

NEXT MEETING: 4:10 PM 23 March 1998, Sinclair Lab Auditorium
Refreshments at 3:30 PM in Sinclair Auditorium Lobby

Lehigh University

MINUTES OF THE FACULTY MEETING

2 February 1998

Presiding: William Hittinger (Sinclair Lab Auditorium)

President Hittinger called the meeting to order at 4:18 PM.

1. **Minutes.** The minutes of the December 1, 1997 faculty meeting were APPROVED with one change. Professor Folk requested corrections to paragraphs 5, 6 and 11 of item 5. His corrections are attached [see Attachment 1].
2. **Committee Motions.** Professor Cates, on behalf of the Graduate and Research Committee, presented proposals for a new M.S. program in Statistics as well as three new courses in the Mathematics Department. In addition, he presented proposed core course changes in the MBA program [see Attachment 2]. Professor Cates noted that all the MBA courses are numbered at the "400" level. Professor Cates **MOVED** adoption of all the proposals. The motion was **SECONDED** and **PASSED**.

Professor Kritz then inquired about what is known as the "4 C" rule i.e., a graduate student who receives a grade lower than "B" in 4 courses is not allowed to continue registration as a graduate student. There is a conflict between R&P and the catalog which is, presumably, a result of the R&P standard pre-dating the "plus/minus" grading system.

Professor Cates indicated that GRC is in deliberations to bring R&P and the university catalog into concert. Registrar Correll noted the conflict between R&P and the catalog and indicated that, when in doubt, R&P prevails. However, students sent notices of probation can petition.

Professor Cates stated that GRC would be receptive to a motion to remove the conflict between the catalog and R&P.

3. **Unfinished Business.** None.
4. **New Business.** None.

5. **Committee Reports.** Professor Cates reported that the GRC Field Test is continuing. There are four representatives from each college, with each college represented on each of the four teams.

Since the Faculty Steering Committee Report was withdrawn, Professor Folk asked to address the faculty concerning the Town Meeting on the Faculty Senate proposal. He reiterated his desire that the Town Meeting be replaced with a regular faculty meeting to take up the issue; wants to make sure the ballot distributed to faculty on the senate proposal is not 'embellished;' and, asked the provost to permit faculty to use the faculty e-mail address list.

Professor Folk MOVED that the ballot be as plain as possible, with a simple "Yes" or "No" box for the proposal. The motion was SECONDED.

Professor Gambino-Stewart indicated that the ballot is 'in the making' and that it will contain a simple 'Yeah' or 'Nay.' She also noted that a sample of the ballot will be available at the Town Meeting on February 12.

Professor Ochs emphasized that the ballot should be completely neutral.

The motion PASSED.

Professor Aronson, pinch-hitting for the absent Professor Neil Simon provided a "nutshell" report on the Faculty Financial Planning and Operations Committee. He promised a more-detailed report at the next faculty meeting.

Item 1 - the budget process. Professor Aronson commented that the new process seems to be an improvement and that the FFPOC appreciated the enhancement to department budgets. He did note that there was disappointment that percentage increase in compensation was not dramatic. FFPOC has met with the Faculty Compensation Committee and will report more about this in the future.

Item 2 - development. Professor Aronson endorsed the idea that, in the near future, development efforts will focus on program. This, he said, is in harmony with the FFPOC. He also noted the enhancement of financial and personnel resources in the development area stating that the enhancement and the goals make sense. He did, however, note that the funds for these enhancements are coming from a 'non-operating' budget rather than the university's "operating" budget. He suggested that everyone would like a 'non-operating' budget for their activities.

FFPOC continues to monitor SAFARIS and Professor Simon will have

'more to say' at the next faculty meeting. Professor Aronson concluded by noting that "Neil is your man on FFPOC!"

President Hittinger acknowledged that Professor Aronson had factually stated the development activities and source of funding. He noted the university is undercapitalized and that the Board of Trustees is taking action to step up development activity by expanding staff and budget. These additional costs are not included in the university's operating budget and no attempt will be made to place them in the operating budget; however, long-term funding for these additional expenditures has not been secured. He concluded by stating that this discussion is "to be continued."

Professor Nation, on behalf of the Faculty Steering Committee, provided an update on the Faculty Senate proposal. The proposal is in the hands of the FSC and a Town Meeting to discuss the proposal will be held on February 12. He then deferred to Professor Moses.

Professor Moses indicated that he was happy the process was getting closer to resolution and noted the outcome will disappoint some. He was hopeful the process will not disappoint.

He articulated the rationale for the Faculty Senate; recalled the FSC process from a year ago; and, reviewed the process since the April 28 1997 faculty meeting when the faculty approved a motion to bring a Faculty Senate constitution to the faculty for consideration.

Professor Nation once again noted the February 12 Town Hall Meeting in Sinclair Auditorium and cautioned that the meeting was simply to discuss the proposal - there will be no vote and no amendments. The ballot will be mailed out on February 15 with instructions to send the ballot to the faculty secretary who will record the receipt of the ballot, but who will not tabulate the votes. That will be done by representatives of all four colleges.

Professor Innes noted that February 12 is a '4 O'Clock Quiz' day. Professor Nation could be heard muttering an audible "OOPS!"

Professor Folk identified several 'left out' points he felt were relevant. Namely: that the FSC proposed three years ago that faculty meetings be chaired by a faculty member rather than the president; that this proposal was voted down because the faculty felt it important to have access to the president; and, that faculty meetings provide just such access. He also stated that he believed the FSC or a portion of the FSC had met with the Board of Trustees to talk about the Faculty Senate proposal, which in his

opinion, was improper since the Board should hear faculty business, not committee business. He also observed that only 40 faculty attended the constitutional convention on January 8, 1998. He encouraged the faculty to change the way committees operate. not to change the voting status of the faculty-at-large.

Professor Nation stated that he was unaware of any meeting between FSC and the Board of Trustees. Professor Gambino-Stewart noted that she had received a request from the Academic Affairs Committee of the Board of Trustees to provide a briefing on the progress of the proposal which she then honored.

6. **President's Report.** President Hittinger related a couple developments. He and the board have talked about a spring agenda for planning and budgeting with goal of matching up the budget with the strategic plan. Efforts are underway to close the gap between the two.

He also reported on a bill presented to the Pennsylvania legislature which would remove the tax-exempt status from private colleges and universities. The bill has been withdrawn, and, hopefully, will not resurface. A group of private colleges and universities in Pennsylvania (approximately 70) plan to carry forward items on what private colleges and universities contribute to the economy of the state. Lehigh has sent out the message. He estimates private colleges and universities, based on inputs contribute on the order of \$800 million a year to the state's economy.

Penn State has capped growth at the State College campus and will turn its efforts toward expanding its regional campuses. Because Penn State receives tax-supported state subsidies, this forces private colleges and universities to compete on an "uneven" playing field. The president expects heightened media coverage on the economic contributions of private colleges and universities.

Professor Ochs recalled a mid-'80s study which concluded that, on a cost per student basis, public universities were more cost-effective. He inquired whether an updated comparison is under development.

President Hittinger stated he was unaware of whether an update was planned, but did note that Penn State's improved reputation is a strategic issue for Lehigh.

Professor Amidon announced that University of Pennsylvania Professor Alan Kors, a French Enlightenment historian and expert on student rights, will give a talk in Perella Auditorium on Thursday, February 5. The title of

the talk is: "The Assault on the Freedom and Dignity of American University Students."

The meeting stood adjourned at 5:02 PM.

Stephen F. Thode
Secretary to the Faculty
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e-mail: SFTØ

ATTACHMENT 1

Corrections To The Minutes of The Faculty Meeting on December 1, 1997

From Bob Folk

Replace paragraphs 5 and 6 of item 5, which now are:

A discussion of the three motions followed. President Hittinger yielded the chair to Professor John Chen, who is not a member of the Faculty Senate Task Group. He noted a schedule of amendments to the proposal would be published. Professor Chen then moved that the ground rules be adopted. The motion was seconded.

with: "Professor Gunter, who made the three motions, chaired the discussion and voting on these three motions."

ALSO replace paragraph 11 of item 5, which now is:

"Professor Folk's motion to divide FAILED."

with: "The chair, Professor Gunter, and the parliamentarian, Professor Frank Colon, ruled that Folk's motion to divide the question required a two-thirds vote. When the chair refused to yield on this ruling, Folk withdrew his motion."

SEE OTHER SIDE for the original three motions presented by the Steering Committee at the December 1, 1997 faculty meeting.

The following motions were made by the Faculty Steering Committee at the December 1, 1997 faculty meeting. Amendments to the third motion are given in the minutes of that meeting.

MOTION 1

That the University Faculty shall become a Committee of the Whole and convene as a Constitutional Convention on 8 JAN 98 to consider and only amend as appropriate the Faculty Senate Proposal. This means that the 1 DEC 97 faculty meeting shall not be adjourned, but shall be reconvened on 8 JAN 98 as a Committee of the Whole. At the close of the 8 JAN 98 meeting, the Committee of the Whole shall "rise and report," which is equivalent to a motion to adjourn.

MOTION 2

That the following rules be adopted for use at the Constitutional Convention of the Lehigh University Faculty on 8 JAN 98 where amendments to the Faculty Senate proposal will be debated and accepted or rejected:

- (1) The meeting will be held on Thursday, 8 JAN 98 from 9:00AM until no later than 4:00PM.
- (2) Since all proposed amendments to the Faculty Senate Proposal must be sent to the Constitutional Task Force by 15 DEC 97 (c/o Linda A. Mery, the President's Office, Alumni Bldg. #27, or e-mail: lam5), the following time limits for debate are established:
 - (a) That any person who presents an amendment be given five minutes to explain her/his rationale for it;
 - (b) That others who wish to speak about the amendment be limited to five minutes each;
 - (c) That no one may speak twice until all who wish to speak have spoken; and
 - (d) That the person who presented the amendment be given a final five-minutes to speak to any comments previously made concerning the amendment before it is voted on.

MOTION 3

That after the Faculty Senate Proposal is discussed and amended at the Constitutional Convention on 8 JAN 98, the University Faculty be convened in a special meeting to discuss (but not vote on) the document. After this special meeting, the voting members of the Faculty shall vote by mail, sending their vote to Professor Stephen F. Thode, Secretary of the Faculty, 304 Rauch Business Center #37, no later than five (5) working days after the close of the special meeting. The votes will be counted by a four-member panel appointed by the Faculty Steering Committee. A two-thirds majority of all ballots cast shall be necessary for the Faculty Senate Proposal as amended to pass.

Lehigh University

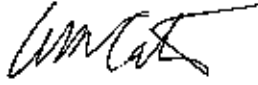


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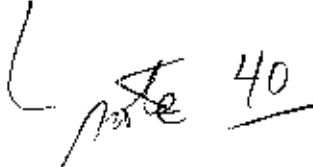
Memorandum

793 VOTING FACULTY
WARD M. CATES
EDUCATION & HUMAN SERVICE
MOUNTAINTOP CAMPUS
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To: Voting Faculty
From: Ward M. Cates Chair, 
Graduate and Research Committee
Date: January 13, 1998
Re: Graduate Program Changes

Enclosed is a proposal for a new M.S. program in Statistics as well as three new courses in the Mathematics Department. These proposals were approved at a fall meeting of the Graduate and Research Committee but were inadvertently omitted in an earlier mailing to the faculty of proposed course changes. They will be presented for approval at the next university faculty meeting.

Also enclosed are proposed core course changes in the MBA program. These were approved by the Graduate and Research Committee on January 13 1998. They will be presented at the next university faculty meeting, as well.

Handwritten signature and the number 40.

A Proposal for an M.S. Program in Statistics

(Revised 9/25/1997)

1. PREAMBLE. The discipline of statistical sciences is concerned with the art of developing techniques to gain information and make decisions from data in the presence of uncertainty. The techniques are based on the theory and tools of the various branches of mathematics, especially probability. A graduate education in the statistical sciences allows one an entry into many areas of physical and social sciences, medicine, business and government.

There are more than 130 universities in the US that offer graduate programs in the statistical sciences, but Lehigh is not one of them. In spite of the declining graduate enrollment in most disciplines across the country the enrollment in statistics has remained steady over the last fifteen years. An average of 1000 M.S. degrees in Statistics and Biostatistics are awarded every year. A recent study by the NSF and DOE (NSF publication 80--78) concludes that during the 90's "the supply of scientists and engineers at all degree levels will likely be more than adequate to meet demand in all fields except computer professions, statistics and some fields of engineering".

Lehigh has the prerequisite courses and the mathematics department has the resources to offer a cogent M.S. Program in Statistics. Three tangible benefits will ensue from such a program apart from the inherent academic reasons. First, our prospects of attracting better students and increasing graduate enrollment will rise, primarily because an M.S. in Statistics will raise the students' chance of gainful employment. Second, Lehigh's prospects of receiving federal, state and industrial grants in statistics-related areas will improve simply because the existence and publicizing of the M.S. program will give Lehigh a higher visibility and the granting agency more confidence in Lehigh's ability. Third, we hope to attract some tuition paying employees of local industries to the statistics courses of the program. The courses are not new but their current "Math" labels have had a tendency to dissuade people who are genuinely interested in learning statistical concepts and methods. We expect to attract five to ten students in three years. No new fund^s will be needed for the proposed program.

2. THE PROGRAM. The prerequisite for admission to the M.S. degree in Statistics is an undergraduate degree that includes at least 9 semester-hours of calculus. Students who have not had any course in linear algebra, complex variables and advanced calculus are advised to take Lehigh's Math 205 (or 244), Math 208 (or 316) and Math 219 at the earliest opportunity.

The M.S. in Statistics requires 30 credit hours of graduate courses with at least 18 hours of 400--level STAT courses for the *Statistics* track and at least 18 hours of 400--level STAT or Math courses for the *Stochastic Modeling* track (see the enclosed list). The choice of the courses must be approved by the graduate advisor, and up to 6 hours of coursework may be replaced with a thesis. In the event a 300-level Math course is cross-listed with a 400-level STAT course, students enrolled in the former will receive 4 hours of credit and in the latter 3 hours of credit. All students in the program must also pass a comprehensive examination. There is no language requirement. Requirements on GRE or TOEFL and the admission deadline will be the same as those in our current M.S. in Mathematics. Master thesis is optional.

The implementation of the program will not require new library or computer resources. No additional faculty will be needed to teach these courses.

The M.S. program in Statistics has two tracks, *Statistics* and *Stochastic Modeling*. The following is a guide for courses and electives in the two tracks. These represent existing courses, although some have been cross listed for the first time as STAT courses.

Statistics Track

Recommended Courses:

- Math 309 Theory of Probability
- STAI 434 Mathematical Statistics
- STAI 412 Applied Statistics
- STAI 462 Nonparametric Statistics

Electives:

- STAI 438 Regression Analysis
- STAI 461 Topics in Mathematical Statistics
- STAI 410 Probability and Its Applications

Other Possible Electives:

- STAI 408. Statistics and Probability Seminar (Spring)
- STAI 409. Statistics and Probability Seminar (Fall)
- Educ 411. Multivariate Statistical Methods
- I.E. 332. Product Quality
- I.E. 409. Data Dependent Systems
- I.E. 410 Design of Experiments
- Eco 455. Econometrics II
- Eco 463. Advanced Statistical Methods
- CSc 411. Advanced Programming Techniques
- Mech 405. Response of System to Random Loads

Stochastic Modeling Track

Recommended Courses:

Math 309. Theory of Probability
STAI 410. Probability and Its Applications
STAI 463. Advanced Probability
Math 401. Real Analysis I

Electives:

STAT 434. Mathematical Statistics
STAT 438. Regression Analysis
STAI 464. Advanced Stochastic Processes
Math 341. Mathematical Models and Their Formulation

Other Possible Electives:

STAI 408. Seminar in Statistics and Probability (Spring)
STAI 409. Seminar in Statistics and Probability (Fall)
Math 320. Ordinary Differential Equations
Math 340. Design and Analysis of Algorithms
Math 402. Real Analysis II
Math 407. Theory and Techniques of Optimization
Math 430. Numerical Analysis

457 Math ~~457~~ Financial Mathematics I *Calculus I*

468 Math ~~468~~ Financial Mathematics II *Calculus II*

Eco. 453. Index Numbers and Time Series Analysis
CSc 411. Advanced Programming Techniques
Mech 405. Response of Systems to Random Loads
I.E. 316. Advanced Operations Research Techniques
I.E. 339. Queuing Theory
I.E. 409. Data Dependent Systems
I.E. 416. Dynamic Programming
I.E. 439. Applications of Stochastic Processes

APPENDIX

Current Math courses to be cross-listed in the catalogue as STAT courses are as follows. We have elevated some 300 level Math courses to the level of 400 STAT courses in order to facilitate meeting the 18 credit hour requirement for M.S. in Statistics.

STAT 410 \equiv Current Math 310

STAT 434 \equiv Current Math 334

STAT 412 \equiv Current Math 312

STAT 438 \equiv Current Math 338

STAT 462 \equiv Current Math 462

STAT 409 \equiv Current Math 409

STAT 408 \equiv Current Math 410

STAT 461 \equiv Current Math 461

STAT 463 \equiv Current Math 463

STAT 464 \equiv Current Math 464

A student will receive 4 hours of credit if enrolled in Math 310, 334, 312 or 338 but 3 hours of credit if enrolled in STAT 410, 434, 412 or 438. (Note: Math 310 is currently a 3-credit course and it will be elevated to a 4-credit course.)

Proposed New Courses:

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FINANCIAL MATHEMATICS AT LEHIGH UNIVERSITY

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Math 495. Financial Calculus I (3)

Basic mathematical concepts behind derivative pricing and portfolio management of derivative securities. Development of Arbitrage Pricing Theory in the context of the binomial model first, culminating in the Black-Sholes model. Option pricing in more realistic scenarios. Introduction into the theory of Brownian motion and Ito calculus (Stochastic Calculus).

Prerequisites: Math 23, Math 43 or Math 205, Math 12 or Math 231, or the consent of the instructor

Math 468. Financial Calculus II (Stochastic methods in finance) (3)

Topics on continuous-time martingales, Brownian motion and Ito calculus. The absence of arbitrage opportunities and the existence of equivalent martingale measures, the pricing of contingent claims. Quantitative methods for portfolio management with Capital Asset Pricing Model and Merton's continuous time dynamic models. Models for the random evolution of the term structure of interest rates.

Prerequisites: Math 402, or Math 495 and Math 463, or the consent of the instructor.

Rational for introducing the courses.

Over the past two decades mathematical finance has been blossoming as an enterprise in a variety of fields. This trend has been accelerating in recent years on numerous fronts, driven both by substantial theoretical advances as well as practical needs in the industry to develop effective methods to price and hedge increasingly complex financial instruments. In recent years, large banks and financial firms have supported conferences and workshops in financial mathematics in such places as Princeton and Cambridge. Carnegie Mellon and NYU have already instituted master programs in the field, and Columbia will start such a program in the fall of 1997.

Financial Calculus I and II will offer graduate students with training in science, engineering and business an opportunity to learn finance at an advanced, quantitative level in the short time frame of one year. It is anticipated that such an offering will attract professionals from local brokerage houses too. If Financial Calculus sequence is successful, it could be further developed and maybe expanded into a Master program. This program could be interdisciplinary with the Business College.

Financial Calculus I will be appropriate for advanced undergraduate students too. Some of our recent Mathematics majors have found jobs in a financial world. Business College has a large undergraduate program in finance. Such a course will be of interest to a large pool of students.

Remark: Experienced practitioners will be invited to discuss their work as an integral part of the courses.

COURSE DEVELOPMENT CRITERIA

Math 495 (Financial Calculus I) and Math 468 (Financial Calculus II)
Instructional Mode:

Three lectures a week . Instructor: Vladimir Dobric (faculty).

Academic Implications:

1. The courses may have an effect on the existing program in the College of Business and Economics.
2. The courses and their contents has been discussed with Prof. J. Greenleaf, the chairman of the Business department. Introduction of the courses has been supported and advertised by the College Business and Economics. The courses will not require any changes in the existing programs at Lehigh.
3. The courses are not cross listed.
4. The courses are taught to a substantial number of non departmental majors.

Resource Implications:

1. The resource implication of the proposed courses have been identified.
2. and 3. Right now the courses do not require any departmental budget changes. However, since this courses will be a part of a new graduate program in Statistics, running of the courses on regular basis may require additional resources. Financial resources for the program in Statistics together with the new pre calculus and calculus program have been requested from the Dean of the College of Arts and Sciences by the chairman of the Department of Mathematics.

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Math ~~446~~: Combinatorics (3)

Fundamental combinatorial theories and modern techniques interconnecting these theories. Topics selected from: enumeration, Ramsey theory, extremal set theory, hypergraphs, structural and extremal graph theory, polyhedral combinatorics, designs and codes, matroids, ordered sets and lattices.

Prerequisite-consent of instructor.

Justification: This course provides an introduction to mathematical techniques necessary for graduate students wishing to pursue research in this area, as well as introducing these techniques to other mathematics graduate students. Graduate students who pursue academic careers are likely to be asked to teach courses in this area. The course will also be useful to certain graduate students in computer science (in algorithms and coding theory) and students in industrial engineering (in operations research) providing mathematical background for these areas. The course will complement but not duplicate CSC440 and IE411.



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January 14, 1998

To: University Faculty

From: Graduate and Research Committee

RE: Core Course Changes in the MBA Program to be voted on at the February 2, 1998 University Faculty meeting.

Attached is the proposal for MBA Core Curriculum changes that was passed by the CBE faculty on November 18, 1997 and Graduate and Research Committee on January 13, 1998.

Motion

Approval of the MBA Courses 401 through 406 to replace the current core courses in the MBA Program

Instructional Mode

A core team of seven faculty members will teach the MBA Core courses. The courses are highly integrative with students from different courses working together on teams to solve real-world business problems. The courses each have a team leader who is responsible for coordinating the course but several faculty will be involved in the actual teaching. The mode is a combination of lecture, case study, self directed learning and interactive team study.

Academic Implications

Since a number of students in the Manufacturing Systems Engineering program take MBA courses as electives, Keith Gardiner was asked for feedback on the changes. MSE students will be permitted to enroll in the new core courses as long as they meet the prerequisites. MBA electives will also remain open to the MSE students as long as the necessary prerequisites have been met. Keith Gardiner was given a complete package outlining the changes and commented that the courses looked good and should pose no problems for his students.

Occasionally graduate students in other engineering programs and in the College of Education take MBA courses as electives in their programs. As long as the prerequisites are met these courses will remain open to students in other colleges on a space available basis.

None of the courses are cross listed.

Resource Requirements

Faculty resources currently available will be adequate.

Since both the current MBA Program and the new MBA will be offered concurrently and faculty members are not completely interchangeable, there may be a need to hire an additional adjunct or two during the first 2 years of transition. The resources will be available from the CBE share of the distance learning money generated by the MBA Program.

As the current program is phased out, the faculty resources required to teach the core MBA courses will actually decrease since there are fewer credits in the core. Students will be permitted to take more electives under the new program but there is ample room in the electives currently offered to handle the expected enrollments.

There will be no impact on library resources and little impact on our current computing facilities. Since over 25% of the MBA students are distance students and over 75% of the total MBA students are part-time, they currently do not use the computing resources in RBC heavily. Most students have access to computer facilities at home or at work which are more convenient than the RBC labs. However, some self-directed learning modules will be assigned using CD ROMS and software packages which may increase use of the computer labs slightly.

The software packages will be purchased by the students. There are no resource implications regarding the purchase of software. The packages we are considering have a cost of between \$30-\$40 and may be run on any 486 or higher level computer. There will be no need to modify the Rauch Center Labs to accommodate this software.

The facilities in the Rauch Business Center and the facilities used through distance learning should be adequate.

It is possible that one or two new portable projection systems may be needed. The share of distance learning money generated by the MBA Program which will be received by the College for the first time in Spring '98 should cover the additional costs of equipment (2 projection systems @ \$4,000). Since the systems are portable, there will be no effect on the classroom environment. These systems may also be used by the undergraduate program during the day since most MBA courses are held in the evening.

Courses to be Eliminated under the New Core (Courses will continue to be taught under a three year phase-out plan to accommodate students currently in the MBA Program.)

GBUS 401	Financial Flows and Accounting Measures
GBUS 402	Legal Environment of Management
GBUS 403	Quantitative Methods in Business and Economics
GBUS 404	Information Systems for Managers
GBUS 405	Organizational Behavior
GBUS 406	Financial Management
GBUS 407	Managerial Accounting and Decision Making
GBUS 408	Marketing Management
GBUS 409	Strategic Information Systems
GBUS 410	Operations Management
GBUS 411	Managerial Policy and Decision Making
GECO 401	Basic Statistics for Business and Economics
GECO 402	Managerial Economics
GECO 403	Money, Banking and Macroeconomics

MBA Core Design

Mission: Develop the knowledge, skills and abilities of managers through a comprehensive and integrated core curriculum with customized concentrated learning designed to meet individual needs of students.

MBA 401	MBA 402	MBA 403	MBA 404	MBA 405	MBA 406
Orientation Including Assessment (1 credit) Objectives: Introduction to Lehigh and the MBA Program Exploring student needs and expectations Setting expectations for MBA core. Introduction to simulation/case study method. Introduction to team approach working with faculty mentors	Managing Financial and Physical Resources (4 credits) At the end of this module, students will be able to: Read, understand and use financial items. Understand the micro-economic market structure and analysis of long run performance. Conduct valuation analysis of the firm Manage and invest physical and financial resources. Understand how to effectively allocate a firm's assets. Prepare pro-forma financial statements. Conduct financial planning of new product/process introduction Generate quality, cost and time information of products and services. Manage internal and external sources of funding, e.g. working capital management and treasury mgmt. Manage stakeholder expectations. Identify and understand their impact on organizational decision making. (Suppliers, customers, owners, employees and society) Tools: Discounted cash flow analysis Ratio analysis Break-even analysis Preparation of budgets Capital evaluation techniques	Managing Information (4 credits) At the end of this module students will be able to: Make decisions with incomplete, imperfect or uncertain information and under conditions of uncertainty, risk and ambiguity. Understand and disseminate quality, cost and time information effectively to organizational decision makers. Convert data into information. Develop enterprise-wide integrated information systems. Understand information enablers. Understand and apply activity-based costing concepts and evaluation of business arguments, transfer pricing and product mix decisions. Develop performance measurement systems. Identify and evaluate sources of information. Understand the use of real time information systems to facilitate effective decision making Use information technology for competitive advantage. Tools: Process mapping Transaction based systems Decision support systems Project Management	Managing Products and Services (4 Credits) At the end of this module, students will be able to: Manage the acquisition of materials and services. Understand inter-firm and value chain relationships. Understand and apply TQM principles Analyze manufacturing and service planning activities. Apply the principles of market segmentation and target marketing. Analyze price, promotion and channel decisions. Understand the role of time, quality, responsiveness, cost and innovation in today's global economy. Develop systems of total cost of ownership. Understand the planning process for new product/process/service development and introduction. Tools: Target pricing DFX ABM Contract law	Managing People (4 credits) At the end of this module, students will be able to: Design effective organizations including new organizational structures such as cross-functional teams. Improve organizational performance through effective: • job design • recruiting and selection processes • training and development • performance appraisal • compensation Manage a diverse workforce. Manage the change process. Manage conflict through the use of effective conflict resolution including negotiation. Create a learning organization. Understand the concepts of effective leadership. Develop effective interpersonal and group relationships. Manage effective team performance. Tools: Negotiating techniques Group problem solving techniques Consensus decision making Performance evaluations	Capstone Experience (1 credits) Objectives: To provide an intensive application of core concepts through the following alternatives: • case study • course • industry project • internship Assessment
Themes: Ethics, diversity, globalization, technology, interpersonal skills, critical thinking, teamwork, communication, managing change.					

Proposed MBA Program

Structure

Prerequisites

Computer Literacy
Statistics

Financial Accounting
Principles of Economics

MBA Courses

The proposed MBA Program is a 36 credit hour program with the following structure:

MBA 401	Introduction to the Organization and Its Environment	1 credit
MBA 402	Managing Financial and Physical Resources	4 credits
MBA 403	Managing Information	4 credits
MBA 404	Managing Products and Services	4 credits
MBA 405	Managing People	4 credits
MBA 406	Integrative Experience	1-4 credits
	Electives	15 - 18 credits

The principles of economics prerequisite may be fulfilled by coursework taken prior to your entrance into the MBA Program. The computer literacy prerequisite may be fulfilled by coursework or experience.

The financial accounting and statistics prerequisites may be fulfilled by taking an appropriate course either at Lehigh or another school within the last five years or by engaging in a self-directed learning process and passing a proficiency exam. The financial accounting prerequisite must be completed before students will be permitted to take MBA 2.

MBA 1 will be offered on 2 Saturdays in August and/or September for students starting in the Fall semester and in January for those students starting their program in the Spring semester. Must be taken in the first semester of your program.

MBA 2 through 5 will be offered from 6:00 p.m. to 9:30 p.m. on weekdays. Since MBA 1 is the only prerequisite for these courses, students will have flexibility in choosing among these courses in any order.

MBA 6 may involve a project within your own firm, a project with an outside firm, a research project or a case study course. Credits are assigned based on the workload involved.

Concentration areas will remain the same. Students may concentrate in Finance, Management, Marketing, International Business and Management of Technology. 9 credit hours of electives will be required for a concentration in Finance, Management or Marketing with 12 credit hours of electives required for a concentration in International Business or Management of Technology. A concentration is not required, the general MBA allows electives to be taken in any area.

Course Descriptions

MBA 401. Introduction to the Organization and its Environment (1 credit)

An MBA core course which introduces the entering MBA student to the workings of today's organization and how it impacts and is impacted by its environment. These concepts will be exposed by using the integrated value chain model and applied through the analysis of a comprehensive case. The course will be offered over a two day period at the beginning of each semester.

MBA 402. Managing Financial and Physical Resources (4 credits)

An MBA core course designed to integrate financial and managerial concepts into operational decisions. Disciplines of Accounting, Finance and Economics are combined to provide substantive foundations for discussing and analyzing data. Implications of analysis are applied to facilitate decision making in other areas such as marketing, operations (manufacturing, logistics and engineering), human resources, information technology and general management. The major learning objectives will be applied through a series of "living" cases that are centered on analyzing historical financial performance, preparing a business plan, and valuing a business.

MBA 403. Managing Information (4 credits)

An MBA core course that primarily deals with concepts and methods involved in the collection, organization and dissemination of information that helps managers make operational and strategic decisions. The course also deals with attributes of information and examines enterprise-wide impacts of local decisions. Revenue, cost, time and quality-based information are accorded equal emphasis, while students are exposed to alternative evaluation methods for decisions related to different parts of the value chain. Topics include: activity-based costing; activity-based management; transaction analysis; operational and strategic decisions such as outsourcing, design partnerships, etc.; investment analysis for short life-cycle investments; evaluation of uncertainty, risk and ambiguity; metrics development; compensation policies; segment evaluation methods; target costing and functional analysis; quality function deployment; total cost of ownership; and transfer pricing. In addition, the course includes topics such as: information technology enablers which allow firms to improve value delivered to customers; and evaluation and management of emerging forms of cooperation, such as joint ventures and project based strategic alliances.

MBA 404. Managing Products and Services (4 credits)

An MBA core course focusing on the *management of products and services* within a firm's value chain. The course addresses exceeding customer expectations, establishing total quality as the core foundation, developing a strong customer focus, creating value added through supply chain management, developing new products for competitive advantage, matching aggregate supply with customer demand, and designing market channels and influencing customers.

MBA 405. Managing People (4 credits)

An MBA core course that examines how effective organizations are created, maintained, and improved. The course will focus on how we attract good people into the organization and how do we make them productive. Topics include: organizational design, job design, staffing, training and development, performance, teams, influence, diversity, change, ethical decision making, and current people issues facing today's organization. The course includes a comprehensive simulation (to be conducted on a Saturday during the semester) and a group project which allows students to apply the principles and concepts covered in the course.

MBA 406. Integrative Experience (1 to 4 credits)

An MBA core course requirement which provides alternative methods for students to apply the body of knowledge acquired in MBA 1 through MBA 5. Students will have the choice of taking a case course, developing and working on a project through their employer or with a corporate partner, an internship or other suitable experiential learning. The preferred option is an outside project or internship rather than a case course. The academic rigor and time required to complete the project or course will determine the number of credits earned.

