

# ACADEMIC PROGRAM REVIEW REPORT

PROGRAM

Computer Information Systems (CSCI) Cybersecurity (CYSE)

Associate in Science (AS) Degree

August 2021-2022



**Signature Page and Archiving** 

Vice President of Instruction	Date
President	Date

Archiving:

Division Leader submits to VP of Institutional Effectiveness & Accountability.

1. A complete electronic version of the Academic Comprehensive Program Review

2. All documentation (electronic)

3. A signed signature page

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability



# Program Review Faculty and Dean Verification

I verify I have been an active participant in the program review process and have read this Program Review Report to be submitted to the Program/Department Review Committee:

Ron Carlson	Date	
Lachele Greathouse	Date	
	Date	
	Date	
	Date	
I verify that this program review report i Program/Department Review Committee	's ready to be reviewed for feedback e.	and action by the
Renee Harbin Division Chair	Date	
As dean of the Academic or Technical E that this program review report is ready appropriate Program/Department Revie report are requested (by the committee)	Education and Workforce Developm to be reviewed for feedback and ac w Committee. If revisions to origina ), I understand another signature by	ent Division, I verify ction by the al submission of the r me will be required:
Phil Terpstra Dean of Academics	Date	
Adapted from Azusa Pacific University, Arizona State Ur	niversity, & Tyler Junior College, 2017.	

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability JMM

# **Table of Contents**

[Note: programs utilizing external accreditation documents must still complete this table of contents and should cut and paste material into report unless given permission by IE to do otherwise.]

### **Program Review Components**

Component A - Mission and Context	5
A.1 Program Mission and Purpose	5
A.2 Progress Since Last Review	6
B.1 Faculty Qualifications	7
B.2 Faculty Demographics	
B.3 Faculty Scholarship	
B.4 Department Scholarship Analysis	9
B.5 Analysis of Faculty Qualifications	9
B.6 Full-Time Faculty Workload	9
B.6.1 Analysis of Faculty Workload	
B.7 Percentage of courses taught by each faculty classification	
B.8 Student Faculty Ratio	
B.8.1 Analysis of Faculty Distribution	
B.9 Summary of Teaching Effectiveness	
B.10 Other Evidence of Faculty Effectiveness	
B.11 Analysis of Teaching Effectiveness	
B.12 Faculty Summary Analysis	
Component C - Quality of Curriculum and Student Learning	13
C.1 Curriculum Structure	
C.2 Assessment of Student Learning	
C.3 Curriculum Map of Program Program Student Learning Outcomes	
C.4 Assessment of Curricular Effectiveness	
C.5 Assessment of Diversity in the Curriculum	
C.6 Use of Continuous Assessment for Educational Effectiveness	
Component D: Student Enrollment and Success	
D.1 Student Enrollment	
D.2 Recruitment and Enrollment	
D.3 Student Fit with Program Mission	
D.4 Student Organizations	
D.5 Student Assistance	
D.6 Student and Alumni Achievement	

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

	4
D.7 GPA Trend Analysis by Ethnicity	
D.8 Completions Analysis by Ethnicity	
D.9 Evidence of Successful Completion	
D-9a Retention Rates	
D-9b Graduation Rate (150% of time)	
D-9c Average semester credit hours for program graduates	
D-9d Program Graduates Time to Degree	
D.10 Retention and Student Success Analysis	
Component E: Academic Opportunities and Class Size	35
E.1 Instruction Type	
E.2 Class Size Analysis	
E.3 Non-credit Courses	
E.4 Academic Opportunities and Class Size Analysis	
Component F - Student and Constituent Feedback	
F.1 Student Feedback	
F.2 Alumni Feedback	
F.3 Employer/Supervisor Feedback	
F.4 Constituent Feedback Analysis	
Component G - Resources and Institutional Capacities	39
G.1 Information Literacy and Library Resources	
G.2 Resource Analysis	
G.3 Revenue and Expense Analysis	40
G.4 Analysis of Acquired Resources	
G.5 Resource Allocation Relative to Capacity	
Summary Conclusions	42
Program Program Goals with Recommended Action Steps	42
Template Appendix A	47
Template Appendix B	47
Template Appendix C	
Template Appendix D	67
Other Attachments (to be completed and sent under separate cover) Program Review Committee Report and Rubric Administrative Response	
Adapted from Azusa Pacific University, Arizona State University, & Tyler Junior College, 2017.	

### **Component A - Mission and Context**

**A.1 Program Mission and Purpose** State your program's mission and purpose and how it helps to fulfill the broader mission of GCCC. Briefly describe where your program fits within the college's structure (e.g. division/dept.) and what credentials and/or areas of specialization it grants. Briefly, discuss the trends in higher education related to the need for your program and identify how the program is responsive to the needs of the region or broader society it intends to serve.

The Computer Science related studies available at Garden City Community College focus on two main goals: 1) preparing students for further academic studies, and (2) preparing students for gainful employment utilizing skills and credentials earned during attendance.

### Computer Information Systems – Program Code: CSCI

- PROGRAM DESCRIPTION: The Associate in Science degree in Computer Information Systems is a program that prepares students with a diverse set of skills that include the fundamentals of software development and computer security. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree. The semester-by-semester plans described below are general guidance. Students should work closely with their academic advisors to develop a plan that best meets their own individual needs and goals.
- An additional area of emphasis on Cybersecurity was added to the programs offered. This program is relatively new. For this report all data is reported as a common program.

### Cybersecurity – Program Code: CYSE

- PROGRAM DESCRIPTION: The Associate in Science degree in Cybersecurity is a program that prepares students with a diverse set of skills that include the fundamentals of software development along with a special focus on computer security. The program prepares students to seek industry-based certifications such as CompTIA A+, Network+, Security+ and Project+. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree. The semester-by-semester plans described below are general guidance. Students should work closely with their academic advisors to develop a plan that best meets their own individual needs and goals.
- GCCC Mission Statement: Garden City Community College exists to produce positive contributors to the economic and social well-being of society.
- The Computer Science program is part of the Business & Technology division and directly supports the GCCC Mission.

Computer Information Systems and Cybersecurity are fast growing areas. From the U.S. Bureau of Labor Statistics,

"Employment in computer and information technology occupations is projected to grow 11 percent from 2019 to 2029, much faster than the average for all occupations. These occupations are projected to add about 531,200 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security.

The median annual wage for computer and information technology occupations was \$91,250 in May 2020, which was higher than the median annual wage for all occupations of \$41,950."

Further details of related job positions can be found at the site <u>Computer and Information Technology</u> <u>Occupations: Occupational Outlook Handbook: U.S. Bureau of Labor Statistics (bls.gov)</u>

- An excellent source of actionable data is the CyberSeek website, a project supported by the National Initiative for Cybersecurity Education (NICE), a program of the National Institute of Standards and Technology (NIST) in the U.S. Department of Commerce. Some relevant quotes are included below:
- "Cybersecurity workers protect our most important and private information, from bank accounts to sensitive military communications. However, there is a dangerous shortage of cybersecurity workers in the United States that puts our digital privacy and infrastructure at risk."
- "From April 2020 through March 2021, there were 144,700 openings for Information Security Analysts, but only 131,000 workers currently employed in those positions – an annual talent shortfall of 13,700 workers for cybersecurity's largest job."
- "There are 319,720 additional openings requesting cybersecurity-related skills, and employers are struggling to find workers who possess them. On average, cybersecurity roles take 21% longer to fill than other IT jobs."
- Additional detailed information about specific job positions, job demand and appropriate training credentials is available from the site, <u>www.cyberseek.org</u>
- A.2 Progress Since Last Review Before commencing with this review, attach the Program Goals with Recommended Action Steps (or equivalent) (<u>Template Appendix A</u>), as well as the Administrative Response to those goals (<u>Template Appendix B</u>), and your Planning Documents (Appendix D) from your last review. Identify the original goals from your report as well as any new goals that emerged from your annual reports and in the planning process and provide evidence your progress toward accomplishing them. (If you don't have a copy, ask your Dean).

### No recent Program Review was available for reference.

**NOTE:** The information for Data Tables required in Components B-E will be provided to the fullest extent possible by the Office of Institutional Effectiveness, Planning, and Research (IEPR). Data collection for faculty will be as of November 1 and student enrollment will be as of October 15 for students of the year prior to the submission of the report (follows IPEDS delineation). Programs *may* choose to update data beyond November 1 or October 15 of the year prior to the submission of the report. Data collection for student completion, GPA, and class size will end by June 30 of the year prior to the submission of the report. Programs *must* specify collection methods and dates (or date ranges). For example, faculty data are recorded at the department level and may not accurately reflect the program assignment. The program is encouraged to review faculty data tables.

Data queries can be found in Earth Reports under Accreditation in the Program Review folder.

### Component B - Faculty Characteristics and Qualifications

### The following faculty classification definitions apply to the data exhibits in section B.

Full-time faculty – faculty whose load is 100% of a full-time contract within the program/department
 Part-time faculty – faculty whose load is less than 100% of a full-time contract within the program/department

**B.1 Faculty Qualifications:** Faculty listed below are those who taught courses for the program within the 17-18 academic year as well as those on the 18-19 faculty roster from the Dean's office as of November 1<sup>st</sup>. (Insert rows as needed).

	Faculty Qualifications					
Name of Faculty Member	Highest Degree Earned and Date of Acquisition (provided by dept.)	Institution of highest degree (provided by dept.)	Certifications, practices, specialties, etc. related to the discipline that illustrate qualifications			
[Full-time faculty listed here]						
Ron Carlson	MastA/B 1984	University of Missouri – Kansas City	Stanford Certified Project Manager, Professional Experience (ATT, IBM), Programming, Data Base, Technical Services Manager, Senior Project Manager, Senior Manager (IBM)			
Lachele Greathouse	MastA 1990 MBE	Fort Hays State University				
Renee Harbin	MastA 2002 MBE	Emporia State University				
Luis Luna Ramos	MastA 2019	Wichita State University				
[Part-time faculty listed here]						
Daniel Lebron	AAS 1998	DeVry University	Professional Experience in programming and data base			
Hector Martinez	MS Education 2015	Newman University	Multiple Certifications related to CICSO routing, network and IT hardware and software			
Cynthia Burrus	MastA 2004/2010	St. Mary's University/American Public University	18 graduate hours in Business			
Amy Anderson	MastC 1991	Fort Hays State University	18 graduate hours in Business			
Kevin Reese	MastC 1987	Kansas State University				

All current faculty have a Master's degree. In the review period, though some adjunct faculty did not have a Master's degree in the field, all still had qualifying experience and/or certifications.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

### **B.2 Faculty Demographics**

	Fa	culty Dem	ographics				
		Full	-time	Part	-time	То	tal
		Female	Male	Female Male		Female	Male
a.)	Faculty who are						
	Non-resident (International)						
	Asian						
	Black, non-Hispanic	<u> </u>					
	Hispanic	0	1	0	2	0	3
	American Indian or Alaska Native						
	Native Hawaiian / Pacific Islander						
	Two or more races						
	Race/Ethnicity Unknown	0	0	1	0	1	0
	(Or Decline to Identify)						
	White, non-Hispanic	2	1	2	3	4	4
	Totals	2	2	2	5	4	7
	c.)Number of faculty with doctorate or other terminal degree						
	<ul> <li>Number of faculty whose highest degree is a master's, but not a terminal master's</li> </ul>	2	2	2	4	4	6
	e.) Number of faculty whose highest degree is a bachelor's	0	0	0	1	0	1

**B.3 Faculty Scholarship:** Provide, in tabular or report format, a comprehensive record of faculty scholarship for the last 5 years. In addition to traditional scholarship, include faculty accomplishments that have enhanced the mission and quality of your program (e.g., discipline-related service, awards and recognitions, honors, significant leadership in the discipline, etc.).

Professional Organizations: Member of CompTIA Partners, National CyberWatch Center, CISCO Networking Academy, (and from the Business faculty instructors) KANAAE, Kansas National Educator's Association, National Business Educators Associations, GC3 Educators, KBEA.

Service to College: CSCI / Business Faculty instructors serve on the following committees at GCCC: GC3 Educators Lead Negotiator, GC3 Educators members, Marketing Committee, KCOG lead for course reviews, KBOR Computer Support Specialist related Technical Advisory Board meetings, Marketing Cluster Review, Curriculum & Instruction, Academic Review

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

- B.4 Department Scholarship Analysis: State the goals previously set by your program for scholarship production (previous review). Analyze whether goals were met and the factors that contributed to goal attainment. What changes or modifications are necessary in light of this analysis? Omitted per Administration.
- **B.5 Analysis of Faculty Qualifications:** From the evidence available, evaluate the qualifications and contributions of your faculty toward fulfilling the mission of the program. Comment on the composition of your faculty in terms of diversity. Identify gaps in preparation, expertise, or scholarly production that need to be filled.

All current faculty are considered highly qualified and able to teach in a variety of modalities.

Reviewing the faculty demographics shows a good balance of male and female instructors. Most of the ethnic diversity comes from adjuncts from a variety of backgrounds.

**B.6 Full-Time Faculty Workload:** For each of the past 5 years, report full-time faculty workload distribution based on the categories identified below. Include units assigned as overload. (get from your Dean's office).

Faculty Workload (over past 5 years)										
Name of Full-Time Faculty	Student Semester Credit Hours			Adminis assignr Leader tasks)	strative nents in , progra	and oth dept. (e m revie	er types e.g., Div w, other	of ision dept.		
Academic Year	2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Lachele Greathouse	866	938	781	669	742					
Ron Carlson	63	177	129	207	219					

For the academic year 2015-2016, Lachele taught 33 credit hours, and Renee Harbin taught 42 credit hours, including their courses in the Business program. The numbers reported above are the total student credit hours taken.

In the most recent year, the total student credit hours taught by Lachele Greathouse, and Ron Carlson totaled 961, reflecting an increase of 10% over the prior year and include a larger mix of advanced courses.

Ron Carlson was the Division Leader for the Business & Technology division for two academic years.

Lachele Greathouse participated in the Business Program Review preparation.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability 9

**Commented [SH1]:** This is a fair answer. Another thing you might add are any specialties you all cover to show the breath of the department's offerings

**B.6.1 Analysis of Faculty Workload:** In what ways does faculty workload contribute to or detract from faculty ability to work effectively in the program?

- Overall, the faculty workload for Full-Time Faculty contributed positively throughout the above timeframe. Currently the program has two faculty hired to teach full time and at full workload within the program.
- Lachele Greathouse taught numerous sessions of the CSCI 110 Introduction to Computer Concepts & Applications course. She is experienced in the presentation of the material and the appropriate assignments which make the most of each session. This course is the only Computer Science related Systemwide Transfer course currently designated by the Kansas Board of Regents. As such, this course transfers to any public Kansas public institution offering an equivalent course. More details are available at Transfer & Articulation (kansasregents.org).
- Ron Carlson was originally hired by GCCC in Fall 2016 as a full-time Physics Instructor with the additional assignment of expanding the course offerings in Computer Science. Ron taught the College Physics I & II courses and the Engineering Physics I & II courses for the three academic years 2016-17, 2017-18, and 2018-19, as well as several Descriptive Physics and College Math courses. Ron began teaching the core Computer Science courses in 2017 and became the full-time Computer Science Instructor in 2019-2020. He has also assumed all the courses taught previously by adjuncts Daniel Lebron and Hector Martinez.
- Renee Harbin teaches Business courses full-time. She also taught CSIS courses during Fall 2015, Spring 2016 and Summer 2016 and is included in the relevant data items under this review.
- Luis Luna Ramos taught full-time during Fall 2015 and Spring 2016 and is included in the relevant data items under this review.

**B.7 Percentage of courses taught by each faculty classification:** The following table includes the percentage of credit bearing courses taught by program faculty (by classification) during the five most recent years for which data are available.

Percentage of Courses Taught by Faculty Classification						
Faculty Classification	2016	2017	2018	2019	2020	
Full-Time	71.43%	77.08%	63.64%	78.79%	82.76%	
Part-time	28.57%	22.92%	36.36%	21.21%	17.24%	
TOTAL	100%	100%	100%	100%	100%	

Percentage of Course Taught by Full-Time is now averaging around 80% after Ron Carlson (Full-Time) transitioned from teaching Physics and Math related courses to expanding and teaching the Computer Science course offerings, including replacing two adjunct instructors who left the program.

**B.8 Student Faculty Ratio:** The following table includes student to faculty ratios for the 5 most recent years. The ratios provided are based on the number of students enrolled in the program and the faculty assigned to teach in the program. Programs that offer courses in which students from outside the program often enroll (e.g., general studies courses), may wish to include additional data such as the average number of students per course taught by program faculty.

Student: Faculty Ratio							
Academic Year	2015-16	2016-17	2017-18	2018-19	2019-20		
# of Full-Time Faculty							
# of Part-time							
FTE Faculty							
# of Full-Time Students							
# of Part-Time Students							
FTE Student							
FTE Student: FTE Faculty Ratio*							

\*Full-time equivalent (FTE) is calculated using the following formula:

Total # Full-Time Faculty (or Students) + One-third Total # Part-Time Faculty (or Students) **Omitted per Administration.** 

B.8.1 Analysis of Faculty Distribution: Comment on the adequacy or number of full-time vs. part-time faculty and the ability to deliver quality education. **Omitted per Administration.** 

B.9 Summary of Teaching Effectiveness: The following figure includes data derived from student end of course evaluations for the program.

Results from seventy-four Student Responses on a scale out of 4.0 possible points (2016):

Clarity - 3.85/4.00 Interaction - 3.79/4.00 Prep/Feedback - 3.76/4.00 Rapport – 3.83/4.00 Enthusiasm - 3.73/4.00

B.10 Other Evidence of Faculty Effectiveness: Programs may provide additional evidence (not anecdote) of faculty effectiveness.

Some students have gone on to take and pass certification exams related to their coursework, including success with the CompTIA A+, Network+, and Security+ certifications. There are examples of successful placement in technical positions, including one at an area utility company and another at the local school district IT department. Both job recipients cited their certifications as instrumental in their job success.

B.11 Analysis of Teaching Effectiveness: Using data from the information above, as well as other pieces of available evidence, evaluate the effectiveness of faculty in the classroom. When applicable, include an analysis of faculty effectiveness across delivery system (e.g., outreach locations, online, etc.).

Multiple courses are offered in full semester mode, hybrid mode, 13-week schedule, 8-week schedule and 4-week schedule. The student success is consistent across these modes.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

Currently the CSCI 110 Introduction to Computer Concepts and Applications course is the only one offered online. Student success in the online course tends to be either very good or very poor. This result is not atypical for online courses in general. One reason might be that the student is not prepared or sufficiently organized to be successful. Another reason might be that more students are hesitant to ask questions or ask for help in an online setting. These causes of poor performance might be mitigated through the advising process and in the course presentation.

B.12 Faculty Summary Analysis: Based on evidence and responses provided above, provide a summary analysis of the quality and quantity of faculty associated with the program. Discuss how workload, course distribution, or other considerations impact the ability of the program to deliver excellent teaching to students. Identify resources, mentoring programs, or other services provided or made available by the department to ensure that faculty are developed professionally (this may include release time or funds provided to faculty for curricular and professional development). What changes, if any, should be implemented to ensure faculty effectiveness? Identify any needs related to faculty that impact delivery of a high-quality program.

Both full-time faculty members typically teach more than the normal full workload. There are some sections of CSCI 110 Introduction to Computer Concepts and Applications taught by an adjunct. Additional adjuncts or possibly a full-time faculty member would allow expansion in several significant areas which are detailed below.

The program should continue to explore and expand alternatives in the delivery nodes, including hybrid and online options. When there is sufficient demand from the community or area businesses, courses could be offered out of rotation and with customized meeting schedules. For an example of partnership, a local business inquired if a Network course could be made available and they offered to guarantee four students. When the course was offered, four additional students joined and made a full class for this advanced course which had not been originally planned for that semester.

The program should explore the ability to provide certification-based courses through a flexible schedule.

The program should continue to promote certification examinations and credentials to students and seek to partner with area organizations to provide specific training needs in the computer science area.

The program should seek to expand course availability to area high school students, both remotely and on campus.

With the recent advent of the GCCC Computer Support Specialist certification, the program should seek CTE funding as appropriate for the related technical courses. These funds can be used for professional development and to acquire and facilitate more flexible and modern modes of delivery.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

### Component C - Quality of Curriculum and Student Learning

- **C.1 Curriculum Structure:** Provide a brief overview of the course offerings and degree requirements of your program. To what degree does the program curriculum align with other comparable programs at other institutions and exemplify best practices for the discipline? Describe the process used by faculty to ensure the program is current and competitive.
- The Computer Science related course offerings span programming, hardware, software, networking, security, ethics, project management and certification preparation. The expansion of academic courses offered were modelled after an examination of multiple university and community college course offerings. The technical and certification emphasis was influenced by Kansas Board of Regents guidelines and related Johnson County Community College programs to ensure alignment. Best practices acknowledge and include an emphasis on high in-demand technical skills and certification.
- See GCCC Catalogs (at <u>https://www.gcccks.edu/academics/academic\_catalogs/academic\_catalog.aspx</u>) for current and historical versions of the Associate of Science (AS) Requirements and the specific Program Requirements.

### COMPUTER SCIENCE course descriptions (from the current GCCC Catalog)

- Introduction to Management Information Systems CSCI-101 3 hours This course is an introductory class that assists students in learning about how computers work and about how the computer is used in our world. Topics range from what parts a computer is made of to how to write a computer program. Also addressed are topics such as how data are stored, how networks and the Internet work, how to secure a computer from malware, and ethical dilemmas that arise in modern computing. The class included detailed discussions of computer logic, data flow, number systems, and computer memory.
- Introduction to Programming CSCI-102 3 hours This course is recommended for computer science majors. It covers the basic logic required to design and develop good logical computer programs. Course topics include hardware and software configurations as well as the concepts of program logic, top-down design, and structured programs. This course may be taken concurrently with Introduction to Management Information Systems.
- Programming in Visual Basic CSCI-103 3 hours Prerequisite: Introduction to Programming or instructor permission. This course provides a thorough introduction to the use of Visual Basic 2008. The main goal of the course is to enable the student to utilize modern application design strategies to deliver completed applications to end users. The hands-on exercises are focused on solving commonly encountered programming problems. The course introduces the Visual Basic Integrated Development Environment (IDE) and its wealth of development tools and includes detailed coverage of the Visual Basic language. The course also includes an introduction to object-oriented programming techniques. Students will learn to build effective user interfaces using controls, forms, and other GUI components. Students also will learn the use of the debugging and testing tools available in Visual Studio. Database access is introduced also using Visual Basic's ADO.
- Advanced Programming (HTML) CSCI-107 3 hours Prerequisite: One of the entry level programming courses or permission of instructor. This course covers disk file structure, creation, and management. Course is placed on logic methods of data file use. Topics include utility programs, and file types within a specific language. This course may be repeated as computer languages change.
- Programming in C++ CSCI-108 3 hours Prerequisite: Introduction to Programming or instructor permission. This hands-on C++ programming course provides an introduction to the most widely used programming language in the world. The essential syntax of C++ is the main focus, as well as introducing data types, fundamental control structures, and an introduction to object-oriented

programming. Topics covered also will include input/output commands, control statements, looping, subroutines, string processing, and arrays. Hands-on exercises will demonstrate key concepts and assure mastery by the student.

Intro to Computer Concepts and Applications CSCI-110 3 hours Prerequisite: None; however, to successfully complete the course, a student should have demonstrated keyboarding skills. Introduction to computer software provides an introduction to the basics of computer usage for Internet, email, word processing, spreadsheet, database, and presentation software programs. This first course provides information to the non-computer user and familiarizes the student with the basics of computer usage. Successful completion of this course will enable the student to continue studying the advanced features of the studied software. This course may be repeated for additional credits as software use changes.

- Web Animation CSCI-122 3 hours This course is designed to introduce students to basic methods and practices in animation. From movies to medicine to architecture, animation is everywhere. the course will provide an overview of techniques ranging from hand-drawn frame-by-frame animation, key framing, rigging, lighting, 3D modeling, texturing, object creation and character animation. Each class will consist of a short demonstration, viewing of related works, hands-on experimentation and/or critique. Weekly assignments will further the student's exploration of animation approaches and techniques. The course will conclude with the creation of final projects in which students will develop and create an animated short story.
- CompTIA A+ Essentials CSCI-125 3 hours Students will gain the knowledge required to assemble components based on customer requirements, install, configure, and maintain devices for end users. This course also covers the basics of networking and security/forensics, proper and safe diagnosis, resolve and document common hardware issues while applying troubleshooting skills.
- CompTIA A+ Practical Applications CSCI-126 3 hours Students will gain the knowledge required to install, configure, and maintain software for end users. This course will also cover the basics of networking and security/forensics, properly and safely diagnose, resolve, and document common software issues while applying troubleshooting skills. Students will also gain appropriate customer support and soft skills; understand the basics of virtualization, desktop imaging, and deployment.
- Introduction to Cybersecurity CSCI-130 3 hours This course examines the security aspects of computer systems, technology, management, and policy. Fundamental security concepts are presented and a review of risks, threats and countermeasures.
- Overview of Computer Science CSCI-140 3 hours An overview of computer science is presented in areas of Networking, Software, Operating Systems, Computer Architecture and Algorithms. The course also examines some of the ethical and legal aspects of Internet security, software engineering and database technology.
- Microsoft Networking Essentials CSCI-150 3 hour Learn to install, configure, manage, and troubleshoot basic networks of any size and prepare for an entry-level networking career in the IT industry. Students learn the foundations of network design and management, focusing on the media, topologies, protocols, and standards upon which modern networks are built. This class prepares students to pass the CompTIA Network+ industry exam and provides a foundation for more advanced courses in Microsoft and Linux client/server networking.
- Computer Networks CSCI-152 3 hours This course provides an introduction to computer networks by examining the network layer model, network management, network security and operational security.
- Computer Ethics CSCI-190 3 hours Computer Ethics examines various social, legal, philosophical, ethical, political, constitutional and economic implications of computing technology. This course presents an array of contemporary topics and issues relevant to modern society.
- Programming Language Concepts CSCI-220 3 hours An overview of the history and evolution of programming language concepts is presented. This course introduces the Python programming language. Prerequisite: programming language experience.
- Photoshop I CSCI-178 3 hours This course is the beginning Photoshop class designed to give students experience using the many tools of this very complex software. This course is a part of the proposed

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability 14

IMM

GCCC Visual Communications program and is appropriate for students entering the Computer Science or Visual Communications field, as well as any curricular area of design. Course content includes using Photoshop's basic tools and effects and filters in projects as well as features available in Photoshop for Web site construction. Students will learn how to use Photoshop and some Flash and Illustrator to produce creative design solutions for artwork, graphic design, photo retouching, and web design. This course is for anyone with an interest in learning more about art, graphic design, web design and the Adobe Creative Suite.

- Security+ CSCI-230 3 hours This class introduces students to computer network vulnerabilities and threats and how to safeguard computer networks from those vulnerabilities and threats. This course will expose the student to network security planning, network security technology, network security organization and the legal and ethical issues associated with network security. In this course, students will learn the skills necessary for Security+ certification.
- Information Security CSCI-232 3 hours Prerequisite: Overview of Computer Science (CSCI-140) or Computer Networks (CSCI-152). This course covers the 10 domains of the Information Security Common Body of Knowledge. Topics include cloud and mobile security, bring-your-own device and compliance.
- Digital Forensics CSCI-234 3 hours Prerequisite: Overview of Computer Science (CSCI-140). This course covers the principles and techniques of modern digital forensics and legal considerations. Topics covered include steps of an investigation, admissibility of evidence, the process of data acquisition and document analysis.
- Operating Systems CSCI-242 3 hours Prerequisite: Overview of Computer Science (CSCI-140). This course is intended for computer science and engineering students. The course covers the fundamentals of operating systems and their design, including approaches to resource management.
- Relational Database Design CSCI-244 3 hours Prerequisite: Overview of Computer Science (CSCI-140). This course teaches relational database design relevant to current databases, applications, and best practices. The goal is to design databases that are soundly structured, reliable, and flexible using database planning and by defining tables, fields, keys, table relationships, business rules and views.
- Software Engineering CSCI-260 3 hours Prerequisite: Overview of Computer Science (CSCI-140). This course provides an introduction to software engineering and the methodology of creating dependable and secure systems.
- Project Management CSCI-262 3 hours This course provides an introduction to project management fundamentals and a framework for managing information technology projects. Project management knowledge areas and process groups are reviewed. The course provides preparation for employment in industry and for project management certification.
- Agile Methodology CSCI-264 3 hours This course examines the values, principles, framework, and processes of the Agile approach as compared to the Waterfall software development methodology. The benefits of the Agile approach, the roles of participants and the impact of the entire development life cycle are reviewed.
- Disaster Recovery CSCI-266 3 hours Prerequisite: Overview of Computer Science (CSCI-140). This course presents on overview of how to prepare, develop and implement a successful disaster recovery plan. An emphasis is placed on risk assessment, business impact assessment, recovery site planning, data backup activities, testing the plan, and updating a disaster recovery plan.
- Web Design I CSCI-276 3 hours This course teaches HTML, the basic language of the web, and teaches design principles ranging from interactive design to typography. These skills will help students to develop their own websites and to better communicate with others who build websites. The course will give a broad framework that will help students to understand the big picture of Web Design and have a strong foundation from which to develop their own ideas and practices.
- Photoshop II CSCI-278 3 credits This course continues Photoshop I usage and image manipulation with a focus on design. Course content includes using Photoshop special effects and filters in projects as well as features available in Photoshop for Web site construction. Students will learn how to use Photoshop and some Flash and Illustrator to produce creative design solutions for artwork, graphic

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability 15

IMM

design, and web design. This course is for anyone with an interest in learning more about art, graphic design, web design and the Adobe Creative Suite.

- Web Design II CSCI-280 3 hours Prerequisite: CSCI-276 or instructor permission. This course will cover the commands and techniques required to create, revise, and enhance Web pages using Adobe Dreamweaver. Topics to be covered will include basic text layout, viewing and identifying basic HTML tags, creating a site map, formatting a Web page, applying background color, inserting images and sounds, creating ordered and unordered lists, inserting files, creating links on Web pages, tracing images, layers, converting layers to tables, custom tables, cascading style sheets, templates, and libraries, and publishing a Web site.
- Statistical Process Control CSCI-292 3 hours Prerequisite: College Algebra (MATH-108). This course shows how to use measurements to manage and improve software processes. Quality characteristics of software products and processes can be quantified, plotted, and analyzed using principles of statistical quality control. In turn, the performance of software can be predicted, controlled, and guided to achieve both business and technical goals.

### **Degree Requirements**

### 2014-2016 Catalog – General Degree Requirements



GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability JMM

### 2014-2016 Catalog – Program Requirements

**Business & Technology** 

### AS COMPUTER INFORMATION SYSTEMS General education requirements Choose 6 hours from the following block of courses CSCI-110 Intro to Computer Concepts CSCI-111 Advanced Computer Concepts CSCI-178 Photoshop I **35 hours** 6 PLUS CSCI-100 Keyboarding ..... strongly recommended if needed Introduction to Programming ..... Web Design I (HTML) ...... Visual Basic .... CSCI-102 CSCI-278 CSCI-280 Photoshop I Photoshop II Web Design II Accounting Basics CSCI-276 CSCI-103 ACCT-101 A+ (Number will be changed to a CSCI #) ...... Intro to Management Information Systems ...... Network Essential CSCI-121 BSAD-220 Business Ethics CSCI-101 CSCI-150 30 Gen Ed Requirements Total Semester Credit Hours CSCI-230 Security +. <u>35</u> 65 Other Recommended courses: Micro Economics (meets Gen Ed requirements) Intro to Business Business Law

### 2016-2018 Catalog – General Degree Requirements



GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

### 2016-2018 Catalog – Program Requirements

COMPUTER INFORMATION SYSTEMS Emphasis CSCI.AS					
The Associate in Science degree with an emphasis in Computer Information Systems is a program that prepares students with a diverse set of skills that include the fundamentals of software development. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree.					
Semester 1		15 hours	Semester 3		18 hours
Course No.	Course Title	Credit	Course No.	Course Title	Credit
ENGL-101	English I	3	SPCH-111	Public Speaking	3
MATH-108	College Algebra	3	CSCI-150	Networking Essentials*	3
CSCI-101	Intro to MIS*	3		Computer Science Elective**	3
CSCI-102	Intro to Programming*	3		Lab Science Requirement	5
PCDE-101	College Success	1		Social Science Requirement	3
	Humanities Requirement	3		Physical Fitness Requirement	1
Semester 2		17 hours	Semester 4		16 hours
Course No.	Course Title	Credit	Course No.	Course Title	Credit
ENG-102	English II	3	CSCI-230	Security+*	3
MATH-109 or 120	Plane Trig or Pre-calculus	3	CSCI-121	IT Essentials I (A+)*	6
		-			

Jennester Z		17 IIUUIS	
Course No.	Course Title	Credit	
ENG-102	English II	3	
MATH-109 or 120	Plane Trig or Pre-calculus	3	
CSCI-276	Web Page Design I*	3	
CSCI-103	Programming in Visual Basic*	3	
	Computer Science Elective**	3	

### \*Required courses for the program Minimum credit hours required to g aduate - 64

Minimum credit nours required to graduate - 64						
** Computer Science Electives must be selected from the following:						
CSCI-100	Keyboarding (strongly recommended if needed)					
CSCI-107	Advanced Programming (Java)					
CSCI-108	Programing in C++					
CSCI-110	Intro to Computer Concepts					
CSCI-111	Advanced Computer Concepts					
CSCI-178	Photoshop I					
CSCI-278	Photoshop II					
CSCI-280	Web Design II					
ACCT-101	Accounting Basics					
BSAD-101	Intro to Business					
BSAD-104	Business Law					
BSAD-220	Business Ethics					
ECON-112	Principles of Economics-Micro (meets Gen Ed requirements)					

Lab Science Requirement	
Social Science Requirement	3
Physical Fitness Requirement	1
	16 hours
Course Title	Credit
Security+*	3
IT Essentials I (A+)*	6
Humanities Requirement	3
Social Science Requirement	3
Physical Fitness Requirement	1

# **Business & Technology**

### 2018-2020 Catalog – General Degree Requirements

he	the second se											
1e	CC ID#	Last Nan	1e		First I	lame				M	ajor	
	Associate in S advanced sta rses will not o scripts must imum of fiftee dents will follow	cience de nding, into count tow be on file n (15) of t r the guide	gree is in compara ard fulfill in the Re the last 3 elines of the	tended to enable students to s ble discipline area Bachelor ol ing degree requirements (El egistrar's Office to receive cr 0 credit hours at Garden Cit he catalog in effect at initial en	atisfy ed Science NGL-090 redit for by Comm rollment	quivale e degre ), ENG transl nunity , provid	nt lor te pr L-09 fer c Coll fed t	wer-division ograms al M, READ- ourses to ege (GCC hey rema	on college of t Kansas R 092, REAL ward grad CC) to rece in continuo	credit cou legents un 0-093, Mu luation. S rive a deg usly enro	rse requirements and to transfer, iiversities. Developmental TTH-005, and MATH-006). Official Students must complete a gree. lied. If a semester is skipped,	
e	Associate in S ulative GPA of	cience de 2.0 includ	gree will I ling the fo	be awarded upon satisfactory illowing distribution of credits:	2. complet	ion of a	plar	nned prog	ram of not	less than	sixty (60) college credits and a	
	COMMUNIC	ATIONS		91	Hours	IV.	HU	MANITIE	S and FIN	ARTS	6 Hours	
	Must complet	e the follo	wing cour	ses with a grade of C or highe	IC.		Mu	st comple	te no more	than one	course per subject area:	·
		ENGL	101	English I	3		1.		ARTS	120	Art Appreciation 3	I
		ENGL	102	Eriglish II Dublic Seeaking	3		2		ARTS	121	Art History I 3	I
		arun		Public Speaking	3		3.		HIST	101	Survey of Civilization I 3	I
	MATHEMAT	CS and N	ATURAL	SCIENCES 11 H	lours				HIST	102	Survey of Civilization II 3	I
	Must complet	e a minim	um of one	mathematics course below:	~				HIST	103	American History to 1865 3	I
	L	MATH	108	College Algébra Plane Trigonometry	3				HIST	104	American History since 1865 3	I
		MATH	110	Fund of Statistics	3		4.		LITR	210	English Literature 3 English Literature 1	I
		MATH	120	Pre-Calculus	3				LITR	213	English Literature II 3	I
		MATH	121	Fund of Calculus	3				LITR	215	American Literature I 3	I
		MATH	122	Calculus & Analytic Geom	5			_	LITR	216	American Literature II 3	I
		MATH	205	Calculus & Analytic Geom I Calculus & Analytic Geom I	5				LITR	230	Understand Old Testament 3	I
		MATH	206	Differential Equations	3				LITR	253	World Literature & Hum 3	I
	Must complet	e a minim	um of one	lab science course below:			5.		MUSC	106	Today's Music 3	I
	2.	BIOL	104	Environmental Science	5				MUSC	108	Music History & Appreciation 3	I
		BIOL	105	Principles of Biology	5		6.		PHIL	101	Intro to Philosophy 3	I
		BIOL	210	Anatomy & Physiology Anatomy & Physiology	4		-		PHIL	102	Elementary Ethics 3	I
		BIOL	212	Anatomy & Physiology II	4		7.		LANG	1322	Elementary Spanish I 5 Elementary Spanish II 5	I
		BIOL	213	Microbiology	5				2440		and and a second s	I
		CHEM	105	General Chemistry	5	V.	PE	RSONAL	WELLNES	SS	2 Hours	
		CHEM	108	College Chemistry I	265 5				HPER	106	First Aid 2	I
		CHEM	110	College Chemistry II	5				HPER	115	Basic Nutrition 3	I
		PHSC	105	General Physical Science	5			_	HPER	121	Lifetime Fitness 2	I
		PHSC	205	Physical Geology	5	VI	ST		UCCESS		1 Hour	I
		PHYS	205	General Physics I General Physics II	5		Mu	st comple	te one cou	rse below	with grade of C or higher:	I
		PHYS	207	Engineering Physics I	5				PCDE	101	College Success 1	I
		PHYS	208	Engineering Physics II	5				PCDE	109	Career Success 1	I
	Eligible non-l	ab science	courses	Internet and the second second	~	VIL	EL	ECTIVES	OR MAJO	RCOUR	SES 22 Hours	
	3	PHSC	101	Descriptive Astronomy	3		_					· I
		PHSC	205	Physical Geology	3							I
		PHYS	106	Descriptive Physics	3							I
	SOCIAL SCI	ENCE			lours							I
	Must complet	e the follo	wing cour	ses:								I
		PSYC	101	General Psychology	3							I
	11-11-11-11-11-11-11-11-11-11-11-11-11-	SOCI	102	Intro to Sociology	3	VIII	от	HER				
	must complet	e one add	105	Intro to Cultural Anthropolo	au 3		1.	Fifteen	(15) of the	last 30 cr	edit hours must be completed at	·
		SOCI	113	Sociology of Families	9) J		~	Garden	City Comr	nunity Co	lege (GCCC).	I
		SOCI	204	Social Problems	3		2.	Develop	omental co	urses do i	not count as earned hours for	I
		ECON	111	Economics: Macro	3			MATHJ	ION (EINGL) 005, and M	ATH-006	acrosit, READ-092, READ-093,	I
		ECON	112	Economics: Micro	3		3.	Econor	nics will not	fulfill Sec	, tion III for Business majors.	I
		BOIS	101	Intro to Political Science	3						Hundrick States	. 1
		POLS	104	American Government	3	*Sn	dent.	s may cont	act their ad	isor or the	Advising Center for a complete list of	
					-	clas	ses ti	tat transfer	r and satisfy	ine Articu	uation agreement.	I
						IX.	DIS	TRIBUTI	ON OF CR	EDIT HO	URS	.
						Rec	uire	d General	Education	38 Hrs	/ Total General Ed Hrs	I
						Add	nition	al Course	s Needed:	22 Hrs	/ Major of Elective Hrs	I
						MIN	nun	Gradual	ALC .	ou rits	/ iusainis	I

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

21

### 2018-2020 Catalog – Program Requirements

### AS COMPUTER INFORMATION SYSTEMS Program Code: CSCI

PROGRAM DESCRIPTION: The Associate in Science degree in Computer Information Systems is a program that prepares students with a diverse set of skills that include the fundamentals of software development and computer security. Completion of the AS degree may help students obtain internships or entrylevel jobs or transfer credits to a university to complete a Bachelor of Science degree.

> \* \* Sen

\_

PROGRAM OUTCOMES AND CURRICULUM MAP.

Minimum Credit Hours Required to Graduate = 60

Semester 1	1	6 hours
Course No.	Course Title	Credit
*ENGL-101	English I	3
*MATH-108	College Algebra	3
**CSCI-101	Introduction to Management Information Systems.	3
**CSCI-102	Introduction to Programming	3
*PSYC-101	General Psychology	3
*	Student Success Requirement	1
Competer 1	,	E hours

Semester 2		15 nours
Course No.	Course Title	Credit
*ENGL-102	English II	3
**CSCI-110	Intro to Computer Concepts and Applications	3
**CSCI-140	Overview of Computer Science	3
*SOCI-102	Introduction to Sociology	3
*	Uumanitias Paguirament	2

### \*\*\* RECOMMENDED ELECTIVE COURSES

Course No.	Course Title	Credi
***CSCI-107	Advanced Programming	3
***CSCI-108	Programming in C++	3
***CSCI-125	IT Essentials: Hardware (A+)	3
***CSCI-126	IT Essentials: Software (A+)	3
***CSCI-130	Introduction to Cybersecurity	3
***CSCI-150	Network Essentials (Network+)	3
***CSCI-230	Security Essentials (Security+)	3
***ECON-111	Macro Economics	3
***ECON-112	Micro Economics	3
***MATH-110	Fundamentals of Statistics	3
***MATH-116	Discrete Mathematics	3
***MATH-121	Fundamentals of Calculus	

Semester 3		17 hours
Course No.	Course Title	Credit
*SPCH-111	Public Speaking	3
**CSCI-130	Introduction to Cybersecurity	3
**CSCI-190	Computer Ethics	3
*	Lab Science Requirement	5
*	Humanities Requirement	3

Jennester 4		14 Hours
Course No.	Course Title	Credit
*	Mathematics/Science Requirement	3
**CSCI-262	Project Management	3
	Social Science Elective	3
*	Personal Wellness Requirement	2
***	Recommended Elective Course	3

\* General Education Requirement (Communications, Math/ Science, Social Sciences, Humanities, Physical Wellness, Student Success)
\*\*\* Required Program Course
\*\*\*\* Recommended Elective Course

GARDEN CITY COMMUNITY COLLEGE • 2018-2020

53

### AS CYBERSECURITY

Program Code: CSCI

PROGRAM DESCRIPTION: The Associate in Science degree in Cybersecurity is a program that prepares students with a diverse set of skills that include the fundamentals of software development along with a special focus on computer security. The program prepares students to seek industry-based certifications such as CompTIAA+, Network+, Security+ and Project+. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree.

PROGRAM OUTCOMES AND CURRICULUM MAP.

Minimum Credit Hours Required to Graduate = 60

Programming in C++. Project Management...

Discrete Mathematics .

Fundamentals of Statistics

Fundamentals of Calculus

Semester 1		16 hours	Semester 3		17 hours
Course No.	Course Title	Credit	Course No.	Course Title	Credit
*ENGL-101	English I		*SPCH-111	Public Speaking	3
*MATH-108	College Algebra		**CSCI-130	Introduction to Cybersecurity	
**CSCI-102	Introduction to Programming	3	**CSCI-150	Network Essentials (Network+)	
**CSCI-125	IT Essentials: Hardware (A+)	3	*	Lab Science Requirement	5
*PSYC-101	General Psychology		*	Humanities Requirement	
*	Student Success Requirement	1			
			Semester 4		14 hours
Semester 2		15 hours	Course No.	Course Title	Credit
Course No.	Course Title	Credit	*	Math/Science Requirement	
*ENGL-102	English II		**CSCI-230	Security+	
**CSCI-126	IT Essentials: Software (A+)		*	Social Science Requirement	
**CSCI-140	Overview of Computer Science	3	*	Personal Wellness	2
*SOCI-102	Introduction to Sociology		***	Recommended Elective Course	
*	Humanities Requirement	3			
*** RECOMMEN	DED ELECTIVE COURSES		* Conoral E	ducation Paguirement (Communic	ations Math/
Course No.	Course Title	Credit	Science Sor	ial Sciences Humanities Physical	Wellness St
***CSCI-107	Advanced Programming	3	dent Succes	s)	Weinless, Ju

dent Success) Required Program Course

- \*\*\* Recommended Elective Course
- Processes and activities to ensure the program is current and competitive are achieved through the influence of multiple sources including CompTIA (global certification organization), CISCO Networking Academy (network and IT related materials), National CyberWatch Center (non-profit organization), National Institute of Standards and Technology (NIST) (government organization), National Initiative for Cybersecurity Education (NICE) (government organization), and CyberSeek (website with information on cybersecurity jobs and skills in demand).

GCCC is currently a CompTIA Academic Partner and a member of the CISCO Networking Academy and the National CyberWatch Center organizations. Each provides significant information guiding the ongoing curriculum and the emphasis on certification of industry relevant skills.

\*\*\*CSCI-108

\*\*\*CSCI-262

\*\*\*MATH-100

\*\*\*MATH-116

\*\*\*MATH-121

C.2 Assessment of Student Learning: Attach your program's most updated overall Annual Assessment Plans (Appendix C) and Annual Assessment Reports since your last program review (Appendix D). Briefly describe the direct and indirect measures your program uses to assess student learning. Analyze how well students are demonstrating <u>each</u> learning outcome within the program. If there is a culminating project in the program, include an objective evaluation of a sample of these products since undertaking the last program review. Use a rubric or other criteria to support your assessment of the culminating projects and analyze the results of this evaluation. Specify the areas where students are not meeting expected levels of competency and provide an analysis of possible explanations for these results.

The program's most updated overall Annual Assessment Plans are in Appendix C. In the next section, the multiple Program Learning Objectives (PLOs) are listed in the Course to Program Map. The two primary PLOs measured as part of Annual Program Review are the following.

Program Learning Outcome:	An ability to apply appropriate knowledge of computing and mathematics

Program Learning Outcome:	An understanding of professional, ethical, legal, security and social issues and responsibilities

- Each PLO has been measured across several different courses and using various measurements. The courses examined include CSCI 130, CSCI 140, CSCI 190, CSCI 230, CSCI 262. Measurements are typically short exam questions in the relevant section of the comprehensive Final Exam.
- The samples consist of 100% of the Computer Science majors enrolled in the course. Almost all of the measurement results meet the target. The exceptions are typically due to a student missing an exam or leaving the question unanswered. One of the action plan items is to consistently track absences and for students that fall behind, contacting them earlier in the semester and more frequently. Also, planning reviews in advance of comprehensive exams has improved retention and grades.
- Student Learning Objective (SLOs) are shared, reviewed, and emphasized throughout each course. Typically, short essay questions are used to evaluate student success against each SLO. Selected objectives are tested and measured as part of the Annual Assessment Plans. An advantage of the essay format is that it allows in-depth answers and a chance to include relevant knowledge that might not be queried by a simple multiple-choice question.
- Regular homework and testing throughout the semester provide feedback as to how each class and the individual students are doing at demonstrating comprehension and the ability to communicate. Some past years' results indicated lower results on comprehensive exams. As a result, the typical class now has homework or in-class review prior to comprehensive exams. The SLOs are measured for each class section and the data is reported in the Course Assessments.
- The Program Level Objectives are overall objectives, and their assessment is planned by using the Course to Program map and specific areas of measurement outlined in the Annual Assessment Plans.

C.3 Curriculum Map of Program Student Learning Outcomes: Paste your program's curriculum map below or attach as an appendix.

Program: CSCI - Computer Science Information Systems								
			EO	nu version: 17	1859.01 3/23/	18		
Program Outcomes		PLO1: An ability to apply appropriate knowledge of computing and mathematics	PLO 2: An ability to analyze a problem, and identify and define the appropriate computing requirements	PLO 3: An ability to design, implement, and evaluate a computer-basel system, process, component, or program to meet desired needs	PLO 4: An understanding of professional, ethkal, legal, accurity and social issues and responsibilities	PLO S: An ability to communicate effectively with a range of audiences	PLO 6: An ability to use current techniques, skills, and tools necessary for computing practice	
Courses								Mapping
CSCI 101 - Introduction to Management		I, R, A	I	I	I		I	I Introduced
Information Systems	ES	1	1	1	5		1	R Reinforced
CSCI 102 - Introduction to Programming	М	I, R, A	I, R	I, R			I, R, A	M Mastered
	ES	3	3	3			3	A Assessed/Artifact
CSCI 103 - Programming in Visual Basic		I, R, A	I, R	I, R			I, R	
	ES	3	3	3			3	Essential Skills
CSCI 107 - Advanced Programming	M	I, K, M, A	1, K, A	1, K, A			1, K, A	1 written communication
	ES	3	1.P	3			3 1 P	2 oral communication
CSCI 108 - Programming in C++		1, 1, 1, 1	3	3			3	3 entical thinking
CSCI 110 - Intro to Computer Concepts and		LA	I	I	T		LR	5 social responsibility
CSCI 110 - Intro to Computer Concepts and Applications		15	1	1	1.5		1	o social responsorito
	M	I, R, A	I, R	I,R			L R	
CSCI 125 - IT Essentials: Hardware (A+)	ES	3	3	3			3	
CP CL 126 IT Econsticular Pollumora (A.)	М	I, R, A	I, R	I, R			I, R	
COCH 120 - TE ESSENTIAIS, SOILWAFE (A+)	ES	3	3	3			3	
CSCI 130 - Introduction to Cybersecurity	М	I, R, A	I, R	I, R	I, R	I, R, A	I, R	
Coor iso - mitroduction to cybersecurity	ES	3	3	3	3, 5	1, 2, 3, 5	3	
CSCI 140 - Overview of Computer Science	М	I, R, A	I, R	I, R	I	I, R, A	I	
	ES	3	3	3	3, 5	1, 2, 3, 5	3	
CSCI 150 - Network Essentials (Network+)	М	I, R, A	I, R	I, R			I, R	
	ES	3	3	3			3	
CSCI 190 - Computer Ethics	М	I, R, A	I, R	I, R	I, R, A	I, R, A	I, R	
	ES	3	3	3	3, 5	1, 2, 3, 5	3	
CSCI 230 - Security Essentials (Security+)	М	I, R, A	I, R	I, R	I, R	I, R, A	I, R	
county country (occurry )	ES	3	3	3	3, 5	1, 2, 3, 5	3	
CSCI 262 - Project Management	М	I, R, A	I, R	I, R	I, R	I, R, A	I, R	
ob or zoz in rejsor in anagement	ES	3	3	3	3, 5	1, 2, 3, 5	3	

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

Program: CSCY - Computer Science Cybersecurity										
cybersecurity				Edit Versi	on: 1718SP.01	3/23/18				
Program Outcomes		PLO I: An ability to apply appropriate knowledge of computing and mathematics	PLO2: An ability to analyze a problem, and identify and define the appropriate computing requirements	PLO 3: An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs	PLO4: An understanding of professional, ethkal, legal, security and social issues and responsibilities	PLO 5: An ability to communicate effectively with a range of aud knees	PLO 6: An ablity to use current techniques, stath, and tools necessary for computing practice	PLO 7: An under tanding of computer hardware, software, networks, security and project management necessary to pursue industry-based certifications		
Courses										Mapping
CSCI 101 - Introduction to Management	Μ	I, R, A	I	I	I		I		I	Introduce d
Information Systems	ES	1	1	1	5		1		R	Reinforce d
CSCI 102 - Introduction to Programming	Μ	I, R, A	I,R	I, R			I, R, A		м	f Mastere d
CSCI 103 - Programming in Visual Basic	ES	3	3	3			3		A	Assessed/Artifact
	M	I, R, A	L, R	I, R			I, R			
	ES	3	3	3			3			Essential Skills
CSCI 107 - Advan ced Programming	M	1, K, M, A	L, R, A	1, R, A			1, R, A		1	written communication
CSCI 108 - Programming in C++	M	J P A	3 1 P	3			3 1 P		2	or al communication
	FS	1, 1, 1	3	3			1, K		3	cultural dim with
CSCI 110 - Intro to Computer Concepts and	M	LA	I I	T	I		LR		-	social responsibility
Applications	ES	15	1	1	1.5		1			social responsibility
	M	I,R,A	LR	I, R	,		L.R.	LR, MA		
CSCI 125 - IT Essentials: Hardware (A+)	ES	3	3	3			3	3,5		
	М	I, R, A	L.R.	I, R			I, R	I, R, M, A		
CSCI 126 - IT E SSENTIAIS: SOTWARE (A+)	ES	3	3	3			3	3,5		
CSCI 130 - Introduction to Cybersecurity	М	I, R, A	I, R	I, R	L R	I, R, A	I, R			
corrise - milloucion to cyberaccanty	ES	3	3	3	3, 5	1, 2, 3, 5	3			
CSCI 140 - Overview of Computer Science	М	I, R, A	I, R	I, R	I	I, R, A	I			
	ES	3	3	3	3, 5	1, 2, 3, 5	3			
CSCI 150 - Network Essentials (Network +)	Μ	I, R, A	L,R	I, R			I, R	I, R, M, A		
	ES	3	3	3			3	3, 5		
CSCI 190 - Computer Ethics	M	I, R, A	L, R	I, R	I, R, A	I, Ř, A	I, R			
	ES	3	3	3	3,5	1, 2, 3, 5	3			
CSCI 230 - Security Essentials (Security+)	М	I, R, A	L,R	I, R	L, R	I, R, A	I, R	I, R, M, A		
	ES	3	3	3	3,5	1, 2, 3, 5	3	3,5		
CSCI 262 - Project Management	M	I, R, A	I, R	I, R	I, R	I, R, A	I, R	I, R, M, A		
	• EC							26		

- **C.4 Assessment of Curricular Effectiveness:** Using your program's curriculum map and the evidence collected from the assessment of student learning, outline your program's intended steps for improving student learning. Include any proposed changes to the curriculum that may be necessary.
- A review of student learning measured through the curriculum map and evidence collected indicates that students (program majors) are performing very well. To ensure a focused presentation and evaluation of Program Learning Objectives (PLOs), some of the remedial and low attendance courses have been removed from the catalog. Some additional courses to consider for removal are CSCI 103 Programming in Visual Basic and CSCI 108 Programming in C++ since the current programming courses like CSCI 102 Introduction to Programming and CSCI 107 Advanced Programming are focusing on Python, the leading academic language, and on SQL (Structured Query Language) which is in wide use in business, financial organizations, and database applications.

Various courses not offered in recent years may be removed from the upcoming course catalogs.

- C.5 Assessment of Diversity in the Curriculum: Describe and evaluate your program's efforts to create a culture of diversity through the curriculum. In what ways is your program being intentional about embedding diversity-related issues in the curriculum?
- Individual courses offer a recognition of social needs and social responsibilities. CSCI 125 CompTIA A+ Essentials has a unit on professional behavior and respect for clients. CSCI 130 Introduction to Cybersecurity and CSCI 230 Security+ discuss security related issues including protecting personal information. CSCI 140 Overview of Computer Science has a unit on social issues including privacy, bullying and the impact of social media. CSCI 190 Computer Ethics is a course focusing on the ethical use of computer technology. CSCI 262 Project Management emphasizes the professional and social responsibilities of project managers.
- As an example, programming mortgage loan approval software that uses zip code as an input parameter to determine loan approval might unintentionally discriminate against residents because of assumptions about income level and racial demographics associated with that zip code. Class discussion can explore and promote awareness of implicit basis and discrimination based on the "logic" and "assumptions" of the underlying computer code and algorithms.
- C.6 Use of Continuous Assessment for Educational Effectiveness: Describe and evaluate the process that your program uses to annually evaluate the quality of curriculum and to assess student learning. Document how your program has used its assessment findings to impact area decisions. In what ways is this process effective toward making effective educational decisions? In what ways should the process change?
- Each semester, the choice of text and accompanying materials is reviewed. In the technical area especially, new editions often appear around every three years so that they reflect the current objectives of various industry certifications.
- Courses in the technical area that are impacted by CompTIA industry certification objectives which are updated periodically, include CSCI 125 CompTIA A+ Essentials, CSCI 126 CompTIA A+ Practical Applications, CSCI 150 Network Essentials, CSCI 230 Security+, and CSCI 262 Project Management.

### Component D: Student Enrollment and Success

**D.1 Student Enrollment:** The following table includes fall enrollment data disaggregated by gender and ethnicity for the five most recent years. The ethnicity categories are based on IPEDS requirements. Therefore, International (non-resident alien) students will only be reported in this category regardless of their ethnicity.

Student Enrollment	201	6	201	7	201	8	201	9	202	20	Totolo
	Female	Male	Totals								
Non-resident (International)	1	1	0	1	0	1	0	2	0	1	7
Asian	1	0	1	0	0	0	1	1	1	0	5
Black, non-Hispanic	1	1	1	2	1	3	0	3	1	5	18
Hispanic	2	9	2	10	1	18	2	11	2	9	66
American Indian or Alaska Native	0	1	0	1	0	1	0	0	0	0	3
Native Hawaiian / Other Pacific Islander	0	0	0	0	0	1	0	0	0	0	1
Two or more races	0	1	0	0	0	0	0	0	0	0	1
Race/ethnicity Unknown	0	0	0	0	0	1	0	0	0	0	1
White, non-Hispanic	3	6	2	17	1	13	0	9	2	6	59
Totals	8	19	6	31	3	38	2	26	6	22	161

**D.2 Recruitment and Enrollment:** Using the evidence provided, discuss your program's enrollment trends over the past five years, including any trends related to diversity. What events are happening within the profession, local or broader community that might explain enrollment trends? What does evidence suggest might be future enrollment trends for your area over the next 3-5 years? What, if any, changes to recruitment strategies would benefit the program so that it attracts a sufficient number of students who are a good fit?

Across the five-year period surveyed, the ethnicity percentages closely reflect the composition of the overall student body at GCCC. The gender percentages reflect the overall ratio at the national level.

Hispanic	66/161	41%
White, non-Hispanic	59/161	37%
Black, non-Hispanic	18/161	11%
Female	25/161	16%
Male	136/161	84%

### From www.computerscience.org

"The <u>Bureau of Labor Statistics</u> (BLS) projects computer science research jobs will grow 19% by 2026. Yet, women <u>only earn 18%</u> of computer science bachelor's degrees in the United States. Despite the GCCC Academic Program Review Template JMM Office of Institutional Effectiveness & Accountability high job demand, computer science remains a male-dominated field in the United States. In response, many top colleges are making efforts to recruit female computer science students, making it an ideal time for women to pursue computer science degrees."

"Starting when computer technology first emerged during World War II and continuing into the 1960s, women made up most of the computing workforce. By 1970, however, women only accounted for 13.6% of bachelor's in computer science graduates. In 1984 that number rose to 37%, but it has since declined to 18% — around the same time personal computers started showing up in homes. <u>According to NPR</u>, personal computers were marketed almost exclusively to men and families were more likely to buy computers for boys than girls."

"Computers are now commonplace, especially in classrooms. While it's hard to pinpoint a single reason for the lack of female computer science majors, researchers are finding that <u>introductory computer</u> <u>science courses</u> play a big role in discouraging women from majoring in computer science."

From the <u>www.aei.org</u> website, the <u>Chart of the Day: The declining female share of computer science</u> <u>degrees from 28% to 18% | American Enterprise Institute - AEI</u> illustrates the overall national trend.



GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability



### Recruitment strategies should emphasize both the academic transfer path and the technical certification preparation opportunities at GCCC.

Some goals and strategies to address the recruiting of new students to GCCC and the department:

- Individually advise all students who select Computer Science as a focus area а
- Use GCCC media to invite students to join computer science classes b.
- Volunteer to help with early enrollment days c.
- Conduct visits to area high schools d.
- Be present at college recruitment events at Garden City High School e.
- Be available for public appearances such as interviews on local TV and radio f.
- Community service in organizations such as Garden City Arts and Lions Club
- g.
- Fully participate in Exploration Day and Advising Day h.
- D.3 Student Fit with Program Mission: Using the student data provided, analyze the quality of students typically enrolled in the program. What are the student qualities sought by the program and to what degree do students and graduates exemplify those qualities? What changes, if any, are desired in the type of student enrolled in the program?
- About 80% of students entering Garden City Community College require one or more remedial courses in Mathematics or English. For students entering the Computer Science program, there is also a significant percentage of students who require some remedial courses. These needs are taken into consideration during the advising process and in the resulting semester plans for each student.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

- Many of the Computer Science courses do not require a pre-requisite course, so students are often able to start their program without significant delay.
- Students are asked about their interests, experience, and goals in the computer science arena. The advising process seeks to get students into the courses of high interest as soon as possible.
- **D.4 Student Organizations:** Identify and describe any national professional, honorary, other student organizations and/or activities sponsored by the department or faculty members in the program which enrich a student's educational experience.
- A Computer Science Club was established in 2018-2019 based on student interest. During the year the club was active, the students organized their charter and were recognized by the GCCC Student Government Association (SGA). Activities included joint programming projects, exploring Raspberry Pi processors and the use of 3-D printers. After the officers of the club graduated, the club disbanded. The 3-D printers and computer maintenance toolkits are still available for use by those interested.
- **D.5 Student Assistance:** Describe any special assistance or services provided by the department for your students (e.g., grants, scholarships, assistantships, tutorial help, job placement, advising and career planning, and awards), and in particular any services provided by the department for students with special needs, which facilitate student success.
- The program department works with the Coordinator of Accommodations on campus to meet requested special needs. One example of requested accommodations is printed providing materials in large font and with specific print and background colors to assist the visually impaired.

Faculty provide ten office hours weekly to ensure availability for questions and for advising opportunities.

- **D.6 Student and Alumni Achievement:** Since the last program review, how have current students and/or alumni exemplified the mission and purpose of the program? In addition to discussing data produced above, this may include achieving influential positions, engaging in service or practice, acquiring advanced degrees or other significant scholarly accomplishments.
- Examples of student success include students passing CompTIA certifications, including the A+, Network+ and Security+ certifications.
- One student, a manager of an area hospital IT department, with existing certifications was granted credit of the equivalent courses, proceeded to take additional courses at GCCC and completed her AS degree. This manager stated that she considered appropriate certifications as highly important in her evaluation of job applicants.
- One student passed the A+ certification, worked in the GCCC IT department while a student, and after graduation accepted an offer to the IT department of the local school district.

One student successfully completed the Network+ certification before graduation.

One graduate accepted an IT service position and then later completed the A+ certification.

One student who was planning to retire from the IT department of a local school district, attended several courses, and completed the CompTIA "trifecta" consisting of the A+, Network+ and Security+ certifications. That individual accepted a high paying position with significant responsibilities at a

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

local utility company and was delighted to not have to move his family to Denver for a comparable position and comparable pay.

Going forward in 2021, GCCC should seek to implement efforts to better track the progress of student accomplishments outside the institution and following graduation.

**D.7 GPA Trend Analysis by Ethnicity:** Data in the following table reflect the cumulative GPAs of students in the program compared to the overall institution (excluding new students without a GPA), disaggregated by ethnicity, for the five most recent years of fall enrollment. Fall enrollment data is a snapshot of enrollment as of Fall census.

### GPA Trend Analysis by Ethnicity report

	2016		20	17	20	)18	20	19	2020	
	Avg GPA in Prog	GCCC Avg GPA								
Non_Resident	3.493	2.934	1.759	2.919	3.929	2.937	3.897	3.048	3.517	3.247
Asian	2.906	3.283	3.000	3.309	n/a	n/a	4.000	3.094	4.000	3.166
Black, non-Hispanic	1.832	2.461	1.296	2.413	3.280	2.397	2.703	2.320	3.084	2.143
Hispanic	2.783	2.780	2.859	2.837	2.418	2.793	2.394	2.743	2.848	2.710
American Indian or Alaska Native	2.676	3.123	3.011	2.286	2.571	2.764	n/a	n/a	n/a	n/a
Native Hawaiian / Other Pacific Islander	n/a	n/a	n/a	n/a	1.891	2.227	n/a	n/a	n/a	n/a
Two or more races	1.720	2.736	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Race/ethnicty Unknown	n/a	n/a	n/a	n/a	0.400	2.378	n/a	n/a	n/a	n/a
White, non-Hispanic	3.160	3.192	2.709	3.154	2.670	3.107	2.959	3.082	3.195	3.033
F	3.054	3.062	2.903	3.035	3.376	3.015	3.707	2.940	3.444	2.901
М	2.767	2.822	2.581	2.794	2.503	2.685	2.701	2.717	3.011	2.637

### The above data shows the trends of the program overall GPA by groupings. The trends are more statistically significant for the major groupings of the student populations, especially Hispanic (41%), White non-Hispanic (37%), and Black (11%), as well as Female (16%) and Male (84%).

D.8 Completions Analysis by Ethnicity: The completions table includes program completers disaggregated by gender and ethnicity for the five most recent completion cycles. A completion cycle includes graduates from the program between July 1st and June 30th of each year. The ethnicity categories are based on IPEDS requirements. Therefore, International (non-resident alien) students will only be reported in this category regardless of their ethnicity.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

### **Completions Analysis by Ethnicity report**

	2016		20	17	20	18	2019		2020		Totals
	F	м	F	м	F	м	F	м	F	М	
Non_Resident	1	1	0	0	0	0	0	0	0	0	2
Asian	0	0	0	0	0	0	0	0	0	1	1
Black, non-Hispanic	0	0	0	0	1	0	0	1	0	0	2
Hispanic	1	2	0	2	0	4	1	2	1	1	14
American Indian or Alaska Native	0	0	0	0	0	1	0	0	0	0	1
White, non-Hispanic	1	4	0	4	1	2	0	1	0	1	14
Totals	3	7	0	6	2	7	1	4	1	3	

Overall Completion data compared to the Computer Science population (over 5-year review period)

14/34	41%	matching the student population of 41%
14/34	41%	slightly above the student population of 37%
2/34	6%	slightly below the student population of 11%
7/34	21%	slightly above the student population of 16%
27/34	<b>79%</b>	slightly below the student population of 84%
	14/34 14/34 2/34 7/34 27/34	14/3441%14/3441%2/346%7/3421%27/3479%

**D.9 Evidence of Successful Completion:** The following tables provide year-to-year retention rates, graduation rates, and time-to-degree rates for the five most recent year's data. Retention and graduation rate tables include individual year counts and percentages as well as five-year averages of counts and percentages. The time-to-degree table includes the number of completers within the completion cycle and the median time to completion in years. A completion cycle includes graduates from the program between July 1<sup>st</sup> and June 30<sup>th</sup> of each year. Programs may provide other sources of data or evidence to demonstrate student success; please specify timeframes used in this analysis.

### **D-9a Retention Rates**

2	2016	2017		2	018	2	019	2	020	5 - YEAR AVG		
# in cohort	% Retained											
27	55.56%	37	43.24%	41	46.34%	28	42.86%	28	53.57%	161	47.83%	

### D-9b Graduation Rate (150% of time)

	2016		2017		2018		2019		2020	5 - YEAR AVG		
# in cohort	% Graduated	# Graduated										
27	22.22%	37	16.22%	41	19.51%	28	14.29%	28	10.71%	161	16.77%	27

### D-9c Average semester credit hours for program graduates

	2016		2017		2018			2	2019		2020			
# Graduated	AVG Local Hrs	AVG Trans Hrs												
10	66.30	6.10	6	66.33	7.00	9	66.11	4.33	5	57.60	13.40	4	64.50	8.00

### **D-9d Program Graduates Time to Degree**

2	016	2017		2	018	2	019	2020		
Median Time Years	# Graduated									
2.00	10	1.50	6	2.00	9	2.00	5	2.00	4	

- D.10 Retention and Student Success Analysis: Summarize and evaluate the effectiveness of the program's recruitment and retention efforts as it relates to enrolling and graduating students who fit the mission of the program. Identify any areas in need of improvement for producing successful students. In the analysis, address the following elements:
  - a. What does the evidence from above data suggest regarding how well your program is producing successful students?
  - b. List specific events/activities that the program uses to increase student retention and degree completion.
  - c. Provide your best practices for tracking students who leave the program (without completing) and any follow up you may do with these students to determine why they have left.
  - d. Identify any areas in need of improvement for producing successful students.

From the data in the most recent year surveyed (the latest trend):

Retention Rates are higher at 54% compared to 49% for the five-year average

Graduation Rate is lower at 11% compared to 17% for the five-year average

Average semester credit hours for program graduates are level at about 65 for local and 8 transfer credits

Program Graduates Time to Degree is level at 2 years

The program continues to produce successful graduates. The most recent data shows higher retention but a lower graduation rate. Specific activities to recruit, retain and encourage degree completion include Enrollment Day and Advising Day activities, both of which were temporarily curtailed last year. The program needs to implement better practices for tracking students, including students who leave the program. Upon semester withdrawal, students are given an opportunity by Student Services administration to indicate any reasons for leaving the semester. An activity that could encourage students to continue and to complete their program might be a regular review with each student each semester to look at their degree progress and the remaining required courses. This activity will be assisted by including the degree and program progress information now available in the new Self Service application.

### Component E: Academic Opportunities and Class Size

**E.1 Instruction Type:** The following table includes the number of students enrolled by instruction types available through your department/program. Please add any additional data as applicable.

### Instruction Type report

	2016		2017		20	18	2019		2020	
Special Study Option	# of Students	Total SCH								
Concurrent Enrollment	16	48	41	123	30	90	30	90	29	87
Dual Credit Enrollment	na	na	na	na	2	6	1	3	1	3
On-line courses	73	219	70	210	93	271	124	366	161	481
Face to Face courses	331	881	417	1109	322	966	208	624	217	651
Independent study, tutorials, or private instruction	na	na	1	3	na	na	na	na	na	na

Instruction Type report data indicates that the Concurrent Enrollment has been relatively steady in the last three years at about 30 students. By comparison, the year preceding the start of this review, there were only 8 students in the program. The next year enrollment in the program climbed to 18 as new computer science courses were introduced and then increased on to about 30 each year.

The On-line courses have doubled in size in the last two years compared to the first three years of data.

The Face-to-Face courses have decreased in the last two years countering the rise in On-line courses.

**E.2 Class Size Analysis:** Based on the definitions provided below, the following table includes student counts in each class-size category for the past 5 years. Data are reported for the number of *class sections* and *class subsections* offered in each class size category. For example, a lecture class with 100 students which also met at other times in 5 separate labs with 20 students each lab is counted once in the "100+" column in the Class Sections column <u>and</u> 5 times under the "20-29" column in the Class Subsections table

**Class Sections:** A class section is an organized course offered for credit, identified by discipline and number, meeting at a stated time or times in a classroom or similar setting, and not a subsection such as a laboratory or discussion session. Class sections are defined as any sections in which at least one degree-seeking student is enrolled for credit. The following class sections are excluded: distance learning classes and noncredit classes and individual instruction such as dissertation or thesis research, music instruction, independent studies, internships, tutoring sessions, practicum, etc. Each class section is counted only once.

**Class Subsections:** A class subsection includes any subdivision of a course, such as laboratory, recitation, discussion, etc.; subsections that are supplementary in nature and are scheduled to meet separately from the lecture portion of the course. Subsections are defined further as any subdivision of courses in which degree-seeking students are enrolled for credit. The following class subsections are excluded: *noncredit* classes as well as individual instruction such as, music instruction, or one-to-one readings. Each class subsection is counted only once.

	9 or Less	10 - 19	20 - 29	30 - 39	40 - 49	50 - 99	100 +	Totals
2016 General Class Sections	23	13	4	0	0	0	0	40
2017 General Class Sections	21	15	7	1	0	0	0	44
2018 General Class Sections	12	9	9	0	0	0	0	30
2019 General Class Sections	15	12	3	0	0	0	0	30
2020 General Class Sections	6	11	9	0	0	0	0	26
2016 Edukan Class Sections	3	0	0	0	0	0	0	3
2017 Edukan Class Sections	2	0	0	0	0	0	0	2
2016 High School Class Sections	4	1	0	0	0	0	0	5
2017 High School Class Sections	0	0	2	0	0	0	0	2
2018 High School Class Sections	1	2	0	0	0	0	0	3
2019 High School Class Sections	1	2	0	0	0	0	0	3
2020 High School Class Sections	1	2	0	0	0	0	0	3
Totals	89	67	34	1	0	0	0	

### **Class Size Analysis report**

Subsections are not relevant to the existing Computer Science curriculum. It applies rather to courses like those in the Sciences with a specific laboratory component.

The drop in the total class sections starting in 2018-19 perhaps coincides with the removal of remedial courses for the course catalog and well as regular offerings of individual one credit courses in various Microsoft Office products like Word, Excel, and PowerPoint. The CSCI 110 Introduction to Computer Concepts & Applications includes computer concepts and an overview of the Microsoft Office applications and adequately replaces the individual courses sometimes used earlier.

**E.3 Non-credit Courses:** If your department offered non-credit courses during the past 5 academic years, please use the chart below to list the course(s) and the number of students who *completed* the course.

	Non-credit Courses													
Academic Year	2015-16	2016-17	2017-18	2018-19	2019-20									
Course	# of students completing													

The department has not offered non-credit courses in the 5-year period under review.

**E.4 Academic Opportunities and Class Size Analysis**. Using the evidence provided in all exhibits above, discuss the trends in the program's class sizes and, if relevant, the impact on student learning and program effectiveness. Note, in particular, downward or upward trends in class size and provide justification for those trends. When possible, identify the impact of special study options and individualized instruction on program quality. Make certain you address, if appropriate, all off-campus and on-line courses and/or programs.

As mentioned earlier in this report, the drop in the total class sections starting in 2018-19 coincides with the removal of remedial courses for the course catalog and well as individual one credit courses in various Microsoft Office products like Word, Excel, and PowerPoint.

About 50% of the courses have fewer than 10 students and about 50% have more than 10 students. This result is consistent with the overall GCCC faculty to student ratio which a noted strength of the college. The technical certification courses are more hands on and typically limited to 12 students per section. The lecture-based courses typically have capacities set at around 24 students depending on the classroom size and availability. As the number of advanced courses offered have increased, the ratios have still remained approximately steady. The typical goal for a course is 8 students minimum and on up to the room capacity.

### Component F - Student and Constituent Feedback

F.1 Student Feedback: Summarize available findings that relate to program quality from student surveys, focus groups, exit interviews or other student sources. Include their perceptions of how well the program met their needs, the program's strengths and weaknesses, and suggestions for improving the program. Describe the ongoing mechanisms that are in place to acquire and utilize student feedback regarding program quality. What changes need to be made to meaningfully incorporate students into the program review process?

- There have been several different processes used to gather Student Feedback. Course feedback is solicited for each course. If the student response rate is too low (fewer than 5 responses), then the feedback is not available.
- An improvement in return rate is needed. Suggestions include starting feedback earlier before the end of semester. Also, an automated process should regularly prompt the students who have not yet submitted feedback.
- F.2 Alumni Feedback: Summarize the results from available alumni surveys, focus groups, or advisory committees as it relates to program quality. When possible, include data indicating how well the program met the alums' goals and expectations, how well they think the program prepared them for next steps professionally and academically, and any program changes they recommend.
- In general, the program has not actively sought alumni feedback in an organized fashion. An appropriate methodology and communication should be used to stay in contact as students continue their education or careers.
- On the other hand, feedback from the Technical Advisory Committee has provided excellent input to the program. Businesses are looking for graduates who are professional in appearance and behavior, who have good communication skills, who can analyze and prioritize problems, and who have good customer relations skills.
- An example of a specific impact was the Technical Advisory Committee request to add Structured Query Language (SQL) content to the programming courses. SQL is an industry standard for organizing and retrieving data from Relational Data Base Management (RDBMs) and is used extensively in many industries and businesses. That accommodation was made the same semester and included the addition a special focus on SQL in the programming class.
- **F.3 Employer/Supervisor Feedback:** Summarize the results from available surveys, job performance appraisals, intern or clinical supervisor evaluations, or other relevant data as it relates to student preparation or competence or program quality. Comment on the level of preparation given to students as a result of the program.
- Faculty are observed by peers and administration on a periodic rotating basis. The evaluation results are reviewed in an annual meeting between faculty and administration. Faculty also perform a self-evaluation which is reviewed with administration. Preparation and effectiveness of presentation are topics in all these evaluations. This feedback provides input to employee goals which are tracked in the related annual process.
- F.4 Constituent Feedback Analysis: Analyze the program's overall effectiveness at utilizing student, alumni, and supervisor feedback as part of the assessment process. How well does the program solicit and respond to feedback, as well as communicate results of program review to its constituents, especially its current students?
- The Program Level Objectives (PLOs) are reviewed each semester and the Annual Program Review is updated with measurement data. Course Assessments are made each semester as well. The Student Learning Objectives (SLOs) are reviewed, and the Course Assessment Reviews are updated each semester as appropriate and combined for the academic year. Each semester, students are given an opportunity to give feedback on their courses. In the five-year period of this review, there have been several changes and the process has evolved from paper forms to on-line surveys. Each semester and for every course, each faculty receives the results of the student feedback when a minimum of survey responses is received. In addition, faculty complete self-evaluations each year which are reviewed by administration.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

### Component G - Resources and Institutional Capacities

- G.1 Information Literacy and Library Resources: Information literacy can be understood as the ability to "recognize when information is needed and...to locate, evaluate, and use effectively the needed information" (from the Association of College and Research Libraries). Describe the degree to which library and information resources are adequate and available for students and faculty members in your department (onsite and remotely). What level of support and instruction is available to students and faculty in the areas of technology and information literacy? Provide examples of how students are meeting information literacy competencies and discuss the level of competency exhibited by students in the program. What resources are needed for your program in this area?
- The GCCC library provides resources and study environments. Students can receive free tutoring in multiple course subjects. This assistance helps the students, especially in their Mathematics, Science, and English courses and may in turn help the computer science students with their course load.
- Textbooks and supplementary materials are available to each student through the Cengage publisher. Each computer science course uses Cengage and the Canvas Learning Management System to effectively present and organize the material covered in each course. These materials are available at no additional charge to students.
- In addition, materials from industry are freely available through CompTIA, CISCO, National Cyberwatch Center, Python Institute, and many other sources.
- G.2 Resource Analysis: Discuss the process used by program faculty to secure needed resources for the program. Include innovative strategies that have resulted in successful resource acquisition. Evaluate the program's effectiveness at securing necessary resources to ensure program quality. What systems or processes are working well, and what improvements could be made to make non-budgeted resource acquisition successful?
- The CompTIA Academic Partner relationship is free to the college. It provides material helpful to maintaining current course objectives. CompTIA provides training for updated objectives. A particularly useful resource is their Train-The-Trainer seminars. The CISCO Networking Academy membership also provides supplementary material that is relevant.
- The National Cyberwatch Center is influential in the direction of curriculum choices and updates. Their website <u>www.nationalcyberwatch.org</u> states their purpose.
- "Headquartered at Prince George's Community College, Maryland, we are a consortium of higher education institutions, businesses, and government agencies focused on collaborative efforts to advance Information Security education and strengthen the national cybersecurity workforce."
- GCCC was one of twenty-five community colleges selected as a partner when the National Cyberwatch Center applied for a \$12 million grant from the Department of Labor. That opportunity was interrupted by a federal budget shutdown and was eventually eliminated when the monies were redirected to other efforts which focused more on the existing workforce pipeline.

GCCC should continue to apply for grant and partnership opportunities relevant to its mission.

Academic Year	Revenue:	change	Expenses	change	Profit/Loss	Change in P/L
	Tuition/Fees, SCH,	from prior		from prior		from prior year
	State	vear		vear		
2014-15	64092	n/a	76620	n/a	-12528	n/a
2014-10	04032	n/a	10020	11/4	-12020	Π/a
2015-16	56848	-11.30%	52731	-31.18%	4117	\$16.645.00
						••••
2016-17	34481	-39.35%	48207	-8.58%	-13726	-\$17.843.00
2017-18	66348	92.42%	23106	-52.07%	43242	\$56,968.00
2018-19	47724	-28.07%	64330	178.41%	-16606	-\$59,848.00
2019-2020	28324	-40.65%	62065	-3.52%	-33741	-\$17,135.00
	1					

G.3 Revenue and Expense Analysis: Insert program data from at least five academic years.

Total Profit/Loss for 2015-16 through 2019-20 totals -\$16,714 for 5 years or -\$3,343 per year on average.

Given that there are several hundred students taking CSCI 110 Introduction to Computer Concepts and Applications and there are about fifty students taking other advanced computer science courses each semester, the cost of achieving a neutral revenue stream could be obtained through minimal fees.

**G.4 Analysis of Acquired Resources:** Since the last program review, identify each major program resource acquisition and its direct or indirect impact on program growth or improved quality. Discussions of impact should include the measurable effect of acquisitions such as new faculty, staff, equipment, designated classroom/office space, non-budgeted monies, awarded grants, scholarships, and other acquisitions by the program or faculty on student learning, enrollment, retention, revenue or other program indicators of educational effectiveness. Justify the program's use of resources through this analysis. When appropriate, discuss resource acquisitions that did not positively impact the program.

Garden City Community College hosted a Cybersecurity Summer Camp in June 2017 and again in June 2018 thanks to sponsorship by the Mary Jo Williams Charitable Trust and the GCCC Endowment Association. The Cybersecurity Summer Camps were open to area high school students at no charge and were focused on Cybersecurity related instruction for their educational benefit.

"Computer security concerns abound as the state of technology continues to grow more sophisticated. Advancing the knowledge of computer fundamentals and related security areas is critical to the proper defense of the government, business and the rights and privacy of individuals. In addition, properly trained students benefit from improved economic opportunities and a wider variety of career choices." – Ron Carlson

Of the twenty or so participants for these summer camps, about one half of those students went to on to enroll in computer science studies at GCCC. Students were given a sample of college level classroom experience and hands-on activities in robotics and programming.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

- **G.5 Resource Allocation Relative to Capacity:** Analyze trends in the program's operational budget as it relates to program enrollment, emerging needs, and program goals. Has the budget increased or decreased in proportionate response to program growth? Using evidence obtained from this review and other data, discuss your program's enrollment trends and/or revenue streams as it relates to non-budgetary resource allocation. In other words, if the program has reduced enrollment or income, what steps have been taken to correct resource allocations or expenses; if the program has increased in size or income, what resources or capacities are needed to meet new demand? What is the impact of budget changes on educational effectiveness? For each necessary capacity, rank order its importance relative to other needs and estimate its cost. Describe planned efforts to obtain funding for these needed capacities.
- During the review period, most associated course fees were eliminated, which in turn reduced the student expense burden slightly. As the curriculum takes a renewed focus in maintaining alignment with industry certification objectives, funding will be required for some additional classroom expenses, including both renewable and non-renewable materials. These costs might include additional classroom materials (such as text, video access, or hardware) and some student consumables such as tool sets, certification training materials, and certification exam expenses. The sources of these funds are most likely to be from technical education grants and funding, and from possibly from re-establishing courses fees for the courses focusing on certification.
- The courses most likely impacted by maintaining alignment with industry certification objectives and the CompTIA certification process are listed below along with the associated CompTIA certifications.

CSCI 125 A+ Essentials	CompTIA A+ certification
CSCI 126 A+ Practical Applications	CompTIA A+ certification
CSCI 150 Network Essentials	CompTIA Network+ certification
CSCI 230 Security+	CompTIA Security+ certification
CSCI 262 Project Management	CompTIA Project+ certification

### Summary Conclusions

Summarize the major findings of the program review as it relates to both the strengths of the program and areas in need of improvement. Include in this discussion any "intangibles" or assessments that you wish to discuss that were not requested in the Program Review Report. Make sure your conclusions are based on evidence.

The Computer Science related studies at GCCC have advanced in several important ways over the last five years. There is now an increased focus on Cybersecurity. The technical training courses related to industry certifications have been renewed and are offered regularly. Recently GCCC was approved by the Kansas Board of Regents to offer a Computer Support Specialist technical certification.

In the process, five new courses have been created and taught:

- CSCI 130 Introduction to Cybersecurity CSCI 140 Overview of Computer Science CSCI 190 Computer Ethics CSCI 262 Project Management MATH 116 Discrete Mathematics
- The historic emphasis on Computer Information Systems is now supplemented with courses and a program focus on Cybersecurity. Though relatively new, this path focuses on cybersecurity and industry certification in Information Technology, Networking, Security, and Project Management. Two Cybersecurity Summer Camps were offered to area high school students.
- Each academic year, eleven different courses are taught on a regular basis and several additional courses are taught on an as-needed basis. About half of the courses taught are aligned with industry certification objectives and guidelines. The other half of the courses are more academic or theoretical in nature and are suitable preparation for advanced study.
- GCCC maintains and benefits from membership privileges with CompTIA Academic Partners, CISCO Networking Academy, National CyberWatch Center and other free resources.
- Student Learning Objectives (SLOs) exist for each course and guide the content of the instruction. Sample SLOs are measured during each semester and contribute to the Annual Course Review. Program Learning Objective (PLOs) exist for each program and guide the overall content of the program. Several PLOs are selected and measured each semester and contribute to the Annual Program Review. A more comprehensive Program Review is scheduled on a five-year rotating basis.
- Student Feedback is solicited anonymously each semester for each course taught. Peer Reviews and Employee Evaluations are conducted on a rotating basis. Evaluations in general are moving toward a 360-degree feedback approach.

GCCC has created activities to promote a Continual Process Improvement methodology.

Faculty have a meaningful presence on academic and administrative committees.

Recruitment and advising activities include Exploration Day, Advising Day, and high school college fairs.

Improvements are needed in several areas.

- Establish better follow-up with former students of the program (including alumni connections).
- Expand student certification opportunities and preparation curriculum and activities.
- Establish a better record of student achievements and efforts toward industry certification.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

### Program Goals with Recommended Action Steps

Program Name: Computer Information Systems

Date: August 2021

Include this document with your Program Review Report. Considering the totality of the program review report, use the table to set goals that, if met, would result in improved student learning, increased enrollment, retention, revenue, or other program indicators of success. Set reasonable, measurable, and achievable goals and identify clear action steps needed to obtain the goal. This information serves as the basis for the Dean's Administrative Response, as well as ongoing strategic planning processes.

(Attach *this* year's "Program Goals with Recommended Action Steps" as Template Appendix A in your program's *next* program review. See "Schedule for Academic Programs", Appendix A in the Academic Program Review Manual for dates of your next review. You may add rows to this table as needed.

The Program Goals listed below are a result of the improvement opportunities found in the contents of this Program Review. These Program Goals address desired program improvements in four areas:

- Quality of Curriculum and Student Learning
- Student Enrollment and Success
- Student and Constituent Feedback
- Resources and Institutional Capabilities

A focus on the Quality of Curriculum and Student Learning is essential to the mission of GCCC. Computer Information Systems and Cybersecurity are fast growing areas. From the U.S. Bureau of Labor Statistics,

"Employment in computer and information technology occupations is projected to grow 11 percent from 2019 to 2029, much faster than the average for all occupations. These occupations are projected to add about 531,200 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security.

The median annual wage for computer and information technology occupations was \$91,250 in May 2020, which was higher than the median annual wage for all occupations of \$41,950."

"Computer security concerns abound as the state of technology continues to grow more sophisticated. Advancing the knowledge of computer fundamentals and related security areas is critical to the proper defense of the government, business and the rights and privacy of individuals. In addition, properly trained students benefit from improved economic opportunities and a wider variety of career choices." – Ron Carlson

Three goals are established in this area, motivated by the quotes above and the need for relevant courses.

- Further align tech course offerings with industry certification objectives.
- Streamline the course catalog and courses offered to maintain focus on the core mission.
- Establish and expand the technical certification areas offered as demand emerges.

Before the five-year Review Period, there were 8 students listed as Computer Science program majors. Over a two-year period that number grew to about 30 students and then stayed at that level for the last three years. The number of graduates declined slightly over the last year. So, with the goal of increasing Student Enrollment and Success, two goals are established.

- Design and initiate a coordinated marketing outreach for the programs and certifications.
- Design and implement an effective response process when requests are received for information about programs or certifications.

Student and Constituent Feedback can be improved by better communication with alumni and better tracking of alumni success.

 Initiate and maintain the appropriate tracking of student certification success, academic transfers, job employment and any major achievements.

Resources and Institutional Capabilities can be improved to better support the GCCC mission, the program mission of training and certification of students in areas of high job demand.

• Procure funding for student certification exams and acquire related instructional materials.

Goals, activities, start/end dates, metrics, resources, priority, and impact are summarized below.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability 44

Component Area	Specific Goal or Desired Outcome to Maintain or Improve Program Quality.	Activity or Strategies to Achieve Goal (include responsible person)	Proposed start and end dates	Progress Metrics and timeframe for measurement	Resource requirement (in-kind & direct)	Priority of Resource Allocation (High, Medium, Low.)	Anticipated Impact on Educational Effectiveness & relation to GCCC Skills
C - Quality of Curriculum and Student Learning	Further align tech course offerings with industry certification objectives.	Include Mike Meyers' material (industry expert) into A# related courses CSCI 125 and CSCI 126. - Ron Carlson	Aug 2021 – Dec 2021	Include video and other high- quality materials into the lectures and the testing process.	Faculty	High	Increased student interest and overall course retention.
C - Quality of Curriculum and Student Learning	Streamline the course catalog and courses offered to maintain focus on the core mission.	Update course catalog. - Ron Carlson	Oct 2021 – May 2022	Reduce the number of courses in the catalog.	Faculty input Registrar Office to make the updates.	Medium	Focused, more consistent, and more predictable schedules of course offerings.
C - Quality of Curriculum and Student Learning	Establish and expand the technical certification areas offered as demand emerges.	Add courses when/if needed. Possible areas include Project+ or Data+ or Python coding. - Ron Carlson	Oct 2021 – May 2025 Review and evaluate each year.	Course creation, C&I mtg approval, syllabus and placed in course schedule.	Faculty Approval of new courses through C&I meetings.	Medium	Increased program relevancy benefitting students and area employers.
D - Student Enrollment and Success	Design and initiate a coordinated marketing outreach for the programs and additional certifications	Design and launch new outreach. -Madilyn Rider at Public Relations -Ron Carlson	October 2021 – May 2022	Student contacts made through this avenue of connection.	Faculty Public Relations Office	High	Improved visibility and community interest in GCCC programs.

45

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

46

D - Student Enrollment and Success	Design and implement an effective response process when requests are received for information about programs or certifications	Design and launch new response process. -Sydnee Sassaman at Admission Office -Ron Carlson	October 2021 – May 2022	Student contacts made through this avenue of connection.	Faculty Public Relations Office	High	Improved visibility and community interest in GCCC programs.
F - Student and Constituent Feedback	Initiate and maintain the appropriate tracking of student certification success, academic transfers, job employment and any major achievements.	Create and maintain a list of contacts. Create a process to gather info and store it.	Sept 2021 and update yearly	Students and details tracked.	Faculty GCCC support for follow-up and tracking of data.	Medium	Increased visibility of student and college success.
G - Resources and Institutional Capacities	Procure funding for student certification exams and acquire related instructional materials.	Create the list of costs. - Ron Carlson Create and support as input to the budget / course fees. -Budget Admin	Sept 2021 and update yearly Budget dates each year in time to be applied to the coming year.	Budget line-item input and supported. Adjust course fees as needed.	Faculty Budget process	High	Increased certification testing and increased student success.
Summary Conclusions	Multiple Goals and Outcomes listed above strengthen the program, create additional focus on student recruiting, marketing, certs, streamline course offerings, while increasing the flexibility of course modes.	Most activities involve faculty input or activity. Other groups support needed as well.	Most activity can start Fall 2021. End times vary.	Course creation, update materials, establish fees, update catalog, add admin processes to achieve improved recruitment and retention.	Faculty and other groups as listed.	Medium to High	Increased student opportunity and testing options for certification. Improve student academic and career success.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

### **Template Appendix A**

### Program Goals with Recommended Action Steps—From Previous Review

Attach this document with your Program Review Report for Section A.2 above.

# No recent program review is available to reference. Goals, Strategies and Budget are created and reviewed yearly. The most recent resource requests are listed below.

Department Plan 2021-2022			
NEW RESOURCE REQUEST	<sup>-</sup> S - FY22		
Goal	Description of Need	Anticipated Cost	
Establish Study Group resources for Computer Science certification exams	Study Guide Materials to assist student preparation for Computer Science/Cybersecurity related industry level certifications.	\$1,200	
Purchase exam vouchers for students to attempt certification exams	Supply a limited number of student vouchers (at an academic discount) for those students seeking industry related certifications.	\$800	
Professional development funds	Ensure that there are monies available for professional development trainings to stay abreast of industry changes	\$5,000	

### **Template Appendix B**

Administrative Response Sheet—From Previous Review

Attach this document with your Program Review Report for Section A.2 above.

Not applicable, no recent program review to reference.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

### **Template Appendix C**

### Annual Assessment Reports—Since Last Program Review

Attach the program's Annual Reports for the last 5 years or since the last program review.

Not directly applicable as there is no recent program review to reference. Multiple examples of the Annual Program Assessment template are included below.

## Annual

Program

### Assessment

Program:	AS Computer Information Systems (CSCI)
Program Mission Statement:	The Associate in Science degree with an emphasis in Computer Information Systems is a program that prepares students with a diverse set of skills that include the fundamentals of software development and computer security. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree.
Year:	2018-2019
Instructors:	Ron Carlson, Daniel Lebron, Hector Martinez

ng of	Program Learning Outcome:	An ability to apply appropriate knowledge of computing and mathematics
ginni ster	Direct Measure #1:	CSCI 140 Final Exam - Fall Semester
Phase 1: Beg Semes	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCI majors enrolled in CSCI 140 Overview of Computer Science
<u>ب</u>	Data/Results:	
ind of Semester	Data Summary/Analysis:	
	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
e 2:	Responsible Party:	Ron Carlson (instructor)
Phas	Completion Date:	end of Fall 2018
	Resources Needed:	Dropout Detective
Pha se 1:	Direct Measure #2:	CSCI 140 Final Exam - Spring Semester

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCI majors enrolled in CSCI 140 Overview of Computer Science
2	Data/Results:	
emeste	Data Summary/Analysis:	
End of S	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
s 2:1	Responsible Party:	Ron Carlson (instructor)
Phae	Completion Date:	end of Spring 2019
	Resources Needed:	Dropout Detective
1: g of er	Indirect Measure:	None
inning mest	Target:	None
PI Beg Se	Sampling:	None
ter	Data/Results:	None
Semes	Data Summary/Analysis:	None
d of	Action Plan (if needed):	None
2: En	Responsible Party:	None
ase 2	Completion Date:	None
ā	Resources Needed:	None
	Overall Assessment of PLO:	(To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

Phase 1: Beginning of Semester	Program Learning Outcome:	An understanding of professional, ethical, legal, security and social issues and responsibilities
	Direct Measure #1:	CSCI 190 Spring - Written assignment on the role of the 17 National Intelligence Organizations in the United States.
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

	Sampling:	100% of CSCI majors enrolled in CSCI 190 Computer Ethics
<u>ر</u>	Data/Results:	
este	Data	
Sem	Summary/Analysis:	
End of	Action Plan (if needed):	(Track absences and students that fall behind, contact them earlier in the semester and more frequently.)
e 2:	Responsible Party:	Ron Carlson (instructor)
Phas	Completion Date:	end of Spring 2019
	Resources Needed:	Dropout Detective
to	Direct Measure #2:	CSCI 262 Spring - Project Management
Phase 1 ginning emeste	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
Be –	Sampling:	100% of CSCI majors enrolled in CSCI 262 Project Management
L.	Data/Results:	
End of Semeste	Data Summary/Analysis:	
	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
es 2:	Responsible Party:	Ron Carlson (instructor)
Pha	Completion Date:	end of Spring 2019
	Resources Needed:	Dropout Detective
1: gof ër	Indirect Measure:	None
iase nnin mest	Target:	None
PF Begi Sei	Sampling:	None
ter	Data/Results:	None
mest	Data	
of Sei	Summary/Analysis:	None
o pu	Action Plan (if needed):	None
2: E	Responsible Party:	None
hase	Completion Date:	None
4	Resources Needed:	None
	Overall Assessment of PLO:	(To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

# Annual Program

# Assessment

Program:	AS Cybersecurity (CSCY)
Program Mission Statement:	PROGRAM DESCRIPTION: The Associate in Science degree with an emphasis in Cybersecurity is a program that prepares students with a diverse set of skills that include the fundamentals of software development along with a special focus on computer security. The program prepares students to seek industry-based certifications such as CompTIA A+, Network+, Security+ and Project Management+. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree.
Year:	2018-2019
Instructors:	Ron Carlson, Daniel Lebron, Hector Martinez

ng of	Program Learning Outcome:	An ability to apply appropriate knowledge of computing and mathematics
ginni ster	Direct Measure #1:	CSCI 140 Final Exam - Fall Semester
e 1: Beg Semes	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
Pha	Sampling:	100% of CSCI majors enrolled in CSCI 140 Overview of Computer Science
ind of Semester	Data/Results:	
	Data Summary/Analysis:	
	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
e 2:	<b>Responsible Party:</b>	Ron Carlson (instructor)
Phas	Completion Date:	end of Fall 2018
	Resources Needed:	Dropout Detective
7	Direct Measure #2:	CSCI 140 Final Exam - Spring Semester
Phase 1: Beginning c Semester	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCI majors enrolled in CSCI 140 Overview of Computer Science

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

ester	Data/Results:	
	Data	
Sem	Summary/Analysis:	
nd of S	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
s 2: E	Responsible Party:	Ron Carlson (instructor)
Phae	Completion Date:	end of Spring 2019
	Resources Needed:	Dropout Detective
Phase 1: Beginning of Semester	Indirect Measure:	None
	Target:	None
	Sampling:	None
ter	Data/Results:	None
emes	Data Summer (Analysis	Nora
f Se	Summary/Analysis:	None
o p	Action Plan (if needed):	None
ase 2: En	Responsible Party:	None
	Completion Date:	None
F	Resources Needed:	None
	Overall Assessment of PLO:	(To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

Phase 1: Beginning of Semester	Program Learning Outcome:	An understanding of professional, ethical, legal, security and social issues and responsibilities
	Direct Measure #1:	CSCI 130 Fall - Written assignment on malware of code name Hidden Cobra and the role of the DHS, FBI and NCCIC.
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCI majors enrolled in CSCI 130 Introduction to Cybersecurity
Pha se 2:	Data/Results:	

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

	Data Summary/Analysis:	
	Action Plan (if needed):	(Track absences and students that fall behind, contact them earlier in the semester and more frequently.)
	Responsible Party:	Ron Carlson (instructor)
	Completion Date:	end of Fall 2018
	Resources Needed:	Dropout Detective
. J	Direct Measure #2:	CSCI 262 Spring - Project Management
Phase 1 ginning emeste	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
- Be	Sampling:	100% of CSCI majors enrolled in CSCI 262 Project Management
<u>د</u>	Data/Results:	
End of Semeste	Data Summary/Analysis:	
	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
es 2:	Responsible Party:	Ron Carlson (instructor)
Pha	Completion Date:	end of Spring 2019
	Resources Needed:	Dropout Detective
1: Ng of ter	Indirect Measure:	None
hase innir mest	Target:	None
Beg Se	Sampling:	None
iter	Data/Results:	None
mes	Data	
ase 2: End of Ser	Summary/Analysis:	None
	Action Plan (if needed):	None
	<b>Responsible Party:</b>	None
	Completion Date:	None
Ч	Resources Needed:	None
	Overall Assessment of PLO:	(To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

# Annual Program

# Assessment

Program:	AS Computer Information Systems (CSCI)
Program Mission Statement:	The Associate in Science degree with an emphasis in Computer Information Systems is a program that prepares students with a diverse set of skills that include the fundamentals of software development and computer security. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree.
Year:	2019-2020
Instructors:	Ron Carlson, Hector Martinez

Phase 1: Beginning of Semester	Program Learning Outcome:	An ability to apply appropriate knowledge of computing and mathematics
	Direct Measure #1:	CSCI 140 Final Exam - Fall Semester
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCI majors enrolled in CSCI 140 Overview of Computer Science
~	Data/Results:	4 out of 4
ind of Semester	Data Summary/Analysis:	100% Met target.
	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
e 2:	<b>Responsible Party:</b>	Ron Carlson (instructor)
Phas	Completion Date:	end of Fall 2019
	Resources Needed:	Dropout Detective
5	Direct Measure #2:	CSCI 230 Final Exam - Spring (was CSCI 140 - but was not offered)
Phase 1: Beginning c Semester	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCI majors enrolled in CSCI 140 Overview of Computer Science
Phaes 2: End of Semester	Data/Results:	4 out of 4
	Data Summary/Analysis:	100% Met target.

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
	Responsible Party:	Ron Carlson (instructor)
	Completion Date:	end of Spring 2020
	Resources Needed:	Dropout Detective
1: Ig of ter	Indirect Measure:	None (TBD)
nase innin mest	Target:	None
PI Beg Se	Sampling:	None
ter	Data/Results:	None
2: End of Semest	Data Summary/Analysis:	None
	Action Plan (if needed):	None
	Responsible Party:	None
ıase	Completion Date:	None
P	Resources Needed:	None
	Overall Assessment of PLO:	Met. (To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

Phase 1: Beginning of Semester	Program Learning Outcome:	An understanding of professional, ethical, legal, security and social issues and responsibilities
	Direct Measure #1:	CSCI 190 Spring - Written assignment on the role of the 17 National Intelligence Organizations in the United States.
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCI majors enrolled in CSCI 190 Computer Ethics
Phase 2: End of Semester	Data/Results:	course not offered - measure not applicable to other courses
	Data Summary/Analysis:	course not offered - measure not applicable to other courses
	Action Plan (if needed):	(Track absences and students that fall behind, contact them earlier in the semester and more frequently.)
	<b>Responsible Party:</b>	Ron Carlson (instructor)

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

55

	Completion Date:	end of Spring 2020
	Resources Needed:	Dropout Detective
<sup>b</sup> hase 1: ginning of emester	Direct Measure #2:	CSCI 262 Spring - Project Management
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
Be –	Sampling:	100% of CSCI majors enrolled in CSCI 262 Project Management
er	Data/Results:	3 out of 4
Semest	Data Summary/Analysis:	75% Met target.
End of S	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
es 2:	Responsible Party:	Ron Carlson (instructor)
Pha	Completion Date:	end of Spring 2020
	Resources Needed:	Dropout Detective
1: gof :er	Indirect Measure:	None
innin mest	Target:	None
PF Beg	Sampling:	None
ter	Data/Results:	None
ase 2: End of Semes	Data Summary/Analysis:	None
	Action Plan (if needed):	None
	Responsible Party:	None
	Completion Date:	None
F	Resources Needed:	None
	Overall Assessment of PLO:	Met (To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

# Annual Program Assessment

Program:	AS Cybersecurity (CSCY)
Program Mission Statement:	PROGRAM DESCRIPTION: The Associate in Science degree with an emphasis in Cybersecurity is a program that prepares students with a diverse set of skills that include the fundamentals of software development along with a special focus on computer security. The program prepares students to seek industry-based certifications such as CompTIA A+, Network+, Security+ and Project Management+. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree.
Year:	2019-2020
Instructors:	Ron Carlson, Hector Martinez

Phase 1: Beginning of Semester	Program Learning Outcome:	An ability to apply appropriate knowledge of computing and mathematics
	Direct Measure #1:	CSCI 130 Final Exam - Fall Semester
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCY majors enrolled in CSCI 130 Overview of Computer Science
L	Data/Results:	2 out of 2
emeste	Data Summary/Analysis:	100% Met target.
ind of Sc	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
e 2:	Responsible Party:	Ron Carlson (instructor)
Phas	Completion Date:	end of Fall 2019
	Resources Needed:	Dropout Detective
7	Direct Measure #2:	CSCI 230 Final Exam (as CSCI 130 was not offered in the Spring)
Phase 1: Beginning o Semester	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCY majors enrolled in CSCI 130 Overview of Computer Science
oha es 2:	Data/Results:	4 out of 4

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

JMM

	Data	
	Summary/Analysis:	100% Met target.
	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
	Responsible Party:	Ron Carlson (instructor)
	Completion Date:	end of Spring 2020
	Resources Needed:	Dropout Detective
1: Ig of ter	Indirect Measure:	None (TBD)
innin mest	Target:	None
PI Beg Se	Sampling:	None
ter	Data/Results:	None
emest	Data Summary/Analysis:	None
d of S	Action Plan (if needed):	None
ase 2: En	Responsible Party:	None
	Completion Date:	None
Ч	Resources Needed:	None
	Overall Assessment of PLO:	Met (To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

ing of	Program Learning Outcome:	An understanding of professional, ethical, legal, security and social issues and responsibilities
eginı ester	Direct Measure #1:	CSCI 140 Final Exam - Fall Semester
ase 1: Be Seme	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
Ph	Sampling:	100% of CSCI majors enrolled in CSCI 140 Overview of Computer Science
of	Data/Results:	4 out of 4
Phase 2: End Semester	Data Summary/Analysis: Action Plan (if needed):	100% Met target. (Track absences and students that fall behind, contact them earlier in the semester and more frequently.)
GCCC Academic Program Review Template JMN		

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

	Responsible Party:	Ron Carlson (instructor)
	Completion Date:	and of Foll 2010
	Resources Needed:	
	Direct Measure #2:	CSCI 220 Spring Socurity
hase 1: ;inning o :mester	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
S Be	Sampling:	100% of CSCI majors enrolled in CSCI 230 Security+
r	Data/Results:	4 out of 4
Semest	Data Summary/Analysis:	100% Met target.
End of	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
es 2:	<b>Responsible Party:</b>	Ron Carlson (instructor)
Phae	Completion Date:	end of Spring 2020
	Resources Needed:	Dropout Detective
1: gof ier	Indirect Measure:	None (TBD)
iase nnin mest	Target:	None
Ph Begi Sei	Sampling:	None
er	Data/Results:	None
lase 2: End of Semest	Data Summary/Analysis:	None
	Action Plan (if needed):	None
	Responsible Party:	None
	Completion Date:	None
Ā	Resources Needed:	None
	Overall Assessment of PLO:	Met (To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

# Annual Program

# Assessment

Program:	AS Computer Information Systems (CSCI)
Program Mission Statement:	The Associate in Science degree with an emphasis in Computer Information Systems is a program that prepares students with a diverse set of skills that include the fundamentals of software development and computer security. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree.
Year:	2020-2021
Instructors:	Ron Carlson, Lachele Greathouse

nning of Semester	Program Learning Outcome:	An ability to apply appropriate knowledge of computing and mathematics
	Direct Measure #1:	CSCI 140 Final Exam - Fall Semester
e 1: Begi	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
Phase	Sampling:	100% of CSCI majors enrolled in CSCI 140 Overview of Computer Science
	Data/Results:	10 out of 10
Phase 2: End of Semester	Data Summary/Analysis:	100% Met target.
	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
	Responsible Party:	Ron Carlson (instructor)
	Completion Date:	end of Fall 2020
	Resources Needed:	Dropout Detective
Phase 1: 3eginnin g of	Direct Measure #2:	CSCI 230 Final Exam - Spring (CSCI 140 is not offered in the Spring semester)

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

JMM

	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCI majors enrolled in CSCI 140 Overview of Computer Science
	Data/Results:	6 out of 6
ester	Data Summary/Analysis:	100% Met target.
l of Sem	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
es 2: End	Responsible Party:	Ron Carlson (instructor)
Pha	Completion Date:	end of Spring 2021
	Resources Needed:	Dropout Detective
l: g of er	Indirect Measure:	None (TBD)
ase nnin nest	Target:	None
Ph Begi Ser	Sampling:	None
er	Data/Results:	None
nest	Data	
f Sei	Summary/Analysis:	None
o pu	Action Plan (if needed):	None
2: E	Responsible Party:	None
hase	Completion Date:	None
Ā	Resources Needed:	None
	Overall Assessment of PLO:	Met. (To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.
f		
Phase 1: Beginning 6 Semester	Program Learning Outcome:	An understanding of professional, ethical, legal, security and social issues and responsibilities

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

	Direct Measure #1:	CSCI 140 Final Exam - Fall Semester (CSCI 190 was not offered)
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CSCI majors enrolled in CSCI 190 Computer Ethics
	Data/Results:	10 out of 10
ester	Data Summary/Analysis:	100% Met target.
of Sem	Action Plan (if needed):	(Track absences and students that fall behind, contact them earlier in the semester and more frequently.)
e 2: End	Responsible Party:	Ron Carlson (instructor)
Phase	Completion Date:	end of Fall 2020
	Resources Needed:	Dropout Detective
ning of :r	Direct Measure #2:	CSCI 262 Spring - Project Management
L: Begin emeste	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
Phase 1 Sé	Sampling:	100% of CSCI majors enrolled in CSCI 262 Project Management
	Data/Results:	6 out of 6
ester	Data Summary/Analysis:	100% Met target.
Phaes 2: End of Seme	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
	Responsible Party:	Ron Carlson (instructor)
	Completion Date:	end of Spring 2021
	Resources Needed:	Dropout Detective
ie 1: nnin of	Indirect Measure:	None
Phas Begi g (	Target:	None

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

62

	Sampling:	None
ase 2: End of Semester	Data/Results:	None
	Data Summary/Analysis:	None
	Action Plan (if needed):	None
	Responsible Party:	None
	Completion Date:	None
R	Resources Needed:	None
	Overall Assessment of PLO:	Met (To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

# Annual

# Program

# Assessment

Program:	AS Cybersecurity (CYSE)
Program Mission Statement:	PROGRAM DESCRIPTION: The Associate in Science degree with an emphasis in Cybersecurity is a program that prepares students with a diverse set of skills that include the fundamentals of software development along with a special focus on computer security. The program prepares students to seek industry-based certifications such as CompTIA A+, Network+, Security+ and Project Management+. Completion of the AS degree may help students obtain internships or entry-level jobs or transfer credits to a university to complete a Bachelor of Science degree.
Year:	2020-2021
Instructors:	Ron Carlson, Lachele Greathouse

Phase 1: Beginning of Semester	Program Learning Outcome:	An ability to apply appropriate knowledge of computing and mathematics
	Direct Measure #1:	CSCI 130 Final Exam - Fall Semester
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

	Sampling:	100% of CYSE majors enrolled in CSCI 130 Overview of Computer Science
ester	Data/Results:	5 out of 5
	Data Summary/Analysis:	100% Met target.
of Sem	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
ase 2: End	Responsible Party:	Ron Carlson (instructor)
Ph	Completion Date:	end of Fall 2020
	Resources Needed:	Dropout Detective
Phase 1: Beginning of Semester	Direct Measure #2:	CSCI 230 Final Exam (CSCI 130 is not offered in the Spring)
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
	Sampling:	100% of CYSE majors enrolled in CSCI 130 Overview of Computer Science
	Data/Results:	6 out of 6
ester	Data Summary/Analysis:	100% Met target.
Phaes 2: End of Seme	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
	Responsible Party:	Ron Carlson (instructor)
	Completion Date:	end of Spring 2021
	Resources Needed:	Dropout Detective
Pha se 1:	Indirect Measure:	None (TBD)

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

JMM

	Target:	None
	Sampling:	None
ter	Data/Results:	None
les	Data	
ase 2: End of Sem	Summary/Analysis:	None
	Action Plan (if needed):	None
	Responsible Party:	None
	Completion Date:	None
훕	Resources Needed:	None
	Overall Assessment of PLO:	Met (To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

ining of Semester	Program Learning Outcome:	An understanding of professional, ethical, legal, security and social issues and responsibilities
	Direct Measure #1:	CSCI 140 Final Exam - Fall Semester
e 1: Begi	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
Phase	Sampling:	100% of CYSE majors enrolled in CSCI 140 Overview of Computer Science
Phase 2: End of Semester	Data/Results:	10 out of 10
	Data Summary/Analysis:	100% Met target.
	Action Plan (if needed):	(Track absences and students that fall behind, contact them earlier in the semester and more frequently.)
	Responsible Party:	Ron Carlson (instructor)
	Completion Date:	end of Fall 2020
	Resources Needed:	Dropout Detective

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability

65

1: Beginning of Semester	Direct Measure #2:	CSCI 230 Spring - Security+
	Target:	80% of program majors will earn 70% or higher on the comprehensive Final Exam
Phase	Sampling:	100% of CSCI majors enrolled in CSCI 230 Security+
	Data/Results:	6 out of 6
ester	Data Summary/Analysis:	100% Met target.
l of Seme	Action Plan (if needed):	(Track absences and for students that fall behind, contact them earlier in the semester and more frequently.)
es 2: End	Responsible Party:	Ron Carlson (instructor)
Рһае	Completion Date:	end of Spring 2021
	Resources Needed:	Dropout Detective
1: gof ter	Indirect Measure:	None (TBD)
iase innin mest	Target:	None
PF Begi Sei	Sampling:	None
ter	Data/Results:	None
Semes	Data Summary/Analysis:	None
d of	Action Plan (if needed):	None
lase 2: En	Responsible Party:	None
	Completion Date:	None
4	Resources Needed:	None
	Overall Assessment of PLO:	Met (To be marked as Met or Not Met.) These two courses focus on this PLO. The attendees are typically majors or non-majors very interested in the content.

### **Template Appendix D**

Strategic Plan and Status Reports Since Last Review

Attach the program's Strategic Plan and Status Reports for the last 5 years or since the last program review.

Though there is no recent program review to reference, an example of annual Strategic Goals and planning is included below.

2016-17 Departme nt Goals	Planned activity/strat egies	Responsi ble individua l or group	Collaborat ive partners (individual s or groups) internal or external	Propos ed start date	Propos ed end date	Progress indicator(s) and timeframe for measurem ent	Resource requireme nts (in- kind & direct)	Contribut ion to GCCC essential skills (if applicabl e)	HLC Criter ia that goal aligns to
Outreach to Prospective Students and Service to the Public	Cybersecurity Summer Camp for area High School Students	Ron Carlson	GCCC and the Mary Jo Williams Charitable Trust	Dec 2016	June 2017	Grant approved. Prepare promotional matterial, mailings, and media info.	-GCCC for classrooms and support for admin and media. -Mary Jo Williams Charitable Trust grant.		

### 2016-2017 GCCC Strategic Goals

GCCC Academic Program Review Template Office of Institutional Effectiveness & Accountability