

Memorandum

TO: Faculty Senate
Seton Hall University

FROM: Dr. Larry A. Robinson
Provost and Executive Vice President



RE: Certificate in Business Analytics

DATE: August 18, 2015

The Office of the Provost in receipt of the Faculty Senate's approval, at its May 8, 2015 meeting, of the certificate in Business Analytics as offered by the W. Paul Stillman School of Business.

The proposal makes a convincing argument for the creation of the certificate based upon its unique academic purpose to teach undergraduate students the practical application of quantitative analytical techniques that are expected to serve them well in meeting the needs of a marketplace that is increasingly reliant upon evidence-based, data-informed decision making. Furthermore, the proposal seems to be very opportune in light of the apparent market demand for workers with analytical expertise.

In summary, the timeliness and applicability of the proposed certificate, as well as its use of an already existing inventory of courses, appears to provide students with a valuable academic program that does not require additional resources. Therefore, the Office of the Provost concurs with the Faculty Senate's approval of this proposal.



FACULTY SENATE

SETON HALL UNIVERSITY

MEMORANDUM

To: Dr. Larry Robinson, Provost and Executive Vice President, Seton Hall University

From: Faculty Senate, Seton Hall University

Re: Certificate in Business Analytics

Date: May 11, 2015

At the May 8, 2015, meeting of the Faculty Senate, the Faculty Senate approved a Certificate in Business Analytics. The proposal is attached.

Received by:

May 11, 2015

Dr. Larry Robinson, Provost and Executive Vice President, Seton Hall University

May 11, 2015

Dr. Philip Moremen, Chair, Faculty Senate, Seton Hall University

Faculty Senate • academic.shu.edu/senate
400 South Orange Avenue • South Orange, New Jersey 07079

SETON HALL UNIVERSITY FACULTY SENATE

[Meeting of May 8, 2015](#)

1:00 p.m.

Beck Rooms

Walsh Library

11. Committee Motions

b. Academic Policy Committee

v. *Motion:* The Senate approves the certificate in [Business Analytics](#)

*Vote: the motion was approved unanimously by voice vote.

The Stillman School of Business is proposing a new 12-credit undergraduate certificate in Business Analytics.

What is Business Analytics?

Business analytics is defined as the combination of skills, technologies, applications and processes used by organizations to gain insight into their business based on data and statistics to drive business planning. As technology continues to facilitate organizations to measure, collect and retain more data, companies are challenged to make sense out of it. Business Analytics provides a set of analytical tools that answers such problems. While statistics and operations research have long been used to allow businesses to make objective decisions, business analytics uses these tools plus others like pattern detection to find meaning in the data. It is no exaggeration to state that every business of moderate size is either using Business Analytics or will have to in order to stay competitive.

Purpose

The course work in this certificate program will concentrate on teaching quantitative techniques that apply to contemporary business problems. Emphasis will be placed on understanding the implications of the results and not on the theoretical underpinnings or the math used. Students will be asked to do assignments/cases where they will be required to understand which analytical tool to use. All calculations will use software that corporations employ today. At this point we envision this being Excel and R.

Competition

We view this as an additional credential for any business student. As such we will not be competing with programs at other universities. This is in keeping with the trend of business students graduating with multiple credentials (concentration, minors and certificates).

We also view this certificate to be different from the Data Visualization concentration offered by the College of Arts and Sciences. The focus of Business Analytics is solely on the analysis of business problems.

Business Analytics Employment Opportunities

There are many predictions of the shortage of workers with Business Analytics skills. McKinsey & Company, an elite business consulting firm, states:

“The United States alone faces a shortage of 140,000 to 190,000 people with analytical expertise and 1.5 million managers and analysts with the skills to understand and make decisions based on the analysis of big data.” (http://www.mckinsey.com/Features/Big_Data)

Approvals

The certificate was submitted by the Computing and Decision Sciences Department and approved by both the Faculty Assembly of the School of Business (FASB) and the Dean of the School of Business.

Course of study

Required Courses:

1. BQUA 2811 – Business Statistics
2. BITM 3744 – Business Intelligence
3. BQUA 3746 – a new course that will cover topics in “Big Data”

Elective Courses - **one** from the following:

1. BMKT 4634 – Marketing Metrics
2. BFIN 4255 – Financial Modeling
3. BITM 3727 – Advanced Business Software Tools
4. DAVA 3000 – Data Visualization
5. We will be continually looking at course offerings from other departments on campus to add as electives.

Note: to encourage students to pursue the certificate, we have allowed existing analytics courses in three of our existing concentration areas, finance, information technology management and marketing, to count towards fulfilling the certificate requirements. Students concentrating in finance, information technology management and marketing can use these courses to count for both the concentration and the certificate.

New Resources Needed

No new resources are needed to support the certificate. With the exception of a new course in Big Data, the other courses needed for the certificate are existing courses that run regularly.

Descriptions or Required Courses:

BQUA 2811 Business Statistics

This course provides students with an understanding of statistical techniques for analyzing business problems. Concepts are developed using calculations for simple problems with small amounts of data. Larger and more realistic problems are handled using Microsoft Excel. Topics include descriptive statistics, elements of probability, sampling, interval estimation, hypothesis testing and regression analysis.

BITM 3744 Business Intelligence

An important determinant of success today is the ability of a business to extract intelligence from data generated as a byproduct of normal operations. Typical business intelligence applications include: Recommender systems, used for example by Amazon.com to suggest additional products and by Netflix.com to suggest movies; Market-based analysis, used to identify which products are frequently purchased together. This can in turn be used for store shelf layout and for promotions to shoppers and classifier systems, used to identify customers who should receive promotional mailers or subscription offers. Also used to identify spam email. This course covers the analytic techniques currently used by businesses. Rather than stress the mechanics of the underlying mathematical and statistical concepts, the course will build a strong intuitive understanding of the techniques and leave the mechanics to statistical packages.

BQUA 3746 Big Data

Today organizations gather huge amounts of data just to manage their routine operations. The field of business analytics has looked at ways to extract intelligence from such data. More recently, with the growth of the World Wide Web, the volume of data that is actually gathered and can potentially be gathered has grown exponentially. In addition, the mashing together of data from widely different arenas is also opening up new arenas for making more informed decisions. Initially the term Big Data simply applied to the technological aspects of handling very large amounts of data distributed over many server computers. Over the last few years practitioners have identified more subtle ways of distinguishing these new analytics approaches from traditional ones and the term Big Data has taken on a more nuanced meaning. After completing this course, participants will be able to identify potential Big Data applications in business situations and use public domain software to gather and analyze the data.