67

Reminder:

- Work with your financial aid director regarding program and student financial aid eligibility.
- Program eligibility information may be found at www.ifap.com.
 - Federal Student Aid Handbook, Chapter 2.

F. **Program Admissions Requirements, Enrollment Projections and Completion Projections**

1. Describe the criteria and screening process that will be used to select students for the program.

Students meeting Shelton State Community College admission requirements are eligible for program enrollment. The program will accept students on a first-come, first-served basis.

2. Describe the methodology for determining enrollment projections. Attach a copy of the survey instrument with a **summary** of results (how many, to whom, response rate) as **APPENDIX B**. Do not submit copies of the individual survey responses.

Enrollment projections were determined by evaluating the results of a program interest survey administered to two populations. Surveys (APPENDIX B) were administered to (a) current SSCC students enrolled in CIS courses and (b) prospective high school juniors and seniors within Shelton State's service area attending on campus career fairs and recruiting events. Of the 30 surveys completed by current SSCC students enrolled, 17 students indicated a desire to enroll in a Computer Science AAS degree program. Results from the 99 surveys returned from area high school juniors and seniors, 91 students indicated interest in pursuing a career within the computer industry and an interest in enrolling in an Associate Degree Computer Science program.

G. Provide an estimate of the costs of the program. Provide enrollment and degree completions projections.

ESTIMATED NEW FUNDS REQUIRED TO SUPPORT PROPOSED PROGRAM						
	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
FACULTY	<u>\$70,000.00</u>	<u>\$70,000.00</u>	<u>\$75,000.00</u>	<u>\$75,000.00</u>	<u>\$75,000.00</u>	<u>\$365,000.00</u>
LIBRARY	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
FACILITIES	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
EQUIPMENT	<u>\$45,000.00</u>	<u>\$65,000.00</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$110,000.00</u>
STAFF	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
OTHER	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
TOTAL	<u>\$115,000.00</u>	<u>\$135,000.00</u>	<u>\$75,000.00</u>	<u>\$75,000.00</u>	<u>\$75,000.00</u>	<u>\$475,000.00</u>

SOURCES OF FUNDS AVAILABLE FOR PROGRAM SUPPORT						
	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
INTERNAL REALLOCATIONS	<u>\$100,000.00</u>	<u>\$115,000.00</u>	<u>\$75,000.00</u>	<u>\$75,000.00</u>	<u>\$75,000.00</u>	<u>\$440,000.00</u>
EXTRAMURAL*	<u>\$22,500.00</u>	<u>\$15,000.00</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$37,500.00</u>
TUITION	<u>\$39,744.00</u>	<u>\$55,890.00</u>	<u>\$63,342.00</u>	<u>\$70,794.00</u>	<u>\$78,246.00</u>	<u>\$308,016.00</u>
TOTAL	<u>\$162,244.00</u>	<u>\$185,890.00</u>	<u>\$138,342.00</u>	<u>\$145,794.00</u>	<u>\$153,246.00</u>	<u>\$785,516.00</u>

*Extramural funds from ACCS Apple App Development contribution (Year 1); Perkins (Year 2)

ENROLLMENT AND DEGREE COMPLETION PROJECTIONS						
	Year 1	Year 2	Year 3	Year 4	Year 5	5-YEAR AVERAGE
TOTAL HEADCOUNT ENROLLMENT	<u>8</u>	<u>15</u>	<u>17</u>	<u>19</u>	<u>21</u>	<u>16</u>
NEW ENROLLMENT HEADCOUNT	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>10</u>
DEGREE COMPLETION PROJECTIONS	<u>0</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	4-YEAR AVERAGE <u>8</u>

G. Program Need Justification

1. Will the program satisfy a clearly documented workforce need?

Occupational forecast data indicates employers within Shelton State’s service area will need to fill 488 computer related positions over the next 10 years. In addition to reviewing employment forecast data, Shelton State also administered a Community and Business Needs Survey (APPENDIX C) to industry partners. Data from companies completing the survey supports employment forecasts, with each company indicating an annual need for full-time computer related positions. With an average annual demand of 49 computer related positions needing to be filled within Shelton State’s service area, sufficient demands exist to sustain a Computer Science Technology program.

2. What characteristics of the identified need require that it be met by a new program rather than an existing program?

Shelton State does not currently offer any degree, certificate, or short-term certificate options in Computer Science. As SSCC does not have an existing Computer Science Technology program, the college is unable to provide students with an opportunity to acquire the knowledge and skills needed for computer science related occupations.

3. Based on research on the employment market for graduates of this program, indicate the total projected job openings (including both growth and replacement demands). These job openings should represent positions that require graduates from a program such as the one proposed.

Projected Job Openings

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
College Service Area	49	49	49	49	49	245
State	1125	1125	1125	1125	1125	5625

Provide the methodology used to determine the projected job openings (such variables as (a) assurance of adequate employer surveys, (b) business/industry markets, and (c) response rate. Cite all relevant sources. If a survey of employment needs was used attach a copy of the survey instrument with a **summary** of results as **APPENDIX C. Do not submit copies of the individual survey responses.**

Projected job openings are based on multiple employment related data sources. College service area projections were derived by comparing occupational projections from the Alabama Department of Labor and employment data provided by the Alabama Community College System. A survey of employment needs was also distributed to various business/industry partners in SSCC’s service area in efforts to compare data with employment data. Six business/industry partners responded to the survey, which each respondent indicating an annual need to hire full-time employees trained in computer science validating an adequate employment need exists within SSCC’s service area.

4. List other similar programs that are available at other institutions in the state. Will any type of program collaboration be utilized? Why or why not? What specific efforts have been made to collaborate with institutions to meet the need for this program?

Multiple institutions within the Alabama Community College System operate Computer Science Technical Education programs, with each institution sharing a common course directory. Due to the common course directory, coursework is transferable across the ACCS system. Within WDCA-3, one additional community college, Bevill State Community College, provides computer science technical training on its Fayette County campus. While program similarities exist with those operated by Bevill State and other institutions throughout the ACCS system, Shelton State Community College, due to its centralized location within WDCA-3 and proximity to Interstate-20/59 and multiple major state highways, is the only community college to which WDCA-3 residents can reasonably commute.

5. Method of program delivery (traditional classroom, online, hybrid). If online/hybrid delivery is available, estimate percentage. List courses delivered via online/hybrid.

Program delivery methods will include, but not limited to, traditional classroom, traditional laboratory, online instruction, and hybrid instruction. Initially online/hybrid course offerings will be limited to approximately 10% of AAS degree requirements. Courses identified as being deliverable via online/hybrid include CIS 146 Microcomputer Applications and CIS 203 Introduction to the Information Highway. As Computer Science Technology program enrollment increases the possibility of expanding the number of courses available through online/hybrid delivery will exist.

H. Program Resource Requirements

1. Number of faculty required to teach in the program: Full-time 1 Part-time 0

Attach a synopsis of the qualifications (degrees, experience, etc.) of each faculty member to this proposal as **APPENDIX D**. Do not attach entire curriculum vitae.

The college presently employs two Full-time Computer Science instructors and utilizes multiple part-time faculty to teach CIS 146 Microcomputer Applications and a limited selection of CIS courses for students intending to transfer to a four-year computer science program. During the initial two years of the CIS program, the college will utilize the current full-time CIS faculty to teach in the program and hire adjunct instructors to teach the CIS 16 classes previously taught by the full-time instructors. SSCC anticipates one additional full-time CIS instructor may be needed to compensate for the additional CIS course offerings required for the Computer Science Technology program.

See APPENDIX D for a synopsis of the two Full-time instructors' qualifications currently employed by the college.

2. List any special equipment that is necessary for this program, indicating what is currently available, what will be added, and the cost of additional equipment.

The proposed Computer Science Technology program will be housed at the C. A. Fredd Campus of SSCC. The C. A. Fredd Campus maintains three computer labs/classrooms, housing a total of 88 Windows-based computers. In order to teach the proposed Apple APP Development component of the program, 12 Apple iMac computers will be purchased and installed within an existing computer lab prior to program implementation. The college estimates \$45,000 will be required to purchase and install Apple iMac computers prior to program implementation. As the

program expands and students progress into the second year of the curriculum, additional equipment will be required. Equipment needed for the Networking coursework will include dedicated routers, cabling, equipment racks, and switches; as existing computers will be displaced by the addition of the Apple iMac computers, no additional PCs will be needed. The college anticipates an estimated cost of \$65,000 to purchase and install the equipment needed for the Networking option coursework.

The funds required for the initial start-up cost will be provided through the ACCS Apple App Development contributions, Title III funds, and the SSCC instructional budget. The Networking equipment needed during the program's second year will be purchased through Title III funds and Perkins funds.

3. Describe facilities for the program, indicating what is currently available and any necessary renovations or additional facilities that would be added. Provide a cost estimate for any renovation or additions.

If clinical sites are required, provide signed agreements between the institution and the host facility. At a minimum, the total number of slots should equal the projected number of students cited above.

The C. A. Fredd Campus of SSCC is equipped with 3 computer labs, with approximately 30 computers per computer lab, providing a total of 88 computers/seats. As the current facilities are adequate to accommodate the program's five year projected enrollment, no renovations or additional facilities are required.

4. Provide the current status of the library collections supporting the proposed program.

Students at SSCC have access to two library collections--the Brooks-Cork Library on the Martin Campus and the Lewis Library on the C. A. Fredd Campus. The collections across these two libraries contain 213 items to support to support students enrolled in Computer Science Technology coursework. The items include books, eBooks, audio/video resources. In addition to the physical library collection, SSCC subscribes to *Credo Reference*, which provides students with access to 846 reference books containing over 3 million articles. As SSCC is a state agency, students also have access to the Alabama Virtual Library, a vast database of vetted academic resources. A brief search of "computer science" within one AVL database (EBSCOhost) yielded 198,059 results. With both physical and virtual computer science resources available to students, SSCC libraries are sufficient to meet the needs of a Computer Science Technology program.

Employment Verification Form Shelton State Community College

(College)

Computer Science

(Program of Study)

We have reviewed the employment demand for Computer Science specialties at selected businesses in Shelton State Community College's service area and in Alabama. We are confident that the employment needs for Computer Science personnel who possess the skills acquired in such a program of instruction could best be classified as:

High Demand **Moderate Demand** **Low Demand** **Critical Shortage**

In addition, we have examined and recommended requirements for admissions, content of the specialties and appropriate general education, program length, method of evaluation, and the skills and/or proficiency required for completion.

EMPLOYERS: (In Computer Science and in directly-related fields)

Employer A High Demand

Name: Brad Wiggins

Title: IT Administrator

Company Name: McAbee Construction Inc.

Address: P.O. Drawer 1460

Zip Code: 35403

Signature: _____

Employer B High Demand

Name: Anna Johnson

Title: Refinery HR Manager

Company Name: Hunt Refining Company

Address: 1855 Fairlawn Road

Zip Code: 35401

Signature: _____

Employer C High Demand

Name: Eden Lindsey

Title: _____

Company Name: Harrison Construction

Address: 5870 Charlie Shirley Rd, Northport, AL

Zip Code: 35473

Signature: _____

Employer D High Demand

Name: Stephen Womack

Title: ERP Supervisor

Company Name: Shelton State Community College

Address: 9500 Old Greensboro Road, Tuscaloosa, AL

Zip Code: 35405

Signature: _____

Employer E High Demand

Name: Russell DuBose

Title: Human Resources Director

Company Name: Phifer Incorporated

Address: 4400 Kauloosa Avenue, Tuscaloosa

Zip Code: 35401

Signature: _____

Employer F _____ Demand

Name: _____

Title: _____

Company Name: _____

Address: _____

Zip Code: _____

Signature: _____