May 14, 2015

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 Modify the Bachelor of Science in Operations Management (PCC log no. 14035)

On March 11, 2015, the Senate Committee on Programs, Curricula and Courses approved the proposal to modify the curriculum of the Bachelor of Science in Operations Management. A copy of the approved proposal is attached.

The change is effective Fall 2015. Please ensure that the change is fully described in the Undergraduate Catalog and in all relevant descriptive materials, including the program’s four-year plan (contact Lisa Kiely at lkiely@umd.edu for more information), and that all advisors are informed.

MDC/
Enclosure

cc: Gregory Miller, Chair, Senate PCC Committee
Barbara Gill, Office of Student Financial Aid
Reka Montfort, University Senate
Erin Taylor, Division of Information Technology
Pam Phillips, Institutional Research, Planning & Assessment
Anne Turkos, University Archives
Linda Yokoi, Office of the Registrar
Cynthia Stevens, Office of 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 of 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: Undergraduate Operations Management major (0503R)
Please also add Department/Program Unit Code-Last 7 digits: 1290102

Type of Action (choose one):

X 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:

Proposing a change to the Operations Management curriculum that will require business analytics coursework to address the growing demand from employers for students with these skills.

Departmental/Unit Contact Person for Proposal: Brian Horick

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

1. Department Committee Chair
2. Department Chair
3. College/School PCC Chair
4. Dean
5. Dean of the Graduate School (if required)
6. Chair, Senate PCC
7. University Senate Chair (if required)
8. Senior Vice President and Provost

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REASONS FOR PROPOSED ACTION

Changes are proposed for the curriculum for the Operations Management (OM) major. In addition to the curriculum changes listed on this proposal, the Decision, Operations & Information Technologies (DOIT) Department is also requesting that the name of the program be changed from Operations Management to Operations Management and Business Analytics. The renaming proposal is submitted in a separate proposal. The proposed curriculum changes are based on: a nationwide study of undergraduate business programs, a focus group of fifteen undergraduate students from the Smith School in Fall 2014 (including the president of the Smith undergraduate Operations Research Society), a study of the career path of OM graduates, faculty input from within and outside the DOIT department including the current and previous department chairs, from meetings with the Dean and Assistant Dean of Undergraduate Studies in RHS and the strong demand for students with a degree in Operations Management and Business Analytics.

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 (Big data: the next frontier for innovation, competition and productivity, The McKinsey Global Institute, 2011). 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 including Dice.com which shows over 5,000 analytics positions. Since the OM program was voted sixth-best undergraduate program by Bloomberg Businessweek in 2010, the proposed changes are intended to further strengthen an already strong and highly regarded program.

DESCRIPTION OF CURRICULUM CHANGE

Approximately 60 students graduate each year with OM as either their primary or secondary major from the Smith School. It is anticipated that the number of students with the OM major will be greater than this. By now requiring BMGT430 Linear Statistical Models in Business and BMGT431 Data Analytics, the OM major will provide students with a solid foundation needed for data and model-driven management decision making as well as for graduate study in the field. Students with these skills are in a high demand in the public and private sectors and in a variety of industries including energy, finance, health care, logistics, marketing and operations. As a result the major should now be more attractive as a second major with other business majors.

See below for more details on the current curriculum and the proposed changes.

Old Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMGT 332 Operations Research For Management Decisions</td>
<td>3 cr</td>
</tr>
<tr>
<td>BMGT 385 Operations Management</td>
<td>3 cr</td>
</tr>
<tr>
<td>BMGT 485 Project Management</td>
<td>3 cr</td>
</tr>
<tr>
<td>One of the following courses:</td>
<td>3 cr</td>
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<tr>
<td>BMGT 430 Linear Statistical Models in Business</td>
<td></td>
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<tr>
<td>BMGT 434 Introduction to Optimization</td>
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<tr>
<td>BMGT 435 Business Process Simulation</td>
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Two of the following courses: 6 cr

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BMGT 430 – Linear Statistical Models in Business (if not selected above)</td>
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<tr>
<td>BMGT 434 – Introduction to Optimization (if not selected above)</td>
<td></td>
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<tr>
<td>BMGT 435 – Business Process Simulation (if not selected above)</td>
<td></td>
</tr>
<tr>
<td>BMGT 403 – Systems Analysis and Design</td>
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</tr>
</tbody>
</table>
BMGT 372 – Introduction to Logistics & Supply Chain Management  
BMGT 486 – Total Quality Management or BMGT 487 – Six Sigma Innovation  
(Credit allowed for only 486 or 487)  
BMGT 490 - The Total Quality Practicum (Open only to QUEST students) 

Total Major Requirements 18 cr

**Upper Level Economics Requirements**
One of the following courses: 3 cr
ECON 305 Intermediate Macroeconomic Theory & Policy  
ECON 306 Intermediate Microeconomic Theory  
ECON 330 Money and Banking  
ECON 340 International Economics  
Total Upper Level Economics Requirements 3 cr

**New Requirements**
BMGT 332 Operations Research For Management Decisions 3 cr  
BMGT 385 Operations Management 3 cr  
BMGT 430 Linear Statistical Models in Business 3 cr  
BMGT 431 Data Analytics 3 cr

One of the following courses: 3 cr
BMGT 434 Introduction to Optimization  
BMGT 435 Business Process Simulation

Complete 1 course from the following*: 3 cr
BMGT 372 Intro to Logistics and Supply Chain Management  
BMGT 403 System Analysis and Design  
BMGT 404 Developing Applications for Decision Analytics  
BMGT 485 Project Management  
BMGT 487 Six Sigma Innovation  
BMGT 490H Quest Consulting and Innovation Practicum (4 cr)  
(open to QUEST students only)  
Or one course not selected above from BMGT 434 or 435

Total Major Requirements 18 cr

*Students may use courses that do not appear on this last list provided that they receive approval to do so from the DOIT Chair or her/his designate.

**Upper Level Economics Requirements**
One of the following courses: 3 cr
ECON 305 Intermediate Macroeconomic Theory & Policy  
ECON 306 Intermediate Microeconomic Theory  
ECON 330 Money and Banking  
ECON 340 International Economics  
Total Upper Level Economics Requirements 3 cr

Note: Students who have completed either ECON325 Intermediate Macroeconomic Analysis and ECON326 Intermediate Microeconomic Analysis can substitute these courses for ECON305 or ECON306, respectively. BMGT341 Financial Markets is an approved substitute for ECON330.
Additional Degree Requirements of the Operations Mgmt Major

At the Smith School of Business, a minimum of 120 credit hours is required to complete a Bachelor of Science degree. Besides the major requirements listed above and the freshmen/sophomore requirements and junior/senior level Smith School of Business core requirements listed below, a student must complete the University's General Education Requirements and sufficient lower and upper level elective credit to accumulate a total of 120 credit hours. A minimum of 58 credit hours of the required 120 hours must be in 300-400 (upper) level courses. A detailed explanation including additional Smith School of Business degree requirements are listed on the next page.

Freshmen/Sophomore Smith School Requirements
MATH 220 or 140 - Elem.Calculus I or Calculus I, 3-4 cr
Note: MATH130 Calculus I for the Life Sciences is an acceptable substitute for MATH 220/140 if the student completed MATH 130 as a part of work toward a previous major, as well as those who were working toward that major while in Letters & Sciences.
BMGT110  Introduction to the Business Value Chain 3 cr
BMGT 220 & 221 - Principles of Accounting I & II 6 cr
BMGT 230 or 231 - Business Statistics 3 cr
ECON 200 & 201 - Principles of Micro & Macro Economics 8 cr
COMM 100, 107 or 200 - Foundations of Speech Communications, 3 cr
Or any course that fulfills the University's Fundamental Studies
Oral Communication (FSOC) General Education requirement
Total 26-27 cr

Junior/Senior Smith School Requirements
BMGT 301 - Introduction to Information Systems 3 cr
BMGT 340 - Business Finance 3 cr
BMGT 350 - Marketing Principles 3 cr
BMGT 364 - Management and Organization 3 cr
BMGT 367 - Career Search Strategies and Business 1 cr
BMGT 380 - Business Law 3 cr
BMGT 495 - Business Policies 3 cr
Total 19 cr

Operations Management Major Requirements (details listed previously) 18 cr

University General Education Requirements - not fulfilled by Smith School requirements listed above. - Total Credits 22-28 cr

Lower Level Electives 10-17 cr

Upper Level Electives 15 cr

Grand Total Required 120 cr
Current Catalog Description
Operations Management involves the design and management of an organization's systems and processes focusing on the creation and delivery of products and services. This includes such functions as capacity planning, inventory management, logistics management, production planning and control, resource allocation and total quality. Career opportunities exist in consulting, manufacturing, retailing, service organizations and government.

Updated Catalog Description
The Operations Management (will add “and Business Analytics” if new major title is approved) major will provide students with the knowledge and skills necessary to successfully apply quantitative and statistically based modeling techniques to data and advantageously use the information in the data to drive decision making and improve performance in an era with massive amounts of data. Students with these skills are in high demand and career opportunities exist in the public and private sectors and in a variety of industries including energy, finance, insurance, health care, logistics and marketing.

Financial Impact
No new funding is requested for this program.
## Typical Four Year Plan

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<th>Year 1</th>
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<tr>
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</tr>
<tr>
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<td>ECON201 (HS)</td>
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<td>BMGT230 (AR)</td>
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<tr>
<td>ECON200 (HS)</td>
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<td>COMM100, 107, or 200 (OC)</td>
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<tr>
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<tr>
<td>Humanities (HU)*</td>
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<td>Scholarship in Practice (SP) non-major</td>
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<tr>
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<td>Credi t</td>
<td>Grad e</td>
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<tr>
<td>BMGT385 (Major Requirement 1 of 6)</td>
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<td>BMGT301 (College Core)</td>
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<td>BMGT380 (College Core)</td>
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<td>BMGT340 (College Core)</td>
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<td>Grad e</td>
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<tr>
<td>Major Requirement (4 of 6) from options</td>
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<td>BMGT431 (Major Requirement 6 of 6)</td>
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<td>BMGT495 (SP/College Core)</td>
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Prerequisite/Course Sequencing Structure

Since there are no significant prerequisite strings in most of the OM major courses, students will have a great degree of flexibility in scheduling their major requirements in junior or senior year. Certain courses could have credit restrictions, which will dictate when the course can be taken in the program.

BMGT 332 (prereq: BMGT 230 or 231)
BMGT 372
BMGT 385
BMGT 430 (prereq: BMGT 230 or 231)
BMGT 431 (prereq: BMGT430)
BMGT 434 (prereq: MATH 220 or MATH 140)
BMGT 435 (prereq: BMGT 230 or 231)
BMGT 485 (prereq: BMGT 230 or 231)
BMGT 486 (prereq: BMGT230 or equivalent)
BMGT 487 (Prerequisite: BMGT 230, BMGT 231, STAT 400 or ENME 392)
BMGT 403 (Prerequisite: BMGT 301 or equivalent. Recommended: BMGT 302)
BMGT 404 (Recommended: BMGT 302)
BMGT 490 (Prerequisite: BMGT 390 or ENES 390)

Course Descriptions

BMGT 230 Business Statistics (3) 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 the application of these concepts to problem solving in business and management.

BMGT 231 Statistical Models For Business (3) Prerequisite: MATH141; or permission of BMGT-Robert H. Smith School of Business. Credit only granted for: BMGT231, ENEE324, ENME392 or STAT400. Courses are not interchangeable. Please consult your advisor. An introductory course in statistical concepts, including probability from a naive set theory approach, random variables and their properties and the probability distributions of selected discrete and continuous random variables. The concepts of sampling and sampling distributions and the application of these concepts to estimation and hypothesis testing are included as are brief surveys of the regression and ANOVA models.

BMGT 301 Introduction to Information Systems (3) Restriction: Must be in a major in BMGT-Robert H. Smith School of Business. Additional information: CMSC majors will not receive credit for this course towards their upper level concentration in their CMSC major. All BMGT majors, including students who are a double major in CMCS, must complete BMGT301 for their BMGT degree. Comprehensive overview of information systems (IS), which explores the strategic and tactical nature of IS. The basic concepts in analyzing and designing information systems for business applications will be presented. Aspects of data management such as databases, data warehousing, data analysis, and data mining will be analyzed, and the basics of web page and web site design will be outlined. Students will also be introduced to modern information systems infrastructure such as telecommunications, networks, and information systems security. Knowledge of Excel or a similar spreadsheet tool.

BMGT 302 Designing Business Applications (3) Prerequisite: BMGT301; or permission of BMGT-Robert H. Smith School of Business. Restriction: Must be in a major in BMGT-Robert H. Smith School of Business; and must not be in Computer Science program. A structured approach to business application development and programming is provided. Problem solving techniques, program design, and logic, are emphasized. Hands-on exercises in which students participate in designing and developing cross-disciplinary business applications are included.

BMGT 332 Operations Research For Management Decisions (3) Prerequisite: BMGT231 or BMGT230; or students who have taken courses with comparable content may contact the department. Surveys the philosophy, techniques and applications of operations research to managerial decision-making. Techniques covered include: linear programming, transportation and assignment models,
Markov processes and inventory and queuing models. Emphasis is placed on formulating and solving decision problems in the functional areas of management.

**BMGT 341 Financial Markets (3)** Prerequisite: BMGT340. Formerly: BMGT498G. Shows the interconnectedness of the markets. The role of the Central bank and monetary policy is included in this context. Students develop an understanding of: (i) the determination of interest rates; (ii) financial instruments, markets and institutions; (iii) the impact of monetary policy on institutions; and (iv) how financial innovations create markets.

**BMGT 372 Introduction to Logistics and Supply Chain Management (3)** Supply chain management involves the coordination of suppliers, manufacturers, distributors, and retailers to ensure that products and services are available to the final consumer in a timely and cost-effective fashion. Logistics management is the subset of supply chain management dealing with the physical flows of product and includes such activities as transportation management, warehousing, materials handling, inventory management, and order fulfillment. Attention is paid to the logistics cost trade-offs within the firm and between members of the supply chain.

**BMGT 385 Operations Management (3)** Credit only granted for: BMGT385 or ENME426. Studies the design, management and improvement of a firm's processes and systems for creation and delivery of products and services. Includes strategic and operational views of supply chain, product development, and capacity analysis, highlighting the competitive advantages that operations management can provide the firm.

**BMGT 390 Systems Thinking for Managerial Decision Making (3)** Prerequisite: ENES190 or BMGT190; and must be a QUEST student. Also offered as: ENES390. Credit only granted for: BMGT390, BMGT498X, ENES390, or ENES498X. Formerly: BMGT498X. An introduction to the theory, concepts, tools, and practices of systems thinking to enhance managerial decision making. Offers a blend of theory, real-life examples, and proven methods to initiate and sustain an organization-wide reorientation towards systems thinking.

**BMGT 403 Systems Analysis and Design (3)** Prerequisite: BMGT301; or students who have taken courses with comparable content may contact the department. Recommended: BMGT302. Techniques and tools applicable to the analysis and design of computer-based information systems. System life cycle, requirements analysis, logical design of databases and performance evaluation. Emphasis on case studies. Project required that involves the design, analysis and implementation of an information system.

**BMGT 404 Developing Applications for Decision Analytics (3)** Recommended: BMGT302. 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.

**BMGT 430 Linear Statistical Models in Business (3)** 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.

**BMGT 431 Data Analytics (3)** Prerequisite: BMGT430. 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.

**BMGT 434 Introduction to Optimization (3)** Prerequisite: MATH220 or MATH140; or students who have taken courses with comparable 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.

**BMGT 435 Business Process Simulation (3)** Prerequisite: BMGT231 or BMGT230; or students who have taken courses with comparable 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.
BMGT 485 Project Management (3) Prerequisite: BMGT231 or BMGT230; or students who have taken courses with comparable content may contact the department. Restriction: Must be in a major in BMGT-Robert H. Smith School of Business. Modern project management techniques that are used by modern practicing professionals will be covered. Particular attention is given to the management of technology based systems and projects in a business enterprise. The topics covered include: defining project scope, alignment of projects with enterprise strategy, managing project cost, time and risks using tools such as CPM/PERT, and measuring project performance.

BMGT 486 Total Quality Management (3) Prerequisite: BMGT230; or students who have taken courses with comparable content may contact the department. Total Quality Management and the synergy required between functions to obtain the customer's quality demands. Statistical tools which are mandatory in any successful quality effort.

BMGT 487 Six Sigma Innovation (3) Prerequisite: STAT400, BMGT231, BMGT230, or ENME392. Enhances the overall understanding of Six Sigma Strategy, Tools and Methods to positively influence the performance of a business process, a product or service. Highlights the application of Define-Measure-Analyze-Improve-Control (DMAIC), Design For Six Sigma (DFSS), and the pursuit of Critical to Quality criteria (CTQ's) in a collaborative perspective, one that recognizes a balance between efficiency, and effectiveness and between statistical analysis and statistical thinking.

BMGT 490 Quest Consulting and Innovation Practicum (4) Prerequisite: ENES390 or BMGT390. Also offered as: ENES490. Credit only granted for: BMGT490 or ENES490. Final course in the QUEST Honors Fellows Program three-course curriculum. Based on a team-based consulting project with one of QUEST’s professional partners. A project advisor and professional champion supervise each student team. Requires extensive out-of-class work.
**Undergraduate Program Learning Outcomes Assessment Summary**

**Department, Program & Degree:** B.S. in Operations Management

**Chair:** Zhi-Long Chen  
301-405-0024  
zchen@rhsmith.umd.edu

**Time Period of Assessment:** Fall 2013- Spring 2014  
**Date:** October 15, 2014

**Actions Taken as a Result of Past Assessments**

1. What have you done in the past academic year (Fall ’13-Spring ’14) to follow up on past learning outcomes assessments, and/or on feedback from reviews of your previous learning outcomes assessments? What decisions were reached and/or what actions were taken to improve student learning?

Statistics is one of the eight core courses that we offer at the business school. The Operations Management group at the Smith School offers this course. All business students, regardless of their major, must take statistics during their freshman or sophomore years.

After reviewing the results of the Learning Outcomes Assessments of 2012, we concluded that the statistics course assessment results did not meet the minimum requirement. The goal for the learning outcomes was for at least 70% of students to achieve a critical (satisfactory) score of 70%.

After I received the 2012 assessment results, I analyzed the data and concluded that the reason behind the low scores for statistics or any other quantitative course is not due to a lack of subject knowledge. The main reason behind the lower score I believe is that after a few years, students are unable to recognize all the formulas and rules of statistics. This academic year, I am teaching a large section of statistics at the business school, so I have had an opportunity to verify my hypothesis.

I asked the same statistics questions that we used on the 2012 LOA General Content Knowledge assessment for my approximately 500 students at the end of Fall 2013. The average result of the asked five questions is equal to 91.46 and it is more than 20 points higher than the Learning Outcomes Assessment target score of 70%. This result shows that students are not remembering all of the formulas and rules after two or three years have passed. That is the main reason why the actual results are lower than the target score.

After the above analyses I made the following recommendations to our Department Chair and I am hoping that if we implement these recommendations, the results of a similar assessment in Fall 2014 will be higher.

These are my recommendations:
- Provide students a review of the course material by a faculty member prior to the assessment.
- Provide a handout and have students review the material with a TA.
- Provide formula sheets during the assessment.

Based on the 2012 LOA results at the business school, Operations Management students did a great job and got perfect scores for Written Communication, Oral Communication, Leadership and Teamwork skills. At our
department meeting, our chair and I asked all of our faculties to increase the level of presentation, either as individual or team projects, to improve the Written Communication, Oral Communication, Leadership and Teamwork skills even further.

Four-Year Assessment Plan

2. Please briefly summarize your 4-year assessment plan for AY14-AY18 (to provide context for your results). Please note any departmental or programmatic special circumstances that provide context to this plan or this year’s work.

The Business School Learning Outcomes Assessment Plan for Fall 2014-Spring 2018 is as follows:

During Fall 2014 we will collect data to assess the general content knowledge, oral communication skills, written communication, critical thinking skills, and leadership & teamwork skills. We will analyze the collected data during Spring 2015. We will repeat the same assessment in Fall 2016 and we will analyze the collected data in Spring 2017.

In Fall 2015 we will collect data to assess specific content knowledge. We will analyze this data in Spring 2016. We will repeat this assessment in Fall 2017 and analyze the collected data in Spring 2018.

In summary:

<table>
<thead>
<tr>
<th>Collect the data</th>
<th>Outcomes</th>
<th>Analyze the data</th>
<th>Repeat Assessment</th>
</tr>
</thead>
</table>
| Fall 2014       | • General Content Knowledge  
                      • Written Communication & Critical Thinking Skills  
                      • Oral Communication Skills  
                      • Leadership & Teamwork Skills | Spring 2015 | ✓ |
| Fall 2015 | **Specific Content Knowledge** | Spring 2016 | ✗ |
| Fall 2016       | • General Content Knowledge  
                      • Written Communication & Critical Thinking Skills  
                      • Oral Communication Skills  
                      • Leadership & Teamwork Skills | Spring 2017 | ✓ |
| Fall 2017       | **Specific Content Knowledge** | Spring 2018 | ✗ |

Results, Conclusions, and Implementations from Last Academic Year

3. Please state the outcome you discuss below.

**Learning Outcome 1b:** Are students able to demonstrate a clear understanding of important concepts in the specific field of Operations Management?

4. How did you measure student learning for this outcome?

**Learning Outcome 1b:** Are students able to demonstrate a clear understanding of important concepts in the specific field of Operations Management?
Assessment Measures and Criteria: As part of the first objective of LOA at Smith School, all Operations Management students were assessed in important concepts in the specific field of Operations Management.

All Operations Management students registered in BMGT 495 Business Policies (the capstone course for business students) in Fall 2013, which was when the assessments were done, were evaluated for specific content knowledge of Operations Management. This assessment was done by analyzing the collected data from the M/C exam, which was prepared by a team of Operations Management faculties for this purpose. 80% of students should have scored at least 70 out of 100 points on the M/C exam to achieve Learning Outcomes 1b.

5) What were the results of each of your assessments? What did you find?

Assessment Results for Outcome 1b: 100% of students achieved the goal, thereby meeting the expectations set in the learning outcome.

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<td>Standard Deviation</td>
<td>6.07</td>
</tr>
<tr>
<td>Variance</td>
<td>36.8</td>
</tr>
<tr>
<td>% of students who got minimum 70 (6 students got minimum 70)</td>
<td>100%</td>
</tr>
</tbody>
</table>

6) How do you interpret these results? What conclusions did you draw?

It is evident from the results in the performance for Outcome 1b (Specific Content Knowledge) that the Operations Management students’ performance met the goal and the performance was much higher than the 80% threshold.

Even with the high performance, we will continue to improve the Specific Content Knowledge of Operations Management majors.

7) What was the consensus of your program’s discussion of these results? What action(s) are you going to take as a result of your discussion and analysis?

As I mentioned in question 6, the Operations Management major met the set assessment goal, but we will continue to improve the major.

I met with the Dean and Vice Dean in spring 2014 to review the results of the assessment. We discussed the steps necessary to improve the assessment’s results. Over the next year, we will do the following:

- Meet with the department chair to determine how to improve programmatic delivery and student retention of Specific Content Knowledge.
• Analyze the results of the Specific Content questions on the Assessment Exam to determine where students are doing least well.
• Since some of the important material that students recognize less may be covered in different courses, we should group these topics and verify the course(s) that are covering these materials.
• Meet with Operations Management instructors to review results and determine how to improve and discuss with them to find a better way to coordinate the delivery of the course content that is commonly covered in different courses.

Plans for This Academic Year

8) For which outcomes will you be collecting information over this academic year?
This Academic year we will assess the following outcomes.
Learning Outcome 1a: Students will be able to demonstrate a clear understanding of important content in the core business disciplines.
Learning Outcome 2: Students will demonstrate critical thinking and written communication skills through the individual analysis and write-up of a business case.
Learning Outcome 3: Students will demonstrate their oral communication skills by presenting an analysis of a business case to their class.
Learning Outcome 4: Students will demonstrate their leadership skills by leading a class discussion.
Learning Outcome 5: Students will demonstrate their abilities to work effectively with other members of a team in the preparation of a group project.

9) How will you measure student learning for these outcomes?

During the last academic year I met numerous times with my college Dean, Vice Dean, Executive Committee members and undergraduate administration, to discuss the best way to assess our students’ General content knowledge. Based on the results of the discussions in these meetings and also based on our experience from the last cycles of the Learning Outcomes assessment, we have decided to conduct an online multiple choice question test. The M/C questions have already been prepared in the Spring of 2014 by six departments’ faculties who are teaching eight courses that all business majors at the Smith School, regardless of their majors, should take. We will run this test at the second half of the November 2014. It is required for all students who are registered for BMGT 495 Business Policies during the Fall 2014 semester in which assessments will take place. Students do not need to prepare themselves for this test. To make sure that students take this test seriously, five percent of their BMGT 495 final grade will be based on these test results. All this information has been discussed with the BMGT 495 faculties and published in the BMGT 495 course syllabus, and students are aware of this test.

In BMGT 495 (the capstone course for business students), groups of six students are working on a big project during the Fall semester. To assess outcome 2, 3, 4, and 5, I will provide rubrics for each outcome to all faculties that will be teaching BMGT 495 and ask them to assess their own students and score them based on the given rubric about critical thinking and written communication, oral communication, leadership and team work skills.