

Computer Technologies Department

Program Review Executive Summary 2019

Mission Statement

Our mission is student success and the Computer Technologies Department is committed to addressing the disparate and constantly changing needs of students throughout rural Nevada who are preparing for technology driven careers by improving our methods, techniques, and content for delivering high quality educational experiences.

Department Goals

Goals of Computer Technologies Department include:

- A) to prepare and deliver all our degree programs via distance education technologies;
- B) to evaluate and implement appropriate new technologies for delivering high quality hands-on educational experiences to all of our students; and
- C) to help our students maintain currency in constantly changing technology fields.

Department Objectives

Objectives to help CT achieve these goals include:

- A) In order to evaluate and implement appropriate new technologies for delivering high quality hands-on educational experiences to our remote students we are:
 - a. continually watching for and reporting to each other new developments in distance education that may apply to our teaching environment.
- B) Since technology fields are among the most rapidly changing fields, we have an obligation to help our students maintain as well as advance their level of expertise within the disciplines we cover. To achieve this goal we are;
 - a. as faculty, continually reviewing, learning, and utilizing new techniques in our individual areas of expertise; and
 - b. as new technologies become accepted practice, developing new classes or re-developing older classes to meet the new industry standards.

Department Profile

Currently, the CT Department has four faculty positions. Three faculty members have a master's degree, and one faculty member will complete her master's program in fall of 2019. The department part-time faculty have a wide-range of degrees and years of experience. Of the five + CT part-time instructors, at least one has earned a master's degree, and the others have either their bachelor's degree or associate's degree.

The CT Department also includes a staff support person that is shared with the Business Department. The person in this position is qualified in all areas of office administration and has years of work experience.

GBC FACULTY			
Faculty	Education	Emphasis	Years of Service
Bret Murphy	BT , Northern Montana College MEd , UNR	Dean of Business and Technology	34
Laura Pike	BS , South Dakota School of Mines and Technology MSCS , GA Tech(in progress, 2019)	MS Windows Server 2012 R2, A+ Hardware, Network+, Linux Computer Programming, Database	8
Byron Calkins	BS, MA , New Mexico State University	Geographic Information System (GIS)	4
Kathy Schwandt	BA, MA , University of Nevada, Reno	Graphic Communications Office Software Information Systems BAS in Graphic Communications	23
Madison Arbillaga	BA , Great Basin College, Elko MS , American College of Education	Information systems Office Administration Professional Medical Coding and Billing Office Software Employment Skills Preparation	1
Joseph Cheung	BVE, MA , California State University, Sacramento	Cisco Networking Academy	1
Part Time Faculty Patricia Phillips Michelle Gavorsky Lisa Brown Dominique Boudinot Brady Johnson	AAS – MA BA MA AGS BAS BAS	Various Keyboarding MS Office MS Office Graphics Communications Graphics Communications	

Students Served

The needs of students served by the CT Department are constantly changing. In the past, the majority of our students were interested only in job skills; now the shift is toward more degree-bound students. The number of distance education students is still increasing, to the point that we now offer all our programs via distance education.

The demand for skilled workers in technology is constantly changing and the CT Department has attempted to keep abreast of these demands and has had to change with the times. In the last 5 years we have seen a increase in demand for computer science therefore we have adjusted our resources accordingly. We try, if not to anticipate these changes, to at least respond to them as fast as possible to ensure that our students have an opportunity to learn the skills needed in the work place at the time they graduate.

Since the last program review, the CT Department has suspended the Geographic Information Systems AAS emphasis and the Medical Transcriptionist Certificate degree, and reestablished the Web Specialist AAS emphasis renaming it to Web Development. Our other emphases are Graphic Communications, Computer Programming (renamed from Information Specialist), Network Specialist and Office Technology. These programs continue to change to ensure their relevance in the workplace.

Distance Education and Branch Campuses

Branch centers offer computer classes that are coordinated with the department. Syllabi are made available to all part-time instructors to ensure the same course outcomes in all sections of a class. The CT faculty delivers computer classes to students within our service area and beyond as needed, via distance education technologies.

While a few computer classes have been offered through IAV within the past 5 years, all of our classes are now online through WebCampus utilizing Canvas as the LMS, and remote access virtual computer labs to allow students, who do not have the expensive systems and software required, to take even our most advanced computer classes.

Twenty-five years ago, CT began the first online classes for GBC (then NNCC) and one of the first in the state. Since that initial class in Lotus 1-2-3, CT's online delivery has grown to include all of the classes offered by the department. The department continues to coordinates with the other centers and has set up a long range schedule to avoid conflicts with live delivery classes.

When evaluating student enrollment and comparing this number to the number of students who receive degrees, the department found that many students declare a degree to take advantage of financial aid opportunities offered only to degree seeking students even though they have no intention of completing a degree.

Resources

Within the High Tech Center on the Elko campus, the CT Department currently has one dedicated instructional computer lab complete with 25 computers, a smart board, and printers. There are two instructional computer

labs at the Pahrump campus and one lab each in Battle Mountain, Ely, and Winnemucca, as well as open labs for student use on the Elko and Pahrump campuses. Open lab hours are maintained at all of the outlying centers. The open lab on the Elko campus has 72 stations and is a shared facility with the Elko High School.

Along with the instructional computer labs available on the Elko campus and four other GBC sites, the CT Department continues to utilize a remote access lab consisting of 32 Dell blade servers and a Dell NAS storage array. This lab supports our students throughout our service area with access to MS server software. Along with this lab, the CT Department has implemented two additional remote access labs, a Citrix virtual lab to support the graphic communications and land surveying students throughout our service area with access to Adobe, Esri, and CAD software, and a Cisco NETLAB+ virtual lab to support GBC's Cisco Network Academy.

The specialty software required to support the three remote lab environments utilize special academic pricing from companies such as Microsoft, Citrix, VMware, NDG, and others. The cost of the annual license fees for these programs is covered entirely by lab fees.

Significant Department Changes

In 2017, Great Basin College partnered with Barrick to become a Cisco Networking Academy. With their financial help a certified Cisco instructor was hired, and the software and hardware necessary to implement a Cisco remote lab, NETLAB+ VE, was acquired. This three year partnership will come up for renewal in 2020, and the CT Department is hopeful that Barrick will continue to support the Technology Skills Learning Partnership.

Courses in the CT Department are continuously updated to reflect changes in technology and as industry requires. With an increased need for computer science skills, the Computer Programming emphasis was developed, providing skills in computational thinking, computer languages, databases, and project management. Our Advisory Board requested these skills.

To service the Graphic Communications emphasis of the AAS degree, a Certificate of Achievement was developed. In addition, an Associate of Arts (AS) in Graphic Communications degree was formed. With this degree students will be prepared for work such as assistant or a graphic or a web designer.

The department has experienced a shift in the type of student we are educating. Although many of our students come straight from high school and attend GBC as full-time students, we have seen an increase in students returning to be retrained. With the addition of the Cisco Networking Academy, we have seen an increase of non-traditional students, specifically Barrick employees, taking courses to further their knowledge in computer technology and networking.

Over the last several decades the CT Department has helped students earn associate degrees in computer technology. We have been hearing from many of our graduates, as well as current students, who would like to advance their careers and now need a baccalaureate degree. In response, we created a BAS emphasis in Graphic Communications, and continue to update the Digital Information Technology. Successful students with these degrees are prepared for supervisory and management jobs requiring a significant background in computer technologies including multimedia, networking, database management, graphic communications, office technology and more.

The department participated in the revamping of the College's general education requirements by adding four computer courses that address technology: IS 101 Introduction to Information Systems, CS 135 Computer Science I, GIS 109 Fundamentals of Geographic Information Systems, GRC 119 Computer Graphics/Digital Media, and more recently (fall 2017) CIT 129 Introduction to Programming.

Working with other departments, the CT Department has articulation agreements with the local high schools to increase the number of local students attending GBC who can, upon high school graduation, enroll in more advanced COT, CS, GRC and CIT classes if desired. The local school district also wanted to identify additional CTE pathways for qualified high school seniors wanting to take dual credit courses.

Analysis

The departmental changes cited above illustrate the major ways that the department has kept pace with changing times. Through workshops, conferences and self-study, the CT faculty continues to stay current with new technologies used by industry.

Data for Change

Using data from the U.S. Bureau of Labor Statistics, program models from sister institutions, an advisory board, and student surveys; the CT Department continually monitors the needs of the students and adjusts programs to prepare students to excel in the workforce. The U.S. Bureau of Labor Statistics covering the present decade indicates a growing need for a well-trained and educated work force. The following information was collected from their web site. This information is widely used in career guidance and projecting long-range employment trends.

Employment

Occupations and industries related to healthcare are projected to add the most new jobs between 2016 and 2026, the U.S. Bureau of Labor Statistics (BLS) reported today. Total employment is projected to increase by 11.5 million during the decade. This growth--0.7 percent annually--is faster than the 0.5 percent rate of growth during the 2006–16 decade, a period heavily affected by the 2007–09 recession.

In addition to projecting employment for each detailed occupation, BLS depicts the education, related work experience, and on-the-job training typically needed for occupations. Occupations that typically require postsecondary education for entry are expected, on average, to grow faster than occupations that require a high school diploma or less.

The labor force will continue to grow slowly and to become older and more diverse. The aging population is projected to result in a decline in the overall labor force participation rate over the 2016 to 2026 decade.

- The civilian labor force is projected to reach 169.7 million in 2026, growing at an annual rate of 0.6 percent. This growth is slightly faster than the annual rate of growth (0.5 percent) witnessed during the 2006–16 decade, but slower than the annual growth experienced during several decades prior.
- Slow labor force growth is a result, in part, of decelerating growth of the civilian noninstitutional population, which is projected to grow at an annual rate of 0.9 percent from 2016 to 2026. This growth is slower than the rates witnessed during previous decades, 1.0 percent from 2006 to 2016, and 1.3 percent from 1996 to 2006.
- As the labor force continues to get older, the overall labor force participation rate is projected to decrease to 61.0 percent in 2026. This rate is down from 62.8 percent in 2016 and from the peak of 67.1 percent in 2000, prior to the 2007–09 recession.
- As the baby-boom generation ages, the share of workers age 55 and older--a cohort with a low labor force participation rate--is projected to grow to 24.8 percent in 2026. This share is up from 22.4 percent in 2016 and 16.8 percent in 2006.
- Real Gross Domestic Product (GDP) (2009 chained dollars) is projected to grow at an annual rate of 2.0 percent from 2016 to 2026. Projected GDP growth is faster than the annual rate of 1.4 percent from 2006 to 2016, but slower than the 3.3 percent annual growth achieved from 1996 to 2006.
- Increased labor productivity will contribute to faster GDP growth. Labor productivity is projected to grow 1.6 percent annually from 2016 to 2026: faster than the 1.2 percent annual growth from 2006 to 2016, but slower than the 2.8 percent annual increase from 1996 to 2006.

Industry employment

BLS analyzes future demand for different types of goods and services, and then projects the employment necessary to produce them. Most of the 10.8 percent employment growth is projected to be in service-providing industries.

- Total employment is projected to grow by 11.5 million jobs over the 2016–26 decade, reaching 167.6 million jobs in 2026. See www.bls.gov/emp/ep_table_201.htm.
- Industry employment is projected to grow at a rate of 0.7 percent per year from 2016 to 2026, faster than the 0.5 percent annual rate from 2006 to 2016 but much slower than rates seen during the decades leading up to the 2007–09 recession.
- About 9 out of 10 new jobs are projected to be added in the service-providing sector from 2016 to 2026, resulting in more than 10.5 million new jobs, or 0.8 percent annual growth. The goods-producing sector is expected to increase by 219,000 jobs, growing at a rate of 0.1 percent per year over the projections decade.
- Employment in the health care and social assistance sector is projected to add nearly 4.0 million jobs by 2026, about one-third of all new jobs. The share of health care and social assistance employment is projected to increase from 12.2 percent in 2016 to 13.8 percent in 2026, becoming the largest major sector in 2026.

Table 2.1 Employment by major industry sector, 2006, 2016, and projected 2026

Industry Sector	Thousands of Jobs			Change		Percent Distribution			Compound Annual Rate of Change	
	2006	2016	2026	2006–16	2016–26	2006	2016	2026	2006–16	2016–26
Total⁽¹⁾	148,988.2	156,063.8	167,582.3	7,075.7	11,518.5	100.0	100.0	100.0	0.5	0.7
Nonagriculture wage and salary⁽²⁾	137,190.9	144,979.3	155,724.8	7,788.4	10,745.5	92.1	92.9	92.9	0.6	0.7
Goods-producing, excluding agriculture	22,466.7	19,685.2	19,904.2	-2,781.5	219.0	15.1	12.6	11.9	-1.3	0.1
Mining	619.7	626.1	716.9	6.4	90.8	0.4	0.4	0.4	0.1	1.4
Construction	7,691.2	6,711.0	7,575.7	-980.2	864.7	5.2	4.3	4.5	-1.4	1.2
Manufacturing	14,155.8	12,348.1	11,611.7	-1,807.7	-736.4	9.5	7.9	6.9	-1.4	-0.6
Services-providing excluding special industries	114,724.2	125,294.1	135,820.6	10,569.9	10,526.5	77.0	80.3	81.0	0.9	0.8
Utilities	548.5	556.2	559.6	7.7	3.4	0.4	0.4	0.3	0.1	0.1
Wholesale trade	5,904.6	5,867.0	6,012.8	-37.6	145.8	4.0	3.8	3.6	-0.1	0.2
Retail trade	15,353.2	15,820.4	16,232.7	467.2	412.3	10.3	10.1	9.7	0.3	0.3
Transportation and warehousing	4,469.6	4,989.1	5,353.4	519.5	364.3	3.0	3.2	3.2	1.1	0.7
Information	3,037.9	2,772.3	2,824.8	-265.6	52.5	2.0	1.8	1.7	-0.9	0.2
Financial activities	8,366.6	8,284.8	8,764.6	-81.8	479.8	5.6	5.3	5.2	-0.1	0.6
Professional and business services	17,566.2	20,135.6	22,295.3	2,569.4	2,159.7	11.8	12.9	13.3	1.4	1.0
Educational services	2,900.9	3,559.7	4,066.2	658.8	506.5	1.9	2.3	2.4	2.1	1.3
Health care and social assistance	15,253.3	19,056.3	23,054.6	3,803.0	3,998.3	10.2	12.2	13.8	2.3	1.9
Leisure and hospitality	13,109.7	15,620.4	16,939.4	2,510.7	1,319.0	8.8	10.0	10.1	1.8	0.8
Other services	6,240.5	6,409.4	6,761.4	168.9	352.0	4.2	4.1	4.0	0.3	0.5
Federal government	2,732.0	2,795.0	2,739.2	63.0	-55.8	1.8	1.8	1.6	0.2	-0.2
State and local government	19,241.2	19,427.9	20,216.6	186.7	788.7	12.9	12.4	12.1	0.1	0.4
Agriculture, forestry, fishing, and hunting⁽³⁾	2,111.2	2,351.5	2,345.4	240.3	-6.1	1.4	1.5	1.4	1.1	0.0
Agriculture wage and salary	1,218.6	1,501.0	1,518.0	282.4	17.0	0.8	1.0	0.9	2.1	0.1
Agriculture self-employed	892.6	850.5	827.5	-42.1	-23.0	0.6	0.5	0.5	-0.5	-0.3
Nonagriculture self-employed	9,686.0	8,733.0	9,512.1	-953.0	779.1	6.5	5.6	5.7	-1.0	0.9

Footnotes:

¹ Employment data for wage and salary workers are from the BLS Current Employment Statistics survey, which counts jobs, whereas self-employed, unpaid family workers, and agriculture, forestry, fishing, and hunting are from the Current Population Survey (household survey), which counts workers.

² Includes wage and salary data from the Current Employment Statistics survey, except private households, which is from the Current Populations Survey. Logging workers are excluded.

³ Includes agriculture, forestry, fishing, and hunting data from the Current Population Survey, except logging, which is from Current Employment Statistics survey. Government wage and salary workers are excluded.

Source: Employment Projections program, U.S. Bureau of Labor Statistics

Occupational Employment

Projected industry employment is distributed among occupations based on how industries are expected to use those occupations.

- Occupational employment is expected to increase by 7.4 percent between 2016 and 2026. All occupational groups are expected to add jobs over the projections decade except for the production occupations group (-4.3 percent), and the farming, fishing and forestry occupations group (-0.3 percent).
- Healthcare support occupations (23.6 percent) and healthcare practitioners and technical occupations (15.3 percent) are projected to be among the fastest growing occupational groups during the 2016–26 projections decade. These two occupational groups--which account for 13 of the 30 fastest growing occupations from 2016 to 2026--are projected to contribute about one-fifth of all new jobs by 2026. Factors such as the aging baby-boom population, longer life expectancies, and growing rates of chronic conditions will drive continued demand for healthcare services.
- Several other occupational groups are projected to experience faster than average employment growth, including personal care and service occupations (19.1 percent), community and social service occupations (14.5 percent), and computer and mathematical occupations (13.7 percent).

Table 1.1 Employment by major occupational group, 2016 and projected 2026
(Numbers in thousands)

2016 National Employment Matrix title and code		Employment		Change, 2016–26		Median annual wage, 2017 ⁽¹⁾
		2016	2026	Number	Percent	
Total, all occupations	00-0000	156,063.8	167,582.3	11,518.6	7.4	\$37,690
Management occupations	11-0000	9,533.1	10,340.4	807.3	8.5	\$102,590
Business and financial operations occupations	13-0000	8,066.8	8,840.7	773.8	9.6	\$67,710
Computer and mathematical occupations	15-0000	4,419.0	5,026.5	607.5	13.7	\$84,560
Architecture and engineering occupations	17-0000	2,601.0	2,795.4	194.3	7.5	\$79,180
Life, physical, and social science occupations	19-0000	1,299.5	1,424.3	124.8	9.6	\$64,510
Community and social service occupations	21-0000	2,570.7	2,942.6	371.9	14.5	\$43,840
Legal occupations	23-0000	1,283.3	1,399.5	116.2	9.1	\$80,080
Education, training, and library occupations	25-0000	9,426.5	10,315.4	888.9	9.4	\$48,740
Arts, design, entertainment, sports, and media occupations	27-0000	2,772.9	2,941.0	168.1	6.1	\$48,230
Healthcare practitioners and technical occupations	29-0000	8,751.5	10,088.1	1,336.6	15.3	\$64,770
Healthcare support occupations	31-0000	4,315.6	5,335.2	1,019.6	23.6	\$28,710
Protective service occupations	33-0000	3,505.6	3,663.8	158.2	4.5	\$39,550
Food preparation and serving related occupations	35-0000	13,206.1	14,438.1	1,232.0	9.3	\$21,910
Building and grounds cleaning and maintenance occupations	37-0000	5,654.1	6,177.9	523.8	9.3	\$25,620
Personal care and service occupations	39-0000	6,419.7	7,647.4	1,227.6	19.1	\$23,610
Sales and related occupations	41-0000	15,747.8	16,206.5	458.7	2.9	\$27,020
Office and administrative support occupations	43-0000	23,081.2	23,230.8	149.6	0.6	\$34,740
Farming, fishing, and forestry occupations	45-0000	1,060.1	1,056.7	-3.5	-0.3	\$24,390
Construction and extraction occupations	47-0000	6,812.5	7,560.0	747.6	11.0	\$44,730
Installation, maintenance, and repair occupations	49-0000	5,905.4	6,293.6	388.2	6.6	\$44,520
Production occupations	51-0000	9,356.9	8,950.0	-406.9	-4.3	\$33,990
Transportation and material moving occupations	53-0000	10,274.2	10,908.4	634.3	6.2	\$31,600

Footnotes:

⁽¹⁾ Data are from the Occupational Employment Statistics program, U.S. Bureau of Labor Statistics. Wage data cover non-farm wage and salary workers and do not cover the self-employed, owners and partners in unincorporated firms, or household workers.

Source: Employment Projections program, U.S. Bureau of Labor Statistics

Growing Occupations in Computer Technology areas for 2016-2026

Growing Occupations in Computer technology Areas for 2016-2026 Regions: Nevada and U.S.							
Area Name	Nevada						
Occupation	Base Year	Projected Year	Base	Projection	Change	Percent Change	Average Annual Openings
Art Directors	2016	2026	400	450	50	12.5	40
Computer and Information Research Scientists	2016	2026	30	40	10	33.3	0
Computer and Information Systems Managers	2016	2026	1360	1790	430	31.6	160
Computer Hardware Engineers	2016	2026	190	240	50	26.3	20
Computer Network Architects	2016	2026	530	620	90	17	50
Computer Network Support Specialists	2016	2026	940	1220	280	29.8	110
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	2016	2026	240	340	100	41.7	40
Computer Occupations, All Other	2016	2026	2470	3090	620	25.1	250
Computer Operators	2016	2026	310	260	-50	-16.1	20
Computer Programmers	2016	2026	1900	1930	30	1.6	120
Computer Science Teachers, Postsecondary	2016	2026	140	170	30	21.4	20
Computer Systems Analysts	2016	2026	1810	2180	370	20.4	160
Computer User Support Specialists	2016	2026	3530	4430	900	25.5	380
Computer, Automated Teller, and Office Machine Repairers	2016	2026	1160	1260	100	8.6	130
Computer-Controlled Machine Tool Operators, Metal and Plastic	2016	2026	850	1020	170	20	110
Database Administrators	2016	2026	720	900	180	25	70
First-Line Supervisors of Office and Administrative Support Workers	2016	2026	11610	13400	1790	15.4	1390
Graphic Designers	2016	2026	2110	2550	440	20.9	260
Medical Records and Health Information Technicians	2016	2026	1750	2170	420	24	160
Medical Secretaries	2016	2026	2830	3520	690	24.4	410
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2016	2026	100	120	20	20	10
Network and Computer Systems Administrators	2016	2026	1340	1620	280	20.9	120
Office and Administrative Support Workers, All Other	2016	2026	7660	9200	1540	20.1	1060
Office Clerks, General	2016	2026	27580	30910	3330	12.1	3720

Growing Occupations in Computer technology Areas for 2016-2026							
Regions: Nevada and U.S.							
Office Machine Operators, Except Computer	2016	2026	410	450	40	9.8	50
Receptionists and Information Clerks	2016	2026	10490	12040	1550	14.8	1600
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	2016	2026	15050	15620	570	3.8	1690
Web Developers	2016	2026	880	1110	230	26.1	90
Area Name	US						
Occupation	Base Year	Projected Year	Base	Projection	Change	% Change	Average Annual Openings
Art Directors	2016	2026	170390	103326	11610	6.8%	14890
Computer and Information Research Scientists	2016	2026	55000	79014	10920	19.9%	5030
Computer and Information Systems Managers	2016	2026	729880	111430	101380	13.9%	66450
Computer Hardware Engineers	2016	2026	143100	89144	11610	8.1%	10420
Computer Network Architects	2016	2026	324040	105352	27040	8.3%	24070
Computer Network Support Specialists	2016	2026	394390	109404	38650	9.8%	33560
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	2016	2026	49880	87118	9470	19.0%	6320
Computer Occupations, All Other	2016	2026	578740	111430	67340	11.6%	46920
Computer Operators	2016	2026	101550	103326	-21130	-20.8%	7050
Computer Programmers	2016	2026	588230	107378	-31430	-5.3%	32400
Computer Science Teachers, Postsecondary	2016	2026	75320	107378	7050	9.4%	6630
Computer Systems Analysts	2016	2026	1183040	109404	125720	10.6%	90880
Computer User Support Specialists	2016	2026	1265900	111430	168590	13.3%	113760
Computer, Automated Teller, and Office Machine Repairers	2016	2026	242230	107378	3130	1.3%	23690
Computer-Controlled Machine Tool Operators, Metal and Plastic	2016	2026	291280	99274	11040	3.8%	30170
Database Administrators	2016	2026	236770	105352	30660	12.9%	18840
Desktop Publishers	2016	2026	27560	76988	-3500	-12.7%	2370
First-Line Supervisors of Office and Administrative Support Workers	2016	2026	3008550	111430	147390	4.9%	312210
Graphic Designers	2016	2026	530260	109404	32320	6.1%	53250
Medical Records and Health Information Technicians	2016	2026	413100	111430	59460	14.4%	32130
Medical Secretaries	2016	2026	1146930	107378	253360	22.1%	160750
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	2016	2026	231040	91170	730	0.3%	24590

Growing Occupations in Computer technology Areas for 2016-2026							
Regions: Nevada and U.S.							
Network and Computer Systems Administrators	2016	2026	775900	111430	60240	7.8%	55220
Office and Administrative Support Workers, All Other	2016	2026	486490	107378	49260	10.1%	59600
Office Clerks, General	2016	2026	6199900	111430	27310	0.4%	722530
Office Machine Operators, Except Computer	2016	2026	117820	105352	-16190	-13.7%	10490
Receptionists and Information Clerks	2016	2026	2103920	111430	207540	9.9%	304480
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	2016	2026	5022310	111430	-244040	-4.9%	496080
Web Developers	2016	2026	323530	103326	55250	844.8	29840

Source: BLS Projections Central - State Occupational Projections

Adequacy of Evaluation Policy and Practices

Department faculty use course evaluations done each semester to enhance their classes and approaches to subjects. The faculty feels that the formal source of regular student evaluations along with comments and suggestions made during advisory board meetings and department meetings adequately serve our evaluation needs.

Response to an Agency

In answer to the Department of Employment's request, GBC's Continuing Education Department, in collaboration with the CT department's instructors and others, designed the Office Technology Skills and Ethics programs. The intent was to provide quick job skills to enable people to return to the job force as soon as possible.

The Office Technology – Skills and Ethics program is an intensive, 16-week program designed with input from local employers to enable students to become employable in a short period of time. This program is open to all interested students through Job Opportunities in Nevada (JOIN). The series is sequenced and has no prerequisites. Students take basic courses in computer skills, word-processing, spreadsheets, office procedures, keyboarding, bookkeeping and human relations.

Fees and Tuition

Each of our associate degrees has 60.5 credits. With the tuition, lab fees and technology fees, it runs approximately \$100 per credit. Students pay approximately \$1500 a semester in tuition. National average per semester for book is around \$500. We encourage students to use eBooks if possible.

Notwithstanding currently posted tuition and fees, all fees, tuition or other charges which students are required to pay each semester are subject to increase by action of the Board of Regents at any time before the commencement of classes (primarily due to budgetary shortfalls). The amount you are charged at the time of registration is not a final bill and may be increased. You will receive a supplemental invoice for any additional amounts which the Board of Regents may impose.

The fees listed in the Schedule for each class assume Nevada Residency. They are calculated as follows:

FEES FOR NEVADA RESIDENTS		
Semester	Per Lower-Division Credit	Per Upper-Division Credit
Spring, 2018	\$98.75	\$161.75
Summer, 2018	\$98.75	\$171.25
Fall, 2018	\$98.75	\$161.75
Spring, 2019	\$98.75	\$161.75

Additional fees: \$5.50 per credit technology fee, plus any applicable lab fees

Strengths

The members of the Computer Technologies (CT) Department have always been open to change, upgrading our skills, and modifying our classes to meet the fluid demands of the computer field. We are now current with Windows 10, MS Server 2016, MS Word 2016, Excel 2016, Access 2016, SQL, ArcGIS, Photoshop, Dreamweaver, and many other software packages some of which did not exist just a few years ago. Various offerings at the lower division are being regularly reviewed and modified as needed to meet industry and student demand. We are cooperating with the BAS program, into which many of our students have gone, to provide relevant technological background at the upper division level.

The CT faculty has made a commitment to going beyond the normal academic degrees. We continue to increase our knowledge and skills by attending seminars, conferences, and continuing education classes on new developments in the field, and by review of relevant literature and new software.

Faculty in the CT department spends many hours in our offices specifically working with our students outside of regular class times. We have a strong commitment to helping students succeed in their goals and are available to them from the beginning of their education through advising and counseling, through consultations on assignments and projects, to graduation.

Each of us in the CT Department also use our skills and knowledge to help our community to be a better place to live and work. The faculty actively works with several area non-profits to help them with their computer technology requirements and serves on boards, others worked with local organization in various activities. We take to heart that the GBC community consists of six very large counties and actively work to provide educational opportunities throughout our service area whether that means traveling to provide hands on experiences or offering courses on-line or via interactive video.

Another strength that the CT Department has is the ability to provide all our degrees and programs via online, including the general education courses. Not all GBC departments have overcome the obstacles of providing a high quality educational experience via distance education in their disciplines, for example, providing high quality, hands on science labs.

Challenges

Although we have excellent facilities both at the main campus and in the outlying areas, our single biggest challenge is keeping these facilities current. Both computer hardware and software are constantly changing. The computer technology needs of the various industries in our service area are continually evolving. Therefore, we are faced with constant change on a limited budget and this is only more difficult with the current budget crisis.

The CT department faculty continues to keep current in new technologies in their chosen fields. However, trying to maintain the CT programs for our student to graduate on schedule with a small faculty made smaller by retirement of a full time professor is not easy. We recognize that doing a few programs well is better for our students then trying to spread our resources too thin.

Recommendations/Action Items

- Continue to update classes, degrees, and materials to keep current with industry standards.
- Replace faculty in the department as retirements occur.
- Continue to grow our list of part time staff with skilled and knowledgeable people.

Analysis of Statistical Data

As can be seen in the following pages there has been substantial changes in the enrollment and graduation numbers for the Computer Technologies Department in the last several years. This statistical data must be interpreted in light of two overriding factors.

First, Great Basin College's CT Department would be, at all larger institutions, three or more departments with several faculty members in each specialization. This is important because each of our CT Department members is a specialist in his/her own area of computing whether it is networking, programming, graphic design, office technology or GIS and none of us is fully qualified to fill in for any of the others when one of us cannot cover our full set of classes.

This leads to the second factor; this department has been two faculty positions down throughout most of the time frame covered in these charts. One faculty member retired in spring 2015: he was in charge of the GIS emphasis and BAS DIT degrees, and was replaced with another faculty who then left in spring 2017. Since then we have pursued a new hire, but have had two failed searches. Another faculty member retired in spring 2017; she was in charge of the Office Technology emphasis and Medical Coding and Billing certificate. After one failed hire search, we finally replaced this position in fall 2018.

Another important factor is the employment increase for network specialist, computer programmers and computer science in general. This alone with the partnership with Barrick Mining and Cisco to bring a Cisco Networking Academy to GBC has spurred an increase in enrollment in these areas

The following charts show data for all the CT Department programs.

Enrollment

Program Name	Degree	2017-18		2016-17		2015-16		2014-15		Total Compl	Total Enrl
		Enrl	Compl	Enrl	Compl	Enrl	Compl	Enrl	Compl		
AAS Computer Programming	AAS	34		25	2	17				2	76
AAS Information Specialist	AAS	2		1		5	1	21	6	6	29
AAS Graphic Communications	AAS	12	2	14		14	3	15	2	7	55
AAS Network Specialist	AAS	37		21		14		16	2	2	88
AAS Web Development	AAS	1				2		2	1	1	5
AAS Office Technology	AAS	21		22	3	21	5	33	6	14	97
AAS Geographic Info System	AAS					1	1	7		1	8
CT Graphics Communications	CT			1							1
CT Medical Coding and Billing	CT	28	12	34	15	23	12	24	7	46	109
CT Medical Transcription	CT					1		2			3
CT Office Technology	CT	10		8	5	10	4	9	9	18	37
TOTAL		145	14	126	25	108	26	129	33	97	508

FTE by Department/Subject

Department/Subject	2015-16	2016-17	2017-18
Computer Office Tech	130.57	139.23	144.70
CIT	14.30	17.90	19.83
COT	13.70	10.80	11.60
CS	4.60	1.30	2.10
CSCO	0.00	0.00	10.27
GIS	8.90	9.70	7.50
GRC	21.80	18.70	16.80
IS	37.50	34.90	29.90
MCOD	15.87	25.20	20.53
MTRN	0.00	0.00	0.00

Declared Majors

ACADEMIC PLAN	TERM CODE		
	Fall 2016	Fall 2017	Fall 2018
Associate of Applied Science - Computer Programming	75	64	56
Associate of Applied Science - Computer Technologies - Graphic Communications Emphasis	58	31	22
Associate of Applied Science - Computer Technologies - Information Specialist Emphasis	10	15	
Associate of Applied Science - Computer Technologies - Network Specialist Emphasis	67	109	94
Associate of Applied Science - Computer Technologies - Office Technology Emphasis	101	55	45
Associate of Applied Science - Computer Technologies - Web Development Emphasis			10
Certificate of Achievement - Computer Technologies - Office Technology Emphasis	15	4	19
Certificate of Achievement - Graphic Communications	2		1
Certificate of Achievement - Medical Coding and Billing	105	73	53

Race

ACADEMIC PLAN	TERM CODE / Ethnicity						
	Fall 2018						
	ZORMR	AIANK	ASIAN	BLACK	HISPA	UNKNW	WHITE
Associate of Applied Science - Computer Programming				3	7	10	36
Associate of Applied Science - Computer Technologies - Graphic Communications Emphasis	1				10		11
Associate of Applied Science - Computer Technologies - Network Specialist Emphasis				1	15	13	65
Associate of Applied Science - Computer Technologies - Office Technology Emphasis		4			16		25
Associate of Applied Science - Computer Technologies - Web Development Emphasis							10
Certificate of Achievement - Computer Technologies - Office Technology Emphasis				3	4	2	10
Certificate of Achievement - Graphic Communications	1						
Certificate of Achievement - Medical Coding and Billing			8	1	6		38

ACADEMIC PLAN	TERM CODE / Ethnicity						
	Fall 2017						
	AIANK	ASIAN	BLACK	HISPA	PACIF	UNKNW	WHITE
Associate of Applied Science - Computer Programming		1		9		8	46
Associate of Applied Science - Computer Technologies - Graphic Communications Emphasis	3			7	10		11
Associate of Applied Science - Computer Technologies - Information Specialist Emphasis				10			5
Associate of Applied Science - Computer Technologies - Network Specialist Emphasis			4	15		6	84
Associate of Applied Science - Computer Technologies - Office Technology Emphasis				10		7	38
Certificate of Achievement - Computer Technologies - Office Technology Emphasis							4
Certificate of Achievement - Medical Coding and Billing	2		3	2	8	7	51

ACADEMIC PLAN	TERM CODE / Ethnicity							
	Fall 2016							
	ZORMR	AIKN	ASIAN	BLACK	HISPA	PACIF	UNKNW	WHITE
Associate of Applied Science - Computer Programming					6		5	6
Associate of Applied Science - Computer Technologies - Graphic Communications Emphasis				2	19		6	3
Associate of Applied Science - Computer Technologies - Information Specialist Emphasis					10			
Associate of Applied Science - Computer Technologies - Network Specialist Emphasis	2			8	12		2	4
Associate of Applied Science - Computer Technologies - Office Technology Emphasis	7	7			5		4	7
Certificate of Achievement - Computer Technologies - Office Technology Emphasis					6		1	
Certificate of Achievement - Graphic Communications								
Certificate of Achievement - Medical Coding and Billing	2	3	12	3	12	9		6

Gender

ACADEMIC PLAN	TERM CODE / Gender					
	Fall 2016		Fall 2017		Fall 2018	
	F	M	F	M	F	M
Associate of Applied Science - Computer Programming	9	66	8	56	13	43
Associate of Applied Science - Computer Technologies - Graphic Communications Emphasis	40	18	18	13	20	2
Associate of Applied Science - Computer Technologies - Information Specialist Emphasis	10		10	5		
Associate of Applied Science - Computer Technologies - Network Specialist Emphasis	9	58	9	100	12	82
Associate of Applied Science - Computer Technologies - Office Technology Emphasis	87	14	55		45	
Associate of Applied Science - Computer Technologies - Web Development Emphasis						10
Certificate of Achievement - Computer Technologies - Office Technology Emphasis	15			4	13	6
Certificate of Achievement - Graphic Communications	2				1	
Certificate of Achievement - Medical Coding and Billing	105		69	4	49	4

Age

ACADEMIC PLAN	TERM CODE / Age Range											
	Fall 2016				Fall 2017				Fall 2018			
	<18	18-24	25-39	>=40	<18	18-24	25-39	>=40	<18	18-24	25-39	>=40
Associate of Applied Science - Computer Programming		31	20	24	3	25	21	15	6	21	18	11
Associate of Applied Science - Computer Technologies - Graphic Communications Emphasis	2	21	32	3		27	1	3	6	13	2	1
Associate of Applied Science - Computer Technologies - Information Specialist Emphasis			1	9			5	10				
Associate of Applied Science - Computer Technologies - Network Specialist Emphasis		23	34	10	2	38	56	13		30	45	19
Associate of Applied Science - Computer Technologies - Office Technology Emphasis		18	42	41		22	15	18	6	13	12	14
Associate of Applied Science - Computer Technologies - Web Development Emphasis										9	1	
Certificate of Achievement - Computer Technologies - Office Technology Emphasis		8	3	4				4		4	6	9
Certificate of Achievement - Graphic Communications		2								1		
Certificate of Achievement - Medical Coding and Billing	1	21	30	53		15	26	32	1	17	22	13

GBC Fall 2018 Student Satisfaction Survey Results

Introduction and Methodology

In fall 2018, all degree or certificate-seeking students enrolled at Great Basin College were asked to participate in a 20 minute, online student satisfaction survey administered by Noel-Levitz, Inc. where they were asked to rank approximately 70 questions in both importance and satisfaction using a Likert scale from 1 to 7 with 7 being the highest score. Students were emailed an initial invitation to participate on Oct. 29 and were told that four of the respondents would be randomly selected to receive a \$25 gift certificate from the GBC Bookstore. Five additional emails were sent through Nov. 29, 2018 and the survey instrument was closed on Dec. 3.

The Noel-Levitz Student Satisfaction Inventory for two-year institutions was used so we could compare student satisfaction with GBC in fall 2018 with the results received from the same survey instrument in fall 2011 as well as with the results of all students taking the survey nationally.

Overall Summary of Results

Overall, students are quite satisfied with GBC.

Summary Item	Great Basin College - SSI
So far, how has your college experience met your expectations?	Average: 5.16
1=Much worse than expected	0%
2=Quite a bit worse than I expected	2%
3=Worse than I expected	4%
4=About what I expected	27%
5=Better than I expected	24%
6=Quite a bit better than I expected	15%
7=Much better than expected	24%
Rate your overall satisfaction with your experience here thus far.	Average: 5.82
1=Not satisfied at all	0%
2=Not very satisfied	1%
3=Somewhat dissatisfied	3%
4=Neutral	9%
5=Somewhat satisfied	12%
6=Satisfied	36%
7=Very satisfied	35%
All in all, if you had to do it over, would you enroll here again?	Average: 6.02
1=Definitely not	0%
2=Probably not	3%
3=Maybe not	3%
4=I don't know	4%
5=Maybe yes	10%
6=Probably yes	31%
7=Definitely yes	46%

GBC Demographic Data

Gender	N	%
Female	201	73.90%
Male	71	26.10%
Total	272	100.00%
No Response	75	

Age	N	%
18 and under	78	26.53%
19 to 24	68	23.13%
25 to 34	62	21.09%
35 to 44	53	18.03%
45 and over	33	11.22%
Total	294	100.00%
No Response	53	

Ethnicity/Race	N	%
African-American	6	1.92%
American Indian or Alaskan Native	11	3.51%
Asian or Pacific Islander	14	4.47%
Caucasian/White	185	59.11%
Hispanic	62	19.81%
Other race	12	3.83%
Race - Prefer not to respond	23	7.35%
Total	313	100.00%
No Response	34	

Current Enrollment Status	N	%
Day	219	69.30%
Evening	84	26.58%
Weekend	13	4.11%
Total	316	100.00%
No Response	31	

Current Class Load	N	%
Full-time	158	52.49%
Part-time	143	47.51%
Total	301	100.00%
No Response	46	

Class Level	N	%
1 year or less	135	44.70%
2 years	70	23.18%
3 years	44	14.57%
4 or more years	53	17.55%
Total	302	100.00%
No Response	45	

Current GPA	N	%
No credits earned	31	9.63%
1.99 or below	5	1.55%
2.0 - 2.49	22	6.83%
2.5 - 2.99	40	12.42%
3.0 - 3.49	95	29.50%
3.5 or above	129	40.06%
Total	322	100.00%
No Response	25	

Educational Goal	N	%
Associate degree	159	49.69%
Vocational/technical program	12	3.75%
Transfer to another institution	29	9.06%
Certification (initial / renewal)	19	5.94%
Self-improvement/pleasure	10	3.13%
Job-related training	14	4.38%
Other educational goal	77	24.06%
Total	320	100.00%
No Response	27	

Employment	N	%
Full-time off campus	113	34.14%
Part-time off campus	79	23.87%
Full-time on campus	13	3.93%
Part-time on campus	24	7.25%
Not employed	102	30.82%
Total	331	100.00%
No Response	16	

Current Residence	N	%
Residence hall	18	5.50%
Own house	117	35.78%
Rent room or apt off campus	50	15.29%
Parent's home	115	35.17%
Other residence	27	8.26%
Total	327	100.00%
No Response	20	

Residence Classification	N	%
In-state	273	89.51%
Out-of-state	29	9.51%
International (not U.S. citizen)	3	0.98%
Total	305	100.00%
No Response	42	

Disabilities	N	%
Yes - Disability	25	8.59%
No - Disability	266	91.41%
Total	291	100.00%
No Response	56	

Institution Was My	N	%
1st choice	224	70.66%
2nd choice	68	21.45%
3rd choice or lower	25	7.89%
Total	317	100.00%
No Response	30	

List the location (or Internet) where you take the majority of your classes	N	%
Elko	142	44.79%
Ely	7	2.21%
Internet	102	32.18%
Pahrump	28	8.83%
Winnemucca	14	4.42%
Other Locations	24	7.57%
Total	317	100.00%
No Response	30	

Institution Question 2	N	%
Campus item 2 - Answer 1	0	0%
Campus item 2 - Answer 2	0	0%
Campus item 2 - Answer 3	0	0%
Campus item 2 - Answer 4	0	0%
Campus item 2 - Answer 5	0	0%
Campus item 2 - Answer 6	0	0%
Total	0	100.00%
No Response	347	

Group Code	N	%
1011: Other Not Listed-Health Sciences and Human Services	14	4.29%
1012: Social Sciences	16	4.91%
1013: Business	30	9.20%
1014: Education	47	14.42%
1015: Other Not Listed-Career and Technical Education	7	2.15%
1016: Science or Agriculture	26	7.98%
1017: Other	47	14.42%
1018: Undecided	23	7.06%
1019: Computer Technologies	17	5.21%
1020: Transfer	10	3.07%
1021: Paramedic	5	1.53%
1022: Radiology Technology	10	3.07%
1023: Nursing AAS	17	5.21%
1024: Nursing BSN	14	4.29%
1025: Human Services	17	5.21%
1026: Diesel Technology	5	1.53%
1027: Electrical Systems Technology	9	2.76%
1028: Industrial Millwright Technology	5	1.53%
1029: Instrumentation Technology	3	0.92%
1030: Welding Technology	4	1.23%
Total	326	100.00%
No Response	21	

Programs and Objectives

Computer Technologies Associate of Applied Science Graphic Communications Emphasis

Kathy Schwandt - Advisor

The content of the Graphic Communications (GRC) Emphasis-specific courses combines identification and application of the elements and principles of design, graphic communications history and theory, design process, and creativity development with training on relevant software programs. Students learn to create well-designed products in a visual language using a variety of tools – from traditional pen-and-paper to cutting-edge technology. Attainment of the CT Associate of Applied Science degree with a GRC Emphasis offers students the opportunity to seek employment in the field of graphic communications. Examples of jobs in this field include Graphic Designer, Logo Designer, Web Designer, Brand Identity Developer, Illustrator, Ad Designer.

Degree Outcomes: Expected outcomes include the following competencies. The recipient of this degree should be able to:

- **Use computers and relevant software efficiently and ethically in the workplace:**
 - COT 204, GRC 103, GRC 156, GRC 119, CIT 151, GRC 183, GRC 188, GRC 256, IS 201
- **Effectively utilize a computer operating system:**
 - COT 204
- **Add interactivity and efficiency to completed activities using programming skills:**
 - CIT 151, GRC 119, GRC 188
- **Identify, discuss, and apply elements and principles of design using tools ranging from traditional pen-and-paper to current technology:**
 - ART 100, ART 107, ART 141, GRC 101, GRC 103, GRC 119, GRC 156, GRC 183, GRC 188, GRC 256
- **Design professional-quality products for use in commercial applications:**
 - GRC 103, GRC 156, GRC 183, GRC 188, GRC 256

Job Titles: Graphic Designer, Logo Designer, Web Designer, Brand Identity Developer, Illustrator, and Ad Designer

<i>First Year, Fall Semester</i>		
Number	Title	Credits
ENG 100 or ENG 101	English/Communications	3
GRC 101	Introduction to Graphic Communications	3
GRC 103	Introduction to Computer Graphics	3
GRC 156	Design with Illustrator	3
MATH 120, 126, or higher	Computation	3
	Semester Total	15
<i>First Year, Spring Semester</i>		
Number	Title	Credits
CIT 151	Beginning Web Development	3
GRC 119	Digital Media	3
GRC 183	Design with Photoshop	3
GRC 256	Advanced Design with Illustrator	3
BUS 110, HMS 200, MGT 283, or PSY 208	Human Relations, choose with advisor.	3
	Semester Total	15
<i>Second Year, Fall Semester</i>		
Number	Title	Credits
ART 141	Introduction to Digital Photography	3
COT 204	Using Windows	3
IS 201	Computer Applications	3
Humanities/Fine Arts	ART 100 recommended.	3
Science	Choose with advisor.	3
	Semester Total	15
<i>Second Year, Spring Semester</i>		
Number	Title	Credits
ART 107	Design Fundamentals I (2-D)	3
ENG 102	English/Communications	3
GRC 188	Web Animation I	3
PSC 101	Introduction to American Politics	3
Elective	Choose with advisor, CIT 129 recommended.	3
	Semester Total	15
Degree Total		60

Computer Technologies

Certificate of Achievement

Graphic Communications

Kathy Schwandt - Advisor

The content of the Graphic Communications (GRC) Emphasis-specific courses combines identification and application of the elements and principles of design, graphic communications history and theory, design process, and creativity development with training on relevant software programs. Students learn to create well-designed products in a visual language using a variety of tools – from traditional pen-and-paper to cutting-edge technology. Attainment of the Certificate of Achievement in Graphic Communications offers students the opportunity to seek employment in the field of graphic communications. Examples of jobs in this field include Graphic Designer, Logo Designer, Web Designer, and Brand Identity Developer.

Certificate Outcomes: Expected outcomes include the following competencies. The recipient of this certificate should be able to:

- **Use computers and relevant software efficiently and ethically in the workplace:**
 - GRC 103, GRC 156, GRC 119, CIT 151, GRC 183, GRC 256
- **Identify, discuss, and apply elements and principles of design using tools ranging from traditional pen-and-paper to current technology:**
 - GRC 101, GRC 103, GRC 119, GRC 156, GRC 183, GRC 256
- **Design professional-quality products for use in commercial applications:**
 - GRC 103, GRC 156, GRC 183, GRC 256

Professional Skills and Career Paths: Graphic Designer, Logo Designer, Web Designer, and Brand Identity Developer

<i>Fall Semester</i>		
Number	Title	Credits
ENG 100 or ENG 101	English/Communications	3
GRC 101	Introduction to Graphic Communications	3
GRC 103	Introduction to Computer Graphics	3
GRC 156	Design with Illustrator	3
MATH 120, 126, or higher	Computation	3
	Semester Total	15
<i>Spring Semester</i>		
Number	Title	Credits
CIT 151	Beginning Web Development	3
GRC 119	Digital Media	3
GRC 183	Design with Photoshop	3
GRC 256	Advanced Design with Illustrator	3

BUS 110, HMS 200, MGT 283, or PSY 208	Human Relations	3
	Semester Total	15

Graphic Communications Program Outlook

The U.S. Bureau of Labor Statistics Occupational Outlook Handbook, last modified November, 2018, states that, “Graphic designers usually need a bachelor’s degree in graphic design or a related field. Candidates for graphic design positions should demonstrate their creativity and originality through a professional portfolio that features their best designs,” and “Employment of graphic designers is projected to grow 4 percent from 2016 to 2026, slower than the average for all occupations. Graphic designers are expected to face strong competition for available positions.”

The U.S. Bureau of Labor Statistics Occupational Outlook Handbook, last modified February, 2019, states that, “Most multimedia artists and animators need a bachelor’s degree in computer graphics, art, or a related field to develop both an impressive portfolio of work and the strong technical skills that many employers prefer,” and “Employment of multimedia artists and animators is projected to grow 8 percent from 2016 to 2026, about as fast as the average for all occupations. Projected growth will be due to increased demand for animation and visual effects in video games, movies, and television.”

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Graphic Designers, on the Internet at <https://www.bls.gov/ooh/arts-and-design/graphic-designers.htm> (visited *March 22, 2019*).

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Multimedia Artists and Animators, on the Internet at <https://www.bls.gov/ooh/arts-and-design/multimedia-artists-and-animators.htm> (visited *March 22, 2019*).

Computer Technologies

Associate of Applied Science

Web Development Emphasis

Kathy Schwandt - Advisor

The content of the Web Development Emphasis program enables students to learn to create well-designed, interactive web pages and sites, and to build and maintain databases and gather user information. Attainment of the CT Associate of Applied Science degree with a Web Development Emphasis offers students the opportunity to seek employment in this field. Examples of jobs in this field include Web Developer and Web Designer.

Degree Outcomes: Expected outcomes include the following competencies. The recipient of this degree should be able to:

- **Use computers and relevant software efficiently and ethically in the workplace:**
 - CIT 129, CIT 151, CIT 152, CIT 174, CIT 180, COT 204, GRC 103, GRC 156, GRC 119, GRC 188, IS 201
- **Effectively utilize a computer operating system:**
 - COT 204, CIT 174
- **Build and maintain well-designed, interactive web pages and sites.**
 - CIT 129, CIT 151, CIT 152, CIT 174, CIT 180, GRC 103, GRC 156, GRC 119, GRC 188
- **Build and maintain databases and gather user information.**
 - IS 201, CIT 152, CIT 180

Professional Skills and Career Paths: Web Developer, Web Designer

<i>First Year, Fall Semester</i>		
Number	Title	Credits
CIT 151	Beginning Web Development	3
ENG 100 or ENG 101	English/Communications	3
GRC 103	Introduction to Computer Graphics	3
GRC 119	Digital Media	3
MATH 126	Precalculus I	3
	Semester Total	15
<i>First Year, Spring Semester</i>		
Number	Title	Credits
CIT 129	Introduction to Programming	3
CIT 152	Web Script Language Programming	3
COT 204	Using Windows	3
ENG 102	Composition II	3

GRC 188	Web Animation I	3
	Semester Total	15
<i>Second Year, Fall Semester</i>		
Number	Title	Credits
CIT 180	Database Concepts and SQL	3
GRC 156	Computer Illustration	3
BUS 110, HMS 200, MGT 283, or PSY 208	Human Relations, choose with advisor.	3
Humanities/Fine Arts	Choose with advisor.	3
Science	Choose with advisor.	3
	Semester Total	15
<i>Second Year, Spring Semester</i>		
Number	Title	Credits
CIT 174	Linux System Administration	3
Program Electives	Choose with advisor.	6
IS 201	Computer Applications	3
PSC 101	Introduction to American Politics	3
	Semester Total	15

Web Development Program Outlook

The U.S. Bureau of Labor Statistics Occupational Outlook Handbook, last modified April, 2018, states that, “Educational requirements for web developers vary with the setting they work in and the type of work they do. Requirements range from a high school diploma to a bachelor’s degree. Web developers need knowledge of both programming and graphic design,” and “Employment of web developers is projected to grow 15 percent from 2016 to 2026, much faster than the average for all occupations. Demand will be driven by the growing popularity of mobile devices and ecommerce.”

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Web Developers, on the Internet at <https://www.bls.gov/ooh/computer-and-information-technology/web-developers.htm> (visited *March 22, 2019*).

Computer Office Technology

Computer Programming Emphasis

Associate of Applied Science

Laura Pike - Advisor

The Computer Programming emphasis provides students with entry level programming skills. Computer programming professionals must also have a broad knowledge of computer systems and technologies, as well as strong problem solving and analysis skills. They must be able to think logically and have strong verbal and written communication skills.

Degree Outcomes: Expected outcomes include the following competencies. The recipient of this degree should be able to:

- ❑ **Design, implement, and test a computer program to meet a desired specification for a problem.**
 - IS 201, CIT 110, CIT 129, CIT 130, CIT 151, CIT 152, CIT 174, CIT 180, COT 204, CS 135, CSCO 120, CIT 263
- ❑ **Apply computing and logical reasoning to analyze a problem and formulate the appropriate solution.**
 - IS 201, CIT 110, CIT 129, CIT 130, CIT 151, CIT 152, CIT 174, CIT 180, COT 204, CS 135, CSCO 120, CIT 263
- ❑ **Build effective databases to solve business-oriented problems.**
 - IS 201, CIT 129, CIT 130, CIT 152, CIT 180, CIT 263

Job Titles: Software Developer, Database Developer, Applications Programmer, and IT Project Manager

First Year, Fall Semester:		
Number	Title	Credits
CIT 110	A+ Hardware	3
CIT 129	Introduction to Programming	3
ENG 100 or 101	Composition I	3
IS 201	Computer Applications	3
MATH 126	Precalculus I	3
Semester Total		15.5
First Year, Spring Semester:		Credits
Number	Title	
COT 204	Using Computers	3
CSCO 120	Internetworking Fundamentals	4
CS 135	Computer Science I	3
ENG 102	Composition II	3
Humanities Elective		3
Semester Total		16
Second Year, Fall Semester:		Credits
Number	Title	
CIT 130	Beginning Java	3
CIT 151	Beginning Web Development	3
CIT 180	Database Concepts & SQL	3
Human Relations Elective		3
Science Elective		3
Semester Total		15
Second Year, Spring Semester:		Credits
Number	Title	
CIT 174	Linux System Administration	3
CIT 152	Web Script Language Programming	3
CIT 263	Project Management	3
GRC 188	Web Animation and Interactivity I	3
PSC 101		3
Semester Total		15
Degree Total		61

Computer Programming, Program Outlook

Today's business world deals in huge amounts of data. Working with this data in its many different forms is a valuable skill. The database administrator field is one of the fastest growing fields in the U.S. Hardly less important is the ability to use Python, Java, and C++ for Applications programming. These skills are in wide demand in every industry today, especially in Healthcare.

Computer Office Technology

Network Specialist Emphasis

Associate of Applied Science

Laura Pike - Advisor

Upon completion of the Associate of Applied Science (AAS) Degree with an emphasis in Networking, a successful student will have acquired the knowledge and technical skills they need to be employed and productive in the computer technology.

Degree Outcomes:

Expected outcomes include the following competencies. The recipient of this degree should be able to:

- **Create and maintain a computer network**
 - CIT 110, CIT 174, CIT 212, CIT 213, CIT 214, CIT 215, CIT 217, CSCO 120, CSCO 121, CSCO 130, CSCO 220, CSCO 221, CSCO 230
- **Install and configure network services.**
 - IS 201, COT 204, CIT 110, CIT 129, CIT 151, CIT 174, CIT 212, CIT 213, CIT 214, CIT 215, CSCO 120, CSCO 121, CSCO 130, CSCO 220, CSCO 221, CSCO 230
- **Maintain availability of network resources to authorized users.**
 - IS 201, COT 204, CIT 110, CIT 129, CIT 151, CIT 174, CIT 212, CIT 213, CIT 214, CIT 215, CSCO 120, CSCO 121, CSCO 130, CSCO 220, CSCO 221, CSCO 230

JOB TITLES: Network Administrator, Help Desk Technician, Technical and Network Support Technician, Network Security Technician, Computer Hardware Technician, Network Design Specialist, Computer Service Engineer, and Network Analyst.

First Year, Fall Semester		
Number	Title	Credits
CIT 110	A+ Hardware	3
CIT 212	Network II	3
CSCO 120	CCNA Internetworking Fundamentals	4
ENG 100 or 101	Composition I	3
MATH 126	Precalculus I	3
	Semester Total	16.5
First Year, Spring Semester		
Number	Title	Credits
CIT 174	Linux System Administration	3
COT 204	Using Windows	3
CIT 215	Network V	3
Program Elective		4-6
ENG 102	Composition II	3
	Semester Total	13-15
Second Year, Fall Semester		
Number	Title	Credits
CIT 129	Introduction to Programming	3
CIT 151	Beginning Web Development	3
Program Elective		3
IS 201	Computer Applications	3
PSC 101	Principles of American Constitutional Government	3
	Semester Total	15
Second Year, Spring Semester		
Number	Title	Credits
BUS 110	Human Relations for Employment	3
MUS 121	Music Appreciation	3
Phys 100	Introduction to Physics	3
Program Elective		3-4
Program Elective		3-4
	Semester Total	15
	Degree Total	60

Program Electives Credits

Select at least 15 credits from the following:

Microsoft Certification:

CIT 213 Microsoft Networking III 3
 CIT 214 Microsoft Networking IV 3
 CIT 215 Microsoft Networking V 3
 CIT 217 Security + 3

CIT 263 Project Management	3
----------------------------------	---

Cisco Certification:

CSCO 121 CCNA Routing and Switching Essentials	4
CSCO 130 Fundamentals of Wireless LANS	4
CSCO 220 CCNA Scaling Networks	3
CSCO 221 CCNA WAN Fundamentals	4
CSCO 230 Fundamentals of Network Security	4

Network Specialists, Program Outlook

By providing our students with a program designed to teach them computer networking and system administration skills as well as a path to relevant certification exams which prove those skills, we are giving our students a strong head start on their chosen career path. Computer networking remains a fast changing profession and need for people with various levels and types of certification also changes rapidly so we are constantly reviewing our classes, their content, and the certification paths they follow to provide our students with strongest possible combination of skills and certifications.

Our current offerings include the Cisco Computer Network Associate (CCNA) Routing and Switching, CCNA Security, Microsoft Certified Solutions Associate (MCSA), Microsoft Certified Solutions Expert (MCSE) certification path, Cisco Certified Entry Networking Technician (CCENT) and the CompTIA A+, and Security+ certifications which by some estimates highly desired in the computer industry.

Computer Technologies

Office Technology Emphasis

Associate of Applied Science

Madison Arbillaga - Advisor

CT Associate of Applied Science with an Office Technology Emphasis degree will offer students the opportunity of employment to include (but not limited to): computer operator, data entry, financial clerk, information and records clerk, office and administrative support (supervisor or manager), general office clerk, records management, secretarial support, reception, or material clerk. This program combines theory information and hands on experience to help students explore, understand, and use office skills.

Goals for students of the emphasis include development of: fluency in word processing, spreadsheets, and data processing; basic web development; accounting principles understanding; confidence in their ability to manage an office; and comfortable level of current technology and computer programs usage.

Degree Outcomes:

Expected outcomes include the following competencies. The recipient of this degree should be able to:

- **Students will support management in office administration.**
 - ACC 201, COT 240, MGT 201, IS 201
- **Students will manage business information using appropriate software to prepare documents.**
 - ACC 201, CIT 201, CIT 202, CIT 203, COT 151, COT 240, GRC 103, GRC 183, MGT 201, IS 201
- **Students will use effective business communication skills**
 - ACC 201, CIT 201, CIT 202, CIT 203, COT 151, COT 240, GRC 103, GRC 183, MGT 201, IS 201
- **Students will utilize appropriate computer technology and software (word processor, spreadsheet, and databases).**
 - ACC 201, CIT 151, CIT 201, CIT 202, CIT 203, COT 151, COT 204, GRC 103, GRC 183, MGT 201, IS 101, IS 201
- **Students will identify ethical issues in business situations.**
 - ACC 201, CIT 151, CIT 201, CIT 202, CIT 203, COT 151, COT 204, GRC 103, GRC 183, MGT 201, IS 101, IS 201



Computer Technologies

Associate of Applied Science

Office Technology Emphasis

Associate of Applied Science — Computer Technologies Office Technology Emphasis

Professional Skills and Career Paths

Executive Assistant, Office Support Manager and
Accounting Assistant

Student Learning Outcomes

Graduates of this degree will have the knowledge and
skills to:

- Support management in office administration.
- Prepare business documents.
- Manage records.
- Demonstrate business communication skills.
- Utilize appropriate office technology.
- Execute the duties of an office administrator.
- Demonstrate effective use of Microsoft Office Products.

General Education Requirements Credits

English/Communications.....	6
ENG 100 or 101, and ENG 102	
Mathematics	3
MATH 120, 126 or higher (includes STAT 152)	
Science	3
Social Science—PSC 101	3
Human Relations	3
Humanities or Fine Arts	3
Technology—IS 101 (required).....	3

Program Core Requirements Credits

CIT	151	Beginning Web Development	3
COT	204	Using Windows.....	3
IS	201	Computer Applications	3

Program Emphasis Requirements Credits

ACC	201	Financial Accounting.....	3
CIT	201	Word Certification Preparation	3
CIT	202	Excel Certification Preparation.....	3
CIT	203	Access Certification Preparation	3
COT	151	Introduction to Microsoft Word.....	3
COT	240	Executive Office Procedures	3
GRC	103	Introduction to Computer Graphics.....	3
GRC	183	Design with Photoshop.....	3
MGT	201	Principles of Management.....	3

SUGGESTED COURSE SEQUENCE AAS—Computer Technologies Office Technology Emphasis

FALL—1st Semester Credits

COT	151	3
ENG	100 or 101	3
IS	101	3
IS	201	3
MATH	120, 126, or higher	3
TOTAL		15

SPRING—2nd Semester Credits

ACC	201	3
CIT	202	3
COT	204	3
COT	240	3
HUMAN RELATIONS*		3
TOTAL		15

FALL—3rd Semester Credits

CIT	151	3
CIT	201	3
CIT	203	3
GRC	103	3
HUMANITIES/FINE ARTS*		3
TOTAL		15

SPRING—4th Semester Credits

ENG	102	3
GRC	183	3
MGT	201	3
PSC	101	3
SCIENCE*		3
TOTAL		15

Minimum Credits: 60

After the AAS in Office Technology, the next step could
be the Bachelor of Applied Science in Digital Information
Technology Emphasis or the Bachelor in Management and
Supervision. See page 105.

NOTE: MATH 126 recommended for students pursuing
the Bachelor program.

Contact: Madison Arbillaga
Computer Technologies Department
775-753-4014
Madison.arbillaga@gbcnv.edu



Computer Technologies

Certificate of Achievement—Office Technology Emphasis

Certificate of Achievement — Office Technology

Professional Skills and Career Paths

Receptionist, Data Entry, Clerical Assistant, Administrative Assistant, Front Office Clerk, and Word Processor.

Student Learning Outcomes

Graduates of this certificate will have the knowledge and skills to:

- Manage business information using appropriate software to prepare documents.
- Use effective business communication skills.
- Utilize appropriate computer technology and software (word processor and databases).
- Identify ethical issues in business situations.

General Education Requirements Credits

English/Communications	3
ENG 100 or 101	
Computation	3
MATH 120, 126 or higher (which includes STAT 152)	
Human Relations (Choose one of the following)	3
BUS 110, HMS 200, MGT 283, or PSY 208	

Program Requirements Credits

ACC	201	Financial Accounting.....	3
COT	151	Introduction to Microsoft Word.....	3
COT	204	Using Windows.....	3
CIT	202	Excel Certification Preparation.....	3
COT	240	Executive Office Procedures	3
IS	101	Introduction to Information Systems....	3
IS	201	Computer Applications	3

SUGGESTED COURSE SEQUENCE

Certificate of Achievement— Computer Technologies Office Technology

FALL—1st Semester Credits

COT	151	3
ENG	100 or 101	3
IS	101	3
IS	201	3
MATH	120, 126, or higher	3
TOTAL		15

SPRING—2nd Semester Credits

ACC	201	3
CIT	202	3
COT	204	3
COT	240	3
HUMAN RELATIONS*		3
TOTAL		15

Minimum Credits: 30

*Select from page 85.

After the Certificate of Achievement in Office Technology, the next step could be the AAS in Office Technology

Contact: Madison Arbillaga
Computer Technologies Department
775-753-4014
Madison.arbillaga@gbcnv.edu

Computer Technologies

Professional Medical Coding and Billing Program

Certificate of Achievement & Recognition of Achievement

Madison Arbilla - Advisor

Certificate of Achievement — Medical Coding and Billing

Professional Skills and Career Paths

Medical Coding and Billing online training program prepares you to fill positions as medical coding and billing professionals.

Student Learning Outcomes

Graduates of this certificate program will have the knowledge and skills to:

- Apply rules of grammar, punctuation, and spelling while using medical terms correctly.
- Identify ICD-10 and basic claims processes for medical insurance and third-party reimbursements and how to manually file claims using the CPT and ICD-10 manuals.
- Knowledge in finding the service and codes using the CPT, ICD-10 and HCPCS manuals.
- Recognize the common types of medical insurance and computerized medical billing systems.

General Education Requirements	Credits
English/Communications.....	3
ENG 100 or 101, or ENG 103	
Human Relations	3
COT 240 Executive Office Procedures (three-credit course includes a computation component)	

Program Requirements	Credits
MCOD 110 Introduction to Medical Coding and Billing.....	3
MCOD 120 Medical Terminology and Healthcare Environment.....	3
MCOD 130 Introduction to Anatomy, Pathophysiology, Disease Processes, and Pharmacology.....	5
MCOD 140 Healthcare Structure and Medical Record Content.....	3
MCOD 200 Introduction to Diagnostic Coding	3
MCOD 210 Exploring Reimbursement and Procedural Coding and Billing	5
MCOD 220 Skill Building for Outpatient Coding	6

Program requirements must be met with an average minimum score of 85% or higher for the total program.

SUGGESTED COURSE SEQUENCE Certificate of Achievement— Medical Coding and Billing

FALL—1st Semester	Credits
ENG 100 or 101, or ENG 103	3
MCOD 110	3
MCOD 120	5
MCOD 130	3
MCOD 140	3
TOTAL	17
SPRING—2nd Semester	Credits
COT 240	3
MCOD 200	3
MCOD 210	5
MCOD 220	6
TOTAL	17

Minimum Credits: 34

Students should contact the Program Coordinator for information regarding admission to the program.

Program Costs and Projected Figures

Program cost information is available from the Vice President of College Services.

Summary

Since the beginning of the PC era, the Computer Technologies Department (CT) has instructed Nevada residents on the use of computers. This has been accomplished by offering everything from a single course to five degree emphasis areas. CT offers current technology, software applications, and employability emphasis covering a wide range of individual and community needs.

Some of the different offerings include four general education core courses for students enrolled in all bachelor and associate degree programs. They include computer courses aimed toward completion of degrees with emphases in networking, graphic design, information systems, geographic information systems, and office technology. The department implements employment skills preparation classes and customized offerings for local businesses and agencies. For community members having little computer experience and great technological anxieties, the department presents its *anxious beginner* series.

Occupational Outlook Handbook: <http://www.bls.gov/ooh/>

Employment Projections: 2012-2022 Summary <http://bls.gov/news.release/ecopro.nr0.htm>

<http://bls.gov/news.release>

Great Basin College

Computer Office Technology Advisory Board

Minutes for Wednesday, April 11, 2018

Location: High Tech Center, Room 110, 9:00 – 11:00 a.m.

Attendees: Kathy Schwandt, Laura Pike, Byron Calkins, Joseph Cheung, Bret Murphy, Mike McGhee, Joanne Storms, Luis Barrios, Katie Neddenriep, Sidnie Grimes, Brady Johnson, Ben Rowley

- I. Call to Order of the Great Basin College Computer Technologies Advisory Board Meeting at 9:03 am.
- II. Roll call and introduction of guests and faculty. All members and guests were introduced.
- III. Approval of April 26, 2017 minutes. The meeting minutes were reviewed. Laura Pike made a motion to approve the minutes, Byron Calkins seconded the motion, and the motion carried.
- IV. Old business – None
- V. New business
 - a. AAS/AS Degree emphasis general reviews.
 1. Byron Calkins gave an overview of the AS-LSG program and explained that he works with an outside industrial advisory group. The AS-LSG degree is for students who are in the field but don't have the college education. There are five core classes dedicated to the intro surveying degree. This degree gives the student the background in land surveying and students can then move on to the BAS-LSG degree. There are approximately 40 students in the program.
 2. Laura Pike reviewed the network specialist and computer programming degrees. The programming degree gives the student a background in understanding programming. This degree teaches Windows and Linux and also teaches two languages, Java and C++. There are two virtual labs, Citrix and NetLab. The network specialist degree currently has a partnership with Barrick Gold and offers two pathways. The student can focus on a network hardware background and work with Cisco or the student can focus on the software side and work with Microsoft. Students can choose their elective courses depending on their focus area. Laura explained that the Cisco courses were pushed through very quickly and the group applauded Laura for making this happen. Laura also mentioned that there are three introductory Cisco courses that are being offered through Continuing Education. An introductory course, the internet of things and an introduction to cyber security are the courses being offered. These courses are not for credit and are not connected with the degree. Five courses have been brought in that relate to CCNA, routing and switching and CCNA security. These courses incorporate into the network specialist degree. Laura informed the group that the department has hired Joseph Cheung to instruct the Cisco courses.
 3. Joseph Cheung gave an overview of his role in the department. He is currently teaching three courses with the beginning Cisco course having 43 students. The response of the students has been good. Joseph explained that there is a need for another layer of networking. That additional layer is Cisco security to build firewalls. Joseph is offering live labs to assist his students. Students are not required to attend the labs but have taken advantage of the opportunity to enhance their skills. He also noted that the NetLab uses the Cisco hardware. Joseph is currently taking classes to learn more about cyber security. This is the first time in the world that these courses are being offered. There are 1.5 million cyber

security jobs waiting to be filled. The department is looking to add 2 – 3 cyber security courses, once Joseph completes his courses.

4. Laura Pike explained the Virtual Machines to the group. With any of the programming courses, an online environment has to be provided. The first Virtual Machines were created in 2003. This last year, the Citrix environment was brought in to update the environment. The Citrix environment will be available to students through a web browser and numerous applications will be available.
5. Kathy Schwandt reviewed the rest of the AAS and Certificate programs. In Office Technology, there is a Certificate of Achievement in Medical Coding and Billing and in Office Technology there is an AAS in Office Technology. A Certificate of Achievement is offered in Graphic Communications, and an AAS and AA pattern of study are also offered in Graphic Communications. For the BAS in Digital Information, the department is looking at focusing on web development and updating the content and structure of the program. Byron Calkins stated that he read an article in the Elko Daily Free Press about the BAS in Graphic Communications being ranked number one in most affordable bachelor degrees amongst other bachelor's in art and design online degrees in the nation. The BAS in Digital Information ranked number 8, and GBC is number 13 in overall associate degrees. Joanne Storms, from JOIN, asked about the cost of tuition for out of state, online students. Mike McGhee, GBC recruiter, explained that the online courses are less expensive for out of state students as compared to live or IAV courses for out of state students. The group discussed online affordability.
- b. All CT programs in ETPL. Joanne Storms, JOIN, Inc., explained that JOIN is “Training Nevadans for Careers” by assisting with education funding. There are many levels of eligibility and students do not have to be low income to qualify. JOIN serves a wide variety of students. In order for JOIN to fund a student, the program the student is interested in must be on the Eligible Training Provider List (ETPL) and must provide a Certificate of Recognition, Certificate of Achievement or a degree. GBC is responsible for submitting the programs to JOIN through the EmployNV website. FAFSA is not required. Joanne spoke about a program that JOIN offers to 18 – 24 year olds. This program works with local employers and the goal is to put students in the local businesses with the hope of the employer eventually hiring the student full time. JOIN reimburses the employer for the first 12 weeks of wages. Joanne gave two success stories for this program.
- c. BAS-DIT program review. The program review is scheduled for next week. Bret Murphy explained that programs are reviewed every five years by an outside reviewer. The DIT program was given an extra year due to the fact that the program supervisor left the college during the middle of the academic year and the department was unable to prepare for the review last year. This year, a faculty member from CSN will be the external reviewer. The reviewer will look at current students and graduates and industry members will also participate. A preliminary report outlines the program and Bret explained the full process. This program currently has low enrollments, so the department intends to revitalize and update the program to attract more students. The program began in 2006 as a generalist degree and several years ago the department began discussing modernizing the program. Due to faculty leaving the college, updating the program has been on hold. The plan is to create a web development track, a networking track and a programming track within the BAS-DIT.
- d. Recruiting Efforts.
 1. CTE College Coordinator Events. Sidnie Grimes reviewed her duties as the CTE College Coordinator. Along with visiting high schools, Sidnie attends career fairs and is currently at a Skills USA event. Sidnie discusses career pathways with students at all levels and mentioned that 5th grade is normally when kids begin to think about what they want to be

- when they grow up. Sidnie will be participating in the Mining Expo that is scheduled the first week in June.
2. GBC Recruiter. Mike McGhee works alongside Sidnie, Cassie Stahlke and Alex Porter to recruit all students. Mike attends many different events to recruit students and promote GBC.
 3. College & Career Fair. Kathy announced that a career fair is scheduled in the High Tech Center tomorrow. The department will be participating in the event, and participates in these events each fall and spring at GBC.
- e. Cisco Programs. Joseph discussed that the programs are all online. He also discussed the need for wireless and more network security.
 - f. New certificates and degrees. The department may possibly look at a GIS program. Brady Johnson, GBC graduate and freelance web and graphic designer, feels that the web development track within the BAS-DIT will be good for students with its narrower emphasis. Joanne Storms suggested offering a computer essentials course, possibly through Continuing Education. Bret Murphy talked about the development of a BAS in Engineering Technology. This would build on the existing courses and programs and add in the Cisco courses. Ben Rowley, Nevada Central Media, Alamo, NV, discussed helping students apply their degree after graduation and upon starting their own business, as well as; the fact that students need to understand how to evolve their skills after graduation. Ben also talked about students being able to take their skills back to their community and helping to grow their community. He feels that getting into high schools and planting the seed helps. Kathy Schwandt mentioned that GBC does offer an entrepreneurship certificate and we also have management courses in the BAS-DIT degree. Brady Johnson also mentioned that discovering different design programs and media platform courses teaches you how to be proactive in learning. Kathy mentioned that students don't have to leave their community in order to earn these degrees. Mike McGhee stated that he continually sends out recruiting materials to different areas.
 - g. In Process of hiring OT and BAS-DIT faculty. Kathy informed the group that the department is in the process of hiring an Office Technology instructor. The search for the Digital Information instructor will be re-opened. There were four candidates and all four withdrew their applications.
 - h. Work/internship availability. Kathy asked the visiting members if their employer offered internships. Katie Neddenriep, Corporate Social Responsibility Manager, Barrick Gold, stated that their internships are listed on their website. They are grouped into different categories. Internal departments specify what projects they need an intern for. The internships are open to anyone within their discipline. Mike McGhee stated that Newmont Mining offers internships on their website, as well. They are typically over the summer and are normally for people that are working on their master's degree.
 - i. Future programs. Laura Pike spoke about the project management course, CIT 263, which the department is considering as a replacement for COT 204 in the CT Program Core Requirements for each CT associate degree. Katie Neddenriep is happy to hear about this course and will be referring a colleague. Brady Johnson also feels that the course is an excellent idea for the graphics degree. The course has been taught the last two spring semesters but has had low enrollment. Laura is hoping that the word about this course will spread and enrollment will increase.

VI. Adjournment. Meeting adjourned at 11:02 am.

Minutes submitted by Gaye Terras

BIOGRAPHY – LAURA B. PIKE

A. Professional Preparation

Undergraduate Institution:	Major	Degree & Year
Normandale Community College	AA	1983
SD School of Mines and Technology	BS	Computer Science, 1985
Graduate Institution:		
GA Tech	MS	Computer Science, in progress (2019)
Certification(s):	Certificate	Year
MS Server 2000	MCP	2001

B. Alignment – indications or evidence of how your 1) degree(s), and/or 2) research, and/or 3) professional experience, and/or 4) other related experience align with or support your teaching or research activities

Being a graduate of a community college has made me appreciate what a community college can offer. Now as a professor at a Great Basin College, I want to provide the same quality of education to student today. With my MS and BS in Computer Science, I feel that I am well equipped to teach programming and database concepts.

Upon graduating, I went to work for Exxon where I was able to put my programming and database knowledge to work. While in the private sector, I held positions as a System Analyst and an Oracle Database Administrator. I relay this experience every day in the classroom. It also has allowed me the ability to answer the question I get from students, “What does a computer science major do?”

When I left Exxon, I started working for community colleges as a contract trainer and adjunct. I taught a variety of computer applications including AutoCAD, Windows OS and office productivity tools. In 2000, I took the networking courses offered by Great Basin College (GBC) from Ed Nickel with the idea that I could teach these classes for GBC in Winnemucca as an adjunct. All this teaching experience allowed me to stay current with the latest technology and prepared me to become a full time faculty member.

I am looking forward to completing my MSCS from GA Tech this December 2019. This is a completely online program has allowed me to participate in Canvas as a student. This along with the Education Technology course has provide insight on how I can improve my online courses.

C. Academic Endeavors – Teaching (including all courses taught), research, and any other academic activities in the past five years; identify degree of course technology used for teaching (e.g., 25% face-to-face, 75% online; 100% online; 100% face-to-face; etc.). Courses taught multiple times only need to be entered once.

CIT 110	A+ Hardware	100% online
CIT 112	Network+	100% online
CIT 129	Intro to Programming	100% online
CIT 130	Beginning Java	100% online
CIT 174	Linux	100% online
CIT 180	DB Concepts and SQL	100% online
CIT 217	Security+	100% online
CIT 211	Network I	100% online
CIT 212	Network II	100% online

CIT 213	Network III	100% online
CIT 214	Network IV	100% online
CIT 215	Network V	100% online
CIT 263	Project Management	100% online
CIT 361	TCP/IP	100% online
CIT 480	DB Administration	100% online
CS 135	Computer Science I	100% online
COT 204	Using Windows	100% online

D. Products – published, patented, or otherwise contributed to your discipline and/or your teaching in the past five years

none.

E. Synergistic Activities – public, private, or academic activities you have conducted in the past five years with others to contribute to your discipline, teaching, or community

In the past 5 years, I have been an active member of the Elko First Presbyterian Church, including choir and help computerization and projection of the worship services.

Since being fulltime with Great Basin College, I have been active in committees including Assessment, Academic Standards, department representative for Faculty Senate, Comp and Benefits, and currently I am the CT Department Chair.

Since acquired the AAS - Information Specialist program, I have converted it to the Computer Programming emphasis and added instruction for the following languages: Java, Python, C++, and SQL. Since then we have seen a significant increase in enrollment.

In the spring of 2017 and with the help of Barrick, I implemented the Cisco Networking Academy including a virtual lab environment, NETLAB+VE. I worked with Curriculum and Articulation to bring five Cisco courses (CSCO 120, 121, 220, 221, and 230) to GBC and incorporate them into the Network Specialist program as a possible course path for students. I also developed the CCNA Routing and Switching Skills Certificate and the CCNA Security Skills Certificate. In this past year, four more Cisco courses have been added; one CCNA Wireless course (CSCO 130) and three for CCNP Routing and Switching to be included in the BAS DIT as electives.

F. Professional Development – conferences, personal study, additional activities, etc. conducted or attended in the past five years that support improvement of your research and/or teaching activities

- Attend ACM SIGCSE conference in 2014, 2016, 2017, and 2018.
- Attended the NACTE conference in 2014 and 2015.

BIOGRAPHY – KATHERINE A. SCHWANDT

A. Professional Preparation

Undergraduate Institution	Major	Degree & Year
University of Nevada, Reno	Psychology	BA, 1988
Graduate Institution	Major	Degree & Year
University of Nevada, Reno	Education	MA, 1999

B. Alignment – indications or evidence of how your 1) degree(s), and/or 2) research, and/or 3) professional experience, and/or 4) other related experience align with or support your teaching or research activities

Teaching is all about working with people, so my Bachelor's degree in psychology is invaluable with the human relations inherent in teaching. The program of study in education for my Master's degree directly relates to teaching.

C. Academic Endeavors – Teaching (including all courses taught), research, and any other academic activities in the past five years; identify degree of course technology used for teaching (e.g., 25% face-to-face, 75% online; 100% online; 100% face-to-face; etc.). Courses taught multiple times only need to be entered once.

CIT 151 100% online
 CIT 303 100% online
 COT 490 100% online
 GRC 101 100% online
 GRC 103 100% online
 GRC 119 100% online
 GRC 156 100% online
 GRC 183 100% online
 GRC 188 100% online
 GRC 256 100% online
 GRC 320 100% online
 GRC 350 100% online
 GRC 360 100% online
 GRC 364 100% online
 GRC 365 100% online
 GRC 455 100% online
 GRC 492 100% online

D. Products – published, patented, or otherwise contributed to your discipline and/or your teaching in the past five years

n/a

E. Synergistic Activities – public, private, or academic activities you have conducted in the past five years with others to contribute to your discipline, teaching, or community

- I developed the upper-division GRC classes required to offer a GRC emphasis for the BAS degree at GBC, and several students have now graduated from this program.
- I completed the process to implement a 30-credit GRC Certificate program, effective in fall 2016. This program is equivalent to the first year of the Computer Technologies AAS-GRC program, and enables students to ladder their programs: Certificate, AAS, then BAS.

- I completed the process to redesign and reactivate the former Web Specialist program to be the Web Development program, effective in fall 2018. This program is an emphasis for the Computer Technologies AAS degree, and is also a track in the BAS-DIT program.

F. Professional Development – conferences, personal study, additional activities, etc. conducted or attended in the past five years that support improvement of your research and/or teaching activities

Prior to each semester I attend in-service professional development activities and lectures conducted by GBC. I engage in continuous personal study with industry publications and websites to stay aware of happenings in the graphic communications realm and changes in computer technology. In addition, I attended the following conferences.

HOW Design Live	May, 2015
99U	May, 2016
AIGA	October, 2016
HOW Design Live	May, 2017
Adobe MAX	October, 2017
An Event Apart	July, 2018

BIOGRAPHY – Madison Arbillaga

A. Professional Preparation

Undergraduate Institution	Major	Degree & Year
Great Basin College, Elko	Elementary Education	BA E.Ed 2013
Graduate Institution	Major	Degree & Year
American College of Education	Instructional Design and Technology	M.Ed 2017

B. Alignment – indications or evidence of how your 1) degree(s), and/or 2) research, and/or 3) professional experience, and/or 4) other related experience align with or support your teaching or research activities

Receiving my bachelors in elementary education supports my understanding of the pedagogy and instructional importance of differentiated education in the learning environment. Through this educational background I am able to develop instruction that is appropriate for our diverse population of learners. This was primarily focused on face-to-face instruction however, my master's degree taught me strategies to implement traditional teaching approaches in the online environment and develop quality online courses.

Obtaining a focus in instructional design and technology provide an invaluable foundation necessary to develop multiple courses in the online learning environment of Canvas. Creating courses that are content focused and relevant with technology emphasis allow for students to be on the edge of the latest educational trends. This has also encouraged my continued education to maintain new and applicable teaching strategies.

C. Academic Endeavors – Teaching (including all courses taught), research, and any other academic activities in the past five years; identify degree of course technology used for teaching (e.g., 25% face-to-face, 75% online; 100% online; 100% face-to-face; etc.). Courses taught multiple times only need to be entered once.

IS 101	Information Systems	100% online
COT 240	Professional Office Procedures	100% online
CIT 203	Intermediate Access	100% online
MCOD 110	Introduction to Medical Coding	100% online
MCOD 120	Medical Terminology/Healthcare	100% online
MCOD 130	Anatomy & Physiology & Pharmacy	100% online
MCOD 140	Healthcare Structure & Records	100% online
MCOD 200	Introduction to Coding	100% online
MCOD 220	Reimbursement Procedures	100% online
MCOD 230	Sill Building Coding & Billing	100% online

D. Products – published, patented, or otherwise contributed to your discipline and/or your teaching in the past five years

N/A

E. Synergistic Activities – public, private, or academic activities you have conducted in the past five years with others to contribute to your discipline, teaching, or community

N/A

F. Professional Development – conferences, personal study, additional activities, etc. conducted or attended in the past five years that support improvement of your research and/or teaching activities

Throughout the semester many online webinars are available through companies such as Microsoft, Cengage, and Campus Management that allow for continued education of course material and best teaching practices. I have also been able to attend a conference in which best teaching practices and teaching collaboration were the focus for the Red Rock Teaching Retreat. This opportunity provided interaction with other teaching professionals to collaborate, share, and discuss important topics in higher education. I also plan to attend the Canvas national conference this year in which I will gain insight into what is new within our current LMS and new technologies available to our students.

BIOGRAPHY – Byron Calkins

A. Professional Preparation

Undergraduate Institution	Major	Degree & Year
Northern Vermont University, Lyndonville, VT New Mexico State University	Geographic Information Systems Surveying Engineering: ABET Accredited	A.S. 2004 B.S. 2009
Graduate Institution	Major	Degree & Year
New Mexico State University New Mexico State University	Online Learning and Teaching Certification Applied Geography	M.A. 2013 M.A.G 2014

Core Qualifications - Instruction:

Online Instruction in Land Surveying/Geomatics

- Fundamentals of Land Surveying/Geomatics
- LIS/GIS systems
- Remote Sensing & Photogrammetry

Core Qualifications - Engineering & Consulting: Subsurface Utility & Forensics Engineer

- Subsurface Utility Engineering-Designating/Locating/Forensics Specialty (GPR/EM/GPS)
- GIS Applications for Civil/Surveying Engineering
- Subdivision Surveying & Historical Land Records

Core Qualifications - Climate & Viticulture: Agricultural Climate Research

- Author of predictive climate model for viticulture parcels in NM

Academic Positions:

2014 - Present Program Supervisor, Advisor, Professor. Great Basin College, Elko, NV

- An online Bachelor of Applied Science degree program with 71 enrolled students
- An online Associate of Science degree program with 34 enrolled students

2012 - 2014 Adjunct Professor. New Mexico State University, Las Cruces, NM

- Adjunct Professor: Surveying Engineering Department. Taught: "Introduction to Land Information Systems" and "GIS for Land Surveyors."

B. Alignment - indications or evidence of how your (1) degree(s), and/or (2) research, and/or (3) professional experience, and/or (4) other related experience align with or support your teaching or research activities.

In my experience, the content and components of online curriculum play a vital role in learner success; yet the function and characteristics of the course's online community is often the backbone and provides the catalyst needed for positive student achievement. By fostering online learning communities, geographically separated members - often working individually or in small groups - can become communities of common interest regardless of location. I have worked in the private sector for 25 years and know what is expected in a job environment and can bring examples of real life situations into my online classes.

Current Engineering and Research Projects:

Project 1: Vermont State Park Campground Site Design (In Progress). Employer: CSI

The State of Vermont hired CSI to survey, design, and layout a high elevation (1800') five unit campground at Mount Ascutney State Park. This site plan includes two ADA compliant cabins complete with water lines, onsite wastewater disposal, road and parking lots, trails, and 700 feet of stone retaining walls. The design and construction effort modeled previous Civilian Conservation Corps historical architectural found in the park. I was responsible for the layout of road, stonewalls, cabin locations, monitoring construction progress, and photographic documentation of construction.

Project 2: Burlington, VT. Church St. Hazardous Waste Site, VT (In Progress). Employer: CSI

Utility Locating for Drilling Operations. Hired to perform a subsurface ground penetrating radar survey (GPR) on a vacant commercial lot previously owned by Burlington Free Press. Radar data was then post processed; cleaning up synthetic artifacts, noise inherent to the 400 MHz frequency and the variable soil dielectric properties. Final maps were produced and drilling commenced to monitor possible hazardous waste.

Project 3: Novo Nordisk - NVO (NYSE) (Completed 2018). Employer: CSI

GPR/EM/GPS subsurface utility & forensic surveying within the existing facility and for new exterior construction in Lebanon, New Hampshire.

Project 4: Bretton Woods Resort (Completed 2018). Employer: CSI

GPR and EM locating of subsurface utilities for new Ski Chair and Lodge expansion at Mt. Washington Hotel in Bretton Woods, NH.

Project 5: Eversource Energy - ES (NYSE). (Completed 2017). Employer: CSI

Preliminary GPR and EM locating of ROW subsurface utilities for the buried portion (60 mi) of the \$4 B DC electrical line construction through New Hampshire.

Project 6: Dartmouth College (Completed 2016). Employer: CSI

Forensic Surveying (GPR & GPS) to locate 18th Century undocumented grave sites in Hanover, NH.

C. Academic Endeavors - Teaching (including all courses taught), research, and any other academic activities in the past five years; identify degree of course technology used for teaching (e.g., 25% face-to-face, 75% online; 100% online; 100% face-to-face; etc.). Courses taught multiple times only need to be entered once.
2014 - Present: Professor. Great Basin College, Elko NV

Teach a wide spectrum of Land Surveying and Geomatics undergraduate classes 100% online

- CADD 121 CAD for Land Surveyors
- CADD 421 Advanced CAD for Land Surveyors
- GIS 109 Introduction to GIS
- GIS 320 GIS in Business and Community
- SUR 280 Fundamentals of Geomatics I
- SUR 281 Fundamentals of Geomatics II
- SUR 290 Introduction to Urban Development
- SUR 320 GIS for Surveyors
- SUR 330 Introduction to Least Squares Adjustment
- SUR 340 Photogrammetry and Remote Sensing
- SUR 440 Geodetic and GPS Surveying
- SUR 450 Construction Surveying
- SUR 460 Advanced Boundary Analysis
- SUR 495 Land Surveying/Geomatics Capstone

D. Products - published, patented, or otherwise contributed to your discipline and/or your teaching in the past five years.

Selected Publications:

- Calkins, Byron, et al; The Boundary Survey of the United States and Mexico "Hidalgo de Guadalupe Medir," Treaty of Guadalupe Hidalgo (1848). *Surveying and Land Information Science*, Volume 68, 4, December 2008, pp. 221-237 (17 pages).
- Calkins, Byron. GBC Land Surveying Students Bring Home Top Award at National Competition: May 2016. *Nevada Traverse*, Volume 43, 2, May 2016, p. 9 (1 page).
- Calkins, Byron. Great Basin College: GBC Celebrates Scholarship, Integrity, and Camaraderie: Sep 2017. *Nevada Traverse*, Volume 44, 3, Sep 2017, p. 29 (1 page).

E. Synergistic Activities - public, private, or academic activities you have conducted in the past five years with others to contribute to your discipline, teaching, or community

2015 - Present: Enhancements to the Land Surveying Geomatics professional experience include:

- Creation of an online student chapter
- Creation of a student honor society
- Creation of national competition team
- Addition of three new courses and four revamped courses
- Increased female student enrollment from 5% to 20%
- Added \$2500.00 Latino Surveying Scholarship
- Added \$2500.00 Women Surveying Scholarship
- Created 28 hours of professional development hours (PDH) mentoring credits

Other enhancements to the Land Surveying Geomatics professional experience include the creation of an online Land Surveying/Geomatics Associate of Science (AS) degree program designed to matriculate traditional and non-traditional learners, who have limited post-secondary education, directly into a professional degree seeking program of study. The Associate of Science in Land Surveying and Geomatics prepares the student for entry-level positions in surveying/mapping, civil engineering, resource management, and mining; as well as diverse technical opportunities within federal, state, and local government agencies. In addition to gaining technical employment, the program is also intended to provide a seamless pathway into the Bachelor of Applied Science's (BAS) Land Surveying and Geomatics program.

F. Professional Development - conferences, personal study, additional activities, etc. conducted or attended in the past five years that support improvement of your research and/or teaching activities

I have been an active guest speaker for the Las Vegas, Reno, and Elko professional surveying chapters. I have presented to the Board of Professional Licensure in Las Vegas, NV concerning academic collaboration with UNLV. I have been a guest speaker for the Nevada Trimble User Conference numerous times, and I was selected as a guest presenter for an ESRI user conference in Phoenix, AZ. These speaking engagements help promote the GBC Land Surveying program and raise the profile of this institution. Furthermore, I have been actively publishing papers in the Nevada Traverse and I have edited and submitted five separate student papers for publication. Outside of collaborating with the various stakeholders and investors in the Nevada geospatial industry, course design, teaching, advising, mentoring, public speaking, publishing and editing, I have participated in surveying conferences as an attendee and booth presenter.

Ongoing Research - Agricultural Climate Research:

Spatial analysis of future climate structure in Nevada viticulture regions. Current research involves building a model that will identify suitable locations for commercial vineyards in Nevada. Core development of a geographic spatial model involves the synthesis of multiple raster and vector data sets; including Community Climate System Models (CCSM), satellite Landsat 4/5 TM band data, USGS 7.5' quad maps, NRCS soil data, PRISM climate data, vegetation data, digital terrain models, road, town, and government boundaries. My research is to help facilitate commercial development and growth of vineyard agriculture in Nevada.

Certifications:

- USDA: Seasonal high-water interpretation. Soils Certification
- GSSI: Radar Theory and Application. Subsurface Radar Certification.

Memberships and Honor Societies:

- National Society of Professional Surveyors (NSPS)
- Nevada Association of Land Surveyors (NALS)
- Gamma Theta Upsilon International Geographic Honor Society (GTU)
- Lambda Sigma Honor Society (LS)
- El Camino Real de Tierra Adentro Trail Association member (CARTA)
- Bureau of Land Management partner/volunteer (BLM)
- National Audubon Society member/volunteer

BIOGRAPHY – Joseph Cheung

A. Professional Preparation

Undergraduate Institution:	Major	Degree & Year
California State University, Sacramento	Bachelor of Vocation Education	Bachelor of Vocation Education with Magna Cum Laude, California State University, Sacramento November, 2005
Graduate Institution:		
California State University, Sacramento	Educational Technology – Distant Education	Master of Educational Technology California State University, Sacramento May 2008
Certification(s):	Certificate	Year
Certified Cisco Instructor for CCNP - ROUTE, SWITCH and TSHOOT - 2003 Certificate for Cisco-Instructor: CCNA-Security Certified Nov. 2009 Certificate of Recognition of 10 years of active Instructor participation and service in the Cisco Networking Academy program. Awarded 2013		

B. Alignment – indications or evidence of how your 1) degree(s), and/or 2) research, and/or 3) professional experience, and/or 4) other related experience align with or support your teaching or research activities

Instructor's Training:

Ethical Hacking – Sierra College(Sacto) June2016
Comptia Security + – Mpict Training (SF) June2015
Linux Essential – Mpict Training (LA) June2015
Oracle Database Programming with SQL July 2014
Ethical Hacking – Mpict Training(SF) June2014
VMWare – Mpict Training(LA) June2013
Information & Storage Management - June2012
CISSP – Mpict Training(SF) June2011
Computer Forensics– Mpict Training(SF) June2010

C. Academic Endeavors – Teaching (including all courses taught), research, and any other academic activities in the past five years; identify degree of course technology used for teaching (e.g., 25% face-to-face, 75% online; 100% online; 100% face-to-face; etc.). Courses taught multiple times only need to be entered once.

Adjunct Professor at Sacramento City College – CCNP-ROUTE, SWITCH and TSHOOT [online]; Comptia Network + [online]; ciscn351-Local Area Network [online] 2015 March 17 to Present

Business and Computer Information Science Lab
Lab Coordinator at Sacramento City College
2015 Oct to Dec.

Instructor at Truckee Meadows Community College –
Instructor for Windows Operating Systems-7, 8 and Professionals; MS-Office- Word, Excel, Power Point and Access; CCNA 1, 2, 3, 4 and CCNA-Security
August 2012. to December 2015

Instructor at Heald College - IT106 Introduction to Information Technology Apr. to Jul 2011

Cisco Certified Instructor (Secondary) at Sacramento
City College, CCNA, CCNP and Security - Class/Lab
Assistant to Pro. Tim Taylor
August 2003-August 2012

D. Products – published, patented, or otherwise contributed to your discipline and/or your teaching in the past five years

Not Applicable

E. Synergistic Activities – public, private, or academic activities you have conducted in the past five years with others to contribute to your discipline, teaching, or community

Not Applicable

F. Professional Development – conferences, personal study, additional activities, etc. conducted or attended in the past five years that support improvement of your research and/or teaching activities

**Attended Syber Security Summit – October 16, 2018 at UC Davis Conference Center; organized by
United States Attorney's Office Eastern District Of California
U.S. Department of Justice – Fedferal Bureau of Investigation**