Routing Sheet for Review and Approval

Proposed New Academic Plan or Name Change to Existing Academic Plan

Required steps in the review and approval process for proposed new academic plans and name changes to existing academic plans vary depending upon a number of factors. The Provost's Office reviews each concept for a new academic plan or name change in light of UMBC campus governance procedures and USM/MHEC approval guidelines. This online form has been routed by the Provost's Office to each office or governance group that needs to review this particular proposal.

Name of proposed new program OR program action: Business Analytics UDC

Date of PCG review:	01/07/2022	Review by USM:	yes
Date of approval initiation:	03/02/2022	Maryland Higher Education	
Date Letter of Intent sent to USM:		Commission for:	admin. review
Date RSTARS transfer requested:		Target MHEC Submission Date:	May 2022

Proposal and Other Attachments

Proposal   Attachment 1   Attachment 2   Attachment 3   Attachment 4

Attachment(s) may be viewed starting on page 4 of this document.

INSTRUCTIONS

1. The proposal and this routing form are being sent to each office indicated on this form via DocuSign, in the order in which each appears on the list. Each recipient who needs to review the proposal will receive an email notification when it is his or her turn to sign.

2. If you have a concern regarding the proposed new plan or plan change, please do the following: (1) select "Concern" on the dropdown near your designated signature block, (2) enter a brief description of your concern regarding the proposal in the text box that appears, (3) select "Finish Later" under the "Other Actions" menu option, and (4) e-mail Beth Wells at bwells@umbc.edu with a more detailed description of your concern.

If you have questions about this form or the review process, please contact Beth Wells at bwells@umbc.edu, x5-8907. Thank you very much for your assistance.

SIGNATURES

Informal Review: **Assistant Vice Provost for Academic Affairs**

Beth Wells

Beth Wells

bwells@umbc.edu

Reviewed: 3/2/2022 | 11:22:38 AM EST

Department Chair

Vandana Janeja

Vandana Janeja

vjaneja@umbc.edu

3/2/2022 | 11:24:45 AM EST

Approve

In Process

Vice President for Administration and Finance

Kathy L Dettloff
dettloff@umbc.edu
Kathy L Dettloff

3/2/2022 | 12:46:20 PM EST

Approve

Dean of Engineering and I.T.

Keith Bowman

Keith Bowman
kjb@umbc.edu
3/9/2022 | 11:39:54 AM EST

 Approve

Please contact Beth Wells at bwells@umbc.edu
with a brief description of your concern
regarding the proposal. To end this session
please select Finish Later under the "Other
Actions" menu option. Please Do Not Decline to
Sign.

Dean of Undergraduate Academic Affairs

Katharine Cole
kcole@umbc.edu
3/16/2022 | 8:38:54 AM EDT

 Approve

Please contact Beth Wells at bwells@umbc.edu
with a brief description of your concern
regarding the proposal. To end this session
please select Finish Later under the "Other
Actions" menu option. Please Do Not Decline to
Sign.

Chair, Undergraduate Council

Elizabeth Feeser
efeeser@umbc.edu

President, Faculty Senate

Orianne Smith
osmith@umbc.edu

Provost   **President**

Philip Rous   Freeman Hrabowski
rous@umbc.edu   hrabowsk@umbc.edu

Final Review: **Assistant Vice Provost for Academic Affairs**

Beth Wells   Reviewed:
bwells@umbc.edu

Date Submitted to MHEC: Date Submitted to USM:

Proof RSTARS Transfer Attached:

--- END OF FORM; ATTACHMENTS BEGIN ON NEXT PAGE ---

UMBC

Department of Information Systems

Proposal for a new Certificate

in

Business Analytics

The Department of Information Systems (IS) proposes the creation of a new Upper Division Certificate (UDC) in Business Analytics in the existing Business Technology Administration degree program.

Sponsoring Department: Information Systems

Description of the need for the programs and educational objectives:

With organizations generating a large amount of data pertaining to their business, there is an urgent need for trained professionals who can collect, store, and analyze this historical data to help in decision-making processes thereby improving business efficiency and increasing the organization's revenue. Thus, we propose to augment our existing undergraduate curriculum in Business Technology Administration (BTA), which already contains rigorous prerequisites, with an additional focus on business analytics skills and topics through an upper division certificate program.

IS as a discipline focuses on specific approaches to solving technology problems from an organizational and people perspective. Similarly, the educational objectives of this certificate program are to equip students to learn foundational skills in data science and business analysis to be able to analyze organizational datasets using the latest software applications, like Python, Tableau, R and Weka. It will also train them on ethical, legal and management concepts related to managing and analyzing business datasets.

We have designed this program to be open to all students who are interested in complementing their degree with skillsets to perform Business Analytics, making this the only business-focused analytics certificate program at UMBC. Anecdotally, interest in such a certificate is very high and fueled by the well-publicized availability of jobs and the national need for graduates trained in this area.

Proposal for a new Upper Division Certificate

The Department of Information Systems proposes creation of a new Upper Division Certificate.

Certificate Title: Business Analytics

Connection of the proposed certificate to UMBC's mission: The quotes in this paragraph are taken from UMBC's mission which states [1]: "As an Honors University, the campus offers academically talented students a strong undergraduate liberal arts foundation that prepares them for graduate and professional study, entry into the workforce, and community service and leadership." Information technology is at the heart of UMBC's mission and as such the Information Systems department is elated to propose a certificate that will provide undergraduate students the tools of Business Analytics, which they can use to "*contribute to the economic development of the State and the region… in collaboration with public agencies and the corporate community.*"

Evidence of the market demand for the proposed certificate program: According to the U.S. Bureau of Labor Statistics [2] "*Employment in management analysts – including business analysts – is expected to grow 14% from 2020 to 2030, which is much faster than the average for all occupations. These occupations are projected to add about 907,600 new jobs… The median annual wage for computer and information technology occupations was $87,660 in May 2020, which was higher than the median annual wage for all occupations*" The proposed certificate prepares students to target jobs that grow faster than the average of all occupations. Enrolled students will learn the foundations of Business Analytics and will become quite marketable. This program, while initially conceived for BTA and IS students at UMBC, will have a generalized course content to enable students across all disciplines to successfully complete the certificate. The course structuring includes several no-prerequisite courses or built-in pre-requisites to make it more appealing to non-computing majors.

Curriculum: All courses in this UDC are already part of the curriculum for the BTA degree in IS. The certificate will be earned by students who successfully complete the courses identified below. The certificate comprises a total of 15 credits.

Core required courses (6 credits):
      IS 296 Introduction to Data Science (3 credits)
      IS/MGMT496 Business Analytics (3 credits)
Electives (choose three – 9 credits):
      IS 425 Decision Support Systems (3 credits)
      IS 438 Project Management (3 credits)
      IS 474 Legal Aspects of Information Systems (3 credits) OR MGMT 360 Business Law (3 credits)
      MGMT 385 Business Ethics (3 credits)
      IS 480 Data Visualization course (3 credits)
      IS 497 Internship in Business Analytics (3 credits)
      MGMT 490 Independent Study in Business Analytics (3 credits)

Learning outcomes: The learning outcomes of this UDC include exposure and experience with foundational skills in data science and business analysis to analyze organizational datasets using the latest software applications, like Python, Tableau, R, and Weka. Students will also be trained on ethical, legal, and management concepts related to managing and analyzing business datasets.

Faculty resources: All courses that are part of the certificate curriculum will be taught by full-time, or in the case of some electives, experienced part-time, IS department faculty. More than 50% of the courses will be taught by full-time faculty. Oversight and advising for the certificate program will be the responsibility of the Director and Associate Director of Undergraduate Programs, as is the case with all certificate programs the department offers.

Faculty	Title (status)	Education	Field of Specialization	Courses Taught
Dr. Vandana Janeja	Professor (Full time)	Ph.D., Management, Rutgers University	Data Science and Data Mining	IS 296 Introduction to Data Science IS/MGMT496 Business Analytics
Dr. Karuna Joshi	Associate Professor (Full time)	Ph.D., Computer Science, UMBC	Data Science, Legal Analytics, Health IT	IS 425 Decision Support Systems IS 474 Legal Aspects of Information Systems
Dr. Anita Komlodi	Associate Professor (Full time)	Ph.D., Computer Science, University of Maryland	Human Computer Interaction (HCI)	IS 480 Data Visualization course
Dr. Karen Chen,	Assistant Professor (Full time)	Ph.D., Information Systems, Carnegie Mellon University	Data Science and Applied Machine Learning	IS 296 Introduction to Data Science IS/MGMT496 Business Analytics
Richard Sponaugle	Senior Lecturer (Full time)	M.S. Information Systems, UMBC	Project Management, Programming	MGMT 385 Business Ethics IS 438 Project Management
Dr. Jennifer Carter	Professor of Practice (Full time)	Doctor of Management, University of Maryland	Managment, Programming	IS 497 Internship in Business Analytics

References

[1] Welcome to UMBC. "UMBC Mission and Vision" https://about.umbc.edu/mission-and-vision/
[2] U.S. Bureau of Labor Statistics, https://www.bls.gov/ooh/business-and-financial/management-analysts.htm