ARIZONA BOARD OF REGENTS
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Request to Establish New Academic Program in Arizona

Please complete all fields. Boxes may be expanded to accommodate longer responses. Clarifying field descriptions can be found below. Should you have any questions or concerns, please email Helen Baxendale, Director of Academic Affairs and Policy at helen.baxendale@azregents.edu

University: University of Arizona

Name of Proposed Academic Program: Business Analytics
Academic Department: Eller College Administration
Geographic Site: Main Campus, Tucson, AZ
Instructional Modality: In Person
Total Credit Hours: 120
Proposed Inception Term: Fall 2023
Brief Program Description: The new Business Analytics (BUAN) major in the Eller Bachelor of Science in Business Administration (BSBA) degree addresses the growing demand for business analytics skills in the economy. The BUAN major responds to the growth in business analytics jobs and prepares Eller students to succeed in a digital and data-driven business world. Catering to the growing demand for business analytics skills will also provide a vehicle for attracting new students to University of Arizona. The BUAN major will enhance and diversify Eller's portfolio offerings of majors and help attenuate the impact of continuing enrollment decline in US undergraduate programs (National Student Clearinghouse Research Center 2022). The proposed major will prepare highly motivated graduates with in-depth data analytical and visualization skills training for promising careers in a data-driven economy. Data is a critical business asset, and companies are overwhelmed by the volume of information available – they struggle to manage and monetize it. The Business Analytics major prepares students for careers requiring a breadth of business knowledge and an in-depth ability to assemble, use, and analyze data to generate insights and make practical recommendations for improving results across a wide range of functional business areas.
Learning Outcomes and Assessment Plan: **Learning Outcome #1:** Demonstrate the ability to collect, link, clean and augment data using database management technologies. **Concepts:** Relational models, concurrency, integrity, and recovery. **Competencies:** Knowledge of databases, how to retrieve data and generate reports, and how to apply SQL query. **Assessment Methods:** The Eller Exit Survey (Indirect measure) and in an exam in BUAN 4XX - Database Fundamentals for Business Analytics (Direct measure). **Measures:** Student survey, Instructor grading of the final exam. Topics of the questions in the exam include 1) relational database schema, 2) primary key and foreign key, 3) components of the relational language SQL, 4) forming SQL queries to retrieve information from a given database, 5) examining the efficiency of the given SQL queries for a given database

Learning Outcome #2: Demonstrate the ability to use state-of-the-art analytics methods (descriptive, predictive, and prescriptive) and competence in analytics packages and tools that are commonly used in business.
Concepts: Wrangling data, understanding, and practicing basis ML/DM, solving business problems using data, reinforce and enhance Python skills for data analysis.
Competencies: Applying analytics to business problems.
Assessment Methods: The Eller Exit Survey (Indirect measure) and in an assignment in BUAN 4XX Business Analytics Techniques (Direct measure).
Measures: Student survey, Instructor grading of assignment. Questions in the assignments will be about 1) describing how to examining the data characteristics for a given dataset, 2) comparing different unsupervised and supervised learning approaches for solving specific tasks with a dataset, 3) utilizing existing Python libraries to analyze a given dataset, 4) formalizing the given real-world business problems as optimization problems and utilizing tools such as Excel and Python to solve the problems.

Learning Outcome #3: Demonstrate proficiency in the most common software, including programming languages, including but not limited to the Microsoft Office Suite, Tableau/Power BI, SQL, Python, and R.
Concepts: Programming and data analysis with common statistical software.
Competencies: Students will demonstrate ability to program in common statistical software.
Assessment Methods: The Eller Exit Survey (Indirect measure) and in an exam in BUAN 4XX Prescriptive Analytics (Direct measure).
Measures: Student survey, Instructor grading of project. Tasks of the project would include 1) using Excel to finish specific data processing tasks with a given dataset, 2) using Python and R to finish data analysis tasks such as clustering and classification with a given dataset and evaluate the results, 3) using SQL to retrieve specific information from a given database, 4) building a Tableau/PowerBI dashboard to visualize important information for a given dataset

Learning Outcome #4: Demonstrate the ability to communicate effectively with an emphasis on data communication, including visualizing.
Concepts: Visualization, storytelling with data.
Competencies: Students will demonstrate their ability to visualize business data.
Assessment Methods: The Eller Exit Survey (Indirect measure) and in a project in BUAN 4XX Data Visualization for Business (Direct measure).
Measures: Student survey, Instructor grading of project. Tasks of the project would include 1) visualizing a given dataset with software like Excel, Tableau/PowerBI to communicate information to audients, 2) building story telling dashboards to communicate the patterns and trends in a given dataset

Projected Enrollment for the First Three Years:

1st Year	2nd Year	3rd Year
87	180	285

Evidence of Market Demand:

The demand for graduates with data analytics skills has been strong and is expected to continue to be robust. This sentiment has been expressed by some significant donors and members of the Eller National Board of Advisors. Several labor market studies arrive at the same conclusion. According to the US Bureau of Labor Statistics Job Outlook, demand for business analytics occupations will grow by 14% from 2020-2030 vs. 8% for all occupations and 9% for business operations specialists. According to the World Economic Forum, data analysis is one of the most in-demand jobs in the 2020s.

The market research firm Frost & Sullivan (2020) projects that the market for big data analytics will grow from $20 billion in 2020 to $68 billion in 2025. More than half of company leaders surveyed consider data their most pressing issue. According to a study by IBM and Burning Glass Technologies (2017), demand for data and analytics talent would grow by 15% from 2015 to 2020, to an estimated 2.7 million job openings. In 2011, the McKinsey Global Institute had predicted that there would be only 2.8 million workers with deep analytical talent or data-savvy skillsets.

Data analytics skills are now in demand from employers across various jobs, from analytically rigorous jobs, such as data scientists and data systems developers, to less analytically rigorous jobs such as data-driven decision makers and functional analysts. Further, according to the World Economic Forum and IBM/Burning Glass Technologies, the demand for workers with data analytical skills is widespread across many industries, including professional services, finance and insurance, manufacturing, government, health care, supply chain management, sports management, and retail services.

Many business analytics jobs cannot be easily filled with workers trained in traditional functional disciplines (e.g., finance, marketing, etc.) or quantitative techniques (e.g., computer science). Business analytics jobs require a unique combination of deep technical training not traditionally offered by undergraduate degrees in traditional business majors, with critical thinking skills that can connect business issues with data solutions traditionally not offered by other quantitative majors.

Therefore, given the demand from recruiters and employers (many of whom already recruit from our undergraduate business program), Business Analytics will likely be a popular major that could drive higher student enrollments. However, given that many universities have already introduced an undergraduate business analytics major, it is important to differentiate Eller's BUAN program from the competition.

Similar Programs Offered at Arizona Public Universities: Arizona State University - BS in Business Data Analytics

Objection(s) Raised by Another Arizona Public University? YES NO

Has another Arizona public university lodged a written objection to the proposed program with the proposing university and the Board of Regents within seven days of receiving notice of the proposed program?

If Yes, Response to Objections:

Please provide details of how the proposing university has addressed the objection. If the objection remains unresolved, please explain why it is in the best interests of the university system and the state that the Board override it.

New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.):

The program would require 3 tenure track faculty lines with expertise in quantitative methods and business analytics to strengthen our expertise in the area. While this program would benefit greatly from these faculty, the faculty would also support existing graduate programs in business analytics. However, the plan is to hire these faculty on a staggered basis.

Plan to Request Program Fee/Differentiated Tuition? YES NO

The Eller College of Management already has a $900 per semester differential tuition in place so no additional Program Fee/Differentiated Tuition will be requested.

Estimated Amount: $900 existing Differentiated Tuition

Program Fee Justification: N/A

Specialized Accreditation? YES NO

No, the Eller College of Management programs are AACSB accredited at the college level, no additional accreditation will be sought

Accreditor: N/A