APPROVED BY SENATE
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ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Proposal to the Senate Educational Policy Committee

PROPOSAL TITLE: Proposal to add the Graduate Concentration in Business Data Analytics in the Department of Business Administration

SPONSOR: Dilip Chhajed, Executive Director of Masters Programs, Department of Business Administration; Chhajed@illinois.edu; 217-333-3778

COLLEGE CONTACT: Dean Larry DeBrock, College of Business, via Mary Schultze (333-5423; mlschltz@illinois.edu)

BRIEF DESCRIPTION: The Department proposes to create a graduate concentration in Business Data Analytics that will consist of 12 hours of analytics related coursework that can be tailored for specific career goals of the students. With the introduction of the proposed concentration, students from approved graduate programs (see list of approved programs in Appendix A) will be able to earn a concentration by following the guidelines below. In addition, students will be required to do a project course to provide them with experience in working on a real-world business analytics problem.

Students will be able to earn a concentration in Business Data Analytics by fulfilling the following requirements (see requirement A and B).

A. Select four credit hours of course work (total 12 credit hours) from each of the three areas below (course descriptions are attached):

1: Customer
- BADM 590 Consumer Analytics (2 or 4 credits)
- BADM 590 Social Media Analytics (2 or 4 credits)

2: Operation and Supply Chain
- BADM 590 Predictive Data Analytics (2 or 4 credits)
- BADM 590 Business Process Improvement (2 or 4 credits)

3: Information Systems
- BADM 554 Enterprise Database Management (4 credits)

- BADM 590 Data and Visual Analytics (2 or 4 credits)
- BADM 557 Decision Support Systems and Knowledge Management (4 credits)

B. In addition students pursuing this concentration will be required to select an analytics related project in their MSTM Practicum or an equivalent course. Students in the MSBA or MBA program can enroll in BADM 594 (Independent Study) to complete a project focused on data analytics to complete the practicum requirement. Alternatively, students in the MBA program may choose BADM 445 (Small Business Consulting) to complete a project focused on data analytics to fulfill the practicum project requirement.

Addition and subtraction of courses within each group and course substitutions may be approved by the Department after consultation with the Data Analytics Concentration committee. Any new course that is cross-listed in multiple groups in the future will count toward satisfying the requirement of only one group. Course proposals are currently under development for the BADM 590 courses in an effort to create permanent course numbers. As more courses are developed, the 2-credit versions of these courses will provide greater flexibility to students. The Department of Business Administration will determine if the 2-credit or 4-credit hour version of the various courses will be offered.

Prerequisites for the Concentration:

Successful completion of the concentration assumes certain knowledge of business and prior coursework. In addition, students must have completed at least two college level math or statistics courses, either at the undergraduate or graduate level. These courses should be completed before admission to the students' degree program. At present, the primary purpose of this concentration is to develop data analytics skills in interested students in the MS in Technology Program; however, students enrolled in other programs identified in Appendix A will be allowed to enroll if space is available.

Expected Enrollment in the Concentration:

The Department expects enrollment to be approximately 25 students which would not require the opening of additional sections of the courses offered for the concentration.

Admission to the Concentration:

The student will complete the necessary Graduate Student Request Form to serve as the application form for the Graduate Concentration in Business Data Analytics. The Graduate Student Request Form will include spaces for indications of approval from the student's academic advisor and the director of the graduate program to which the student is already admitted or enrolled. The Department's Executive Director of

Masters Programs or designee will be responsible for overseeing the graduate concentration admission process.

Concentration Advisor:

The director of the program in which the student is enrolled, together with the Executive Director of the Masters Programs and the Data Analytics Concentration committee will advise students in the proposed graduate concentration.

JUSTIFICATION:

With the advent of the Internet, social networking and cheap communication capability, billions of bytes of data are generated and collected by organizations every day. These data can provide important information about customers, organizational performance, and future trends. A new breed of graduates is required to convert these data into useful information that can help shape the decisions companies make that affect their strategic direction and policy. Data Analytics is a relatively young, multidisciplinary field that enhances organizations' ability to extract useful insights from data to aid management in making better decisions. Corporations as well as non-profit organizations are looking for qualified students who can employ data analysis to solve business problems.

To meet these needs, the proposed concentration in Business Data Analytics will focus on developing leaders in business who understand (1) how to leverage data to identify new customer segments and market; (2) how to optimize the supply chain and logistics, and (3) how to collect, manipulate and visualize data for business decisions. The concentration will provide a strong foundation in business courses as well as develop skills using data as a foundation for sound decision making.

BUDGETARY AND STAFF IMPLICATIONS: For the initial years of the program, the Department expects no additional sections to be opened for the students in the concentration and thus no budgetary implications.

DESIRED EFFECTIVE DATE: August 2015

STATEMENT FOR PROGRAMS OF STUDY CATALOG:

Graduate Concentration in Business Data Analytics:

The concentration in Business Data Analytics is designed to develop leaders in various business fields who understand (1) how to leverage data to identify new customer segments and market; (2) how to optimize the supply chain and logistics, and (3) how to

collect, manipulate and visualize data for business decisions. The concentration will develop skills using data as a foundation for sound decision making in business.

This concentration requires twelve graduate hours of Business Data Analytics related coursework and completion of an analytics related project in their Practicum or an equivalent course. Successful completion of the concentration assumes certain knowledge of business and prior coursework.

A. Select four credit hours of course work (total 12 credit hours) from each of the three areas below:

1: Customer

- BADM 590 Consumer Analytics (2 or 4 credits)
- BADM 590 Social Media Analytics (2 or 4 credits)

2: Operation and Supply Chain

- BADM 590 Predictive Data Analytics (2 or 4 credits)
- BADM 590 Business Process Improvement (2 or 4 credits)

3: Information Systems

- BADM 554 Enterprise Database Management (4 credits)
- BADM 590 Data and Visual Analytics (2 or 4 credits)
- BADM 557 Decision Support Systems and Knowledge Management (4 credits)

B. In addition students pursuing this concentration will be required to select an analytics related project in their Practicum or an equivalent course.

Admission to the concentration requires a Graduate Student Request Form submitted to the Department and Graduate College and admission to one of the programs approved for the concentration. Admission is limited and acceptance is considered based on a student's academic standing and space availability.

CLEARANCES: *(Clearances should include signatures and dates of approval.* ***These signatures must appear on a separate sheet.*** *If multiple departments or colleges are sponsoring the proposal, please add the appropriate signature lines below.)*

Signatures:

Unit Representative:	Date: 10/29/14
College Representative:	Date: 11/4/14
Graduate College Representative:	Date: 12/19/14
Council on Teacher Education Representative:	Date:

Appendix A

List of Approved Programs and Letters of Support for Graduate Concentration in Data Analytics

1. Master of Science in Technology Management
2. Master of Business Administration
3. Master of Science in Business Administration

Course Descriptions

BADM 590 Consumer Analytics
Obtaining extensive information about consumers is essential for firms to develop profitable relationships with customers. This is especially the case in the age of "Big Data". This course helps students to expand much needed skills in making decisions of which success comes only from a better understanding of the customers. This course allows students to learn specialized skills to use data to create customer value and cultivate customer relationships, plan and develop coherent marketing strategies, analyze simple and complex marketing data for managing customer relationships, obtain customer insights and evaluate alternative marketing opportunities, effectively communicate database analytic results to decision-makers, and bridge the gap between analytical models and business opportunities by providing innovative solutions.

BADM 590 Social Media Analytics
Social media has disrupted communication channels and created challenges for marketing in the digital age. The change of control of the brand has shifted from the company to the consumer. Brands have become perplexed by this new phenomenon, requiring a newfound dynamic to their approach. In this course, students learn how to manage their brand on social media and how to create a social media strategy and campaign. Through lecture, discussions, and case studies, students determine the best tactic and content for social media marketing in their specific industry. Topics that are discussed include the importance of influencers, the benefits of listening, aligning objectives with goals, determining which analytics are important and how to track them, and defining and measuring success.

BADM 590 Predictive Data Analytics
This course covers advanced techniques of data analytics, with an emphasis on the predictive perspective. This course provides both rationale and real-world applications of data analytics and is ideal for students seeking to extract insights from real data to support business decision-making. In particular, students will learn to: (1) mine, summarize and visualize data (2) formulate, identify, and design optimal procedures for prediction, forecast and inferential decision-making (3) uncover and quantify the influence of performance drivers with data (4) draw data-driven conclusions to create competitive advantage for businesses.

BADM 590 Business Process Improvement
This course focuses on methods for analyzing and improving work processes in organizations. We will focus on (1) formulation of problems, (2) selection of existing data and new measurements, (3) choice and application of data-analysis techniques, and (4) interpretation of results, leading to systematically made decisions about work processes. We will also study frameworks used for scientific management of work processes and learn techniques for setting organizational priorities for process improvements. Theoretical concepts and analytical techniques will be introduced and applied through readings, discussions, exercises, and quantitative problems. The process

analysis and improvement frameworks covered in this course are widely used by world-class organizations to achieve sustainable competitive advantage through better customer service and controlled operational costs.

BADM 554 Enterprise Database Management

Databases are important because they play a critical role in today's business environment. Almost all modern organizations use database technologies to store and manage data in every functional area of business including its operations, finance, accounting, and marketing. By understanding data modeling and being able to query databases, you possess one of the most marketable skills to help a business better manage their data and discover new opportunities through better analytics. At the end of this course you will be able to (a) Understand and help articulate the data needs of the company (requirement analysis), (b) Conceptually model the relationship of the data (data modeling), (c) Query databases to meet business requirements, (d) Understand the principles of design of data warehouses, (e) Understand the alternatives to relational databases (no SQL) with reference to storing Big Data, and (f) Explain the benefits of distributed databases

BADM 590 Data and Visual Analytics

If you want to make better business decisions than using just your experience, theoretical knowledge or intuition, then you need to understand analytics. In this course, you will learn not only data analytic techniques but also the managerial implications of competing with analytics. You will understand the managerial challenges of using data analytics to develop a strategic advantage through readings and case studies. You will learn techniques such as statistical inference, linear modeling, sentiment analytics, and data mining through hands-on exercises in R. R is an open source language that has grown in importance and usage in corporations. Finally, you will be able to present and interpret data through an understanding of data visualization techniques (using tools such as Tableau, among other tools). A final project will give you the opportunity to synthesize all the components of data analytics, culminating in a presentation in a professional environment.

BADM 557 Decision Support Systems and Knowledge Management

In an increasingly digitized world, data is rapidly growing in abundance. The ability to generate insights from data is an increasingly valuable skill for business analysts and managers. In this course, students will develop analytical and data modeling skills that enable sound decision-making. We will focus on skill sets of data mining in business intelligence.

The course will involve a hands-on and application-oriented approach, in which students will learn how to apply a variety of modern techniques to specific business intelligence challenges involving the analysis or mining of data. We will be concerned more with understanding which techniques are appropriate in various business situations, rather than on mastering the theoretical underpinnings of those techniques. The course will introduce some interactive data mining and data-visualization tools, and will cover methods aimed at prediction, classification, and forecasting. The course will incorporate case studies, news articles, and managerial articles on the emerging phenomenon of evidence-based management.

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

College of Business
Department of Business Administration
15 Wohlers Hall, MC-706
1206 South Sixth Street
Champaign, IL 61820 USA

October 20, 2014

Allison McKinney
Director, Academic Programs and Policy
Graduate College, University of Illinois Urbana-Champaign
204 Coble Hall, MC-322
801 S. Wright Street
Champaign, IL 61820

Dear Ms. McKinney:

The MS Technology Management Program (MSTM) supports the introduction of a Graduate Concentration in Business Data Analytics. We will allow qualified MSTM students who meet the program requirements to enroll in the classes comprising the concentration and all credit hours earned by each student in those courses will be counted toward the MS Technology Management degree for that student.

Respectfully,

Jeffrey Kurtz
Interim Director, MSTM Program

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Illinois MBA
College of Business
3019 Business Instructional Facility
515 East Gregory Drive
Champaign, IL 61820

October 10, 2014

Allison McKinney
Director, Academic Programs and Policy
Graduate College, University of Illinois Urbana-Champaign
204 Coble Hall, MC-322
801 S. Wright Street
Champaign, IL 61820

Dear Ms. McKinney:

The Illinois MBA program supports the introduction of a Graduate Concentration in Business Data Analytics. We will allow qualified MBA student who meet the program requirements to enroll in the classes comprising the concentration and all credit hours earned by each student in those courses will be counted toward the Masters of Business Administration degree for that student.

Sincerely,

Darcy Sementi
Assistant Dean

telephone 217-244-8019 • *fax* 217-333-1156

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

College of Business
Department of Business Administration
15 Wohlers Hall, MC-706
1206 South Sixth Street
Champaign, IL 61820 USA

October 10, 2014

Allison McKinney
Director, Academic Programs and Policy
Graduate College
University of Illinois
222 Coble Hall
Champaign, IL 61820

Mary,

The Master of Science in Business Administration Program (MSBA) supports the introduction of a concentration Business Data Analytics. We will allow *qualified* MSBA students *who meet the MSBA Program requirements* to enroll in the classes comprising the concentration and all credit hours earned by each student in those courses will be counted toward the MS Business Administration degree for that student.

Respectfully,

William Qualls
Academic Director, MSBA Program

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of the Provost and Vice Chancellor
for Academic Affairs

Swanlund Administration Building
601 East John Street
Champaign, IL 61820

January 5, 2015

Gay Miller, Chair
Senate Committee on Educational Policy
Office of the Senate
228 English Building, MC-461

Dear Professor Miller:

Enclosed is a copy of a proposal from the College of Business and the Graduate College to establish a Concentration in Business Data Analytics.

The proposal has been reviewed and approved by the Graduate College Executive Committee. It now requires Senate review.

Sincerely,

Kathryn A. Martensen
Assistant Provost

c: J. Hart
D. Chhajed
L. DeBrock
A. Edwards
A. McKinney
A. Rindfleisch

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Graduate College

204 Coble Hall
801 South Wright Street
Champaign, IL 61820-6210

December 18, 2014

Kristi Kuntz
Office of the Provost
207 Swanlund MC-304

Dear Kristi,

Enclosed please find the proposal to add the Graduate Concentration in Business Data Analytics in the Department of Business Administration. The Graduate College Executive Committee has approved this proposal.

The proposal was first received at the Graduate College on November 11, 2014. It was reviewed by the Program Subcommittee on November 18, 2014. As an outcome of that meeting two clarifications were requested. Those involved making it clear in the proposal that each course will have its own, permanent number and adding the number of credit hours the courses will be offered for. The revised proposal was received at the Graduate College on December 3, 2014.

The proposal was unanimously approved by the Graduate College Executive Committee at the December 12, 2014 meeting. I send this proposal to you now for further review.

Sincerely,

John C. Hart
Associate Dean, Graduate College

c: D. Chhajed
L. DeBrock
A. Edwards
A. McKinney
A. Rindfleisch

ILLINOIS
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Senate Educational Policy Committee
Proposal Check Sheet

PROPOSAL TITLE (Same as on proposal): Proposal to add the Graduate Concentration in Business Data Analytics in the Department of Business Administration

PROPOSAL TYPE (select all that apply below):

A. ☒ Proposal for a NEW or REVISED degree program. Please consult the Programs of Study Catalog for official titles of existing degree programs.

1. Degree program level:

   ☒ Graduate ☐ Professional ☐ Undergraduate

2. ☐ Proposal for a new **degree** (e.g. B.S., M.A. or Ph.D.):

   Degree name, "*e.g., Bachelor of Arts or Master of Science*": _____

3. ☒ Proposal for a new or revised **major, concentration, or minor**:

   ☐ New or ☐ Revised **Major** in (name of existing or proposed major): _____

   ☒ New or ☐ Revised **Concentration** in (name of existing or proposed concentration): Graduate Concentration in Business Data Analytics

   ☐ New or ☐ Revised **Minor** in (name of existing or proposed minor): _____

4. ☐ Proposal to rename an existing major, concentration, or minor:

   ☐ Major ☐ Concentration ☐ Minor

   Current name: _____

   Proposed new name: _____

5. ☐ Proposal to terminate an existing degree, major, concentration, or minor:

   ☐ Degree ☐ Major ☐ Concentration ☐ Minor

   Name of existing degree, major, or concentration: _____

6. ☐ Proposal involving a multi-institutional degree:

   ☐ New ☐ Revision ☐ Termination

Name of existing Illinois (UIUC) degree: _____

Name of non-Illinois partnering institution: _____

Location of non-Illinois partnering institution:

☐ State of Illinois ☐ US State: _____ ☐ Foreign country: _____

B. ☐ Proposal to create a new academic unit (college, school, department, program or other academic unit):

Name of proposed new unit: _____

C. ☐ Proposal to rename an existing academic unit (college, school, department, or other academic unit):

Current name of unit: _____

Proposed new name of unit: _____

D. ☐ Proposal to reorganize existing units (colleges, schools, departments, or program):

1. ☐ Proposal to change the status of an existing and approved unit (e.g. change from a program to department)

   Name of current unit including status: _____

2. ☐ Proposal to transfer an existing unit:

   Current unit's name and home: _____

   Proposed new home for the unit: _____

3. ☐ Proposal to merge two or more existing units (e.g., merge department A with department B):

   Name and college of unit one to be merged: _____

   Name and college of unit two to be merged: _____

   Proposed name and college of new (merged) unit: _____

4. ☐ Proposal to terminate an existing unit:

   Current unit's name and status: _____

E. ☐ **Other educational policy proposals** (e.g., academic calendar, grading policies, etc.)

Nature of the proposal: _____

Revised 10/2012