

May 10, 2017

MEMORANDUM

TO: State Board of Regents

FROM: David L. Buhler

SUBJECT: Dixie State University – Bachelor of Science in Information Systems & Analytics

Issue

Dixie State University (DSU) requests approval to offer a Bachelor of Science in Information Systems & Analytics effective Fall Semester, 2017. The proposed program was approved by the institutional Board of Trustees January 27, 2017.

Background

As DSU's service region continues to grow in population and as businesses expand in the area, the need for individuals prepared in a variety of occupations increases. The state of Utah has seen significant job growth within computer and computer-related occupations.

This proposed program blends two disciplines, information systems and analytics, into a single program designed to provide businesses and organizations with people who can use information resources and analyze data to inform strategic planning and decision-making, thus enabling competitive advantage in a complex marketplace.

Graduates from the proposed program will have skills in business administration, operations, analysis, leadership, and project management. While there are some discrete courses in the program that focus entirely on analytic tools, DSU faculty have integrated analytics throughout the program's required courses.

There is a wide range of careers available to graduates in information systems and analytics. The following table is derived from information provided by the Utah Department of Workforce Services (DWS) Economic Data Viewer and represents a sampling of occupational categories related to the proposed program.

SOC Code	Occupational Category	Median Wage- Utah	Average Annual Job Openings- Utah	Median Wage- St. George	Average Annual Job Openings- St. George
13-1161	Market Research Analysts and Marketing Specialists	\$53,120	350	\$39,130	10
15-1122	Information Security Analysts	\$74,660	20	Not available	Not available

15-2031	Operations Research Analysts	\$69,360	50	Not available	Not available
15-1121	Computer Systems Analysts	\$70,610	240	\$71,680	Not available
13-1111	Management Analysts	\$70,850	380	\$44,300	10

While the DWS data showed a healthy job market within these occupational categories, especially at the state level, information from the Burning Glass Labor Insight tool showed more robust labor market demand, identifying 5,970 job postings in Utah from March, 2016 through February, 2017. Burning Glass data showed that mean advertised annual salary ranged from \$59,290 for Market Research Analysts and Marketing Specialists to \$78,260 for Information Security Analysts. A bachelor degree was required for most of these positions. Burning Glass data for the St. George Metropolitan Statistical Area showed considerably fewer job postings, 74, over the same period. While that number may seem low compared to the overall state number, it would appear there is a sufficient labor market in the local area to justify the program. Dixie State University anticipates approximately 20 annual program graduates in years 4 and 5 following program implementation.

Policy Issues

The proposed program has been developed through established institutional procedures and Board of Regents policy. Chief academic officers as well as faculty in related departments from the Utah System of Higher Education institutions have reviewed the proposal and have provided input.

Commissioner's Recommendation

The Commissioner recommends the Board of Regents approve the Bachelor of Science in Information Systems & Analytics.

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David L. Buhler  
Commissioner of Higher Education

DLB/BKC  
Attachment

## Utah System of Higher Education Program Description - Full Template

### Section I: The Request

Dixie State University requests approval to offer the following Baccalaureate degree(s): BS in Information Systems & Analytics effective Fall 2017. This program was approved by the institutional Board of Trustees on 01/27/2017.

### Section II: Program Proposal

#### Program Description

*Present a complete, formal program description.*

Information Systems (IS) is the design and management of Information Technology (IT) for an organization. It focuses on the best way to enable the organization to meet its goals and business challenges. IS students focus on developing skills to manage the technical direction of business, solve technological issues, and implement new technological advances to enrich business operations.

Business Analytics (BA) utilizes statistical and operations analytical tools to derive actionable insights from large amounts of data. These analytical tools can be used to formulate predictive models, apply optimization techniques and communicate these results to customers, business partners, governmental agencies, and executives.

The Dixie State University (DSU) Udvar-Hazy School of Business (UHSB) proposes to develop and offer a baccalaureate degree program, Information Systems and Analytics (IS&A), focusing on these two key and closely related disciplines.

#### Consistency with Institutional Mission

*Explain how the program is consistent with the institution's Regents-approved mission, roles, and goals. Institutional mission and roles may be found at [higheredutah.org/policies/policy312/](http://higheredutah.org/policies/policy312/).*

The IS&A baccalaureate will further enhance DSU's ability to meet the educational goals of its students and to fulfill the obligation mandated in the DSU mission to offer baccalaureate programs in core or foundational areas consistent with four-year colleges. IS is the design and management of IT for an organization, while business analytics utilizes statistical and operations analytical tools to derive actionable insights from large amounts of data created from the deployment of IT.

Careers in Information Technology and Analytics are available in a wide range of economic sectors (i.e. healthcare, retail, public sector, education, etc.) Each of these sectors are well represented within the region served by DSU. Offering and equipping students with an IS&A Degree will provide additional economic growth potential and employment opportunities for DSU graduates. It will also prepare students to enter graduate schools in Information Systems, Business Analytics, Business or technology-related disciplines.

### Section III: Needs Assessment

#### Program Rationale

*Describe the institutional procedures used to arrive at a decision to offer the program. Briefly indicate why such a program should be initiated. State how the institution and the USHE benefit by offering the proposed program.*

As Washington County and DSU's region grows, it is in the interest of DSU and the surrounding area that this program be offered, so as to provide skilled workers for a growing workforce demand. There is a broad spectrum of excellent opportunities for an IS&A major. Businesses and organizations, in growing numbers, need individuals who understand information technology and how to use it to solve business problems for competitive advantage. Additionally, the large amount of data produced by information technologies can be used as a competitive advantage by analyzing said data to apply and develop actionable predictive and optimization models. The advantage of a graduate trained in IS&A lies in his/her ability to work with

managers and users in a cross-functional organization to develop, implement, manage and analyze the information technology infrastructure and gain meaningful insights from the large amount of data created by this infrastructure. Also, their role is to aid in establishing the organization's technical strategy and planning. IS&A majors develop excellent business administration, operational, analytical, leadership, and project management abilities.

There is a wide range of careers available to graduates in IS&A. For example, there are positions in healthcare administration, website design and development, consulting, security risk assessment, internet marketing, audit control, business analysis, data analytics, customer relationship management consulting, e-commerce, legal forensics, enterprise resource planning, and/or supply chain management. Properly prepared IS&A students are prepared for all of these activities as they combine leading edge business and technology skills.

## Labor Market Demand

*Provide local, state, and/or national labor market data that speak to the need for this program. Occupational demand, wage, and number of annual openings information may be found at sources such as Utah DWS Occupation Information Data Viewer ([jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do](http://jobs.utah.gov/jsp/wi/utalmis/gotoOccinfo.do)) and the Occupation Outlook Handbook ([www.bls.gov/oco](http://www.bls.gov/oco)).*

Information from the Utah Department of Workforce Services shows occupations served by information systems and/or analytics degrees will experience consistent growth into the foreseeable future. These include the following occupational categories:

- Market Research Analysts and Marketing Specialists
- Information Security Analysts
- Operations Research Analysts
- Computer Systems Analysts
- Management Analysts

Nationally, the need for graduates possessing analytical skills is acute. From a recent McKinsey report; "The United States alone faces a shortage of 140,000 to 190,000 people with deep analytical skills as well as 1.5 million managers and analysts to analyze big data and make decisions based on their findings."<sup>1</sup>

<sup>1</sup> McKinsey Global Institute, (2011), *Big data: The next frontier for innovation, competition, and productivity*

## Student Demand

*Provide evidence of student interest and demand that supports potential program enrollment. Use Appendix D to project five years' enrollments and graduates. Note: If the proposed program is an expansion of an existing program, present several years enrollment trends by headcount and/or by student credit hours that justify expansion.*

Students are recognizing that in order to compete in business, they need a solid understanding of information systems and analytics. This has fueled the enrollment growth in the existing management information systems (MIS) emphasis program, which has increased an average of just under 200% in the last two years. This growth coincides with the hiring of the first full-time MIS faculty within the last two years.

## Similar Programs

*Are similar programs offered elsewhere in the USHE, the state, or Intermountain Region? If yes, identify the existing program(s) and cite justifications for why the Regents should approve another program of this type. How does the proposed program differ from or compliment similar program(s)?*

Bachelor of Science degrees in Management Information Systems or Information Systems are offered at most state universities, including; Utah State University (USU), Weber State University (WSU), University of Utah (UU), Utah Valley University (UVU) and Southern Utah University (SUU). Utah Valley University offers an emphasis in Business Intelligence Systems, an area closely related to the proposed DSU program.

## Collaboration with and Impact on Other USHE Institutions

*Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in [higheredutah.org/policies/policyr315/](http://higheredutah.org/policies/policyr315/). Assess the impact the new program will have on other USHE institutions. Describe any discussions with other institutions pertaining to this program. Include any collaborative efforts that may have been proposed.*

The proposed degree appears to be most similar to offerings at USU and has some commonality with the UVU emphasis in Business Intelligence. Given industry demand for graduates in this field, it is not expected that the program will have a significant impact on either the USU or UVU program. In addition, the inclusion of the DSU proposed program may serve as a feeder for the current USU Master in Management Information Systems and the UU Master in Business Analytics programs.

## External Review and Accreditation

*Indicate whether external consultants or, for a career and technical education program, program advisory committee were involved in the development of the proposed program. List the members of the external consultants or advisory committee and briefly describe their activities. If the program will seek special professional accreditation, project anticipated costs and a date for accreditation review.*

The DSU business school is accredited by the Accreditation Council for Business Schools and Programs (ACBSP). The proposed IS&A degree program will be subject to ongoing accreditation by this body.

## Section IV: Program Details

### Graduation Standards and Number of Credits

*Provide graduation standards. Provide justification if number of credit or clock hours exceeds credit limit for this program type described in R401-3.11, which can be found at [higheredutah.org/policies/R401](http://higheredutah.org/policies/R401).*

Graduates must earn a total of 122 credits, which includes a minimum of 30 IS&A credits (18 core and 12 upper-division elective), 28 required credits in core business, and 64 General Education and pre-IS&A and pre-business course credits. The total credit amount is within the 126 credit hour limit for a BS degree.

### Admission Requirements

*List admission requirements specific to the proposed program.*

A matriculated DSU student in good standing with the university is eligible for admission to the major. Students may be admitted to the IS&A program after successful completion of the prerequisite coursework and have obtained approval from the department advisor. Declaration of the major is required for admission and is accomplished through the processes defined by the Registrar's Office. To graduate in this program, in addition to the required course work, IS&A majors are required to receive a "C-" or higher grade in the business core, IS&A core, and IS&A elective courses and an overall GPA of at least 2.5 in course work required for the major.

### Curriculum and Degree Map

*Use the tables in Appendix A to provide a list of courses and Appendix B to provide a program Degree Map, also referred to as a graduation plan.*

## Section V: Institution, Faculty, and Staff Support

### Institutional Readiness

*How do existing administrative structures support the proposed program? Identify new organizational structures that may be needed to deliver the program. Will the proposed program impact the delivery of undergraduate and/or lower-division education? If yes, how?*

DSU has an infrastructure and institutional environment appropriate for the baccalaureate role. The IS&A degree will draw on resources from the existing DSU UHSB degree programs including; Accounting, Finance, Business Administration, Business Administration - MIS Emphasis, General Marketing, and Operations Management. Further, the faculty members who will serve the new IS&A program have extensive experience offering upper-division coursework, mentoring UHSB majors, and advising degree-seeking students. The DSU Business Department faculty has been recently augmented to include professors capable of launching and growing the IS&A degree program. It is also anticipated that the IS&A program will utilize, to the extent practicable, faculty from the DSU Computer Information Technology Department.

### Faculty

*Describe faculty development activities that will support this program. Will existing faculty/instructors, including teaching/graduate assistants, be sufficient to instruct the program or will additional faculty be recruited? If needed, provide plans and resources to secure qualified faculty. Use Appendix C to provide detail on faculty profiles and new hires.*

Faculty members who will be providing instruction within the IS&A program include six members with Ph.D. degrees in MIS or CS. The current faculty will meet the immediate needs for this degree. As the program matures, DSU will hire additional faculty to accommodate growth. Appendix C represents faculty who will be giving instruction in the IS&A degree and are housed in the Business, Computer Information Technology, and Accounting Departments.

### Staff

*Describe the staff development activities that will support this program. Will existing staff such as administrative, secretarial/ clerical, laboratory aides, advisors, be sufficient to support the program or will additional staff need to be hired? Provide plans and resources to secure qualified staff, as needed.*

The DSU Business Department currently has the appropriate staff to support the new degree. It is not anticipated that additional staff members will be required to support the program.

### Student Advisement

*Describe how students in the proposed program will be advised.*

The UHSB Business Department has two full-time academic advisors who provide academic advising. The advisors currently advise students in the Business Administration MIS Emphasis and they are capable to advise students in the proposed IS&A program. Since the program is interdepartmental, advisors from the computer and information technology program may also provide advising support if needed. Secretarial and administrative support under the current departmental structure is adequate.

### Library and Information Resources

*Describe library resources required to offer the proposed program if any. List new library resources to be acquired.*

The DSU Library at the Holland Centennial Commons continues to expand appropriate collections for baccalaureate offerings. The library is committed to supporting current and future baccalaureate programs by ordering requested materials. DSU has university-wide access to information technology, advanced computing, and analytics resources including; Oracle, SPSS and IBM Watson Analytics.

## Projected Enrollment and Finance

*Use Appendix D to provide projected enrollment and information on related operating expenses and funding sources.*

## Section VI: Program Evaluation

### Program Assessment

*Identify program goals. Describe the system of assessment to be used to evaluate and develop the program.*

The proposed IS&A degree will conform with current UHSB course learning outcomes (CLOs), which are provided below, accompanied by strategy for attainment and proposed measures for assessment:

1. Provide students with core economic and business knowledge and skills (DSU Core Theme One - Learning)  
Strategy: To prepare students for advanced business degrees and professional success in a rapidly changing, competitive business environment.  
Measures: (a) MFT National Comparison, (b) Analysis of a Business Case, (c) Written Assignment, and (d) Formative Assessment Test
2. Develop students' awareness of ethical issues and the ability to resolve them. (DSU Core Theme One - Learning)  
Strategy: To give students experience in identifying ethical issues and applying analytical and decision-making processes for their resolution.  
Measures: (a) Ethical Analysis of a Business Case
3. Provide career development experiences (DSU Core Theme Three - Opportunity)  
Strategy: To assist students in defining career goals, having increased connections with recruiting organizations and preparing for jobs by incorporating real world applications into the curriculum.  
Measures: (a) Quality of Resumes and Portfolios upon graduation, (b) Internship or Experiential Supervisor Evaluations
4. Employ and support highly qualified faculty members  
Strategy: To foster open, innovative, analytical, practice-based and student-focused learning environments. Support academically and professionally active faculty who model continuous improvement in their practice and service. (DSU Core Theme One - Learning)  
Measures: (a) Maintain personnel evaluations and strategic personnel planning. (b) Maintain active membership (hold office or participate in at least one activity per year in a professional organization in which membership is held). (c) All faculty will participate in and record in their files at least one professional development activity (publication of articles in refereed journals; publication of books or chapters in edited volumes; development of working papers; participation in academic conferences or professional training; obtain professional certifications/licenses; or successful grant writing in related field). Part-time and adjunct faculty are also encouraged to maintain professional development information in their files.
5. Establish productive partnerships with the community and alumni. (DSU Core Theme Two - Engagement)  
Strategy: To provide opportunities in response to local and industry needs which afford valuable community engagement and development.  
Measures: (a) Full-time faculty will participate in at least one community engagement activity per year. (b) Conduct skills gap need survey every three years. (c) UHSB will proactively engage in business school fund raising.

The proposed IS&A degree will conform to these CLOs at the program and individual course level. Individual course learning outcomes will be mapped to the UHSB learning outcomes.

### Student Standards of Performance

*List the standards, competencies, and marketable skills students will have achieved at the time of graduation. How and why were these standards and competencies chosen? Include formative and summative assessment measures to be used to determine student learning outcomes.*

Training in information systems and analytics prepares students for high-demand careers in many business functions, including: database management, systems administration, programming, business analyst, technical sales and consulting. Measurements are included in Program Assessment section above.



## Appendix A: Program Curriculum

List all courses, including new courses, to be offered in the proposed program by prefix, number, title, and credit hours (or credit equivalences). Indicate new courses with an X in the appropriate columns. The total number of credit hours should reflect the number of credits required to be awarded the degree.

For variable credits, please enter the minimum value in the table for credit hours. To explain variable credit in detail as well as any additional information, use the narrative box at the end of this appendix.

		Course Number	NEW Course	Course Title	Credit Hours
General Education Courses (list specific courses if recommended for this program on Degree Map)					
General Education Credit Hour Sub-Total					36
Required Courses					
+ -		ISA 1400 or CS 1400		Fundamentals of Programming	3
+ -		ISA 1100 or IT 1100		Introduction to Unix/Linux	3
+ -		ISA 2400 or IT 2400		Intro to Networking	3
+ -		ACCT 2010		Financial Accounting	3
+ -		ACCT 2020		Managerial Accounting	3
+ -		CIS 2010		Business Computer Proficiency	3
+ -		COMM 1020 or COM 1020		Public Speaking or Interpersonal Communication	3
+ -		ECON 2010		Micro Economics	3
+ -		BUS 2000		Introduction to Career Strategies	1
+ -		STAT 2040		Business Statistics	3
+ -					
+ -				Business Core Requirements	
Choose of the following courses:					
+ -					
+ -		BUS 3000		Intermediate Career Strategies	1
+ -		ENGL 3010		Writing in the Professions	3
+ -		FIN 3150		Managerial Finance I	3
+ -		ISA 3050		Management Information Systems	3
+ -		MGMT 3050		Business Law I	3
+ -		MGMT 3400		Management & Organizations	3
+ -		MGMT 3510		Business & Professional Ethics	3
+ -		MGMT 3600		Production & Operations	3
+ -		MGMT 4800		Strategic Management	3
+ -		MKTG 3010		Marketing Principles	3
+ -					
+ -				Information Systems & Analytics Core Requirements (listed under	18
+ -					
Required Course Credit Hour Sub-Total					74
Elective Courses					
+ -				Choose one track from below	
+ -				Analytics Track (choose 12 credits)	

		Course Number	NEW Course	Course Title	Credit Hours
+	-	ISA 3020		Seminar in Business - Structured Query Language (SQL)	1
+	-	IT 4310		Database Administration	3
+	-	MGMT 4040		Quantitative Decision Analysis	3
+	-	FIN 4380		Financial Modeling and Decision Making	3
+	-	ISA 4060	×	Big Data Analytics	3
+	-	ISA 4070	×	Big Data Visualization	3
+	-			Systems Track (choose 12 credits)	
+	-	IT 1200		A+ Computer Hardware/Windows OS	3
+	-	IT 3110		Systems Design and Administration II	3
+	-	IT 3150		Windows Servers	3
Choose of the following courses:					
+	-				
+	-	IT 3300		Virtualization	3
+	-	MGMT 4040		Quantitative Decision Analysis	3
+	-	IT 4100		File Systems and Storage Technologies	3
+	-	IT 4310		Database Administration	3
+	-	IT 4400		Network Design & Management	3
+	-			Web DevelopmentTrack (choose 12 credits)	
+	-	WEB 1400		Web Design I	3
+	-	DES 1300		Communication Design	3
+	-	WEB 3500		Electronic Commerce	3
+	-	WEB 3400		Web Design II: Essentials	3
+	-	WEB 3550		Internet & eCommerce Marketing	3
+	-	IT 4200		Advanced Web Delivery	3
+	-			Application Development Track (choose 12 credits)	
+	-	CS 1410		Object Oriented Programming	3
+	-	CS 2420		Introduction to Algorithms and Data Structures	3
+	-	CS 3005		Programming in C++	3
+	-	CS 3500		Application Development	3
+	-	CS 3010		Mobile Application Development for Android	3
+	-	CS 3020		Mobile Application Development: iOS	3
<b>Elective Credit Hour Sub-Total</b>					<b>12</b>
<b>Core Curriculum Credit Hour Sub-Total</b>					<b>122</b>

### Program Curriculum Narrative

*Describe any variable credits. You may also include additional curriculum information.*

**All Program Courses (with New Courses in Bold)**

**General Education & Institutional Requirements**

CIS 1200 or CIS 1201 or (CS 1400 and CS 1410) Computer Literacy 0 - 6 Zero-credit test out available  
ENGL 1010 or ENGL 1010A or ENGL 1010D Intro to Writing 0 - 4 Placement score, LIB 1010  
ENGL 2010 or ENGL 2010A Intermediate Writing 3 ENGL 1010 (C or higher), LIB 1010  
LIB 1010 Information Literacy 0 - 1 Zero-credit test out available  
MATH GE Mathematics course 3 Math Placement score w/in last 2 years  
AI GE American Institutions course 3 Reading Placement score  
LS GE Life Sciences course 3-4  
PS GE Physical Sciences course 3-4  
SL GE Science Laboratory course 1  
Fine Arts GE Fine Arts course 3  
HUM GE Literature / Humanities course 3  
SBS GE Social & Behavioral Sciences course (recommended ECON 2010) 3  
EXPL GE Exploration course (recommended COMM 2110) 3 - 5 Prefix not used to fill other GE requirement  
GLOCUP GE Global & Cultural Perspectives course 0 - 3 Complete two with different prefixes; recommend courses that can fulfill other GE or program requirements  
GLOCUP GE Global & Cultural Perspectives course 0 - 3

### **Major Requirements**

ISA 1400 Fundamentals of Programming 3 Cross listed (CL) with CS 1400  
ISA 1100 Introduction to Unix/Linux 3 CL with IT 1100  
ISA 2400 Intro to Networking 3 ISA 1100 (C- or higher) CL with IT 2400  
ACCT 2010 Financial Accounting 3  
ACCT 2020 Managerial Accounting 3 ACCT 2010, CIS 1200  
CIS 2010 Business Computer Proficiency 3 CIS 1201 or CIS 1200 (B- or higher)  
COMM 1020 or  
COMM 2110 Public Speaking or  
Interpersonal Communication 3 Also used to fill GE requirements  
ECON 2010 Micro Economics 3 Also used to fill GE requirements  
BUS 2000 Introduction to Career Strategies 1  
STAT 2040 Business Statistics 3 CIS 1200, MATH 1010

**TOTAL 60** *Total can vary based on how strategically students plan their program of study.*

Advanced standing status must be obtained prior to enrollment in any 3000 or 4000 level business course.

### **Business Core Requirements**

BUS 3000 Intermediate Career Strategies 1 BUS 2000  
ENGL 3010 Writing in the Professions 3 ENGL 2010 or ENGL 2010A  
FIN 3150 Managerial Finance I 3 ACCT 2020, STAT 2040, and ECON 2010  
ISA 3050 Management Information Systems 3 CIS 2010 & ENGL 1010/A/D & MATH 1000 or higher (Change MIS 3050 Prefix)  
MGMT 3050 Business Law I 3  
MGMT 3400 Management & Organizations 3  
MGMT 3510 Business & Professional Ethics 3 ENGL 1010/A/D (C or higher)  
MGMT 3600 Production & Operations 3 STAT 2040 or MATH 1040/A  
MGMT 4800 Strategic Management 3 Pre- or Co-requisites: FIN 3150, MGMT 3400, MGMT 3600, MKTG 3010, and (ACCT 3050 or IT3050)  
MKTG 3010 Marketing Principles 3

**TOTAL 28**

### **Information Systems & Analytics Core Requirements**

ISA 3100 Systems Design and Administration I 3 ISA 1400 & ISA 2400 (both C- or higher) CL with IT 3100  
ISA 4300 Database Design & Management 3 ISA 1400 & ISA 1100 (both C- or higher) CL with IT 4300  
ISA 4450 Project Management 3 ISA 1400, IT 1100, ISA 3050 (all grade C- or higher) (Change MIS 4450 Prefix)  
ISA 4500 Information Security 3 ISA 1400 & ISA 3100 (both C- or higher) CL with IT 4500  
MGMT 4040 Quantitative Decision Analysis 3 STAT 2040 (C- or higher)

**ISA 4600 or**

MGMT 4200 **Senior Project** or

Business Internship I 3 Senior Status

Internship must include ISA component

**TOTAL 18**

**Electives: 12 credits from the following or other approved courses.**

**Analytics Track Suggested Courses**

ISA 3020 Seminar in Business - Structured Query Language (SQL) 1 CIS 2010 (converting from MGMT 4950R trial course)

IT 4310 Database Administration 3 IT 4300 (C- or higher)

MGMT 4040 Quantitative Decision Analysis 3 STAT 2040 (C- or higher)

FIN 4380 Financial Modeling and Decision Making 3 FIN 3150 (C- or higher)

**ISA 4060 Big Data Analytics** 3 ISA 3020

**ISA 4070 Big Data Visualization** 3

**Systems Track Suggestion Courses**

IT 1200 A+ Computer Hardware/Windows OS 3

IT 3110 Systems Design and Administration II 3 IT 3100 (C- or higher)

IT 3150 Windows Servers 3 IT 1200, IT 2400 (both C- or higher)

IT 3300 Virtualization 3 IT 2400 (C- or higher)

MGMT 4040 Quantitative Decision Analysis 3 STAT 2040 (C- or higher)

IT 4100 File Systems and Storage Technologies 3 IT 3100 (C- or higher)

IT 4310 Database Administration 3 IT 4300 (C- or higher)

IT 4400 Network Design & Management 3 IT 2400 (C- or higher)

**Web Development Track Suggested Courses**

WEB 1400 Web Design I 3

DES 1300 Communication Design 3

WEB 3500 Electronic Commerce 3

WEB 3400 Web Design II: Essentials 3 WEB 1400 & DES 1300

WEB 3550 Internet & eCommerce Marketing 3

IT 4200 Advanced Web Delivery 3 IT 3100 (C- or higher)

**Application Development Track Suggested Courses**

CS 1410 \* Object Oriented Programming 3 CS 1400 (C- or higher)

CS 2420 Introduction to Algorithms and Data Structures 3 CS 1400 (C- or higher)

CS 3005 Programming in C++ 3 CS 1410 (C- or higher)

CS 3500 Application Development 3 CS 3005 (C- or higher)

CS 3010 Mobile Application Development for Android 3 CS 2420, CS 3005 (both C- or higher)

CS 3020 Mobile Application Development: iOS 3 CS 2420, CS 3005 (both C- or higher)

**TOTAL 12**

**TOTAL FOR BACCALAUREATE DEGREE 122**

## Degree Map

*Degree maps pertain to undergraduate programs ONLY. Provide a degree map for proposed program. Degree Maps were approved by the State Board of Regents on July 17, 2014 as a degree completion measure. Degree maps or graduation plans are a suggested semester-by-semester class schedule that includes prefix, number, title, and semester hours. For more details see <http://higheredutah.org/pdf/agendas/201407/TAB%20A%202014-7-18.pdf> (Item #3).*

*Please cut-and-paste the degree map or manually enter the degree map in the table below.*

### Sample Program Schedule

Fall, Year 1

CIS 1200, Computer Literacy \* 3

ENGL 1010, Intro to Writing 3

COMM 2110, Interpersonal Communication / GE Exploration 3

GE Math Course 3-4

LIB 1010, Information Literacy \* 1

BUS 1001 FYE: Business 1

\*Test out options available Total 14-15

Spring Year 1

ACCT 2010, Financial Accounting 3

ENGL 2010, Intermediate Writing 3

IT 1100, Introduction to Unix/Linux 3

CS 1400, Fundamentals of Programming 3

GE Fine Arts / GE GLOCUP 3

Total 15

Fall Year 2

ACCT 2020, Managerial Accounting 3

GE American Institutions course 3

GE Life Science/Lab 3-4

BUS 2000, Introduction to Career Strategies 1

IT 2400, Introduction to Networking 3

GE (if less than optimal program of study) or IS&A Elective 3

Total 16-17

Spring Year 2

STAT 2040, Business Statistics 4

CIS 2010, Business Computer Proficiency 3

GE Physical Science/Lab \* 3-4

GE Literature / Humanities course / GE GLOCUP 3

ECON 2010, Micro Economics / GE Social Science 3

\*If lab was not taken with life science, it must be taken here Total 16-17

Fall Year 3

IT 3100, Systems Design and Admin I 3

ISA 3050, Management Information Systems 3

BUS 3000, Intermediate Career Strategies 1

MKTG 3010, Marketing Principles 3

MGMT 4040, Quantitative Decision Making 3

IS&A Elective 3

Total 16

Spring Year 3

ENGL 3010, Writing in the Professions 3  
FIN 3150, Managerial Finance 3  
MGMT 3600, Production Operations 3  
MGMT 3400, Management Organizations 3  
IT 4500, Information Security 3  
Total 15

Fall Year 4

WEB 1400, Intro to Internet Development 3  
IT 4300, Database Design and Management 3  
MGMT 3050 Business Law I 3  
MGMT 3510 Business Professional Ethics 3  
IS&A Elective 3  
Total 15

Spring Year 4

MGMT 4800, Strategic Management 3  
ISA 4450, Project Management 3  
ISA 4600, Senior Project 3  
IS&A Elective 3  
IS&A Elective 3  
Total 15  
Grand Total 122

## Appendix C: Current and New Faculty / Staff Information

### Part I. Department Faculty / Staff

Identify # of department faculty / staff (headcount) for the year preceding implementation of proposed program.

	# Tenured	# Tenure -Track	# Non -Tenure Track
Faculty: Full Time with Doctorate	11		8
Faculty: Part Time with Doctorate			
Faculty: Full Time with Masters	1		2
Faculty: Part Time with Masters			2
Faculty: Full Time with Baccalaureate			
Faculty: Part Time with Baccalaureate			
Teaching / Graduate Assistants			
Staff: Full Time			3
Staff: Part Time			

### Part II. Proposed Program Faculty Profiles

List current faculty within the institution -- with academic qualifications -- to be used in support of the proposed program(s).

	First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.	If "Other," describe
Full Time Faculty							
	Matt	Harris	Assitant Prof +	PhD, Manac +	Utah State University	100	
	Joe	Francom	Associate Pro +	PhD, Comp +	University of Louisville	100	
	Bob	Nielson	Associate Pro +	DCS, Comp +	Colorado Technical University	50	
	Eric	Pedersen	Professor	PhD, MIS	Utah State University	25	
	Bart	Stander	Professor	PhD, CS	Washington State University	25	
	Russ	Ross	Associate Pro +	PhD, CS	University of Cambridge	25	
	Kyle	Wells	Professor	PhD, Financ +	University of Utah	25	
	Helen	Saar	Assistant Pro +	PhD, Financ +	University of Hawaii	25	
	Munir	Mahmud	Professor	PhD, Econo +	University of Illinois, Urbana-Champaign	25	
	Shandon	Gubler	Assistant Pro +	PhD, Strate +	Brigham Young University	25	
	Debra	Bryant	Associate Pro +	PhD, Educa +	University of Nebraska	25	
	Scott	Lindsey	Assistant Pro +	PhD, Opera +	University of Utah	25	
	Nathan	Staheli	Associate Pro +	PhD, Accou +	University of Hawaii	25	
	Kevin	Barrett	Professor	PhD, Accou +	Virginia Tech	25	
	Verl	Anderson	Professor	DBA, Busine +	Arizona State University	25	
	Abu	Kahn	Assistant Pro +	PhD, Financ +	University of New Orleans	25	
	Phillip	Garner	Assistant Pro +	PhD, Econo +	Brown University	25	
	Travis	Seegmiller	Assistant Pro +	JD, Law	Georgetown University	25	
	Curtis	Larsen	Associate Pro +	MS, Physics +	University of Utah	25	

	First Name	Last Name	Tenure (T) / Tenure Track (TT) / Other	Degree	Institution where Credential was Earned	Est. % of time faculty member will dedicate to proposed program.	If "Other," describe
Part Time Faculty							
	Jay	Sneddon	Instructor	MS, CIS	Missouri State University	25	
	Rachel	Ramsay	Instructor	MS, Graphic	Vermont College of Fine Arts	25	
	Donald	Fisher	Instructor	MBA	California State University	25	
	Adam	Snow	Adjunct	MBA	Pepperdine University	25	
	Hal	Anderson	Adjunct	MBA	Brigham Young University	25	

Part III: New Faculty / Staff Projections for Proposed Program

Indicate the number of faculty / staff to be hired in the first three years of the program, if applicable. Include additional cost for these faculty / staff members in Appendix D.

	# Tenured	# Tenure -Track	# Non -Tenure Track	Academic or Industry Credentials Needed	Est. % of time to be dedicated to proposed program.
Faculty: Full Time with Doctorate					
Faculty: Part Time with Doctorate					
Faculty: Full Time with Masters					
Faculty: Part Time with Masters					
Faculty: Full Time with Baccalaureate					
Faculty: Part Time with Baccalaureate					
Teaching / Graduate Assistants	////	////			
Staff: Full Time					
Staff: Part Time					



## Appendix D: Projected Program Participation and Finance

### Part I.

*Project the number of students who will be attracted to the proposed program as well as increased expenses, if any. Include new faculty & staff as described in Appendix C.*

Three Year Projection: Program Participation and Department Budget						
	Year Preceding Implementation	New Program				
		Year 1	Year 2	Year 3	Year 4	Year 5
<b>Student Data</b>						
# of Majors in Department	411	421	426	433	441	451
# of Majors in Proposed Program(s)	////	20	25	32	40	50
# of Graduates from Department	0	211	216	220	224	228
# Graduates in New Program(s)	////	5	10	14	18	22
<b>Department Financial Data</b>						
	Department Budget					
	Year Preceding Implementation (Base Budget)	Year 1	Year 2	Year 3		
		Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)	Addition to Base Budget for New Program(s)		
<i>Project additional expenses associated with offering new program(s). Account for New Faculty as stated in Appendix C, "Faculty Projections."</i>						
<b>EXPENSES – nature of additional costs required for proposed program(s)</b>						
<i>List salary benefits for additional faculty/staff each year the positions will be filled. For example, if hiring faculty in year 2, include expense in years 2 and 3. List one-time operating expenses only in the year expended.</i>						
Personnel (Faculty & Staff Salary & Benefits)	\$1,249,267	\$0	\$90,000	\$90,000		
Operating Expenses (equipment, travel, resources)	\$47,718	\$0	\$36,000	\$36,000		
Other:						
<b>TOTAL PROGRAM EXPENSES</b>	////	\$0	\$126,000	\$126,000		
<b>TOTAL EXPENSES</b>	\$1,296,985	\$1,296,985	\$1,422,985	\$1,422,985		
<b>FUNDING – source of funding to cover additional costs generated by proposed program(s)</b>						
<i>Describe internal reallocation using Narrative 1 on the following page. Describe new sources of funding using Narrative 2.</i>						
Internal Reallocation						
Appropriation	\$1,286,297		\$126,000	\$126,000		
Special Legislative Appropriation						
Grants and Contracts						
Special Fees	\$10,688					
Tuition						
Differential Tuition (requires Regents approval)						
<b>PROPOSED PROGRAM FUNDING</b>	////	\$0	\$126,000	\$126,000		
<b>TOTAL DEPARTMENT FUNDING</b>	\$1,296,985	\$1,296,985	\$1,422,985	\$1,422,985		
<b>Difference</b>						
Funding - Expense	\$0	\$0	\$0	\$0		

**Part II: Expense explanation**

**Expense Narrative**

*Describe expenses associated with the proposed program.*

The current Business Department budget is sufficient to support existing faculty. The budget reflects the addition of one faculty member added in year two if enrollment merits.

**Part III: Describe funding sources**

**Revenue Narrative 1**

*Describe what internal reallocations, if applicable, are available and any impact to existing programs or services.*

Funding for the proposed degree will come primarily from institutional funds appropriated by the state. External funding sources will be pursued as conditions allow.

**Revenue Narrative 2**

*Describe new funding sources and plans to acquire the funds.*