PROGRAM REVIEW 2018 REPORT

BACHELOR OF APPLIED SCIENCE DIGITAL INFORMATION TECHNOLOGY

Contents

Executive Summary

This review of Great Basin College's Bachelor of Applied Science Digital Information Technology (BAS-DIT) program shows that it has lagged behind student and industry needs, but is beginning the process of better serving these needs with an updated approach. This approach entails developing more focused tracks within the program rather than operating as a generalist program. These tracks are web development, network specialist, and computer programming. Since first being offered beginning in the 2006-2007 academic year, there have been 25 graduates of the BAS-DIT program, and we believe a program with more focused tracks will better serve students and industry and result in many more graduates. The Computer Technologies Department will have the appropriate faculty members in place for these tracks when vacant faculty positions are filled this spring; the Program Information section of this document elaborates on the overall BAS-DIT plan going forward.

The recommendations represent judgments by the program review coordinator of priorities based on the preliminary study, the program review committee meeting, and the external evaluator's written report. Administration and the Computer Technologies Department may use these recommendations to inform priorities for continued improvement of the BAS-DIT program.

Program Review Policy

The purpose of the program review is "to ensure academic quality, and to determine if need, student demand, and available resources support their continuation." (NSHE Title 4, Chapter 14, Section 5)

The periodic program review provides an opportunity for the college to reflect on the quality of instruction within programs, to develop tools to measure program effectiveness, to ensure the viability of degrees and certificates with regard to our graduates' employment opportunities and transferability to other institutions, and to enhance our graduates' ability to be productive and discerning citizens of their communities.

The information gained can inform the college about which programs are serving the constituency well in their present form, which programs need moderate or minor changes regarding structure, instruction, curricula, and/or format, and which programs need to be changed drastically or eliminated altogether. These decisions can be difficult, and the program review process provides GBC with the most current and sound data to influence making such determinations.

Computer Technologies Department Mission Statement

Our mission is student success; therefore, 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 to deliver high-quality educational experiences.

Computer Technologies Department Faculty			
Instructor	**Degree/Training**	**Years at GBC**	**Total Years Teaching Experience**
Calkins, Byron	MAG, New Mexico State University MA, New Mexico State University BS, New Mexico State University AS, Lyndon State College	4	7
Cheung, Joseph	MA, California State University BA, California State University CCNA, CCNP, CCIE Security Candidate	1	6
Pike, Laura	MS, Georgia Tech (anticipated completion fall 2019) BS, South Dakota School of Mines & Technology	20	22
Schwandt, Kathy	MEd, University of Nevada, Reno BA, University of Nevada, Reno	22	22
TBD: BAS-DIT faculty member		will be hired spring 2018	
TBD: Office Technology faculty member		will be hired spring 2018	
There are currently two part-time instructors for BAS-DIT classes	GBC Emeritus Faculty with Master's Degrees		
Dean of Business and Technology			
Murphy, Bret	MEd, University of Nevada, Reno BT, Northern Montana College	34	22

How the BAS-DIT Program Supports the GBC Mission

"The mission of Great Basin College is to provide superior, student-centered, post-secondary education in rural Nevada." Career and technical education is one of the five major types of education offered by GBC and has been a major element of the college program from the beginnings of the college 50 years ago. The career and technical programs, including those in the Computer Technologies department, are developed and refined to meet the demands of the current economy.

Perkins Grants

GBC receives Carl Perkins CTE grant funding from the federal government through the Nevada Department of Education. These funds have been used to help start and augment several CTE programs at GBC, including programs in Agriculture, Radiology, the High School Diesel program in Battle Mountain and Broadcast Technology. Funding in 2015 helped with the startup of the new Paramedic Program. The Carl Perkins grant also supports the CTE College Credit coordinator's position and over the years purchased several thousands of dollars for technical equipment. It has also provided professional development funds for the CTE program faculty.

Other Funds

Barrick Gold Corporation provided funding that supports the faculty position and equipment for the Cisco networking classes and program for three years. This funding began in fall 2017 and will continue through spring 2020.

Online Education

Every program within the Computer Technologies department is available completely online.

JOIN, Nevada Job Connect, Vocational Rehabilitation

GBC has worked with Job Opportunities in Nevada (JOIN) to help train displaced workers. JOIN has sponsored many students in Computer Technologies programs. Nevada Job Connect and Vocational Rehabilitation have also sponsored students in Computer Technologies programs.

Bachelor of Applied Science (BAS)

GBC recognized the need for their CTE graduates to continue their education, and in 1997 the Bachelors of Applied Science (BAS) degree program was established. In the beginning the BAS program had one emphasis, Management in Technology, which was created specifically for Associate of Applied Science students who were either in management or were considering management careers.

The Management in Technology BAS was very popular, and because of this popularity five emphasis areas were created. However, only instrumentation, land surveying/geomatics,

digital information technology and management in technology remain from the original five emphasis areas. Agriculture was placed on the inactive list due to budget cuts and low enrollments. In 2014, a program review committee recommended that the GBC administration eliminate the associate degree in Agriculture; that degree is no longer offered.

In 2013, a graphic communications emphasis area was added to the BAS program bringing the number of emphasis areas back up to five. The Management in Technology area has been updated and renamed Management and Supervision. Three of the five BAS emphasis areas are in the Computer Technologies department: digital information technology, graphic communications, and land surveying/geomatics.

How the BAS-DIT Program Integrates with Other Departments and Programs at GBC

Admission into the BAS-DIT program requires evidence of completion of an associate's degree from a regionally accredited college, and a strong background in computer technology in fields such as networking, information technology, office technology, programming, GIS, or some other computing field. Students are able to earn a qualifying associate's degree from GBC. Additionally, within the BAS-DIT program there are general education requirements and applied science core requirements that are from many disciplines outside the Computer Technologies department. Examples include oral and professional communications, math, humanities, social science, philosophy, finance, and management.

Recruitment Approaches

CTE College Credit

In fall 2014, the Tech Prep program became CTE College Credit; the transition from Tech Prep to CTE College Credit was completed by summer 2016. CTE College Credit is a collaborative effort between college instructors and high school instructors where both agree that the class taught in high school is equivalent to the college level. There is a ten dollar fee the student pays to get a GBC transcript with the CTE College Credit class posted on it. Classes that qualify for CTE College Credit are available at 27 high schools in the GBC service area. Students can earn up to 21 free college credits for select CTE courses taken in high school.

The CTE College Credit Coordinator spends time informing students within Great Basin College's Service area about the opportunities available to them in fields related to their Career and Technical Education classes. The CTE College Credit Coordinator in conjunction with the GBC Recruitment Coordinator schedules spring visits to all the service area high schools, to talk to senior classes as well as targeted CTE classes including Agriculture Science, Welding, Drafting, Electronics, Automotive Technology, Business, Computer Technologies, and Woodworking.

CTE College Credit and area mines also sponsor "Mining Rocks" twice a year for high school students to learn about the various careers available in mining; in addition, the students take a tour of an active mine site. CTE College Credit has also worked with many Career and Technical

Student Organizations to host and participate in regional and state competitions. CTE College Credit also offers other activities for high school students to learn about education and careers as funding is available.

At GBC, students entering into the CTE programs can apply for Pell Grants by completing the Free Application for Federal Student Aid (FAFSA). Qualifying students who meet the income standards will receive aid to help them pay for their technical education. Other sources for low income CTE students are college scholarships, JOIN, MTC scholarships, and Boys and Girls Club scholarships.

Another way that high school students can earn college credit is through Dual Credit classes. Dual credit is given when a high school student takes a high school class that is taught by a GBC instructor. This class counts towards the student's high school credits, and because it is a GBC class it also counts towards GBC credit.

The History and Future of the BAS-DIT Program

Ed Nickel is the Computer Technologies (CT) department faculty member who originally designed the BAS-Digital Information Technology (DIT) program that was first offered in the 2006-2007 academic year. It was designed to be quite broad to enable students with any CT-related AAS degree to go on to earn a BAS degree. At the time, the available AAS degrees in what was then called the Computer Office Technology (COT) department, were in CADD/GIS, Graphic Communications, Information Specialist, Network Specialist, Office Technology, and Web Specialist. Because students could come into the BAS-DIT program with such a wide array of AAS degrees, the BAS-DIT program was designed to accommodate that. It included courses such as the 1-credit GRC 301, the 1-credit GIS 301, the 1-credit COT 301, the 1-credit CIT 302, and the 1-credit CIT 301. These classes were designed for students who had a degree that didn't address these areas. For example, if a student had an Information Specialist AAS, s/he would take the GRC 301 class to get a brief background in Graphic Communications, in order to be able to successfully take GRC 319 or GRC 383, which were required options in the BAS-DIT program.

By the time Ed Nickel retired after the spring semester of 2015, the one-credit classes had been consolidated into one, three-credit class: CIT 303 – Intermediate Survey of Computing. The remaining BAS-DIT emphasis classes, however, were still much the same as they were when the program was first created. Before Ed retired, all the faculty members of the CT department discussed the need to update the BAS-DIT program to be more beneficial for students and more reflective of the current technology field. It was decided that the BAS-DIT should be less of a generalist program and more of a specific program, and that the new faculty member coming in to fill Ed's position would be responsible for updating the program. Unfortunately, this new faculty member was in the CT department for only three semesters: fall 2015 through fall 2016, and was unable to make significant changes to the program during this time. The department is currently going through the hiring process to refill this position, with a start date of August 1, 2018.

The lack of a faculty member to primarily supervise the BAS-DIT program means that is has not been fully attended to and modernized for several years. This has led to stagnant growth for the program, as shown in the Graduates table on page 11. The Computer Technologies department now believes that the best way to make the BAS-DIT program most beneficial for students is to create tracks within the program that more specifically align with students' CT-related AAS degrees. The current AAS degrees (as of the upcoming 2018-2019 academic year) in the CT department are Computer Programming, Graphic Communications, Network Specialist, Office Technology, and Web Development. A BAS-GRC was developed and offered beginning in the 2013-2014 academic year, and historically, students who earn an Office Technology AAS degree tend to go into the BAS-Management and Supervision program. This means that Computer Programming, Network Specialist, and Web Development are the logical tracks for the BAS-DIT. Current staffing, the upcoming refill of the BAS-DIT faculty position, and already-developed upper-division classes make the Web Development track the sensible one to start out with; the Computer Programming and Network Specialist tracks will become feasible once more upper-division classes are developed related to these areas.

Another reason that it makes sense to start with the Web Development track is that according to the Bureau of Labor Statistics, "employment of web developers is projected to grow 15 percent from 2016 to 2026, which is much faster than average for all occupations." (https://www.bls.gov/ooh/computer-and-information-technology/web-developers.htm) An article in the Udacity blog supports this data, stating, "As of July 2017, the Internet contains more than four billion pages. And counting. Talk about some serious job security for web developers, the people responsible for coding, building, analyzing, and maintaining all those websites. Websites are now a critical component for any business to stay competitive. And as web development trends and best practices change practically with the season, there's no shortage of work for developers." (https://blog.udacity.com/2014/12/front-end-vs-back-end-vs-full-stack-web-developers.html)

A web development track (and the other two proposed tracks) also correspond to needs of Nevada. "From July to December 2016, the Governor's Office of Workforce Innovation for a New Nevada (OWINN) partnered with the Governor's Office of Economic Development (GOED) and the Department of Employment, Training and Rehabilitation (DETR) to coordinate and convene industry representatives of Nevada business, education, and labor to acquire insights concerning sector-specific workforce needs and challenges to help guide state workforce development efforts." An excerpt of the resulting report follows. (The full report can be found here: http://gov.nv.gov/OWINN/InDemandOccupation/)

"The 2017 In-demand Occupation and Insights report is a resource for K-12, Career Technical Education (CTE), and postsecondary institutions as well as nonprofits, government entities, and workforce boards to leverage in preparing Nevada's workforce to make informed decisions about program or training offerings that align to research and labor market data as well as the state's needs. But perhaps, even more importantly, leveraging the 2017 In-demand Occupation and Insights provide a level of information and security for students and adults engaging in various career pathways and spending precious time, energy, and financial resources to make informed decisions and

understand the consequences of the choices they make when pursuing skills and training. OWINN, GOED, and DETR in partnership with the GWDB Industry Sector Councils will produce an annual list of in-demand occupations. We encourage institutions to work to align education and training programs shared in these findings and, in doing so, grow a skilled, diverse, and aligned 21st century workforce capable of excelling within a vibrant and sustainable economy."

Web Developers are an in-demand occupation that shows up in the Information Technology and Tourism/Gaming/Entertainment sectors. According to the 2017 In-demand Occupation and Insights report, "An occupation that shows up in more than one industry has significant implications in diversifying and growing the economy."

An older report from 2015, the "State of Nevada Information Technology Occupations" report, contains additional supportive data. This report can be found through the nevadaworkforce.com website. The section of this report with the heading of "Web Developer Occupation" lists the following information.

- In 2015 there were 800 web developer online job postings in Nevada. This is a 90 percent increase over the 2014 total of 420 ads. Most employers in terms of total ads were from the following industries: management/scientific/technical consulting services, traveler accommodation, and colleges/universities/professional schools.

- In 2015 a total of 250 ads in Nevada specified an educational requirement. About 80 percent of ads required a Bachelor's degree.

- Regarding skills requirements 580 job postings specified skills in 2015. The most requested specialized skills were: JavaScript, Website development, and web development. The most requested baseline skills were: writing, communication, and creativity.

The current curriculum for the BAS-DIT is referred to in the next section of this document (Curriculum and Learning Outcomes). Within the Program Emphasis Requirements there are two upper-division classes that need to be offered at GBC for a Web Development track: CIT 302 and GRC 370, and COT 490 would need to be revised. The BAS-DIT Web Development track would then have the following Program Emphasis Requirements classes beginning in the 2019-2020 academic year.

- CIT 302 – Programming and the Web: Development Essentials (replacing the current IS 301 – Management Information Systems)
- CIT 303 – Intermediate Survey of Computing
- CIT 361 – TCP/IP: Managing Network Resources
- CIT 480 – SQL Database Design and Implementation
- GRC 365 – Web and User Interface Design
- GRC 370 – Content Management Systems (replacing the current GIS 320 – GIS in Business and Community)
- GRC 383 – Advanced Multimedia Design: Video and Audio
- COT 490 – Digital Communications Capstone

Curriculum and Learning Outcomes

Appendix A provides the 2017-2018 catalog information for the BAS in general, and the BAS-DIT specifically. This information addresses the overall purpose the BAS, including student learning outcomes, and the BAS-DIT student learning outcomes. The BAS-DIT catalog page lists the current classes in the program and a suggested two-year, four-semester course sequence.

Program Emphasis Course Enrollments

Course Number	Course Title	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
CIT 303	Intermediate Survey of Computing	n/a	n/a	n/a	n/a	n/a	n/a	n/a	5	2	2
CIT 361	TCP/IP: Managing Network Resources	5	0	6	2	0	1	3	6	3	2
CIT 480	SQL Database Design & Implementation	2	0	0	0	0	0	0	0	0	2
COT 490	Digital Communications	2	2	2	1	2	1	3	5	3	2
GIS 320	GIS in Business and Community	14	7	4	3	1	6	8	4	11	16
GRC 365	Web and User Interface Design	n/a	n/a	n/a	n/a	n/a	n/a	n/a	2	4	7
GRC 383	Advanced Multimedia Design: Video/Audio	6	8	0	2	3	7	1	2	3	0
IS 301	Management Information Systems	26	32	20	24	26	25	26	35	48	42

Assessment of Learning Outcomes*

Course Number	Course Title	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	Total Enrolled
CIT 361	TCP/IP: Managing Network Resources	n/a	100%	100%	n/a	100%	100%	14
COT 490	Digital Communications	100%	100%	100%	80%	100%	100%	16
GIS 320	GIS in Business and Community	100%	66.7%	87.5%	n/a	81.8%	87.5%	46
GRC 365	Web and User Interface Design	n/a	n/a	n/a	100%	100%	85.7%	13
GRC 383	Advanced Multimedia Design: Video/Audio	100%	85.7%	100%	100%	100%	n/a	16
IS 301	Management Information Systems	92.3%	80%	88.5%	80%	89.6%	83.3%	202

*Total students with C- and above, P, or S grades/total enrolled after removing audits, incompletes and missing grades. Must have at least a total of 10 students enrolled.

Student Enrollment by FTE

Course Number	Course Title	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
CIT 303	Intermediate Survey of Computing	n/a	n/a	n/a	0.5	0.2	0.2
CIT 361	TCP/IP: Managing Network Resources	0.0	0.1	0.3	0.6	0.3	0.2
CIT 480	SQL Database Design & Implementation	n/a	n/a	n/a	n/a	n/a	0.2
COT 490	Digital Communications	0.2	0.1	0.3	0.5	0.3	0.2
GIS 320	GIS in Business and Community	0.1	0.6	0.8	0.4	1.1	1.6
GRC 383	Advanced Multimedia Design: Video/Audio	0.3	0.7	0.1	0.2	0.3	0.0
IS 301	Management Information Systems	2.6	2.5	2.6	3.5	4.8	4.2

Student Enrollment by Percentage of Minority Students Enrolled

Course Number	Course Title	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
CIT 303	Intermediate Survey of Computing	n/a	n/a	n/a	40%	0.0	100%
CIT 361	TCP/IP: Managing Network Resources	0.0	0.0	33.3	33.3	33.3	50.0
CIT 480	SQL Database Design & Implementation	n/a	n/a	n/a	n/a	n/a	50.0
COT 490	Digital Communications	50.0	0.0	33.3	60.0	0.0	0.0
GIS 320	GIS in Business and Community	0.0	16.7	25.0	25.0	27.3	31.3
GRC 383	Advanced Multimedia Design: Video/Audio	33.3	42.9	0.0	50.0	0.0	n/a
IS 301	Management Information Systems	19.2	12.0	26.9	31.4	20.8	38.1

Student Enrollment by Gender (Percentage of Women Enrolled)

Course Number	Course Title	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
CIT 303	Intermediate Survey of Computing	n/a	n/a	n/a	40.0	50.0	50.0
CIT 361	TCP/IP: Managing Network Resources	n/a	0.0	0.0	66.7	33.3	0.0
CIT 480	SQL Database Design & Implementation	n/a	n/a	n/a	n/a	n/a	50.0
COT 490	Digital Communications	0.0	0.0	0.0	60.0	33.3	50.0
GIS 320	GIS in Business and Community	100.0	33.3	62.5	75.0	54.5	68.8
GRC 383	Advanced Multimedia Design: Video/Audio	0.0	14.3	100.0	50.0	33.3	n/a
IS 301	Management Information Systems	57.7	64.0	76.9	51.4	60.4	76.2

Average Annual Full-time Equivalent (AAFTE) for the Computer Technologies Department

Department	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
Computer Technologies	118.0	148.7	150.5	141.4	129.8	124.0	118.2	109.5	130.6	138.3
Note: AAFTE is calculated as the total number of student credit hours enrolled in departmental classes an academic year (fall, spring, summer) divided by 30 and represents one full-time student enrolled in 15 credits in the fall and 15 credits in the spring.										

Declared Majors

2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
19	18	23	19	10	16
Note: Until fall 2015, students could declare multiple majors and so a unique headcount for all majors cannot be tabulated prior to that. As of fall 2015, students are required to declare the proximate major.					

Graduates

2006-13	2013-14	2014-15	2015-16	2016-17	2017-18
14	1	2	6	1	3*
*For the 2017-18 academic year, one student graduated in December 2017, and two more should graduate in May 2018.					

Graduate Surveys

	Are you currently employed (yes/no), in the military or in an apprenticeship?	If not, are you actively looking? If so, is it in a field related to your certification or degree?	Do you feel that the curriculum taught in the classes is current and relevant to employment? Why or why not?	Was the variety of technologies taught in the courses sufficient to be successful in the workplace? Provide examples.	Did you learn critical thinking, problem solving, and creativity, communication, and analysis skills in order to progress in your chosen career? Please explain.
Responding Graduate*	Yes	Yes	Yes	Yes	Yes
*There were nine graduates from 2014-2017. As part of the Carl Perkins CTE grant funding four of the nine graduates were contacted, and one of the contacted graduates gave responses to the above questions.					

Program Costs

Instructor Base Salary	Fringe 32%	Computer, Office, etc.	Software	Facility	Total
$76,000.00	$24,320.00	$2,000.00	$10,000.00	n/a	$112,320.00

BAS-DIT Program Review Committee
Meeting Notes
April 18, 2018
8:00 am

Introduction:

Bret Murphy, Dean of Business and Technology
Jonathan Boarini, Program Director of Graphic Communications

Overview of process:

Preliminary report sent to Jonathan
Verify information on report
Basis of review this year vs last year when due was the loss of instructor mid-year
Enrollment is down, going forward program will be improved and headed in a new direction.

Student participation:

Aurora Tangaro – comments
- Ed Nickel – good with working with her for independent study, allowed her to finish quicker
- Current job (Data Administrator) was built from her starting position and used knowledge learned in classes to help her develop her position and be promoted within the company she works at in West Wendover where employment is not always plentiful.
- Has taken both in person and online courses and sees the benefit of both. Online classes allowed her to do things more quickly, but a small classroom she enjoyed because of more faculty to student time available.
- Her transition from AAS to BAS was guided by Ed Nickel, and was very beneficial. She also thought the management and human resource classes she took were very helpful in her current job.

Roger Quijada-comments
- Currently employed by Great Basin College as a Computer Tech, has worked as a student first and then part time employee.
- He took independent studies with Ed Nickel when he was beginning the program. It was in the beginning stages of the program as a whole so he did most of his schooling on his own.
- He liked learning the basics of several different subjects with getting into more specific subjects as his education continued on.
- He liked the idea of more in person classes and feels more peer to peer is beneficial
- Felt the management classes were beneficial for when employed with learning. customer skills and having a good perspective of the customer.
- Thankful to go through classes at GBC and said it saved him a great deal of money.

Aurora Tangaro – in response to questions
- Would you have benefited more from hands on?
    - If interested in hardware you miss out on that being online only. It is also helpful to have good textbooks with pictures.
- Had you applied for other positions before your current position?
    - I grew from working front desk at hotel to current job as an Administrator. Did not seek other positions.

Roger Quijada – in response to questions
- If you had done classes online do you feel you would have had the same experience?
    - Feels like the resources are there but students should seek out personal experiences if having to do online classes.
- The program has a sampling of different subjects, was that ok?
    - It was new, but he liked it.

Closing comments on student participation

Bret to Aurora and Roger – Independent study is not viable in the long run. What will help program grow? What can we do?
- Aurora – Change the name so the program may be more noticeable to others looking for IT. Cut back on management classes and allow students to pick some specialty classes.
- Roger – Agree on name change. The generalization of classes may be a little off-putting to students seeking a degree. Programs might be trying to do too much, maybe information is not reaching a bigger audience.

Kathy Schwandt: Question and Answer with Jonathan.

J - DIT, that name seems unique to GBC?
K – The original developers of the program did want something general. There may be more marketing needed to get more information out there about the program.

J – What is focus on implementing three new tracks?
K – The web development track should be complete within two academic years. The networking track should be complete two academic years after that, and theprogramming track two academic years after that.
K – GBC just became a Cisco Academy which should create a pipeline of students for the networking track.
K – Laura Pike will have a Master's and can oversee the programming track . She is working on a Master's in Computer Science at Georgia Tech.

J – DIT very general, but getting more specific with three new tracks. Why not offer three separate degrees?
K – Board of Regents are reluctant to approve new Bachelor's programs at this time.

J – How is search for faculty going?

K – We have to reopen the search. We contacted four applicants, three declined to interview, and one never responded back to us. Bret recently did a presentation regarding having more competitive salary to offer prospective candidates.

K – We will probably resume a search in fall for a January start.

K – I would continue as Program Supervisor for one year in order to help with the transition of the new faculty member in that position.

J – What qualifications are you seeking?

K – Master's degree and experience.

J – Articulation and curriculum?

K – We will accept most AAS degrees but acceptance may be conditional if the degree is not in a technology program. An applicant may need to take classes to transition into technology and be prepared for the upper-division classes. Experience can be a factor, too.

J – When will degree sheet with three new tracks be out?

K – There will be submission to the Curriculum and Articulation Committee for the Web Development track for the 2019-2020 catalog.

K – The Gen Ed classes will stay similar. The Applied Science core may change if changes are made for all BAS degrees. Some tracks may share classes with other programs.

J – The CIT 303 syllabus presents an interesting overview of lots of different topics. Maybe expand on some of the topics such as Graphic Design, to give enough to make it easier for students to move on to upper-division courses.

J – Web development track, GRC 370 – Content Management Systems, is this replacing GIS 320 ?

K – Truckee is developing a 3+1 w/Nevada State College online, which includes GRC 370. The current version of the class is WordPress focused, but that could phase out in a few years.

J – Is program going to be all online?

K – Yes.

J – Could I see a list of credentials you are seeking with new faculty?

K – Yes, [emailed job description to Jonathan between sessions].

Review Meeting with Faculty and Advisory Board – Bret Murphy, Kathy Schwandt, Laura Pike, Luis Barrios (Newmont)

Bret – There is a low yield process for programs with low numbers over several years. We need to find a good direction to go in for the BAS-DIT progam. Find a good instructor and it will be a good program.

Kathy – Referred to Bret's presentation to the Legislative Council Bureau (LCB) in regards to being able to offer attractive salaries. Current salary expectations by those seeking a position may be more than what we can offer.

Bret – The LCB presentation was for Workforce Initiatives in CTE programs. Salary is the biggest reason we can't get instructors. Students starting out in industry are making more than the instructors.

Laura – One reason for low yield could be that many students go into the BAS Management in Technology degree thinking it was the degree they were looking for when it should have been the BAS-DIT. She had many students tell her the BAS-MT was not what they thought it would be about. It should help that the name of the BAS-MT degree was changed to BAS-Management and Supervision.

Laura – Making students aware, and getting the word out is important. The GBC website and external communication is improving. We are bringing the program up to date to fulfil needs of the business workforce.

Laura – It's important to not have just one instructor for all courses in a degree emphasis area. We would like to bring in a faculty member that has broader knowledge in order to possibly teach in other areas in the Computer Technologies department.

Kathy – The current position description for new BAS-DIT instructor very broad.

Bret – One struggle is deciding where to advertise open positions. Indeed.com and HigherEdJobs.com is where the position was last advertised. Any other publications/suggestions?

Jonathan – HigherEdJobs.com might be too academic heavy and not pulling from the industry sector.

Bret – Location (Elko) is an issue too. How to attract people that are in that industry?

Jonathan – Indeed might be good. Applicants could find teaching interesting. Casting a wider net would be a good thing.

Laura – There is an option to possibly place in Pahrump so they are closer to Las Vegas.

Bret – Has concerns about allowing faculty to be completely online. Full-time faculty have other duties including committee involvement and student advising.

Luis – You can make a multi-location work. Just get together a few times a year.

Attendees discussed having a probation period in Elko to get faculty used to GBC and the program.

The BAS was created in 2006 as a generalist degree so that any student with an AAS could go on to earn a BAS. The suggested new tracks within the BAS-DIT could be for a more specific degree. Do these seem like good track choices?

Luis – The networking track should be first for businesses in Elko. With Newmont there is a disconnect between departments and knowledge of networking. Virtualization is big now, and an intro course to that would be a good idea.

Laura – TCP/IP is built into several classes for networking. A bachelor's program with Cisco networking is in demand.

Luis – It's important to educate the public on how Computer Technologies classes and programs are integrated into many job opportunities.

Kathy – Increased marketing would a good idea to get the word out. Maybe GBC needs more marketing money?

Jonathan – Something he is doing at CSN is a bus tour with HS students with demos and lectures. He is going to forward information regarding that to Kathy and follow up with her on results.

Laura – Excited about booth at Mining Expo, and will use the opportunity to offer more communication on GBC programs and how technology is ingrained into everything.

Laura – It's important to have communication and advertising to industry and students. We will continue integration of Computer Technologies courses into different programs.

Bret – To explain to Jonathan, Mine Expo is big event with vendors and products. Events tied in with Expo include a golfing tournament and a sporting clays shoot. There are usually around 450 vendors.

Laura – Worked in mining for ten years, and understands the gap between employees and technology knowledge. We have a ways to go to close the gap.

Bret – Student advice on a name change for the degree? Can you see what you will learn based on a name? Might be something to look at. Luis commented that the degree name makes sense to him.

Bret – How much are we educating students on overlap between courses? Do they know about the BAS program? Bret suggested educating students about the BAS could be built into the coursework some, maybe as questions on tests, etc.

Jonathan – indicated that he will have the report written and ready to email out within two weeks.

BAS-DIT Program

Program Review Report

Jonathan Boarini

April 30th, 2018

Program Review Report

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Reviewer Credentials

- Program Director & Professor, Graphic Design Program at the College of Southern Nevada
- Extensive experience in the instructing of graphic/web design and related subjects in both on-site and on-line environments, coupled with vast experience in the industry.
- Development of curricula at the course, program & committee level

Verification of preliminary report

After attending the Program Review meeting, I was able to verify the information provided in the preliminary report to the best of my knowledge, in addition to gathering much additional information during our meetings.

Direction & viability of program

After review of the information provided, I agree with the direction of the program. There are some areas where more information will be needed, but I am confident that the faculty and administration of the college will ultimately create a successful and unique program, not only in the state of Nevada but nationwide.

The current structure of the proposed program, consisting of the core classes and the separate tracks (Network Specialist, Computer Programming & Web Development) offers initial flexibility and the ability to test whether the curriculum needs changes without the commitment of creating entire degrees beforehand. Because of this, I believe it is the correct approach.

Recommendations:

1. Because the program structure and its focus are unique and new to the college, it is important that the first cohort of students be closely observed throughout their time in it, and followed up with upon graduation in order to verify that they did in fact receive in-demand skills. Their feedback post-graduation will be crucial to verifying the direction of the program and making the necessary changes for the next cohort.

2. Although the Web Development track will be implemented first because it fits well with current faculty and curriculum, one of the attendees from the local industry present at the meeting suggested that the Network Specialist track be created and implemented first, citing demand for those skills. This feedback from is very important because it might indicate to the college which direction to go with first. More information is needed from industry and Program Advisory, and their suggestions should be ideally incorporated into those decisions.

3. Because some classes are still in the development stage (such as CIT 302, for example), I cannot provide feedback on them. I would be happy to review them once they are fully developed, since the content of the courses will be very important, particularly classes that form the Program Emphasis portion of the degree sheet.

4. Since the new and upcoming BAS-DIT is still in the development stage, I was unable to review a full and finalized list of the classes that will make up the Program Emphasis requirements for each of the 3 tracks. The makeup and content of these classes is crucial, and once again the input from Industry advisory will be very important.

Program Review Report

5. The classes that make up the Program Emphasis portion of the degree should ideally be created with industry demand as the first priority, and faculty skills as a secondary matter. In the case that faculty skills are insufficient, steps should be taken to ensure those gaps are filled.

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Student satisfaction

The amount of students who provided feedback (3 total, of which 1 provided their experience in writing) was in my opinion not sufficient to accurately gauge the level of student satisfaction. I realize there are limitations due the low amount of graduates from the program. Ideally, more students should be surveyed to increase the sample size.

Because student Roger Quijada was hired at GBC upon graduation without experience in the industry outside of the academic environment, in my assessment his feedback on the program has less weight that students that have gone into industry.

Kelsey McClanahan's feedback was very useful in its incorporation of hard data regarding what skills did and didn't serve her upon entering her employment in the industry. More feedback of this manner is needed in my opinion.

Observations:

1. In addition, it is important to gather more quantitative data, such as graduate earnings as compared to industry averages. This hard data will be crucial in validating the qualitative feedback provided. Future graduates, especially the first cohort out of the new program should be surveyed extensively.

2. Because the BAS-DIT program is being overhauled and the student feedback was based on the existing program (which is going away), their feedback and experiences provide an incomplete picture. Their positive comments though, reflect very well on the learning environment, faculty, staff and resources at Great Basin College.

3. The feedback from all students underscored the importance of related classes such as Business, Oral Communication and Human Resources. This reflects that the mix of topics and courses in the BAS-DIT program was well put together, and gives credibility to the makeup of the upcoming, revamped program.

4. Students provided contradictory feedback on the value of "hands-on" experience versus on-line classes. More information is needed in order to determine how much, if any, of the courses should be in-person. Industry advisory input will be important on this issue.

5. Due the new nature of the program, the involvement of Industry Advisory should ideally be greater than usual, with checks each semester, ideally.

Program Review Report

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Faculty/staffing

The experiences described in the meeting regarding job applicants who withdrew or did not follow up on the position underscore the need to ensure that the proposed compensation be commensurate with salary ranges in the industry for similar work as much as possible.

Because of the proposed schedule for beginning the program, and the extensive amount of tasks that need to be done by the new hire, the process of hiring the applicant should ideally be put in motion as soon as possible.

In addition to listing the position on academic websites such as Higher Ed Jobs, there is potential for utilizing other sources that are more industry-oriented, such as GitHub & Stack Overflow Careers.

I do not believe that the location of the college is an obstacle to hiring the correct person.

Conclusion

Upon review of the reports and participation in the program review meetings, I believe the proposed Bachelor of Applied Science in Digital Information Technology at Great Basin College is a promising, innovative and attractive educational path for the students it serves. The creation of this program demonstrates Great Basin College's commitment to educational innovation and reaching a wide net of students for employment in ever-changing environments. GBC is an example to other NSHE institutions and as Program Director for the Graphic Communications Program at CSN, the work at GBC has demonstrated ways for the improvement of our own programs and degrees.

I am thankful for the opportunity to work more closely with my counterparts in GBC, and offer my assistance and availability for working more closely together.

Appendix A: BAS and BAS-DIT 2017-2018 Catalog Pages

Bachelor of Applied Science

Student Learning Outcomes
Graduates of the BAS degree program will have the knowledge and skills to:

- Understand the social responsibilities of being a member of a professional community and the ethical values which are integral to personal and professional success.
- Identify and access information and be able to interpret, summarize, synthesize and convey this information to others using a variety of technology platforms.
- Understand the key concepts and be able to demonstrate the ability to apply the latest knowledge, techniques, concepts and tools of a profession to solve problems and address the needs of society, organizations and individual clients.
- Demonstrate knowledge of the relationship of professionals to society at large, the role of the professional as part of that society and the ability to analyze how changes in technology will impact the future of their profession and its relationship with society.
- Demonstrate skills and abilities in critical thinking, creativity, communication and analysis to facilitate career progression in their profession.

Accreditation
The program has been approved by the Northwest Commission on Colleges and Universities.

Mission Statement
The mission of the Bachelor of Applied Science is to fulfill and to extend the mission and philosophy of Great Basin College by providing a distinctive baccalaureate degree that builds upon the technical skills and knowledge acquired in attaining an Associate of Applied Science and, in particular cases, an Associate of Science or Associate of Arts degree. In this endeavor, the program is designed to instill abilities and qualities of competence, personal communication, management, and decision making within a broader context than a single vocation. The program will build on the individual's current vocational abilities and provide additional managerial skills within a specific field of emphasis. Those completing the program should then be prepared to competently and efficiently engage their chosen vocational field as either highly trained technicians or effective managers.

Purpose Statement
The purpose of the Bachelor of Applied Science (BAS) Program is to provide a quality and affordable four-year degree to residents of rural Nevada. This degree is particularly suited to accommodate working adults whose schedules may be limited due to work and time constraints.

Contact Information
Bachelor of Applied Science degree program, 775.753.2363 or 775.753.2217.

About the Program
Greater Accessibility
The program is designed for students who have previously completed an associate's degree at an accredited college or university. There are currently five emphases: Digital Information Technology Emphasis; Instrumentation; Land Surveying/Geomatics, Management in Technology Emphasis (name change to *Management and Supervision* pending); and Graphic Communications. These are particularly attractive to employers of the school's service area and provide an avenue of continuing education for all persons with work experience to complete a baccalaureate degree at Great Basin College.

Meets Employer Demand
The program is intended to build on the student's associate degree curricula, work experience, and maturity. It will provide the student with communication and problem solving skills, management and organizational theories and practice, and a broad liberal arts view of the world and workplace. This training is designed to prepare students for employment in demanding management positions, depending on the emphasis a student selects. The focus in the curriculum on the values of lifelong learning and positive human relation skills will be especially beneficial to graduates of this program.

Program Strengths
This degree program addresses many of the widely acknowledged deficiencies of the traditional bachelor's education. It represents a shift away from a narrow-focused, speciality program to a broader approach with courses taught by colleagues from across all disciplines at the College. This strategic adjustment allows our students to experience a broader array of values and attitudes about their field of study and to enlist the alliance of employers within our service area as educational partners and stakeholders in the success of this degree program. We believe these learning partnerships allow Great Basin College to deliver an innovative training program whose graduates are sought out because:

1. GBC's program is more reflective of the ideal bachelor's educational philosophy: a broad liberal arts exposure.
2. The program instills in its graduates professional ethics and leadership skills needed to make critical decisions.
3. The program supplies students with a unifying operational and practical framework for problem

solving; thus, stakeholder value is enhanced and a position of distinctiveness in bachelor's level education in this region is achieved.

GBC's academic approach to the delivery of education will help students become innovative leaders and practitioners in organizations that value continuous renewal of their culture and management approach. This gives our graduates a significant, distinct, comparative advantage in their chosen career fields.

Admission to the Program

Students will be admitted to the program in a Full Admission status when all admission requirements have been completed and accepted by the Program Supervisor and/or Emphasis Advisors. Students who do not maintain good standing, as defined, will be placed on Probationary Status. Students on probationary status are not allowed to continue toward completion of the program until they have removed all restrictions. The manner for reinstatement to good standing will be determined by the Committee on a case-by- case basis.

To be officially admitted to the Bachelor of Applied Science Program, students should do the following.

STEP 1: Inquiries

As soon as practical, applicants should meet with a faculty program advisor to outline a proposed course of study.

STEP 2: Application Process

Students must present evidence of completion of an associate's degree from a regionally accredited college.

Students should submit transcripts indicating an overall grade-point average (GPA) equal to or greater than 2.0, as calculated by Great Basin College formulas. Students should submit a program application to the Admissions and Records Office before completion of 30 credits in the program.

STEP 3: Follow Up

Students have the responsibility to ensure that official transcripts and any other requirements are actually received by the Director of Admissions and Registrar of Great Basin College.

NOTE: Evaluation of the entrance criteria will be made by the Program Supervisor and/or Emphasis Advisors. This processing takes approximately five to six weeks. Students will be notified by a letter from the Program Supervisor upon acceptance/denial.

Pre-admission Information

Some emphases of the program may have their own special admission requirements.

- Completion of an approved electrical program is required before official admission to the Instrumentation program.
- The Graphic Communications emphasis requires an AAS in Computer Technology with a Graphic Communications emphasis for admission, or advisor permission.
- See the Land Surveying/Geomatics emphasis for a list of prerequisites.
- The Digital Information Technology Emphasis requires an associate's degree, and a strong background in computer technology with an emphasis in one of the many computer technology fields, such as networking, information technology, computer office technology, computer programming, GIS, or some other computing field.
- Students with a bachelor's degree from a regionally accredited college or university will not be required to take general education courses unless they are listed under the Emphasis Requirements or are needed as prerequisites for more advanced requirements.

Maintaining Good Standing

Students who have been admitted to the Bachelor of Applied Science Program will maintain their status as students in good standing, and be allowed to graduate, if they meet the following requirements:

- Maintain an overall 2.0 cumulative GPA in all GBC courses.
- Maintain a cumulative GPA of 2.0 in all upper-division courses applied to the degree. This includes courses taken at GBC and those transferred from other institutions.

Total Minimum Credits for BAS.........................120
Total Minimum Upper-Division Credits................42

Skills Certificates

Skills Certificates are single courses or short sequences of courses which provide basic job skills for employability. The certificates listed on this page include training for a variety of practical and vocational endeavors. Each provides basic skills for students to complete the requirements necessary to take state, national, and/or industry recognized certification or licensing exams.

These certificates are also a foundation to continue additional training and education to obtain higher employability. These certificates are stackable to Certificates of Achievement, Associate's degrees, and in many cases Bachelor's degrees and beyond.
Please seek advisement regarding which of these Skills Certificates may be appropriate for you and your personal interests.

Computer Technologies

Bachelor of Applied Science —
Digital Information Technology Emphasis

Professional Skills and Career Paths
Computer Support Specialist, Computer Systems Analyst and Network Computer Systems Administrator.

Student Learning Outcomes
Graduates of the BAS Digital Information Technology Emphasis will have the knowledge and skills to

- Identify, access, organize and process data into useful information through interpretation, synthesis and presentation of the information using appropriate technological platforms.
- Apply the latest techniques, concepts and tools of computing professionals to solve problems and address the needs of organizations and individual clients.
- Explain the relationship between various computing, networking and data storage systems.
- Demonstrate skills and abilities to analyze digital information situations then provide that analysis clearly to facilitate a solution.

General Education Requirements
(beyond those required for AAS)

COM	101	Oral Communication,	
THTR	102	Introduction to Stage Voice, or	
THTR	221	Oral Interpretation	3
ENG	333	Professional Communications	3
STAT	152	Principles of Statistics I, or	
MATH	181	Calculus I	3-4
INT	339	Integrative Humanities Seminar	3
INT	349	Integrative Social Science Seminar	3
INT	359	Integrative Mathematics Seminar	3
PHIL	311	Professional Ethics (formerly ECON 311)	3

Total Credits.. 21-22

Applied Science Core Requirements

AMS	320	Science and Engineering in Technology, or	
INT	369	Integrative Science Seminar, or	
PHYS	152	General Physics, or	
PHYS	181	Physics for Scientists and Engineers II	3-4
FIN	310	Applied Accounting and Finance	3
MGT	310	Foundations of Management Theory and Practice	3
MGT	323	Organizational Behavior and Interpersonal Behavior, or	

MGT	367	Human Resource Management	3

Total Credits.. 12-13

Program Emphasis Requirements

CIT	303	Intermediate Survey of Computing	3
CIT	361	TCP/IP: Managing Network Resources	3
CIT	480	SQL Database Design and Implementation	3
COT	490	Digital Communications (Capstone)	3
IS	301	Management Information Systems	3
GIS	320	GIS in Business and Community	3
GRC	365	Interface & Web Design	3
GRC	383	Advanced Multimedia Design: Video and Audio	3

Total Credits 24

Program Electives
Upper-Division Elective, see advisor.................................3

Note: All students graduating from Nevada institutions of higher education must satisfy the U.S. and Nevada Constitutions requirement. Contact your academic advisor for details.

SUGGESTED COURSE SEQUENCE
BAS—Digital Information Technology Emphasis

FALL—1st Semester		Credits
CIT	303	3
PHIL	311 (formerly ECON 311)	3
ENG	333	3
MGT	310	3
STAT	152 or MATH 181	3-4
TOTAL		**15-16**

SPRING—2nd Semester		Credits
AMS 320, INT 369, PHYS 152, or PHYS 181		3-4
COM	101, THTR 102, or THTR 221	3
GRC	383	3
INT	339, 349 or 359	3
MGT	323 or 367	3
TOTAL		**15-16**

FALL—3rd Semester		Credits
CIT	361	3
CIT	480	3
GIS	320	3
GRC	365	3
IS	301	3
TOTAL		**15**

SPRING—4th Semester		Credits
COT	490	3
FIN	310	3
INT	339, 349 or 359	3
INT	339, 349 or 359	3
Upper-Division Elective, See Advisor		3
TOTAL		**15**