December 17, 2013

MEMORANDUM

TO: Alexander J. Triantis
   Dean, Robert H. Smith School of Business

FROM: Elizabeth Beise
       Associate Provost for Academic Planning and Programs

SUBJECT: Proposal to Establish a Minor in Business Analytics (PCC log no. 13022)

At its meeting on November 1, 2013, the Senate Committee on Programs, Curricula, and Courses approved your proposal to establish a Minor in Business Analytics. A copy of the approved proposal is attached.

The change is effective Spring 2014. Please ensure that the change is fully described in the Undergraduate Catalog and in all relevant descriptive materials, and that all advisors are informed.

MDC

Enclosure

cc: Marilee Lindemann, Chair, Senate PCC Committee
    Sarah Bauder, Office of Student Financial Aid
    Reka Montfort, University Senate
    Erin Howard, Division of Information Technology
    Pam Phillips, Institutional Research, Planning & Assessment
    Anne Turkos, University Archives
    Linda Yokoi, Office of the Registrar
    Doug Roberts, Undergraduate Studies
    Joyce Russell, Robert H. Smith School of Business
THE UNIVERSITY OF MARYLAND, COLLEGE PARK
PROGRAM/CURRICULUM/UNIT PROPOSAL

- Please email the rest of the proposal as an MSWord attachment to pcc-submissions@umd.edu.
- Please submit the signed form to the Office of the Associate Provost for Academic Planning and Programs, 1119 Main Administration Building, Campus.

College/School: Robert H. Smith School Business
Please also add College/School Unit Code-First 8 digits: 01202900
Unit Codes can be found at: https://hypprod.umd.edu/Html_Reports/units.htm

Department/Program: BMGT-Decision, Operations & Information Technologies
Please also add Department/Program Unit Code-Last 7 digits: 1291101

Type of Action (choose one):

☐ Curriculum change (including informal specializations)  ☐ New academic degree/award program
☐ Renaming of program or formal Area of Concentration  ☐ New Professional Studies award iteration
☐ Addition/deletion of formal Area of Concentration  ☐ New Minor
☐ Suspend/delete program  ☐ Other

 Italics indicate that the proposed program action must be presented to the full University Senate for consideration.

Summary of Proposed Action:

The Department of Decision, Operations, and Information Technologies (DOIT), located within the Robert H. Smith School of Business, proposes an undergraduate minor in Business Analytics.

APPROVAL SIGNATURES - Please print name, sign, and date. Use additional lines for multi-unit programs.

1. Department Committee Chair  FRANK A. ALT  5/3/2013
2. Department Chair  ZHI-LONG CHEN  5/3/2013
3. College/School PCC Chair  REBECCA RATNER  5/28/2013
4. Dean  JOSEPH E. RUSSELL  6/6/2013
5. Dean of the Graduate School (if required)
6. Chair, Senate PCC  MANU E.  1/1/2013
7. University Senate Chair (if required)
8. Senior Vice President and Provost  ELIZABETH J. BEIN  12/17/2013
Proposal for an Undergraduate Minor in Business Analytics

The Department of Decision, Operations, and Information Technologies (DOIT), located within the Robert H. Smith School of Business, proposes an undergraduate minor in Business Analytics.

The department currently offers undergraduate majors in Operations Management and Information Systems. It also offers an MS in Business: Information Systems which includes a Business Analytics component.

In Fall 2013, DOIT will launch a one year undergraduate Fellows program in Business Analytics with the first cohort having over twenty-five students. These students will intensely study this specific area of business via three required courses and attendance at seminars by corporate speakers and workshops, such as the Smith-IBM Joint Analytics Workshop. The third workshop was held in 2013.

Building on this foundation, DOIT proposes an undergraduate minor in Business Analytics. The minor will be a 15 to 18 credit program designed to provide students with the training necessary to pursue successful careers in this rapidly growing field.

Title for Transcript
Business Analytics

Primary Sponsoring Unit
Department of Decision, Operations, and Information Technologies, Robert H. Smith School of Business

Catalog Description
The undergraduate Minor in Business Analytics is a program offered by the Department of Decision, Operations and Information Technologies within the R. H. Smith School of Business. The availability of massive amounts of data has created the need for Business Analytics professionals who can analyze such data and obtain the insight needed for informed decision making. This allows an organization to gain a competitive edge in today’s dynamic business environment. The Minor integrates technology with statistical and quantitative modeling techniques to provide students with the foundation needed for data driven decision making, as well as for graduate study in the field of Business Analytics. Students with these skills are in high demand in a variety of industries and sectors including marketing, finance, information systems, operations, health care and energy.

Program Oversight
Dr. Frank Alt will serve as Program Director for the minor and will oversee the academic component of the minor. Two additional tenured or tenure-track DOIT faculty members will serve with Professor Alt as members of a faculty oversight committee responsible for program academic content, admissions criteria, admissions decisions and all other academic matters. The Program Director will chair the faculty oversight committee. The two additional faculty members will be appointed by the DOIT Chair.
The Undergraduate Studies Office (USO) in the Business School will monitor student progress in the minor. The USO will also manage other routine administrative items, including maintaining a website whereby applicants to the minor can download the application form and obtain other information regarding the minor including required coursework.

Student Learning Outcomes
The availability of massive amounts of data has created the demand for professionals with strong business analytics skills. Employees with these skills will provide organizations, whether in the
public or private sector, with the competitive edge needed to ensure the organization’s long-term success.

Upon completion of the proposed curriculum, students will:

- Develop awareness of the descriptive, predictive and prescriptive perspectives comprising Business Analytics.
  - Analyzing and evaluating what has happened in the past.
  - Predicting future outcomes
  - Prescribing an optimal course of action, thus allowing an organization to gain a competitive advantage.
- Develop expertise in applying Business Analytics to a problem by viewing it as quantifiable and thus solvable.
- Develop proficiency in using leading software packages.
- Increase communication skills by effectively presenting results from analysis of real-life scenarios.
- Provide career opportunities for students with an understanding of general business and strong Business Analytics skills.

**Demand**

We are in the midst of an information revolution where the proliferation of data is widespread. 90% of the data in the world today was created in the last two years alone [http://www-01.ibm.com/software/data/bigdata/]. Companies are tracking every possible digital footprint of consumers whether from transaction records of purchases, loan and credit card applications or interactions on social media sites. With data being collected at every step, it has become strategically important for organizations to have a competitive advantage by extracting meaningful information from the tsunami of data and acting on it. That is why Business Analytics is one of the fastest growing job specializations.

Other applications include health, education, energy and fraud detection and prevention.

What is Business Analytics? J. Griffin of Deloitte gives the following comprehensive definition “Business analytics is a process that refers to the use of skill-sets, technologies, applications and practices for continuous, iterative exploration and investigation of past business performances. It is used to gain insight and drive business planning. The process of BA makes extensive use of data, statistical and quantitative analysis, explanatory and predictive modeling and fact-based management to drive decision making.” [Clearing the Confusion: The What and Why of Business Analytics, Information Management, May 2010] Although other definitions are not as comprehensive, they are very similar.

The McKinsey Global Institute issued a report in 2011 titled “Big data: the next frontier for innovation, competition, and productivity.” For the U.S. alone, projection is that the demand for deep analytical positions could exceed the supply being produced by 140,000 to 190,000 positions by 2018. The report also projects “a need for 1.5 million additional managers and analysts in the United States who can ask the right questions and consume the results of the analysis of big data effectively.” The growing demand by employers for Business Analytics professionals is supported by a number of other studies.

The minor in BA seeks to fill the need for BA professionals and to prepare graduates for successful careers in this growing field by developing students’ strategic skills along with a solid technical foundation in data and model-driven management decision making.

**Analytics Programs at Other Universities**

Universities have recognized the increasing demand by corporations for graduates with Business Analytics skills and have been trying to meet this burgeoning demand by developing and implementing
programs in Business Analytics. A listing of some of these programs is in Appendix B. Most of these programs are at the graduate level with very few at the undergraduate level.

Some universities that have recently added Business Analytics or a related field to their undergraduate curriculum are:

- MIT Sloan School of Management: Major in Business Analytics and Operations Research
- University of Pennsylvania: Undergraduate major in Business Analytics
- George Washington University: Minor and certificate in Business Analytics.
- Villanova University: Minor in Business Analytics

Program Description
The curriculum will consist of required and elective courses, in addition to three pre-requisite courses.

A total of 15 to 18 credits will be required to complete the minor, primarily dependent on whether a student’s major is within or outside of the Smith Business School.

Pre-requisites
The three pre-requisites (9 credits) are:
1. BMGT 110 - Introduction to the Business Value Chain
2. BMGT 230 – Business Statistics (or equivalent) (grade of B or higher is required)
3. MATH 220, 130 or 140 (or equivalent)

All students in the minor will be required to satisfy all three pre-requisites. Students whose major is within the Business School will have satisfied all three pre-requisites. Most students whose major is outside the Smith Business School will have satisfied pre-requisites (2) and (3) but not (1).

Required Courses
There are three required courses (9 credits):
1. BMGT402 - Database Systems
   [CMSC 424 (Database Design) can be used as a substitute.]
2. BMGT430 - Linear Statistical Models in Business
   [ECON 423 (Econometrics II) can be used as a substitute.]
3. BMGT431 - Data Analytics (new course)

All students will be required to satisfy all three required courses. BMGT 431 will be offered for the first time in Spring 2014.

Electives (6 credits - Choose any two of the following) - Consult Testudo for course restrictions.
1. BMGT404 - Developing Applications for Decision Analytics
2. BMGT434 - Introduction to Optimization
3. BMGT435 - Business Simulation
   [ENCE 402 (Simulation and Design of Experiments) can be used as a substitute.]
4. One course from the following list:
   - BMGT484 - Electronic Marketing
   - BMGT 448E - Computational Finance
   - CMSC 422 - Introduction to Machine Learning
   - ECON 424 - Computer Methods in Economics
   - STAT 430 – Introduction to Statistical Computing with SAS
There may be prerequisites and restrictions associated with a course. For example, ECON 423 has a prerequisite of ECON 422 and the restriction is permission of BSOS – Economics department. The course descriptions, their prerequisites and restrictions, if any, for the complete list of courses for the minor is in Appendix A. The current restrictions for BMGT 430, BMGT 434 and BMGT 435 will be revised to accommodate those students in the minor.

That a course is listed as fulfilling the minor requirements does not imply that a student will be able to enroll in that course.

Some of the required and elective courses for the minor may also fulfill the course requirements in a student’s major department. However, a student may use no more than six credits (or two courses) to satisfy the requirements of both a major and a minor, and the courses completed in this minor cannot be used to satisfy the requirements in another minor.

Several possibilities for completing the minor follow:

IS majors: \{BMGT 402, BMGT 430, BMGT 431, BMGT 404 and one other elective.\}

OM majors: \{BMGT 402, BMGT 430, BMGT 431, BMGT 434 and BMGT 435.\}

FIN majors: \{BMGT 402, BMGT 430, BMGT 431, BMGT 448E and one other elective.\}

MKTG majors: \{BMGT 402, BMGT 430, BMGT 431, BMGT 484 and one other elective.\}

ECON majors: \{BMGT 110, BMGT 402, ECON 423, BMGT 431, ECON 424 and one other elective.\}

CMSC majors: \{BMGT 110, CMSC 424, BMGT 430, BMGT 431, CMSC 422 and one other elective.\}

Because of the dynamic nature of the field of data analytics, the coursework required for the minor will be reviewed annually by the faculty oversight committee to ensure that it is current. The committee will also consider expanding the list of electives and recommend the development of new courses when necessary.

**Completion Requirements**

In order to complete the minor, students must:

- Complete all 15-18 required credits.
- Achieve a minimum grade of "C-" or better in all minor courses.

No more than six credits (or two courses) for the minor may be taken at an institution other than the University of Maryland, College Park. Furthermore, at least six upper division credits applied to the minor must be taken at this university.

Although the minor is designed to be completed during the junior and senior years, students could apply for admission to the minor as early as the fall semester of their sophomore year. Courses completed prior to applying for the minor will be accepted to satisfy the minor requirements.

**Eligibility and Application Process**

Admission to the minor will be limited to no more than 30 students in the initial year, selected through a competitive application process. This limitation on the first year’s enrollment is
necessary in order to better assess the demand for the minor and the corresponding faculty workload. The number of admitted students will be increased to a maximum of 40 in the second year and a maximum of 50 in the third year. In the third year of the minor, the faculty oversight committee will explore the feasibility of further increasing the number admitted and the possible need for additional resources.

Successful applicants will have completed at least 30 semester credits and have demonstrated a high level of academic achievement. Students seeking admission to the minor will be asked to complete an application form available on the R.H. Smith School of Business undergraduate website (http://www.rhsmith.umd.edu/undergrad/), submit a letter of support for their application from a faculty member or advisor, and provide a copy of their transcript. The faculty oversight committee will evaluate the applications submitted. In selecting students to the program, the committee will emphasize academic achievement, including in particular evidence of successful completion of courses in quantitative subjects.

**Advising System**

Once admitted to the program, students will initially work with a business minor advisor in the UG Studies Office to plan the courses to be taken for the minor. Once a plan has been prepared, the students will meet with the Program Director or another member of the faculty oversight committee to review and approve the program of study. Students are expected to meet with their business minor advisor before the start of each semester to ensure that they are continuing on track to complete the minor requirements.

**Financial Impact**

No new funding is requested for this program.

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**Appendix A - Course Descriptions**

**Pre-requisites**
BMGT110 Introduction to the Business Value Chain; (3 credits) Grade Method: REG/P-F/AUD. CORE Interdisciplinary & Emerging Issues (IE) Course.

Restriction: Must not be a BMGT major with 56 or more credit hours.

Students are provided with an introduction to the business value chain with an emphasis on inter-organizational and intra-organizational coordination of core business processes. Emphasis is on cross-functional integration and the efficient and effective management of core processes with an emphasis on marketing, operations and supply chain management.


Prerequisite: MATH113 or MATH115; or must have math eligibility of MATH220 or higher. Restriction: Must not have completed ENCE302, ENME392, STAT400, BMGT231, or ENEE324. Credit only granted for: BIOM301, BMGT230, CCJS200, ECON321, EDMS451, GEOG306, GVPT422, PSYC200 or SOCY201. Introductory course in probabilistic and statistical concepts including descriptive statistics, set-theoretic development of probability, the properties of discrete and continuous random variables, sampling theory, estimation, hypothesis testing, regression and decision theory and the application of these concepts to problem solving in business and management. Where a BMGT exam conflicts with a regularly scheduled class, the student will be provided with a makeup exam.

MATH 130 Calculus I for the Life Sciences (4) Three hours of lecture and two hours of discussion/recitation per week. Prerequisite: Minimum grade of C- in MATH112; or minimum grade of C- in MATH113; or minimum grade of C- in MATH115; or permission of CMNS-Biological Sciences UG Program; and Not open to students majoring in mathematics, engineering or the physical sciences. Credit only granted for: MATH130, MATH220, or MATH140. Basic ideas of differential integral calculus, with emphasis on elementary techniques and applications to the life sciences.

or

MATH 140 Calculus I (4) Prerequisite: Minimum grade of C- in MATH115. Or Must have completed 3 1/2 years of college preparatory mathematics (including trigonometry); and must have math eligibility of MATH140 or higher. Or permission of CMNS-Mathematics department. Credit only granted for: MATH130, MATH220, or MATH140. Introduction to calculus, including functions, limits, continuity, derivatives and applications of the derivative, sketching of graphs of functions, definite and indefinite integrals, and calculation of area. The course is especially recommended for science, engineering and mathematics majors

or

MATH 220 Elementary Calculus I (3) Prerequisite: MATH112, MATH113, or MATH115. Or Must have completed 3 1/2 years of college preparatory mathematics (including trigonometry); and must have math eligibility of MATH220 or higher. Or permission of CMNS-Mathematics department. Restriction: Not open to students majoring in mathematics, engineering or the physical sciences. Credit only granted for: MATH130, MATH220, or MATH140. Basic ideas of differential and integral calculus, with emphasis on elementary techniques of differentiation and applications.

Required Courses (9 credits)

BMGT402 Database Systems; (3 credits) Grade Method: REG.

Recommended: BMGT302.

This course covers the fundamentals of database management systems (DBMS), data models and query processing, and their application in the development of business information systems. An important goal of this
course is to understand the value of information resources and information management challenges within an organization.

or

**CMSC424 Database Design; (3 credits)** Grade Method: REG.
Prerequisite: Minimum grade of C- in CMSC351 and CMSC330; and permission of CMNS-Computer Science department. Or Must be in the (Computer Science (Doctoral), Computer Science (Master's)) program. Students are introduced to database systems and motivates the database approach as a mechanism for modeling the real world. An in-depth coverage of the relational model, logical database design, query languages, and other database concepts including query optimization, concurrency control, transaction management, and log based crash recovery. Distributed and Web database architectures are also discussed.

**BMGT430 Linear Statistical Models in Business; (3 credits)** Grade Method: REG.
Prerequisite: BMGT231 or BMGT230; or permission of BMGT-Robert H. Smith School of Business. Model building involving an intensive study of the general linear stochastic model and the applications of this model to business problems. The model is derived in matrix form and this form is used to analyze both the regression and ANOVA formulations of the general linear model. Restricted to BMGT majors with 84 credit hours completed or those in the Quantitative Finance Fellows Program.

or

**ECON 423 Econometrics II (3)**
Prerequisite: ECON422. Restriction: Permission of BSOS-Economics department.
Interaction between economic problems and specification and estimation of econometric models. Topics include issues of autocorrelation, heteroscedasticity, functional form, simultaneous equation models, qualitative choice models, and other computational methods.

**BMGT 431 Data Analytics; (3 credits)** Grade Method: REG.
Prerequisite: BMGT 430
This course is intended to provide an introduction to the tools and techniques that are central to the analysis of abundant data that is being collected in many forms including web traffic, social network data, and reviews and comments on websites.

**Elective Courses (6 credits)**
**BMGT404 Developing Applications for Decision Analytics; (3 credits)** Grade Method: REG.
Recommended: BMGT302.
This course focuses on developing skills relevant to the design and development of interactive business analytics applications. Students will learn to use Excel and Visual Basic for Applications (VBA) to develop applications for business production planning, resource allocation, budgeting, finance, and marketing, among others.

**BMGT434 Introduction to Optimization; (3 credits)** Grade Method: REG.
Prerequisite: MATH220 or MATH140; or students who have taken courses with similar or comparable course content may contact the department. Recommended: MATH221; or MATH141. Restriction: Must be in a major in BMGT-Robert H. Smith School of Business. Introduces concepts and techniques of operations research to model and solve business decision problems, focusing on optimization and commercially available software tools. Models include linear programming, the transportation and assignment problems, network flow models, and non-linear programming. Emphasis is placed on analyzing business scenarios and formulating associated decision models. Restricted to BMGT majors and QUEST program students with 72 credit hours completed.
BMGT 435 Business Process Simulation; (3 credits) Grade Method: REG.
Prerequisite: BMGT 231 or BMGT 230; or students who have taken courses with similar or comparable course content may contact the department. Restriction: Must be in a major in BMGT-Robert H. Smith School of Business. Develop and plan simulation studies, build simulation models with special purpose software, analyze and interpret the results. Extensive use of applications and real-world examples. The emphasis is on model formulation and the interpretation of results, rather than mathematical theory. Restricted to BMGT majors with 60 credits completed.

or

ENCE 402 Simulation and Design of Experiments for Engineers (3)
Prerequisite: ENCE 302; and permission of ENGR-Civil & Environmental Engineering department. Review of statistics and hypothesis testing, sample design and design of experiments, generation of discrete and continuous distributions and their applications. Introduction of simulation languages and simulation of discrete and continuous engineering systems. Output analysis, model validation and sensitivity and reliability analysis.

One course from the following list.

BMGT 484 Electronic Marketing (3) Prerequisite: BMGT 350. Restriction: Must be in a major in BMGT-Robert H. Smith School of Business. Examines the process of developing, implementing and analyzing strategies for successfully marketing a variety of existing and potential products and services on the Internet. Special attention devoted to the tools and techniques unique to the electronic media.

or

BMGT 448E Computational Finance (3) Prerequisite: BMGT 343. Description not available.

or

CMSC 422 Introduction to Machine Learning (3) Prerequisite: Minimum grade of C- in CMSC 351 and CMSC 330. Recommended: STAT 400. Machine Learning studies representations and algorithms that allow machines to improve their performance on a task from experience. This is a broad overview of existing methods for machine learning and an introduction to adaptive systems in general. Emphasis is given to practical aspects of machine learning and data mining.

or

ECON 424 Computer Methods in Economics (3) Prerequisite: Minimum grade of C- in ECON 321, ECON 325, and ECON 326. Or minimum grade of C- in ECON 321, ECON 305, and ECON 306; and permission of BSOS-Economics department. Restriction: Must be in a major within BSOS-Economics department. Database development from Internet and other sources, research methods, and statistical analysis in economics using EXCEL and SAS.

or
STAT 430 Introduction to Statistical Computing with SAS (3) Prerequisite: STAT400; or permission of instructor.
Descriptive and inferential statistics. SAS software: numerical and graphical data summaries; merging, sorting and splitting data sets. Least squares, regression, graphics and informal diagnostics, interpreting results.
Categorical data, lifetime data, time series. Applications to engineering, life science, business and social science.

Appendix B – Links to Programs at Other Universities

http://business.uc.edu/programs/graduate/msbana.html
http://www.stern.nyu.edu/programs-admissions/global-degrees/business-analytics/index.htm
http://www.stern.nyu.edu/programs-admissions/global-degrees/business-analytics/program-overview/index.htm
http://kelley.iu.edu/ODT/AboutUs/DecisionSciences/page11147.html
http://www mccombs.utexas.edu/business-analytics.aspx
http://www mccombs.utexas.edu/Business-Analytics/Curriculum.aspx
http://www.bnet.fordham.edu/academics/ms_programs/ms_business_analytics/index.asp
http://msbapm.uconn.edu/
http://analytics.okstate.edu/
http://www.lemoyne.edu/tabid/715/default.aspx
http://www.oakland.edu/MSITM-BA
http://www.loras.edu/Academics/MBA-Business-Analytics.aspx
http://cob.umd.umich.edu/694965/
http://extension.berkeley.edu/cert/busanalysis.html
http://www.lebow.drexel.edu/academics/programs/masters
http://cob.umd.umich.edu/695355/

http://bus.utk.edu/soms/prospective/undergrad/index.htm

http://www.rpi.edu/dept/lally/academics/ms_ba.html

http://www.rhsmith.umd.edu/ms/analytics/courses.aspx
Minor in Business Analytics

3 messages

Francis Alt <falt@rhsmith.umd.edu>  Sun, Apr 28, 2013 at 5:17 PM
To: "P.K. Kannan" <PKannan@rhsmith.umd.edu>

Professor P.K. Kannan
Chair, Marketing Department
R.H. Smith School of Business

Dear PK,

The Decision, Operations and Information Technologies Department (DOIT) is preparing a proposal for a Minor in Business Analytics. I have attached a summary of the student outcomes and required coursework. I would like to include BMGT 484 (Electronic Marketing) in the list of electives.

I would be surprised if the inclusion of BMGT 484 in the list of electives would increase the number of students from outside the Smith School taking this course since BMGT 350 is a prerequisite.

I am writing to you as Chair of the Marketing Department to request an email or letter of support from you. If you approve, I merely need a statement that you approve listing BMGT 484 (Electronic Marketing) as an elective for the Minor in Business Analytics.

Even though we have discussed this, if you have any questions, please let me know.

Regards,

Frank

Frank Alt
Associate Professor
Department of Decision, Operations and Information Technologies
Robert H. Smith School of Business
VMH 4323 Van Munching Hall
University of Maryland
College Park, MD 20742-1815
301-405-2231 TEL
falt@rhsmith.umd.edu

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18K

P.K. Kannan <pkannan@rhsmith.umd.edu>  Mon, Apr 29, 2013 at 2:40 PM
To: Francis Alt <falt@rhsmith.umd.edu>

Hi Frank:

Thanks for your e-mail. I approve BMGT 484 as an elective for the Minor in Business Analytics. Please do let us know if there is a surge in the enrollments that might have an impact on class size :)

10/11/2013 2:31 PM
PK
[Quoted text hidden]

--

P. K. Kannan
Ralph J. Tyser Professor of Marketing Science
Chair, Department of Marketing
Robert H. Smith School of Business
3461 Van Munching Hall
University of Maryland
College Park, MD 20742-1815
301-405-2188 TEL
301-405-0146 FAX
pkannan@rhsmith.umd.edu
http://www.rhsmith.umd.edu
http://www.bmg.t.umd.edu/marketing/faculty/kannan.aspx

Francis Alt <falt@rhsmith.umd.edu>  Mon, Apr 29, 2013 at 3:12 PM
To: "P.K. Kannan" <pkannan@rhsmith.umd.edu>

Hi PK,

Thank you for your email and support. I'll certainly let you know if there is a surge in enrollments.
For the first year, we will admit no more than 30.

Sincerely,
Frank
[Quoted text hidden]
Minor in Business Analytics - email of support
3 messages

Francis Alt <falt@rhsmith.umd.edu>  Mon, May 6, 2013 at 1:58 PM
To: Vojislav Maksimovic <vmaksimovic@rhsmith.umd.edu>

Professor V. Maksimovic
Chair, Finance Department
R.H. Smith School of Business

Dear Max,

The Decision, Operations and Information Technologies Department (DOIT) has prepared a proposal for a Minor in Business Analytics. If approved by the Smith UG committee, it will come before the Smith Assembly on Friday. I have attached a summary of the student outcomes and required coursework. I would like to include BMGT 448E (Computational Finance) in the list of electives.

I would be surprised if the inclusion of BMGT 448E in the list of electives would increase the number of students from outside the Smith School taking this course since BMGT 343 is a prerequisite.

I am writing to you as Chair of the Finance Department to request an email or letter of support from you. If you approve, I merely need a statement that you approve listing BMGT 448E (Computational Finance) as an elective for the Minor in Business Analytics.

Even though we had discussed this and you gave verbal approval, I need an email stating your approval. If you have any questions, please let me know.

Regards,
Frank

Frank Alt
Associate Professor
Department of Decision, Operations and Information Technologies
Robert H. Smith School of Business
VMH 4323 Van Munching Hall
University of Maryland
College Park, MD 20742-1815
301-405-2231 TEL
falt@rhsmith.umd.edu

Hi Frank:

I concur with your proposal.
Thank you

Max

Vojislav Maksimovic
Dean's Chair Professor of Finance
Robert H Smith School of Business
University of Maryland
College Park, MD 20742
[Quoted text hidden]

Francis Alt <falt@rhsmith.umd.edu> Mon, May 6, 2013 at 2:08 PM
To: Vojislav Maksimovic <vmaksimo@rhsmith.umd.edu>

Max,

Thank you for your very fast reply and, of course, your approval.

Frank
[Quoted text hidden]
Dear Al,

The Smith School of Business is preparing a proposal for a Minor in Business Analytics (BA).

I have attached a summary of the student outcomes and courses required. The list of electives includes BMGT 435 - Business Simulation. I would like to state that ENCE 402 - Simulation and Design of Experiments for Engineers is an approved substitute. By doing so, I am hoping to attract ENCE students to consider the BA minor since this would reduce their required number of courses to complete the minor.

My intent is not to further increase enrollment in ENCE 402 by having BMGT students use this course as an elective for the BA minor. I doubt that would happen, especially since ENCE 302 is a prerequisite for ENCE 402 and permission of the Civil & Environmental Engineering department is required.

I am writing to ask your approval to state that ENCE 402 is an approved substitute for BMGT 435.

Thank you for your consideration.

Sincerely,
Frank

Frank Alt
Associate Professor
Department of Decision, Operations and Information Technologies
Robert H. Smith School of Business
VMH 4323 Van Munching Hall
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College Park, MD 20742-1815
301-405-2231 TEL
falt@rhsmith.umd.edu
Alan P. Santos <asantos@umd.edu>  
To: fall-contact <FALT@rhsmith.umd.edu>  

Hello Dr. Alt,

Yes, it will be fine for ENCE 402 to substitute as BMGT 435.

I will be happy to announce the minor in Business Analytics to Civil student when it's officially offered by the Business School.

Best, Al

---

Alan P. Santos  
Director of Student Services  
Civil and Environmental Engineering  
301-405.1977 tel  
asantos@umd.edu  
www.ence.umd.edu

[Quoted text hidden]

> 

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Francis Alt <falt@rhsmith.umd.edu>  
To: "Alan P. Santos" <asantos@umd.edu>  

Al,

Thank you for ending my Friday on such a positive note.  
I will let you know when the minor is approved.

Sincerely,

Frank

[Quoted text hidden]
Minor in Business Analytics proposed by the Smith Business School

3 messages

Fri, Apr 26, 2013 at 2:56 PM

Frances Alt <falt@rhsmith.umd.edu>  To: cclement@umd.edu

Dr. Cindy Clement
Director of UG Studies
Department of Economics

Dear Cindy,

First, I want to thank you for taking the time several weeks ago to discuss with me the minor in Business Analytics (BA) being proposed by the Smith Business School. I have attached a summary of the student outcomes and courses required.

The list of required courses includes BMGT 430. I am requesting permission to state that ECON 423 - Econometrics II is an approved substitute. If a student has completed ECON 423, I see no need for them to also take BMGT 430 because of the considerable overlap in content between BMGT 430 and ECON 423, for which ECON 422 is a prerequisite.

I am also requesting permission to include ECON 424 - Computer Methods in Economics in the list of electives.

By doing so, I am hoping to attract those quantitatively oriented ECON students to consider the BA minor since this would reduce their required number of courses to complete the minor.

My intent is not to further increase enrollment in either ECON 423 or ECON 424 by having BMGT students take ECON 423 instead of BMGT 430 or by using ECON 424 as an elective for the BA minor. I doubt this could happen since permission of the BSOS-Economics department is required for both courses and ECON 424 has the additional restriction that a student must be in a major within the BSOS-Economics department.

I am writing to you in my role as interim faculty advisor of the minor in Business Analytics to ask your approval to state that ECON 423 is an approved substitute for BMGT 430 and to include ECON 424 in the list of electives.

Thank you for your consideration.

Sincerely,

Frank
Dear Professor Alt:

Inclusion of ECON423 and ECON424 in the Business Analytics minor as you describe below is acceptable by and even welcome to the Economics Departments. I am glad to know that ECON majors who sign up for this minor will have access to the required BMGT courses.

Cindy Clement, Ph.D.
Director of Undergraduate Studies, Economics
clement@econ.umd.edu
301 405 3257
3108 Tydings Hall
www.econ.umd.edu

Francis Alt <falt@rhsmith.umd.edu>
To: "Clement, Cindy" <Clement@econ.umd.edu>
Hi Cindy,

Thank you for speaking with me today and, of course, your approval. I hired an ECON major last semester as a TA and he was outstanding. I believe he took ECON 423 and 424.

Very appreciatively,
Frank
[Quoted text hidden]
Professor Alan Sussman

Associate Chair & Undergraduate Advisor

Department of Computer Science

Dear Professor Sussman,

On February 16th, Louiqa Raschid, one of my colleagues in DOIT, included you on an email stating that I was leading the effort to put together a minor in Business Analytics in the Smith Business School. In looking for appropriate electives, Professor Daume III suggested CMSC 422 – Introduction to Machine Learning. My colleagues and I are very enthusiastic about including this in the list of electives.

I have attached a summary of the student outcomes and both the required and elective courses.

In the list of electives, I would like to include CMSC 422 (Introduction to Machine Learning).

By doing so, I am hoping to attract CS students since this would reduce their required number of courses to complete the minor. I am writing to ask your approval to include CMSC 422 in the list of electives.

The list of required courses includes BMGT 402 – Database Systems. In the recent revision to the IS program in the Smith School, CMSC 424 is listed as an approved substitute. Thus, I am also requesting permission to state that CMSC 424 is an approved substitute for BMGT 402 for the minor under consideration.

My intent is not to further increase enrollment in either CMSC 422 or CMSC 424 by having BMGT students take CMSC 424 instead of BMGT 402 or by using CMSC 424 as an elective for the BA minor. I doubt this could happen since CMSC 422 and CMSC 424 each have two 300 level CMSC courses as prerequisites and CMSC 424 also requires permission of the CMSC – Computer Science department.

I am writing to you in my role as interim faculty advisor for the minor in Business Analytics to ask your approval to state that CMSC 424 can be used as a substitute for BMGT 404 and to include CMSC 422 in the list of electives.

Thank you for your consideration.
Sincerely,

Frank

Frank Alt
Associate Professor
Department of Decision, Operations and Information Technologies
Robert H. Smith School of Business
VMH 4323 Van Munching Hall
University of Maryland
College Park, MD 20742-1815
301-405-2231 TEL
falt@rhsmith.umd.edu

Alan Sussman <als@cs.umd.edu>  
To: Francis Alt <falt@rhsmith.umd.edu>  
Tue, Apr 30, 2013 at 11:40 PM

Frank,

I do not see a problem with listing our 2 courses as fulfilling your new minor's requirements. As you note, this would only really apply to CS majors because of the course prerequisites, so these students could have taken CMSC 422 and 424 anyway.

I've also run this past our undergraduate office staff, and they do not see any problems either.

So we're OK with using the courses in the way you describe.

Alan

Alan Sussman
Professor and Associate Chair for Undergraduate Education
Computer Science Department

Francis Alt <falt@rhsmith.umd.edu>  
To: Alan Sussman <als@cs.umd.edu>  
Wed, May 1, 2013 at 6:19 AM

Alan,

Thank you for your fast reply and, of course, your approval. You got my Wednesday off to a great start.

Very appreciatively,
Frank
Professor Doron Levy  
Associate Chair, Undergraduate Studies  
Department of Mathematics  

Dear Doron,

The Decision, Operations and Information Technologies Department (DOIT) in the R.H. Smith School of Business is preparing a proposal for a Minor in Business Analytics. I have attached a summary of the student outcomes and required coursework. I would like to include STAT 430 (Introduction to Statistical Computing with SAS) in the list of electives.

I am writing to you as Associate Chair, Undergraduate Studies, Department of Mathematics to request an email or letter of support from you. If you approve, I merely need a statement that you approve listing STAT 430 (Introduction to Statistical Computing with SAS) as an elective for the Minor in Business Analytics.

If you have any questions, please let me know.

Regards,

[attachment]

Doron Levy <dlevy@math.umd.edu>  Apr 28

to me

Dear Frank,

Thanks for informing the Math Department about this very exciting new minor. The Math Department supports the inclusion of STAT 430 in the list of electives for the minor in Business Analytics.

Best regards -
Doron

Doron Levy  
Professor and Associate Chair  
Department of Mathematics  
University of Maryland  
College Park, MD 20742-4015  
Phone: +1-301-405-5140
Dear Doron,

Thank you for your support and for always responding so quickly.

Sincerely,
Frank
Mike,
Just to clarify my email below a little further. We would give non-BMGT students admitted to the minor access to the required 400 level BMGT minor courses and we also give them access to some of the 400 level BMGT minor elective courses (ex BMGT404, 434 and 435). However, there are a few upper level BMGT minor electives (BMGT484 and BMGT448E) that will not be open to BA minor students unless they declared in that Smith School major or are in the Smith School.
Let me know if you have further questions.
Brian

On Wed, Oct 23, 2013 at 8:38 AM, Brian Horick <bhorick@rhsmith.umd.edu> wrote:
Mike,
We would give non-BMGT students who are admitted to the minor access to these 400 level BMGT courses that fulfill minor requirements.
Brian
On Tue, Oct 22, 2013 at 5:41 PM, Michael D Colson <mcolson@umd.edu> wrote:

Dear Brian and Frank,

I am going to review the Business Analytics Proposal with Betsy, but I do have a question. Are students outside of the Smith School able to take 400-level BMGT courses? It seems as though any of these non-BMGT majors would be precluded from completing this minor because of the restrictions on the courses.

-Mike

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Mike Colson
Senior Coordinator for Academic Programs
Office of the Associate Provost for Academic Planning and Programs
1122 Main Administration Building
University of Maryland
College Park, MD 20742
phone: 301-405-5626; fax: 301-405-8195
mcolson@umd.edu
www.provost.umd.edu/academic_planning

From: Brian Horick [mailto:bhorick@rhsmith.umd.edu]
Sent: Tuesday, October 15, 2013 1:21 PM
To: Michael D Colson
Cc: falt-contact
Subject: Business Analytics minor proposal

Mike,
Attached is the Business Analytics minor proposal, and the hard copy with the signed PCC form should arrive within the next day or two.

Please let me know if you have any questions.

Brian

**Brian Horick**
Assistant Dean
Undergraduate Studies Office
Robert H. Smith School of Business
1570V Van Munching Hall
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College Park, MD 20742-1815

301-405-2293 TEL
301-314-1990 FAX
bhorick@rhsmith.umd.edu
http://www.rhsmith.umd.edu
Michael D Colson

From: Francis Alt <falt@rhsmith.umd.edu>
Sent: Friday, November 01, 2013 1:20 PM
To: Michael D Colson
Cc: bhorick-contact
Subject: Re: Minor in Business Analytics Proposal

Mike,

Thank you for such a quick turn around.

The condition that "students may use courses that do not appear on the elective list provided that they receive approval to do so from the Program Director" is very acceptable to me. It actually addresses a concern I had of how to proceed if additional courses become appropriate for the minor.

Thank you for you input throughout the stages of proposal preparation and presentation.

Sincerely,

Frank

On Fri, Nov 1, 2013 at 1:10 PM, Michael D Colson <mcolson@umd.edu> wrote:

Dear Frank and Brian,

Thank you for presenting at today’s Senate PCC meeting. The committee voted to approve your proposal with one condition and one recommendation. The condition is that students may use courses that do not appear on the elective list provided that they receive approval to do so from the Program Director.

The committee also recommended that you articulate how the course work would address the stated learning outcome: “Increase communication skills by effectively presenting results from analysis or real-life scenarios.”

If the condition is acceptable to you, you can just reply to this email that you agree and I will add it to the proposal file. You can handle the recommendation in the same way, but only the statement about the electives is required for approval.

Please let me know if you have any questions.
Thanks,

Mike

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Mike Colson
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