2019-2020

COURSE CATALOG

UNIVERSITY of ROCHESTER | SIMON BUSINESS SCHOOL

Information in this publication is current as of **May 2019 and is subject to change.**

COURSE CATALOG

Academic Year 2019–2020

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2019-2020 SIMON BUSINESS SCHOOL COURSE CATALOG

Provisions of this publication are not to be regarded as an irrevocable contract between the student and the William E. Simon School of Business. Simon Business School reserves the right to make changes in its course offerings, degree requirements, regulations and procedures, and fees and expenses as educational and financial considerations require.

Simon encourages the application of all qualified persons interested in the study of management at the master's and doctoral levels.

The University of Rochester values diversity and is committed to equal opportunity for persons regardless of age, color, disability, ethnicity, gender identity or expression, genetic information, marital status, military/veteran status, national origin, race, religion/creed, sex, sexual orientation, or any other status protected by law. Further, the University complies with all applicable non-discrimination laws in the administration of its policies, admissions, employment, and access to and treatment in University programs and activities.

Questions on compliance should be directed to the particular school or department and/or to the University's Intercessor, University of Rochester, P.O. Box 270039, Rochester, NY 14627-0039. Phone: (585) 275-9125.

CONTACT INFORMATION:

Academic Operations and Registrar's Office
245 Gleason Hall
Phone: (585) 275-3533

Office of Student Engagement
202 Schlegel Hall
Phone: (585) 275-8163

To view the current Academic Calendar, please go to:

http://www.simon.rochester.edu/registrar/registrar/academic-calendars/index.aspx

While the study grids contained in this book are current for the 2019-2020 academic year, the arrangement of courses is subject to change.

MBA REQUIREMENTS AND CORE COURSE SEQUENCES

Full-Time MBA Program

To earn the Master of Business Administration degree, a full-time student must complete 68 credit-hours of study with a minimum 3.0 grade-point average. Students take 9 required core courses and 14 electives, GBA 401, and the MGC course sequence taken during the first year. Much of the academic work in the MBA program will rely on computer based analysis and computer-assisted presentations. Upon entry to the program, faculty will expect students to have a working knowledge of spreadsheet and word-processing software. The programs most widely used are Microsoft Excel and Access. Although not required, a student may complete a specialization or minor. For students interested in a STEM designated MBA, they can earn that if 50% or more of their total credits earned come from STEM designated classes. STEM designated courses are indicated with an asterisk (*). For more details on specializations and minor please refer to page 20.

REQUIRED COURSES

ACC 401. Corporate Financial Accounting
*CIS 401A. Information Systems for Management: Part A
*CIS 401B. Information Systems for Management: Part B
*FIN 402. Capital Budgeting and Corporate Objectives
GBA 401. Structured Problem Solving in Teams
*GBA 411. Business Modeling
*GBA 412. Data Analytics
MKT 402. Marketing Management
*OMG 402. Operations Management
*STR 401. Managerial Economics
STR 421. Competitive Strategy
MGC 401. Professional Communication: Persuasion in Business Relationships
MGC 402. Influence in Interpersonal Interactions

FULL-TIME MBA CLASS OF 2021
TWO-YEAR MBA PROGRAM: YEAR 1

<table>
<tr><th colspan="3">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th></tr>
<tr><th>PRE-FALL</th><th>FALL A</th><th>FALL B</th><th>SPRING A</th><th>SPRING B</th></tr>
<tr><td rowspan="4">*STR 401
Managerial
Economics</td><td>ACC 401
Corporate Financial
Accounting</td><td>*CIS 401A
Information Systems for
Management: Part A
(1.3 Credits)</td><td colspan="2">*CIS 401B
Information Systems for
Management: Part B
(1.2 Credits)</td><td><u>Choose 1:</u>

STR421
Competitive Strategy

or
Elective</td></tr>
<tr><td>MKT 402
Marketing Management</td><td>*GBA 412
Data Analytics</td><td colspan="2">*GBA 411
Business Modeling

*OMG 402
Operations Management</td><td>Elective</td></tr>
<tr><td rowspan="2">*FIN 402
Capital Budgeting and
Corporate Objectives</td><td><u>Choose 1:</u>

STR421
Competitive Strategy

or
Elective</td><td rowspan="2">GBA 401
Structured Problem
Solving in Teams
(1 Credit)</td><td rowspan="2"><u>Choose 1 Project Elective:</u>

*MKT 441
Brand & Product Management Workshop
(3 Credits)
or
*FIN 434
Investment Management and Trading
Strategies (3 Credits)
or
CIS 461
Strategy and Business Systems
Consulting Practicum (3 Credits)</td></tr>
<tr><td colspan="2">MGC 401
Professional Communication: Persuasion
in Business Relationships</td><td>Elective</td></tr>
<tr><td colspan="3">Pre-Fall + Fall A + Fall B Total Credit Hours: 21.3</td><td colspan="2">Spring A + Spring B Total Credit Hours: 17.7</td></tr>
<tr><td colspan="5">All courses are 2.5 credits unless noted otherwise.</td></tr>
</table>

TWO-YEAR MBA PROGRAM: YEAR 2

FALL SEMESTER		SPRING SEMESTER	
FALL A	**FALL B**	**SPRING A**	**SPRING B**
Elective	**Choose 1:** **STR421 Competitive Strategy** **or** **Elective**	**Elective**	**Choose 1:** **STR421 Competitive Strategy** **or** **Elective**
Elective	**Elective**	**Elective**	**Elective**
Elective	**Elective**	**Elective**	**Elective**
Fall A + Fall B Total Credit Hours: 15		Spring A + Spring B Total Credit Hours: 15	
All courses are 2.5 credits unless noted otherwise.			
Year 2 Total Credit Hours: 30 Minimum Degree Total Credit Hours: 68			

Two electives must be selected from the following five to satisfy the Managerial Breadth degree requirement:

- STR403 – Organization and Strategy
- STR427 – Organizational Behavior
- GBA442C – Elements of Leadership
- GBA435 – Negotiation Theory and Practice: Bargaining for Value
- GBA441 – Business Ethics and Corporate Social Responsibility

FULL-TIME MASTER OF SCIENCE PROGRAMS

FULL-TIME MASTER OF SCIENCE IN ACCOUNTANCY

The program of study for the Master of Science in Accountancy is a lock-step program, which meets all the requirements for a STEM designated degree. Students take 12 core courses, 1 elective, and the MGC course sequence. A minimum 3.0 grade point average is required for graduation. STEM designated courses are indicated with an asterisk (*)

Assuming that students have met certain undergraduate prerequisites, this program has been designated by the New York State Education Department as fulfilling the 150 credit-hour requirement for professional education programs in public accountancy.

Students whose undergraduate programs do not satisfy all the assumed prerequisites will be advised of the additional courses that they must complete following a review of their undergraduate transcript. The New York State Education Department will have final approval upon application for licensure.

CORE COURSES

*ACC 410. Managerial Accounting and Performance Measurement

*ACC 411. Applied Financial Statement Analysis with Data Analytics

*ACC 417. Auditing

*ACC 419. Positive Accounting Research Concepts and Empirical Analysis Tools

ACC 423. Financial Reporting I

ACC 424. Financial Reporting II

ACC 436. Research Into Professional Accounting Standards

ACC 437. Basic Federal Income Tax Accounting

*ACC 438. Auditing II—Auditing and Information Systems

ACC 440. Basic Income Tax - Business Entities and Gift/Estate Taxes

BPP 432. Basic Business Law

*GBA 462R. Core Statistics for MS Students Using R

*GBA 464. Programming for Analytics

MGC 461. Professional Communication

ELECTIVE OPTIONS

*ACC 418. Taxes and Business Strategy

*ACC 439. Accounting Analytics for Forensics

FULL-TIME MS IN ACCOUNTANCY (NON-INTERNSHIP TRACK)

<table>
<tr><th colspan="3">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th></tr>
<tr><th>PRE-FALL</th><th>FALL A</th><th>FALL B</th><th>SPRING A</th><th>SPRING B</th></tr>
<tr><td>BPP 432
Basic Business Law</td><td>*GBA 462R
Core Statistics for MS Students Using R</td><td>*ACC 410
Managerial Accounting and Performance Measurement</td><td>*ACC 438
Auditing II—Auditing and Information Systems</td><td>*ACC 411
Applied Financial Statement Analysis with Data Analytics</td></tr>
<tr><td rowspan="2">*GBA 464
Programming for Analytics</td><td>ACC 436
Research into Professional Accounting Standards</td><td>*ACC 417
Auditing</td><td>ACC 437
Basic Federal Income Tax Accounting - Individuals</td><td>ACC 440
Basic Income Tax – Business Entities and Gift/Estate Taxes</td></tr>
<tr><td>ACC 423
Financial Reporting I</td><td>*ACC 419
Positive Accounting Research Concepts and Empirical Analysis Tools</td><td rowspan="2"><u>Choose 1 Elective:</u>
*ACC 439
Accounting Analytics for Forensics
or
*ACC 418
Taxes & Business Strategy</td><td rowspan="2">ACC 424
Financial Reporting II</td></tr>
<tr><td colspan="3">MGC 461
Professional Communications (4 Credits)</td></tr>
<tr><td colspan="3">Pre-Fall + Fall A + Fall B Total Credit Hours: 24</td><td colspan="2">Spring A + Spring B Total Credit Hours: 15</td></tr>
<tr><td colspan="5">All courses are 2.5 credits unless noted otherwise.
Degree Total Credit Hours: 39</td></tr>
</table>

FULL-TIME MS IN ACCOUNTANCY (INTERNSHIP TRACK)

<table>
<tr><th colspan="3">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th><th>FALL SEMESTER</th></tr>
<tr><th>PRE-FALL</th><th>FALL A</th><th>FALL B</th><th>SPRING A</th><th>SPRING B</th><th>FALL A</th></tr>
<tr><td>BPP 432
Basic Business Law</td><td>*GBA 462R
Core Statistics for MS Students Using R</td><td>*ACC 410
Managerial Accounting and Performance Measurement</td><td>*ACC 438
Auditing II—Auditing and Information Systems</td><td>*ACC 411
Applied Financial Statement Analysis with Data Analytics</td><td rowspan="4">ACC 436
Research Into Professional Accounting Standards</td></tr>
<tr><td rowspan="2">*GBA 464
Programming for Analytics</td><td rowspan="2">ACC 423
Financial Reporting I</td><td>*ACC 417
Auditing</td><td>ACC 437
Basic Federal Income Tax Accounting</td><td>ACC 440
Basic Income Tax – Business Entities and Gift/Estate Taxes</td></tr>
<tr><td>*ACC 419
Positive Accounting Research Concepts and Empirical Analysis Tools</td><td rowspan="2"><u>Choose 1 Elective:</u>
*ACC 439
Accounting Analytics for Forensics
or
*ACC 418
Taxes & Business Strategy</td><td rowspan="2">ACC 424
Financial Reporting II</td></tr>
<tr><td colspan="3">MGC 461
Professional Communications (4 Credits)</td></tr>
<tr><td colspan="3">Pre-Fall + Fall A + Fall B Total Credit Hours: 21.5</td><td colspan="2">Spring A + Spring B Total Credit Hours: 15</td><td>Fall A Total Credit Hours: 2.5</td></tr>
<tr><td colspan="6">All courses are 2.5 credits unless noted otherwise.
Degree Total Credit Hours: 39</td></tr>
</table>

Key Elements for MSA Students

The program of study for the MSA degree has been designed as a lock-step program which meets all the requirements for a STEM certified program.

Substitutions

- Students with prior coursework that is equivalent to an MSA course may petition for a course substitution.
- Petitions must be submitted to Karen Platt by August 15th for the entire academic year.
- Petitions must include a course description and syllabus from the course think meets the requirements for a substitution.
- If a substitution is approved, a meeting will be scheduled with Karen Platt to determine an appropriate substitute course.
- Final approval is given by Professor Tribunella.

Internship Track

- The last class of ACC436 can be taken remotely, however all students are required to return to the campus for the last class session and complete the in-person final exam. Failure to attend the last class session and final exam will result in failing the class.
- Petitions to change tracks are reviewed on a case-by-case basis and should be discussed with your academic advisor.

Elective

- MSA students will take an elective course in Spring A .
- Students will choose from either ACC439 (Accounting Analytics for Forensics) or ACC418 (Taxes and Business Strategy).

Teams

- Before classes start students in the MSA program will be pre-assigned to teams of 4 or 5 for your core classes.
- Requests to change teams within a quarter will not be granted. It is expected you will learn to work with your team through any issues or obstacles that arise and utilize the advising process for issue resolution.
- Any team that has significant enough issues that they are unable to resolve them internally will be referred to the Office of Student Engagement for a peer evaluation. The results of which will be shared with the appropriate faculty members.

FULL-TIME MASTER OF SCIENCE IN FINANCE

The program of study for the Master of Science in Finance is a lock-step program which meets all the requirements for a STEM-designated degree. Students take 10 core courses, 2 electives, 1 project course, and the MGC course sequence. A minimum 3.0 grade point average is required for graduation. STEM designated courses are indicated with an asterisk (*)

CORE COURSES

ACC 401.** Corporate Financial Accounting
*ACC 411. Financial Statement Analysis with Data Analytics
*CIS 418 Advanced Business Modeling and Analysis Using Spreadsheets
*FIN 411. Investments
*FIN 413. Corporate Finance
*FIN 418. Quantitative Finance with Python
*FIN 424. Options and Future Markets
*FIN 430. Risk Management
*FIN 448. Fixed-Income Securities
FIN 462. Foundations in Financial Economics
*GBA 462. Core Statistics for MS Students
MGC 461. Professional Communication

ELECTIVE OPTIONS

ACC 424. Financial Reporting II
*BPP 426. Macroeconomics
*FIN 434. Investment Management and Trading Strategies
*FIN 441A. Special Topics in Finance: Real Estate
FIN 441G. Special Topics in Finance: Asset Management
*FIN 442X. International Finance & Switzerland Immersion
*FIN 444. Entrepreneurial Finance (ENT 444)
*FIN 446. Financial Technology
STR 440. Corporate Governance
STR 442F. Strategy, Organization, and Firm Value

FULL-TIME MS IN FINANCE (NON-INTERNSHIP TRACK)

<table>
<tr><th colspan="3">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th></tr>
<tr><th>PRE-FALL</th><th>FALL A</th><th>FALL B</th><th>SPRING A</th><th>SPRING B</th></tr>
<tr><td>*GBA 462
Core Statistics with Python</td><td>ACC 401**
Corporate Financial Accounting</td><td>*FIN 424
Options and Future Markets</td><td rowspan="2">*FIN 430
Risk Management</td><td>*FIN 448
Fixed-Income Securities</td></tr>
<tr><td rowspan="4">FIN 462
Foundations in Financial Economics</td><td>*FIN 411
Investments</td><td>*ACC 411
Financial Statement Analysis</td><td>*CIS 418
Advanced Business Modeling and Analysis Using Spreadsheets</td></tr>
<tr><td rowspan="3">*FIN 418
Quantitative Finance with Python</td><td rowspan="3">*FIN 413
Corporate Finance</td><td colspan="2">Choose 1 Elective in the Spring Semester</td></tr>
<tr><td>*BPP 426
Macroeconomics
*FIN 434
Investment Management and Trading Strategies
FIN 441G
Special Topics in Finance: Asset Management
*FIN 442X
International Finance & Switzerland Immersion
STR 442F
Strategy, Organization, and Firm Value</td><td>ACC 424
Financial Reporting II
*FIN 441A
Special Topics in Finance: Real Estate
*FIN 444
Entrepreneurial Finance
*FIN 446
Financial Technology
STR 440
Corporate Governance</td></tr>
<tr><td colspan="2">Choose 1 Project Course Option:</td></tr>
<tr><td colspan="3" rowspan="3">MGC 461
Professional Communications (4 Credits)</td><td>Option 1:</td><td>FIN 465
Applied Finance Project (3 Credits) - Couch</td></tr>
<tr><td>Option 2:</td><td>FIN 465
Applied Finance Project (3 Credits) - Burnside</td></tr>
<tr><td>Option 3:</td><td>FIN 465
Applied Finance Project (3 Credits) - Insalaco</td></tr>
<tr><td colspan="3">Pre-Fall + Fall A + Fall B Total Credit Hours: 24</td><td colspan="2">Spring A + Spring B Total Credit Hours: 13 - 13.5</td></tr>
<tr><td colspan="5">All courses are 2.5 credits unless noted otherwise.
Minimum Degree Total Credit Hours: 37</td></tr>
</table>

**Students with sufficient prior coursework in accountancy can petition to substitute ACC401 (Corporate Financial Accounting) with ACC423 (Financial Reporting I).

FULL-TIME MS IN FINANCE (INTERNSHIP TRACK)

<table>
<tr><th colspan="3">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th><th>FALL SEMESTER</th></tr>
<tr><th>PRE-FALL</th><th>FALL A</th><th>FALL B</th><th>SPRING A</th><th>SPRING B</th><th>FALL A</th></tr>
<tr><td>*GBA 462
Core Statistics for MS Students</td><td>ACC 401*
Corporate Financial Accounting</td><td>*FIN 424
Options and Future Markets</td><td colspan="2" rowspan="2">*FIN 430
Risk Management</td><td rowspan="8">*CIS 418
Advanced Business Modeling and Analysis Using Spreadsheets</td></tr>
<tr><td rowspan="3">FIN 462
Foundations in Financial Economics</td><td rowspan="2">*FIN 411
Investments</td><td rowspan="2">*ACC 411
Financial Statement Analysis with Data Analytics</td><td rowspan="2">*FIN 448
Fixed-Income Securities</td></tr>
<tr><td colspan="2">Choose 1 Elective in Spring Term</td></tr>
<tr><td rowspan="2">*FIN 418
Quantitative Finance with Python</td><td rowspan="2">*FIN 413
Corporate Finance</td><td>*BPP426
Macroeconomics
*FIN 434
Investment Management and Trading Strategies
FIN 441G
Special Topics in Finance: Asset Management
*FIN 442X
International Finance & Switzerland Immersion
STR 442F
Strategy, Organization, and Firm Value</td><td>ACC 424
Financial Reporting II
*FIN 441A
Special Topics in Finance: Real Estate
*FIN 444
Entrepreneurial Finance
*FIN 446
Financial Technology
STR 440
Corporate Governance</td></tr>
<tr><td colspan="2">Choose 1 Project Course Option:</td></tr>
<tr><td colspan="3" rowspan="2">MGC 461
Professional Communications (4 Credits)</td><td>Option 1 Track:</td><td>FIN 465
Applied Finance Project (3 Credits) - Couch</td></tr>
<tr><td>Option 2:</td><td>FIN 465
Applied Finance Project (3 Credits) - Burnside</td></tr>
<tr><td colspan="3">Pre-Fall + Fall A + Fall B Total Credit Hours: 24</td><td colspan="2">Option 3:</td><td>FIN 465
Applied Finance Project (3 Credits) - Insalaco</td></tr>
<tr><td colspan="3">Pre-Fall + Fall A + Fall B Total Credit Hours: 24</td><td colspan="2">Spring A + Spring B Total Credit Hours: 10.5 - 11</td><td>Fall A Total Credit Hours: 2.5</td></tr>
<tr><td colspan="5">All courses are 2.5 credit hours unless indicated otherwise.
Minimum Degree Total Credit Hours: 37</td><td></td></tr>
</table>

*Students with sufficient prior coursework in accountancy can petition to substitute ACC401 (Corporate Financial Accounting) with ACC423 (Financial Reporting I).

Key Elements for MSF Students

The program of study for the MSF degree has been designed as a lock-step program which meets all the requirements for a STEM certified program.

Substitutions

- Students with sufficient prior coursework in Accountancy, or holding a CPA can petition to substitute ACC401 (Corporate Financial Acct) with ACC423 (Financial Reporting I) in Fall A. Petitions must be submitted to your academic advisor by August 15.
- Students who graduated from the University of Rochester with an undergraduate business degree and have taken classes in the MSF core can petition to substitute those classes. Students should talk to their academic advisor if they have questions. This only pertains to University of Rochester students.

Internship Track

- MSF students in the internship track will not take CIS418 in Spring B but will take CIS418 the following Fall A as their last class. There are no exceptions on this class.
- CIS418 can be taken remotely but it is required that all students return for the last 3 hours of lecture and the final. There are no exceptions. Failure to attend the last 3 class hours and final will result in failing the class.
- Changes in track length are reviewed on an exception basis. Requests to change tracks must be submitted by January 31.

Teams

- Before classes start students in the MSF program will be pre-assigned to teams of 4 or 5 for your core classes.
- Requests to change teams within a quarter will not be granted. It is expected you will learn to work with your team through any issues or obstacles that arise and utilize the advising process for issue resolution.
- Any team that has significant enough issues that they are unable to resolve them internally will be referred to the Office of Student Engagement for a peer evaluation. The results of which will be shared with the appropriate faculty members.

FULL-TIME MASTER OF SCIENCE IN MARKETING ANALYTICS

The program of study for the Master of Science in Marketing Analytics is a lock-step program which meets all the requirements for a STEM-designated degree. It is designed to equip students with the skills and experience necessary to excel in marketing jobs in a compact, highly focused program. Students are likely to take a job related to one of the program's four main emphases: marketing research, consumer insights, advertising, and account management.

Students take 9 core courses, 3 electives and the MGC course sequence. A minimum 3.0 grade point average is required for graduation. STEM designated courses are indicated with an asterisk (*)

CORE COURSES

*CIS 417. Introduction to Business Analytics

*CIS 418. Advanced Business Modeling and and Analysis Using Spreadsheets

*GBA 462R. Core Statistics for MS Students Using R

GBA 463. Economics and Marketing Strategy for MS Students

*GBA 464. Programming for Analytics

MGC 461. Professional Communications

*MKT 414. Pricing Policies

*MKT 436. Predictive and Casual Analytics in R

*MKT 451. Consumer and Brand Research

MKT 465. Marketing Analytics Projects

ELECTIVE OPTIONS

*CIS 434. Social Media Analytics

MKT 431. Consumer Behavior

*MKT 437. Digital Marketing Strategy

*MKT 439. Advanced Pricing

*MKT 440. Pricing Analytics

FULL-TIME MS IN MARKETING ANALYTICS (NON-INTERNSHIP TRACK)

<table>
<tr><th colspan="3">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th></tr>
<tr><th>PRE-FALL</th><th>FALL A</th><th>FALL B</th><th>SPRING A</th><th>SPRING B</th></tr>
<tr><td>*GBA 462R
Core Statistics for MS Students Using R</td><td>GBA 463
Economics and Marketing Strategy for MS Students</td><td>GBA 424
Analytics Design and Applications</td><td colspan="2">MKT 465
Marketing Analytics Project (3 Credits)</td></tr>
<tr><td rowspan="2">*GBA 464
Programming for Analytics</td><td>*CIS 417
Intrduction to Business Analytics</td><td>*MKT414
Pricing Policies</td><td rowspan="3"><u>Choose 2 Electives:</u>
*MKT 437
Digital Marketing
or
*MKT 440
Pricing Analytics
or
*CIS 434
Social Media Analytics</td><td rowspan="2"><u>Choose 1 Elective:</u>
MKT 431
Consumer Behavior
or
*MKT 439
Advanced Pricing
or
*MKT 451
Consumer and Brand Research</td></tr>
<tr><td>*MKT 436
Predictive and Casual Analytics in R</td><td><u>Choose 1 Elective:</u>
*CIS 432
Advanced Predictive Analytics with Python
or
*MKT 437
Digital Marketing Strategy</td></tr>
<tr><td colspan="3">MGC 461
Professional Communications (4 Credits)</td><td>*CIS 418
Advanced Business Modeling and Analysis Using Spreadsheets</td></tr>
<tr><td colspan="3">Pre-Fall + Fall A + Fall B Total Credit Hours: 24</td><td colspan="2">Spring A + Spring B Total Credit Hours: 13</td></tr>
<tr><td colspan="5">All courses are 2.5 credit hours unless indicated otherwise.
Degree Total Credit Hours: 37</td></tr>
</table>

FULL-TIME MS IN MARKETING ANALYTICS (INTERNSHIP TRACK)

<table>
<tr><th colspan="3">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th><th>FALL SEMESTER</th></tr>
<tr><th>PRE-FALL</th><th>FALL A</th><th>FALL B</th><th>SPRING A</th><th>SPRING B</th><th>FALL A</th></tr>
<tr><td>*GBA 462R
Core Statistics for MS Students Using R</td><td>GBA 463
Economics and Marketing Strategy for MS Students</td><td>GBA 424
Analytics Design and Applications</td><td colspan="2">MKT 465
Marketing Analytics Project (3 Credits)</td><td rowspan="4">*CIS 418
Advanced Business Modeling and Analysis Using Spreadsheets</td></tr>
<tr><td rowspan="2">*GBA 464
Programming for Analytics</td><td>*CIS 417
Introduction to Business Analytics</td><td>*MKT414
Pricing Policies</td><td colspan="2" rowspan="2"><u>Choose a Total of 3</u>
<u>Electives in Spring Semester</u>

<u>Choose 1-2 Electives</u>:
*MKT 437
Digital Marketing
or
*MKT 440
Pricing Analytics
or
*CIS 434
Social Media Analytics

<u>Choose 1-2 Electives</u>:
MKT 431
Consumer Behavior
or
*MKT 439
Advanced Pricing
or
*MKT 451
Consumer and Brand Research</td></tr>
<tr><td>*MKT 436
Predictive and Casual Analytics in R</td><td><u>Choose 1 Elective:</u>
*CIS 432
Advanced Predictive Analytics with Python
or
*MKT 437
Digital Marketing</td></tr>
<tr><td colspan="3">MGC 461
Professional Communications (4 Credits)</td></tr>
<tr><td colspan="3">Pre-Fall + Fall A + Fall B Total Credit Hours: 24</td><td colspan="2">Spring A + Spring B Total Credit Hours: 10.5</td><td>Fall A Total Credit Hours: 2.5</td></tr>
<tr><td colspan="6">All courses are 2.5 credit hours unless indicated otherwise.
Degree Total Credit Hours: 37</td></tr>
</table>

Key Elements for MSMA Students

The program of study for the MSMA degree is a lock-step program that meets all the requirements for a STEM certified program.

Internship Track

- MSMA students in the Internship track will not take CIS418 the Spring B quarter but will take CIS418 the following Fall A as their last class. There are no exceptions on this class.
- The last class of CIS418 can be taken remotely but it is required that all students return for the last 3 hours of lecture and the final. There are no exceptions. Failure to attend the last 3 class hours and final will result in failing the class.
- Changes in track length are reviewed on an exception basis. Requests to change tracks must be submitted by January 31.

Teams

- Before classes start students in the MSMA program will be pre-assigned to teams of 4 or 5 for your core classes.
- Requests to change teams within a quarter will not be granted. It is expected you will learn to work with your team through any issues or obstacles that arise and utilize the advising process for issue resolution.
- Any team that has significant enough issues that they are unable to resolve them internally will be referred to the Office of Student Engagement for a peer evaluation. The results of which will be shared with the appropriate faculty members.

FULL-TIME MASTER OF SCIENCE IN BUSINESS ANALYTICS

The program of study for the Master of Science in Business Analytics degree has been designated as a lock-step program which meets all the requirements for a STEM designated program. It combines business frameworks with the latest data analytics techniques to provide students with skills and concepts to deal with big data in organizations. Students will learn concepts for dealing with large volumes, real time and unstructured data from organizational, web, and social sources. Economics, statistics, and elements from computer science form the foundation of the program.

Students take 10 required courses, 2 electives, and the MGC course sequence. A minimum 3.0 grade point average is required for graduation. STEM designated courses are indicated with an asterisk (*)

CORE COURSES

*CIS 417 Introduction to Business Analytics
*CIS 418 Advanced Business Modeling and Analysis Using Spreadsheets
*CIS 432 Predictive Analytics with Python
*CIS 434 Social Media Analytics
*CIS 465 Businesss Analytics Project
GBA 424 Analytics Design and Applications
*GBA 462R Core Statistics for MS Students Using R
GBA 463 Economics and Marketing Strategy for MS Students
*GBA 464 Programming for Analytics
*MKT 436 Predictive and Casual Analytics in R
MGC 461 Professional Communications

ELECTIVE OPTIONS

*CIS 442E Data Management for Analytics
*CIS 442F Big Data

FULL-TIME MS IN BUSINESS ANALYTICS (NON-INTERNSHIP TRACK)

<table>
<tr><th colspan="3">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th></tr>
<tr><th>PRE-FALL</th><th>FALL A</th><th>FALL B</th><th>SPRING A</th><th>SPRING B</th></tr>
<tr><td>*GBA 462R
Core Statistics for MS Students Using R</td><td>GBA 463
Economics and Marketing Strategy for MS Students</td><td>GBA 424
Analytics Design and Applications</td><td colspan="2">*CIS 465
Business Analytics Project (3 Credits)</td></tr>
<tr><td rowspan="5">*GBA 464
Programming for Analytics</td><td>*CIS 417
Introduction to Business Analytics</td><td rowspan="2">*CIS 432
Predictive Analytics with Python</td><td rowspan="2">*CIS 434
Social Media Analytics</td><td rowspan="2">*CIS 418
Advanced Business Modeling and Analysis Using Spreadsheets</td></tr>
<tr><td>*MKT 436
Predictive and Casual Analytics in R</td></tr>
<tr><td colspan="3">Choose 1 Track from Below</td><td rowspan="4"><u>Choose 1 Elective:</u>
*CIS 442E
Data Management for Analytics
or
*CIS 442F
Big Data</td></tr>
<tr><td>Business Systems Track:</td><td>*ACC 439
Introduction to Accounting and Forensic Auditing</td><td>*ACC 438
Auditing II - Auditing and Information Systems</td></tr>
<tr><td>Pricing Track:</td><td>*MKT414
Pricing Policies</td><td>*MKT 440
Pricing Analytics</td></tr>
<tr><td>Risk Management Track:</td><td>*FIN 461
Introductory Finance for MS Students</td><td>*FIN 430
Risk Management</td></tr>
<tr><td colspan="3">MGC 461
Professional Communications (4 Credits)</td><td></td></tr>
<tr><td colspan="3">Pre-Fall + Fall A + Fall B Total Credit Hours: 24</td><td colspan="2">Spring A + Spring B Total Credit Hours: 13</td></tr>
<tr><td colspan="5">All courses are 2.5 credit hours unless indicated otherwise.
Degree Total Credit Hours: 37</td></tr>
</table>

FULL-TIME MS IN BUSINESS ANALYTICS (INTERNSHIP TRACK)

<table>
<tr><th colspan="4">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th><th>FALL SEMESTER</th></tr>
<tr><th>PRE-FALL</th><th colspan="2">FALL A</th><th>FALL B</th><th>SPRING A</th><th>SPRING B</th><th>FALL A</th></tr>
<tr><td>*GBA 462R
Core Statistics for MS Students Using R</td><td colspan="2">GBA 463
Economics and Marketing Strategy for MS Students</td><td>GBA 424
Analytics Design and Applications</td><td colspan="2">*CIS 465
Practicum in Business Analytics (3 Credits)</td><td rowspan="7">*CIS 418
Advanced Business Modeling and Analysis Using Spreadsheets</td></tr>
<tr><td rowspan="6">*GBA 464
Programming for Analytics</td><td colspan="2">*CIS 417
Introduction to Business Analytics</td><td rowspan="2">*CIS 432
Predictive Analytics with Python</td><td rowspan="2">*CIS 434
Social Media Analytics</td><td rowspan="6">Choose 1 Elective:
*CIS 442E
Data Management for Analytics
or
*CIS 442F
Big Data</td></tr>
<tr><td colspan="2">*MKT 436
Predictive and Casual Analytics in R</td></tr>
<tr><td colspan="3">Choose 1 Track from Below</td></tr>
<tr><td>Business Systems Track:</td><td>*ACC 439
Introduction to Accounting and Forensic Auditing</td><td>*ACC 438
Auditing II - Auditing and Information Systems</td></tr>
<tr><td>Pricing Track:</td><td>*MKT414
Pricing Policies</td><td>*MKT 440
Pricing Analytics</td></tr>
<tr><td>Risk Management Track:</td><td>*FIN 461
Introductory Finance for MS Students</td><td>*FIN 430
Risk Management</td></tr>
<tr><td colspan="3">MGC 461
Professional Communications (4 Credits)</td><td></td><td></td><td></td></tr>
<tr><td colspan="4">Pre-Fall + Fall A + Fall B Total Credit Hours: 24</td><td colspan="2">Spring A + Spring B Total Credit Hours: 10.5</td><td>Fall A Total Credit Hours: 2.5</td></tr>
<tr><td colspan="6">All courses are 2.5 credit hours unless indicated otherwise.
Degree Total Credit Hours: 37</td><td></td></tr>
</table>

Key Elements for MSBA Students

The program of study for the MSBA degree has been designed as a lock-step program which meets all the requirements for a STEM certified program.

Spring B Elective

- CIS442E in Spring B is required, CIS442F is recommended.
- Students are allowed to take both CIS442E and CIS442F.
- The requirement of CIS442E can be waived if students are able to show that they have prior coursework and/or experience which would give them sufficient knowledge of the subject.
    - Waiver requests will need to include a transcript showing the classes taken with a grade along with the course descriptions of each class and any relevant experience
    - Waiver should be submitted to your OSE advisor by January 31.
    - The program director will make the final decision in all waiver requests.

Tracks

- Starting in Fall B students can choose a track. Tracks are suggested but not required.
  - Business Systems Track
    - The school strongly recommends one or more courses in accounting before attempting this track
  - Pricing Track
    - No pre-requisite coursework
  - Risk Management Track
    - The school strongly recommends one or more courses in Finance before attempting this track
    - FIN461 is a pre-requisite for FIN430.
      - Students who have **not** taken FIN461 cannot take FIN430.

Internship Track

- MSBA students in the internship track will not take CIS418 in Spring B but will take CIS418 the following fall as their last class. There are no exceptions on this class.
- The last class of CIS418 can be taken remotely but it is required that all students return for the last 3 hours of lecture and the final. There are no exceptions. Failure to attend the last 3 class hours and final will result in failing the class.
- Changes in track length are reviewed on an exception basis. Requests to change tracks must be submitted by January 31.

Teams

- Before classes start students in the MSBA program will be pre-assigned to teams of 4 or 5 for your core classes.
- Requests to change teams within a quarter will not be granted. It is expected you will learn to work with your team through any issues or obstacles that arise and utilize the advising process for issue resolution.
- Any team that has significant enough issues that they are unable to resolve them internally will be referred to the Office of Student Engagement for a peer evaluation. The results of which will be shared with the appropriate faculty members.

PMBA REQUIREMENTS AND CORE COURSE SEQUENCES

PROFESSIONAL MBA (PMBA)

To earn the Master of Business Administration degree, students in Simon's PMBA program take 9 core courses and 11 electives with a minimum 3.0 grade-point average to complete the degree. Although not required, students may complete a specialization.

CORE CURRICULUM

- ACC 401 Corporate Financial Accounting**
- FIN 402 Capital Budgeting and Corporate Objectives*
- GBA 411 Business Modeling*
- GBA 412 Data Analytics*
- OMG 402 Operations Management*
- STR 401 Managerial Economics*
- CIS 401 Information Systems For Management
- MKT 402 Marketing Management

Choose One:

- STR 403 Organization and Strategy
- STR 421 Competitive Strategy

**The first six core courses listed are ideally taken as a cohort; the three remaining courses (CIS401, MKT402, and STR403/STR421) may be completed as non-matriculated courses or as part of the matriculated courses schedule. Core courses should be completed prior to beginning elective courses.

EXAMPLE PROGRAM SCHEDULE
YEAR 1

FALL SEMESTER		SPRING SEMESTER		SUMMER SEMESTER
FALL A TERM	FALL B TERM	SPRING A TERM	SPRING B TERM	
MKT 402 Marketing Management	STR 401 Managerial Economics	FIN 402 Capital Budgeting and Corporate Objectives	OMG 402 Operations Management	CIS 401 Information Systems for Management
ACC 401 Corporate Financial Accounting	GBA 412 Data Analytics	GBA 411 Business Modeling	Elective	STR 421 Competitive Strategy -OR- STR 403 Organization and Strategy

YEAR 2

FALL SEMESTER		SPRING SEMESTER		SUMMER SEMESTER
FALL A TERM	FALL B TERM	SPRING A TERM	SPRING B TERM	
Elective	Elective	Elective	Elective	Elective
Elective	Elective	GBA 401 Elective: Structured Problem Solving (1 credit)	Choose 1 Project Elective (3 credits): MKT 441 Brand Management -OR- FIN 434 Investment Management and Trading Strategies -OR- CIS 461 Strategy and Business Systems Consulting Practicum	Elective
All courses are 2.5 credit hours unless indicated otherwise. Minimum Degree Total Credit Hours: 51.5				

All PMBA students work with their academic advisors to construct a personalized program of study to meet their individual schedule needs.
While the study grids contained in this book are current for the 2019-2020 academic year, the arrangement of courses is subject to change.

PART-TIME MASTER OF SCIENCE IN MEDICAL MANAGEMENT

Management Tools

Simon offers a part-time MS program in Medical Management to provide physicians, hospital administrators, and medical professionals with management tools and an understanding of the key business issues that confront health care providers. The part-time structure of the program allows health care professionals to maintain their career and personal commitments while in the program. The program focuses on developing health care managers and leaders who will be confident in making key financial, operational, and strategic decisions for their organizations.

Logistics and Time Requirements

The program is specifically designed to accommodate the busy schedules of physicians and medical professionals. The program consists of 31 credits and is offered on a part-time basis only.

The medical management student enrolls in a health care-specific class that meets one night per week. During the same term, the student also takes a class on two separate weekends to cover core business concepts.

Curriculum

The curriculum is designed around four core areas of management that are especially relevant to health care:

- Development of marketing and business plans
- Quantifying strategy through financial analysis
- Implementing strategy by efficiently managing operations; and
- Building efficient organizations for the long run, through intelligent work design, performance assessment, and employee incentives.

The curriculum is presented in a unique format that delivers the necessary depth of core business material while simultaneously applying that material to the health care industry. This is accomplished through the pairing of Simon's core courses with health care management courses that develop applications of the core material.

PART-TIME MS MEDICAL MANAGEMENT

<table>
<tr><th colspan="2">FALL SEMESTER</th><th colspan="2">SPRING SEMESTER</th><th>SUMMER SEMESTER</th><th>FALL SEMESTER</th></tr>
<tr><th>FALL A TERM</th><th>FALL B TERM</th><th>SPRING A TERM</th><th>SPRING B TERM</th><th></th><th></th></tr>
<tr><td>HSM 420
Business Economics of the Health Care Industry</td><td>HSM 425
Managerial Accounting for Health Care Organizations</td><td>HSM 452
Health Care Financial Management</td><td>HSM 430
Health Science Management and Strategy</td><td>HSM 437
Managing Health Care Processes</td><td>HSM 455*
Health Care Practicum I
(Fall A Term - 3 credits)</td></tr>
<tr><td colspan="2">HSM 450
Accounting, Economics and Finance for MS Students

HSM 454
Leading Health Care Organizations</td><td colspan="2">STR 403
Organization and Strategy

HSM 451
Health Care Marketing and Business Plan Development</td><td>HSM 464
Creating and Using Information to Manage Health Care</td><td>HSM 456*
Health Care Practicum II
(Fall B Term - 3 credits)</td></tr>
<tr><td colspan="6">All courses are 2.5-credit hours unless indicated otherwise.
Degree Total Credit Hours: 31</td></tr>
</table>

*Students receive a grade of I (incomplete) in these courses which extend into the next term. The incomplete will be replaced with a grade upon completion of the courses.

PHD REQUIREMENTS AND CORE COURSE SEQUENCES

The PhD Program at the Simon Business School is designed to equip students with the necessary analytical skills to carry out high-quality teaching and research in various fields of management. The Simon School confers a PhD in Business Administration. Our major fields of study include: Accounting, Finance, Marketing, Information Systems, and Operations Management.

Students build a firm foundation in economics, statistics, and their specific fields of study. Deeper specialization in coursework occurs in the second year when the students concentrate on their major fields of study. The PhD program is full-time only and consists of a minimum of 90 credit hours to include both coursework and research.

PhD Program Requirements vary by field of study with the exception of the Thesis Proposal and Thesis Defense.

Dissertation Proposal: Students are expected to submit a Thesis proposal paper along with a faculty advisor and committee. The exact form and timing of this proposal is defined by area requirements.

Dissertation Defense Seminar: The University of Rochester Graduate Student Office oversees all the Thesis Defense submissions. The have strict deadlines and policies that must be followed. See the University Graduate Studies Booklet Regulations Concerning Graduate Study, for a detailed description of the Final Oral Examination.

PhD Program Requirements by Field of Study:

Accounting

Required Courses:

AEC 511. Adv. Price Theory

ACC 501. Seminar in Accounting

AEC 514. Game Theory

ACC 510. Accounting Research I

AEC 513. IO Theory

ACC 511. Accounting Research II

AEC 510. PhD Workshop in Applied Economics

ACC 512. Adv. Topics in Acct. Research

AEC 520. Causal inference

ACC 513. Contemporary Topics in Acct.

ECO 484. Intro to Math Stat & Econometrics

FIN 505. Theory of Finance

ECO 485. Intro to Econometrics

FIN 512. Empirical Asset Pricing

ECO 487. Research in Applied Econometrics

FIN 513. Agency Theory

FIN 514. Empirical Corporate

Preliminary Exam: The Accounting Preliminary Exam is given in June at the end of the first year and consists of two parts. The exam is based on questions from the following courses:

FIN 505. Theory of Finance

AEC 511. Price Theory

AEC 514. Game Theory

AEC 520. Causal Inference

First Year Paper: Each student must complete and successfully pass a research-oriented first year paper. The paper is due by September 15th of the second year for Accounting students. The paper will then be presented in AEC510 or in an Accounting Workshop by the end of the fall term of the student's second year.

Qualifying Exam and Second Year Paper: The Accounting Qualifying Exam consists of passing an examination on the second year paper by the end of the fall quarter of the third year. The paper is due by September 15th of the third year for Accounting students. This paper should be an original contribution to the literature in the specific major area. Students are scheduled to present their paper to a selected faculty committee in AEC510 that fall

Finance

Required Courses:

ECO 484. Intro to Math Stat & Econometrics

FIN 505. Theory of Finance

ECO 471. Modern Value Theory I

FIN 511. Continuous Time Theory in Finance

ECO 485. Into to Econometrics

FIN 512. Empirical Asset Pricing

ECO 487. Research in Applied Econometrics

FIN 513. Agency Theory

ECO 472. Modern Value Theory II

FIN 514. Empirical Corporate

AEC 510. PhD Workshop in Applied Economics

FIN 522. Adv. Empirical Asset Pricing

FIN 524. Financial and Economic Networks

Preliminary Exam: The Finance Preliminary Exam is given in June at the end of the first year and consists of two parts.

The exam is based on questions from the following courses:

FIN 505. Theory of Finance

As well as one of the series below based on what courses are offered the first year:

FIN 511. Continuous Time Theory and FIN 512. Empirical Asset Pricing

OR

FIN 513. Agency Theory and FIN 514. Empirical Corporate

The exam is written and evaluated by a faculty committee. The committee will assign a combined grade to the exam for all parts.

First Year Paper: Each student must complete and successfully pass a research-oriented first year paper. The paper is due by October 15th of the second year for Finance students. The paper will then be presented in AEC510 by the end of the fall term of the student's second year.

Qualifying Exam and Second Year Paper: The Finance Qualifying Exam consists of passing an examination on the second year paper by the end of the fall quarter of the third year. The paper is due by September 15th of the third year for Finance students. This paper should be an original contribution to the literature in the specific major area. Students are scheduled to present their paper to a selected faculty committee in AEC510 that fall.

Marketing

Required Courses:

AEC 511. Adv. Price Theory

MKT 505. Marketing Research PhD Wkshp

AEC 513. IO Theory

MKT 511. Core Research Topics Quant. MKT

AEC 514. Game Theory

MKT 512. Quantitative Marketing Research

ECO 484. Intro to Math Stat & Econometrics

AEC 520. Causal Inference

ECO 485. Into to Econometrics

AEC 523. Micro-Econ Model: Static Apr

ECO 487. Research in Applied Econometrics

AEC 524. Micro-Econ Model: Dynamic Apr

Preliminary Requirement: First-year Marketing PhD students will be required to demonstrate proficiency in the topics covered in a specific set of required classes. These courses fall into two categories, Econometrics and Marketing

Econometrics core courses as listed below. This sequence is taken through the University of Rochester Economics department.

ECO 484. Intro to Math Statistics/Intro to Econometrics

ECO 485. Introduction to Econometrics

For these courses, students need to obtain a 3.3 (B+) GPA average. Failure to meet this average GPA indicates not meeting the milestones of the program and can result in being asked to leave the program, retake the courses, or demonstrate sufficient knowledge through other courses or means.

Marketing core courses consist of four different required classes:

AEC 520. Causal Inference

MKT 511. 1st year Core Research Topics in Quantitative Marketing

MKT 511. 2nd year Core Research Topics in Quantitative Marketing

AEC 523 or AEC 524 Microeconometrics Static (or Dynamic) Approaches. At least one of these courses must be taken to demonstrate depth of skills in microeconometrics.

First Year Paper: Each student must complete and successfully pass a research-oriented first year paper. The paper is due by October 15th of the second year for Marketing students. The paper will then be presented in a Marketing Seminar by the end of the fall term of the student's second year.

Qualifying Exam and Second Year Paper: The Marketing Qualifying Exam consists of passing an examination on the second year paper by the end of the fall quarter of the third year. The paper is due by September 15th of the third year for Marketing students. This paper should be an original contribution to the literature in the specific major area. Students are scheduled to present their paper to a selected faculty committee in a Marketing Seminar that fall.

Information Systems

Required Courses:

AEC 511. Adv. Price Theory

MSM 504. Theory of Prob. & Stoc. Proc I

AEC 513. IO Theory

MSM 505. Theory of Prob. & Stoc. Proc II

AEC 514. Game Theory

MSM 511. Advanced Topics in CIS and OM

AEC520. Causal Inference

MSM 522. Optimization

ECO 484. Intro to Math Stat & Econometrics

MSM 542. Queuing Theory and Applications

ECO 485. Into to Econometrics

CIS 511. Research Topics and Methods in IS

ECO 487. Research in Applied Econometrics

Preliminary Requirement: First-year IS PhD students will be required to demonstrate proficiency in the topics covered in a specific set of required classes as listed below:

CIS 511. Research Topics and Methods in Information Systems

MSM 522. Optimization

AEC 513. IO Theory

AEC 514. Game Theory

For these courses students need to obtain a 3.3 (B+) GPA average.

First Year Paper: Each student must complete and pass a first year paper requirement, due by the end of the summer term (August 31st) of their first year. The student must identify two topics of interest in the area of research (business analytics, information systems, or operations). These topics must have the scope for original research. The student is expected to research the literature to find the state of the art in these areas and to properly place the problem in the context. Problem identification and some effort at originality is sufficient for the first year paper. The work for the paper is to be done independently by the student, but the student may seek guidance and feedback from faculty. By September 30th, the student should form and present his/her work to a committee of IS faculty that will grade the first-year paper.

Qualifying Exam: The IS Qualifying Exam consists of students work on two individual research topics in conjunction with the faculty to write two research papers. These two papers are due by May 31st of the end of the second year. By June 30th, the student should form and present his/her work to a faculty committee that will evaluate the papers and the

presentation.

Second Year Paper: The IS Second Year Paper is due by November 30th of the third year. This paper should be an original contribution to the literature in the specific major area and is usually a more in depth version of one of the two papers used for the qualifying exam. The paper should be presented to the committee (formed before the qualifying exam) by January 15th.

Operations Management

Required Courses:

AEC 511. Adv. Price Theory

MSM 504. Theory of Prob. & Stoc. Proc I

AEC 513. IO Theory

MSM 505. Theory of Prob. & Stoc. Proc II

AEC 514. Game Theory

MSM 511. Advanced Topics in CIS and OM

AEC520. Causal Inference

MSM 522. Optimization

ECO 484. Intro to Math Stat & Econometrics

MSM 542. Queuing Theory and Applications

ECO 485. Into to Econometrics

ECO 487. Research in Applied Econometrics

Preliminary Requirement: A committee of OM faculty reviews students after the first year in early June. The expectation is that students would receive B+ or higher in all of their courses. In addition, the expectation is that students would receive A- or higher in the following courses:

AEC 511. Price Theory

AEC 514. Game Theory

MSM 504. Theory of Probability & Stochastic Processes I

MSM 505. Theory of Probability & Stochastic Processes II

MSM 522. Optimization

First Year Paper: By the end of spring term of their first year (May 31st), students should pick two research questions. By the end of summer term (August 31st) of their first year, students should deliver initial drafts of the papers based on the two research questions that would include: a problem statement, initial problem formulation, and a literature review. By September 30th, the student should form and present his/her work to a committee of OM faculty that will grade the first-year paper. Successful completion of the initial drafts and presentation constitutes passing the Preliminary requirement and first-year paper.

Qualifying Exam: The Operations Management Qualifying Exam consists of the student's work on two individual research topics to write two research papers. These two papers are due by May 31st of the end of the second year. By June 30th, the student should form and present his/her work to a faculty committee that will evaluate the papers and the presentation.

Second Year Paper: The Operations Management Second Year Paper is due by November 30th of the third year. This paper should be an original contribution to the literature in the specific major area and is usually a more in depth version of one of the two papers used for the qualifying exam. The paper should be presented to the committee (formed before the qualifying exam) by January 15th.

MBA SPECIALIZATIONS

The current list of specializations offered to our MBA students was re-evaluated to provide more opportunities for students to specialize in areas to better meet requirements of current job markets. The specializations are focused to entry-level MBA positions, have a curricular and co-curricular content, and students will work closely with Admissions, Office of Student Engagement, and Career Management Center for consistent guidance for success in the academic coursework, co-curricular activities, and career goals. STEM designated courses are indicated with an asterisk (*)

CONSULTING SPECIALIZATIONS	FINANCE SPECIALIZATIONS	MARKETING SPECIALIZATIONS
Strategy	Banking	Brand Management
Pricing	Asset Management	Product Management
Technology	Venture Capital & Private Equity	
Operations	Corporate Finance	

CONSULTING SPECIALIZATIONS

Strategy
No required courses

Choose 4:
STR403 Organization and Strategy
*STR422 Game Theory for Managers
*STR423/MKT414 Pricing Policies
STR424 Human Resource Strategy
STR429 Advanced Competitive Strategy
*STR/MKT439 Advanced Pricing
STR440 Corporate Governance
*HSM420 Business Economics of the Health Care Industries

Choose 3, including any from above:
*ACC410 Managerial Accounting and Performance Measurement
*ACC411 Financial Statement Analysis with Data Analytics
CIS415 Business Process Analysis and Design
*CIS418 Advanced Business Modeling and Analysis Using Spreadsheets
GBA435 Negotiation Theory and Practice: Bargaining for Value
*FIN413 Corporate Finance
FIN441F Special Topics in Finance: Corporate Restructuring
ENT423 New Venture Development and Managing for Long Term Success
MKT421 Advanced Marketing Strategy
MKT432 New Product Strategy
OMG413 Operations Strategy
OMG415 Process Improvement
MKT/STR438 B2B Pricing

Pricing
*MKT414/STR423 Pricing Policies

Choose 2:
MKT/STR438 B2B Pricing
*MKT/STR439 Advanced Pricing
*MKT440 Pricing Analytics
*STR422 Game Theory for Managers

Choose 3, including any from above:
*ACC410 Managerial Accounting and Performance Measurement
GBA435 Negotiation Theory and Practice: Bargaining for Value
*HSM420 Business Economics of the Health Care Industries
*MKT412 Marketing Research
MKT421 Advanced Marketing Strategy
STR429 Advanced Competitive Strategy

CONSULTING SPECIALIZATIONS (continued)

Technology

*CIS415 Business Process Analysis and Design
*CIS416 Advanced Information Technology
CIS461 Strategy and Business Systems Consulting Practicum

Choose 3:

*ACC410 Managerial Accounting and Performance Measurement
*CIS/MKT437 Digital Marketing Strategy
*CIS413 Managing Digital Products and Platforms
*CIS417 Introduction to Business Analytics
*CIS418 Advanced Business Modeling and Analysis Using Spreadsheets
*CIS434 Social Media Analytics
CIS440 Digital Business Strategy
*CIS/FIN446 Financial Technology
*OMG411 Supply Chain Analytics
*OMG412 Service Management
OMG413 Operations Strategy
OMG415 Process Improvement
*OMG416 Project Management

Operations

*OMG411 Supply Chain Analytics
OMG415 Process Improvement
CIS461 Strategy and Business Systems Consulting Practicum
*ACC410 Managerial Accounting and Performance Measurement

Choose 2:

*CIS415 Business Process Analysis and Design
*CIS418 Advanced Business Modeling and Analysis Using Spreadsheets
CIS440 Digital Business Strategy
*OMG412 Service Management
OMG413 Operations Strategy
*OMG416 Project Management
STR403 Organization and Strategy
STR424 Human Resource Strategy

FINANCE SPECIALIZATIONS

Banking

*FIN411 Investments
*FIN413 Corporate Finance
*ACC411 Financial Statement Analysis with Data Analytics
*FIN430 Risk Management

Choose 3:

ACC423 Financial Reporting I
ACC424 Financial Reporting II
*BPP426 Macroeconomics
*FIN424 Options and Future Markets
FIN441F Special Topics in Finance: Corporate Restructuring
*FIN/CIS446 Financial Technology
*FIN448 Fixed-Income Securities

Asset Management

*FIN411 Investments
*ACC411 Financial Statement Analysis with Data Analytics
*FIN424 Options & Future Markets
*FIN434 Investment Management & Trading Strategy

Choose 3:

*FIN442 International Economics and Finance
*BPP426 Macroeconomics
*FIN418 Quantitative Finance with Python
*FIN441A Special Topics in Finance: Real Estate
*FIN448 Fixed-Income Securities

FINANCE SPECIALIZATIONS (continued)

Venture Capital and Private Equity

*FIN411 Investments
*FIN413 Corporate Finance
*ACC411 Financial Statement Analysis with Data Analytics
*FIN/ENT444 Entrepreneurial Finance
FIN441B Special Topics in Finance: Private Equity

Choose 3:

ACC423 Financial Reporting I
*CIS413 Managing Digital Products and Platforms
ENT423 New Venture Development and Managing for Long Term Success
*FIN424 Options and Future Markets
FIN441F Special Topics in Finance: Corporate Restructuring
*FIN/CIS446 Financial Technology
STR440 Corporate Governance

Corporate Finance

*FIN411 Investments
*FIN413 Corporate Finance
*ACC411 Financial Statement Analysis with Data Analytics
*ACC410 Managerial Accounting and Performance Measurement
FIN441F Special Topics in Finance: Corporate Restructuring

Choose 3:

*ACC418 Taxes and Business Strategy
ACC423 Financial Reporting I
ACC424 Financial Reporting II
*FIN442 International Economics and Finance
*FIN424 Options and Future Markets
STR440 Corporate Governance

MARKETING SPECIALIZATIONS

Brand Management

*MKT412 Marketing Research
*MKT414/STR423 Pricing Policies
MKT421 Advanced Marketing Strategy
*MKT440 Pricing Analytics
*MKT441 Brand Management

Choose 2:

MKT432 New Product Strategy
MKT433 Advertising Strategy
MKT435 Channels Strategy
*CIS/MKT437 Digital Marketing Strategy
*MKT/STR439 Advanced Pricing

Product Management

*MKT412 Marketing Research
*MKT414/STR423 Pricing Policies
MKT421 Advanced Marketing Strategy
MKT432 New Product Strategy
*MKT440 Pricing Analytics

Choose 2:

*CIS413 Managing Digital Products & Platforms
*CIS417 Introduction to Business Analytics
*CIS/MKT437 Digital Marketing Strategy
ENT423 New Venture Development and Managing for Long Term Success
GBA435 Negotiation Theory and Practice: Bargaining for Value
*MKT/STR439 Advanced Pricing
MKT433 Advertising Strategy
*MKT436 Marketing Analytics
STR403 Organization and Strategy

MBA MINORS

Students will also have the option to complete a minor consisting of 4 courses in areas that are either cross-functional or functional (see chart below). Most functional minors are contained in one or more specializations. Students fulfilling a specialization (e.g., Banking) do not in addition earn the Minor for the respective function (e.g., Finance). Thus, except for Accounting, functional minors are intended for students who do not complete a specialization in the same functional area. STEM designated courses are indicated with an asterisk (*)

CROSS-FUNCTIONAL MINOR	FUNCTIONAL MINOR
Analytics	Accounting
Entrepreneurship	Finance
Leadership	Marketing
Global Business	Consulting: Strategy and Pricing
Health Sciences Management	Consulting: Operations and Technology

MINORS

CHOOSE ANY 4 OF THE COURSES LISTED UNDER EACH MINOR

CROSS-FUNCTIONAL

ANALYTICS

*CIS417 Introduction to Business Analytics
*CIS418 Advanced Business Modeling and Analysis Using Spreadsheets
*CIS432 Predictive Analytics Using Python
*CIS434 Social Media Analytics
*FIN418 Quantitative Finance with Python
*GBA464 Programming for Analytics
*MKT436 Marketing Analytics
*MKT440 Pricing Analytics

ENTREPRENEURSHIP

*ENT422 Generating and Screening Entrepreneurial Ideas
ENT423 New Venture Development and Managing for Long Term Success
*ENT425 Technical Entrepreneurship
ENT432 Basic Business Law
*ENT/FIN444 Entrepreneurial Finance
GBA435 Negotiation Theory and Practice: Bargaining for Value

LEADERSHIP

STR403 Organization and Strategy
STR427 Organizational Behavior
STR440 Corporate Governance
STR442D Leading Organizational Change
GBA435 Negotiation Theory and Practice: Bargaining for Value
GBA441 Business Ethics & Corporate Social Responsibility
GBA442C Elements of Leadership
OMG415 Process Improvement
*STR/MKT438 B2B Pricing

FUNCTIONAL

ACCOUNTING

*ACC410 Managerial Accounting and Performance Measurement
*ACC411 Financial Statement Analysis with Data Analytics
*ACC418 Taxes and Business Strategy
ACC423 Financial Reporting I
ACC424 Financial Reporting II

FINANCE

*FIN411 Investments
*FIN413 Corporate Finance
*FIN418 Quantitative Finance with Python
*FIN424 Options and Future Markets
FIN441F Special Topics in Finance: Corporate Restructuring
*FIN430 Risk Management
*FIN434 Investment Management & Trading Strategy
*FIN441A Special Topics in Finance: Real Estate
FIN441B Special Topics in Finance: Private Equity
*FIN442 International Economics and Finance
*FIN/ENT444 Entrepreneurial Finance
*FIN/CIS446 Financial Technology
*FIN448 Fixed-Income Securities
*BPP426 Macroeconomics
STR440 Corporate Governance

CROSS-FUNCTIONAL
(continued...)

GLOBAL BUSINESS

*BPP426 Macroeconomics
ENT442X International Business (Israel)
*FIN442X International Finance (Switzerland)
*FIN442 International Economics and Finance
GBA442X Doing Business in South Africa
MKT449 Global Marketing Strategy

HEALTH SCIENCES MANAGEMENT

*HSM420 Business Economics of the Health Care Industry
HSM425 Managerial Accounting for Health Care Organizations
HSM/STR430 Health Sciences Management and Strategy
HSM440 Evolving Medical Markets
HSM452 Health Care Accounting and Finance
HSM454 Leading Health Care Organizations

FUNCTIONAL
(continued...)

MARKETING

*MKT412 Marketing Research
*MKT414 Pricing Policies
MKT431 Consumer Behavior
MKT432 New Product Strategy
MKT433 Advertising Strategy
MKT435 Channels Strategy
*MKT436 Marketing Analytics
*MKT437 Digital Marketing Strategy
MKT438 B2B Pricing
*MKT439 Advanced Pricing
*MKT440 Pricing Analytics
*MKT441 Brand Management
MKT444 B2B Marketing
MKT448 Brand Strategy
MKT449 Global Marketing Strategy
MKT451 Consumer and Brand Research
MKT465 Marketing Projects

CONSULTING: STRATEGY AND PRICING

STR403 Organization and Strategy
*STR422 Game Theory for Managers
*STR423/MKT414 Pricing Policies
STR424 Human Resource Strategy
STR429 Advanced Competitive Strategy
STR440 Corporate Governance
STR/MKT438 B2B Pricing
*STR/MKT439 Advanced Pricing

CONSULTING: OPERATIONS AND TECHNOLOGY

*CIS413 Managing Digital Products and Platforms
*CIS415 Business Process Analysis and Design
*CIS416 Advanced Information Technology
*CIS417 Introduction to Business Analytics
*CIS418 Advanced Business Modeling and Analysis Using Spreadsheets
*CIS434 Social Media Analytics
CIS440 Digital Business Strategy
*OMG411 Supply Chain Analytics
*OMG412 Service Management
OMG413 Operations Strategy
OMG415 Process improvement
*OMG416 Project Management

SPECIALIZED-DEGREE PROGRAMS

Simon offers programs that allow students to receive a first-rate business education tailored to their specific needs. In addition to the Full- and Part-Time MBA Programs, a few other opportunities are available to students who wish to pursue coursework within a more specialized context of business management.

EXECUTIVE MBA (EMBA)

The Simon Executive MBA has been specifically designed to help you, the working professional, no matter what your career objectives may be. The unique lockstep curriculum sequence moves you through the initial foundational tools and functional knowledge before culminating in strategic application. There are 15 required courses, three electives, plus two complimentary courses available to customize your study.

For additional information, contact:

Karen Steiner
Director of Executive Programs
Simon Business School
University of Rochester
Box 270107 / 204 Schlegel Hall
Rochester, NY 14627

(585) 275-3148
E-mail: karen.steiner@simon.rochester.edu
Website: http://www.simon.rochester.edu/programs/executive-mba/index.aspx

MD/MBA PROGRAM

Along with Simon, the School of Medicine and Dentistry offers a combined MD/MBA degree program in Health Sciences Management. This program is designed to prepare physician managers who can respond intelligently, effectively, and creatively to the changing health care services industry. Only candidates with exceptional promise and academic records will be considered.

To participate in this program, students must apply to, and be accepted by both the School of Medicine and Dentistry and Simon Business School. Students are also required to take both the MCAT and GMAT/GRE exams. The program takes five years to complete—taken separately, the MD is four years and the MBA is one year. Students start the program at the Simon School for the first-year core courses and the majority of electives, and then move to the MD program on a full-time basis, completing the remaining Simon electives in their third and fourth years of medical school.

For application information, contact:

Pat Samuelson
Director of Admissions
University of Rochester
School of Medicine and Dentistry
601 Elmwood Avenue
Box 601A
Rochester, N.Y. 14642-8603
(585) 275-4542
E-mail: pat_samuelson@urmc.rochester.edu
or
Andrew Brayda
Senior Associate Director of Admissions
Simon Business School
245 Gleason Hall
Rochester, N.Y. 14627-0107
(585) 275-3533
E-mail: andrew.brayda@simon.rochester.edu

TECHNICAL ENTREPRENEURSHIP AND MANAGEMENT (TEAM) MS PROGRAM

The TEAM master's degree program is administered by the Ain Center for Entrepreneurship. This program is designed for students with an engineering, science, or mathematics undergraduate degree, who wish to pursue a master's level technical education in combination with business, entrepreneurship, and leadership courses. The TEAM program can be completed in one academic year. Students may also choose a three-semester program with a summer internship or a part-time option.

Students enrolled in the TEAM program will take half of their classes at the Simon Business School and the other half at the Hajim School of Engineering and Applied Sciences. Students may choose from nine different technical concentrations, which include biomedical engineering, chemical engineering, computer science, data science, energy and the environment, electrical engineering, materials science, mechanical engineering, and optics.

Degree Requirements:

- Five core entrepreneurship management courses which include:
  - One semester long practicum
  - Written business plan and oral presentation
- Three technical elective courses
- One additional technical or entrepreneurship management elective

The depth of knowledge provided by the TEAM curriculum creates well-rounded, business-savvy engineers and scientists who are prepared to take on both the technical and business challenges of any industry in a global world.

For application information, contact:

Andrea Barrett
Executive Director
University of Rochester
Ain Center for Entrepreneurship
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Website: www.rochester.edu/team

INTERNATIONAL EXCHANGE PROGRAMS

We believe a rigorous MBA program can and should be eye-opening on many levels. You will be encouraged to explore and focus as never before to gain a more profound understanding of what business means in the world, the leader you can be, and the impact you create. Part of expanding your understanding of the global business marketplace is to see it up close. We offer international exchange programs in Finland, Germany, and Japan for Spring A of the second year of the MBA program.

PARTNER SCHOOLS:

- Finland: Aalto – Helsinki
- Germany: WHU – Düsseldorf
- Japan: GSIM – Minamiuonuma

DETAILS:

- Tuition cost to the partner school is covered by Simon tuition, including any financial aid received by Simon
- Application process begins in spring of student's first year. Placement is NOT guaranteed, as there is a limit (usually 2 - 3 students per school).
- Students are required to submit academic objectives and a job search plan for while they are away. This includes a mandatory meeting with a CMC Advisor and Academic Advisor. Their application is reviewed in the Spring term.
- Students must be in good standing academically.
- Applications to the partner schools are due in early fall of student's second year.
- Students are responsible for additional costs, including flights, local travel, housing, food, books, university fees, health insurance, and mobile phone carrier.

CREDITS:

- Full course load required (7.5 credits)
- Must receive passing grades at partner institution for transfer credit.
- Course description, syllabus, and transfer petition form all must be submitted to receive credit
- Most of our partner schools have different course credit systems than we do
  - Credit conversion must be watched carefully and calculate individually per school
- There is no transfer fee for international exchange

INTERNATIONAL IMMERSIONS

the destination country, and is focused on one of the core elements of Simon instruction. These immersions break down the ethnocentrism as students discover the infusion of culture and business in the daily practices of alumni, company owners, senior executives and entrepreneurs. International Immersions are set so travel will occur during winter and spring break and will not take away traditional class time.

OUR OPTIONS:

ISRAEL IMMERSION

ENT 442X. INTERNATIONAL BUSINESS PRACTICUM

This course is designed to provide students with a hands-on experiential learning opportunity for global entrepreneurship through a combination of lectures, a real-life business development project and learning about the Israeli entrepreneurial ecosystem. Students will be partnered with an Israeli startup that is looking to expand their markets served by penetrating the US market. The project will include following a consultative model, analyzing the markets and opportunities and presenting their recommendations to the client. Israel has built a stellar reputation for being one of the most innovative countries in the world and has the highest per capita number of startup companies in the world. Their citizens have a perseverant, take-charge approach to business, which has led a vast number of international conglomerates to base their R&D and New Product Development Centers in Israel. This class will introduce students to the Israeli culture and business climate along with multi-national corporations that have moved mission-critical centers and startup venture activities to Israel. The International Business Practicum will introduce students to Israel's history, which will help them understand how Israel came to be what it is today.

**SWITZERLAND IMMERSION*

FIN 442X. INTERNATIONAL FINANCE

This course is designed to give students an immersive experience into Swiss culture, business and international finance. The three elements of this experience are classwork, cultural experiences and company visits. The classwork is taught both in the US and in Switzerland and focuses on elements of international finance and the macro and micro-effects on the Swiss and other international economies. Class sessions are held in Thun and business trips are scheduled to Swiss companies in Bern and Zurich where students hear directly from the company about economic influences discussed in class. Cultural experiences are designed to help understand how the public lives in Switzerland, including historic sites in Lucerne and towns in the Swiss Alps.

**INDIA IMMERSION*

BPP 442X. INTERNATIONAL MACROECONOMICS

Offered every other year, this course is designed to give students an immersive experience into the culture in India, business practices, traditions, and in-India coursework to support experiences. Class sessions held before departure will lay the foundation for monetary and policy effects in India and worldwide, leading to a richer experience when the students are immersed in the culture through company visits, interactions with local business owners and events including meals reflecting their culture. Students will attend classes in Delhi and Mumbai where local alumni and businesses will be encouraged to join, further enriching the experiential learning. The immersion will let the students experience the different business climates in New Delhi, Jaipur and Mumbai, as well as cultural adventures in Delhi and Mumbai, the splendor of the Taj Mahal and the Palace and marketplace in Jaipur.

SOUTH AFRICA IMMERSION

GBA 442X. DOING BUSINESS IN SOUTH AFRICA

Offered every other year, the South Africa International Immersion allows the students to experience corporate and cultural interactions that will change their perspectives on how business is done internationally and allow them to learn how business is done in South Africa. Through a combination of lectures, a real-life business analysis of a community revitalization and company meetings, the students will grow their understanding and appreciation for the cultural and community effect on business in South Africa. Students will examine a revitalized community and compare and contrast this live case study with the Rochester revitalization, presenting their findings to City of Rochester officials. Students will also experience the contrast of a safari and being housed near a watering hole, with the corporate world of Cape Town. Students will travel to Johannesburg, George and Cape Town. In addition to the cultural aspects of the tour, company visits, industry tours and alumni meetings will allow students to apply their learning to engage better with doing business in South Africa.

COURSE DESCRIPTIONS

A course schedule showing offerings, times, and instructors for each term is available from the Simon Registrar's Office prior to the start of each term. STEM designated courses are indicated with an asterisk (*).

■ ACCOUNTING

MASTERS LEVEL COURSES

ACC 401. CORPORATE FINANCIAL ACCOUNTING

Corporate financial accounting is concerned with the form and content of the information firms disclose to external parties (e.g., shareholders). In the United States, financial reporting is based on generally accepted accounting principles (GAAP) set by the Financial Accounting Standards Board (FASB). GAAP define the accounting methods and disclosure practices that firms select from when providing financial statements to external parties. This course covers these principles and other important financial reporting practices. The primary focus of the course is developing the skills required to interpret and analyze financial information, rather than the skills required to prepare financial statements. Upon completion of the course, students will appreciate how financial accounting information is used in contracts between parties (e.g., lenders and the firm) and to evaluate a firm's past performance and potential future performance.

*ACC 410. MANAGERIAL ACCOUNTING AND PERFORMANCE MEASUREMENT

In contrast to the external reporting perspective of Corporate Financial Accounting (ACC 401), Managerial Accounting and Performance Measurement (ACC 410) focuses on strategic decision making within the organization. The course is oriented towards training business professionals to comprehend and utilize their organization's internal accounting system to assist them in strategic decision making. The course provides students with a framework to understand accounting systems, and demonstrates how such an understanding of the underlying cost structures facilitates managers in evaluating profitability of individual products and customers. In addition, the course delves into issues of performance measurement, with special emphasis on the C-suite and the role of corporate governance actors such as the board in effectively monitoring CEO (and CFO) performance.

In addition to covering the basic conceptual principles underlying managerial accounting, the course has a significant data analytics component with MS Excel and Stata being the primary data analysis tools used (the course outline indicates sessions where we will analyze data). Examples of data analytics exercises include – (i) using publicly available financial reporting data (under GAAP) to analyze cost structures for specific industries, companies or macroeconomic cycles, (ii) using publicly available CEO (and CFO) compensation data to analyze the mapping between pay and performance, (iii) studying the role of corporate governance in mitigating "excess" compensation being paid to the CEO (or CFO).

Prerequisites: ACC401 and STR401 or GBA461; STR403 (may be taken concurrently)

*ACC 411. FINANCIAL STATEMENT ANALYSIS WITH DATA ANALYTICS

The objective of this course is to develop and sharpen your analytical ability to use financial information to perform various types of applied economic and financial analysis. Managers formulate a firm's business strategy and make operating, investing, and financing policy decisions to implement that strategy. The outcomes of those decisions are reflected in the firm's financial statements which, along with other financial information, are used by equity and debt analysts, investors, lenders, creditors, bondholders, loan officers, debt-rating agencies, and numerous other external parties to evaluate the firm's current economic performance and to forecast its future economic performance. A key aspect of the course is the link between managers' strategic decisions and the resulting performance that gets reflected in the firm's financial statements. This course develops the analytical and technical skills and related applied analysis techniques required to perform a wide variety of economic analyses using financial information. Among other things, applied financial analysis requires knowledge of the various techniques used to analyze financial information such as common-size and trend analysis, ratio analysis, modeling the predictable cash flow effects of sales growth, models of financial distress, forecasting techniques, valuation models, as well as the ability to select and apply the appropriate techniques in a given economic setting. This course develops your ability to perform economic analysis in a wide variety of real-world settings using a number of different applied financial analysis techniques.

Prerequisites: ACC401 and FIN402

*ACC 417. AUDITING

Auditing principles and procedures are examined. This course includes an analysis of auditing and its relationship with financial reporting with emphasis on the independent accountant's attest function as well as the consideration of ethics, legal responsibility, security, technology, and regulatory influences. In addition, big financial data and the SEC's Idea system will be reviewed. Also, statistical sampling and the role of the internal auditors as well as compilation and review reports are discussed.

Prerequisite: ACC 401

*ACC 418. TAXES AND BUSINESS STRATEGY

The goal of this course is to help students develop the tools required to identify, understand and evaluate tax-planning opportunities, develop a framework for understanding how taxes affect profitability and cash flow implications of business decisions, and develop the data gathering, mathematical and modeling skills needed to maximize the after-tax economic effects of those business decisions. Optimal strategic decision making requires that the often-significant tax consequences of strategic alternatives are effectively and explicitly accounted for. Ignoring the tax consequences of decisions will lead to suboptimal outcomes for the firm's stakeholders. Effective tax planning (e.g., the integration of taxation impacts on strategic decisions) requires the planner to:

- Be able to identify and gather the relevant data to appropriately analyze and evaluate the tax implications of a proposed transaction for all parties to the transaction
- Consider not only explicit taxes (tax dollars paid directly to taxing authorities), but also implicit taxes (taxes paid indirectly in the form of lower before-tax rates of return on tax-favored investments)
- Recognize that taxes represent only one among many business costs: in the planning process, all costs must be considered, including the costly restructuring of the business necessary to implement some tax plans

While the course will introduce key tax rules and laws in areas where taxes typically play a large role in strategic alternatives, memorizing detailed tax laws and becoming a tax specialist is not a goal of the course. Tax rules and laws change over time and from jurisdiction to jurisdiction. Rather, it is a goal of this course to provide future managers with an analytical, mathematical, modeling and conceptual framework to incorporate tax rules into the strategic decision making process, regardless of the particular tax laws in effect at any given point in time or in any particular taxing jurisdiction.

After establishing a fundamental tax planning framework using the themes referenced above, the learning objectives of this course are, using differential equations, present value concepts and modeling software, to operationalize the established conceptual framework to real-life business decisions such as:

- Alternative investment opportunities
- Capital structure
- Compensation planning
- Organizational form
- Asset pricing
- Tax arbitrage
- Mergers and acquisitions
- Maximizing value of tax attributes
- International tax planning for multinational ventures

Prerequisites: ACC 401 and FIN 402

*ACC 419. POSITIVE ACCOUNTING RESEARCH CONCEPTS AND EMPIRICAL ANALYSIS TOOLS

This course is designed to expose students to the conceptual role of financial accounting information in capital markets and to the analysis techniques used to document key empirical evidence in this research area. This is accomplished by surveying select areas of accounting research, introducing research design concepts, and by using statistical database tools to replicate key accounting research findings using actual financial accounting data.

Prerequisite: ACC401

ACC 423. FINANCIAL REPORTING I

This course acquaints students with the conceptual and practical problems in measuring revenues and expenses, assets and liabilities. The principal objective is to make students proficient in assessing the financial position of a company, its cash flow, liquidity, capital structure, hidden liabilities, and reserves through an understanding of generally accepted accounting principles (GAAP). The course provides a practical overview of the structure of accounting and its relation to finance and economics that should continue to be valuable as the accounting environment changes.

Prerequisites: ACC 401 and FIN 402

ACC 424. FINANCIAL REPORTING II

This course addresses the accounting for mergers and acquisitions, foreign operations, and derivative financial instruments. Emphasis is placed on developing an appreciation of the forces shaping accounting, including the effects of organizational arrangements, information and taxes. The interdependency of the accounting methods, organizational structure, and tax decisions are investigated.

Prerequisites: ACC 401 and FIN 402

ACC 433. ADVANCED BUSINESS LAW AND ETHICS

(Same as BPP 433, a continuation of BPP 432)

Topics include: bankruptcy, real property, personal property, sales, secured transactions, negotiable instruments, insurance, trusts and estates and consumer protection. This course also includes discussions of ethics and professional responsibilities.

Prerequisites: BPP 432

ACC 436. RESEARCH INTO PROFESSIONAL ACCOUNTING STANDARDS

This course will cover the conceptual framework for standard-setting established by the Financial Accounting Standards Board (FASB). It will also review how to research financial accounting and reporting issues using the FASB Accounting Standards Codification. The research of financial accounting and reporting issues will be applied to professional accounting decisions in financial reporting, disclosure and other accounting decision making. In addition, a comparison of US Generally Accepted Accounting Principles (US GAAP) and International Financial Reporting Standards (IFRS) will be included. The course concludes with a review of the impact of governmental and not-for-profit accounting standards on financial reporting.

Prerequisites: ACC 401 and ACC 423

ACC 437. BASIC FEDERAL INCOME TAX ACCOUNTING - INDIVIDUAL

This course will introduce the federal tax system in the United States and will focus on specifics of federal tax code. It will provide an overview of individual income taxes. Detailed topics will include, but are not limited to, gross income, deductions for adjusted gross income, deductions from adjusted gross income, taxable income, certain tax credits, recognition of gains and losses. Skills will be developed to research the tax issues and determine the proper reporting.

Prerequisite: ACC401 or equivalent

*ACC 438. AUDITING II—AUDITING AND INFORMATION SYSTEMS

This course will focus largely on Sarbanes-Oxley compliance and internal control systems. Internal control systems will be covered in depth, with focus on internal controls in an information technology (IT) environment. The IT environment will be discussed from the perspectives of designing effective internal controls and auditing in an IT environment. The function of the internal audit department will be covered, as well as how external auditors can work with internal auditors.

Prerequisites: ACC 401

*ACC 439. ACCOUNTING ANALYTICS FOR FORENSICS

According to the Kroll Global Fraud Report, 69% of business surveyed report suffering a financial loss as a result of fraud. This course is designed to give students skills in the area of fraud investigations. This course will delve into the analytical methodologies used during forensic accounting investigations and expose the student to how access and excel can be used in conjunction with analytics to provide evidence required in forensic accounting investigations. Throughout the different analytical topics, access and excel will be used.

ACC 440. BASIC INCOME TAX – BUSINESS ENTITIES AND GIFT/ESTATE TAXES

This course will introduce the federal tax system in the United States and will focus on specifics of federal tax code. It will provide an overview of tax partnership, corporate, gift and estate taxes. Detailed topics will include, but are not limited to, gross income, taxable income, recognition of gains and losses, transactions between partners, Subchapter S Corporations, gift tax and estate tax. Skills will be developed to research the tax issues and determine the proper reporting.

Prerequisite: ACC401 or equivalent

ACC 445. MANAGERIAL ACCOUNTING FOR HEALTH CARE ORGANIZATIONS

(Same as HSM 425)

Costs for health services continue to rise faster than overall economic growth drawing ever-greater attention from employers, governments, and consumers. The front line of the cost battle is within the health services entities where decision making depends on accurate reporting of internal costs. This course focuses on how costs are reported and how to use this information to make decisions within the health

services entity. The following topics will be examined within a health services setting: cost allocation, cost-volume-profit analysis, budgeting and variance analysis, and transfer pricing.

PHD COURSES

ACC 501. SEMINAR IN ACCOUNTING

(First-year PhD students are graded on a P/F basis. Second-year and later students receive a letter grade.)

A forum for the presentation, discussion, and critique of current accounting research papers where accounting faculty, PhD students, and outside speakers present working papers on current research topics. Students are expected to actively participate in the discussion and critique of the papers presented. In weeks when accounting workshops/seminars are scheduled, accounting PhD students will meet as a group with a member of the accounting faculty before the seminar to discuss the paper. Since such meetings are designed to facilitate students' active participation in the seminars, students are required to circulate a brief set of comments to the other class participants in advance of the meeting. Grading will be based on the quality of students' contributions to the pre-seminar meetings as well as their contributions and participation in the actual workshops.

ACC 510. ACCOUNTING RESEARCH I

The natural starting point for the study of capital markets research in accounting begins with the relationship between accounting earnings and security returns. This course covers the evolution of research on the earnings-return relation from the seminal papers up through current research. Topics covered include the fundamental features of the contemporaneous earnings-return relation, the nature of association-type and event study-type investigations of the contemporaneous earnings-return relation, evidence on the lead-lag relation between security returns and accounting earnings, the asymmetric timeliness of accounting earnings, theoretical and empirical research on the role of conservatism in accounting earnings, international research on the characteristics and properties of the earnings-return relation, and capital market research on financial analysts' earnings forecasts and stock recommendations. The course also covers the role of accounting information in corporate governance as well as how accounting interacts with the political process. Given the turnover of course materials from year-to-year, students are required to enroll in ACC 510 each year they are in residence.

ACC 511. ACCOUNTING RESEARCH II

This course covers a broad array of research topics currently being addressed at the interface between empirical research in accounting and finance. To reflect such research, the topics covered in the course change considerably from year-to-year. The course's objectives and strategy consist not only of framing the state of the current debate in various areas of the literature, but also of identifying unaddressed and/or under-researched topics and issues. Topics covered recently by the course include the aggregate earnings-returns relation; cross-firm information transfers; the role of accounting information in debt and equity markets; voluntary disclosure strategies; the role of information intermediaries, such as the media, in the production of accounting information; and the role of economic uncertainty in the production and pricing of accounting information (among others). Given the turnover of course topics from year-to-year, students are required to enroll in ACC 511 each year they are in residence.

Prerequisite: ACC 510

ACC 512. ADVANCED TOPICS IN ACCOUNTING RESEARCH

This course (along with ACC 513) is the next step in the sequence of accounting seminars taken by the Ph.D. students. ACC 512 builds on the "classics" covered in prior seminars by applying the insights to topical areas of research interest. It focuses on international aspects of accounting research, such as the interaction between country-level institutional features and financial reporting outcomes, cross-border information flows, harmonization of financial reporting standards and its implications for actual outcomes (both reporting and economic). Given the turnover of course topics over time, students are required to enroll in ACC 512 each time the course is offered. This course alternates with ACC 513.

Prerequisites: ACC 510 and ACC 511

ACC 513: CONTEMPORARY TOPICS IN ACCOUNTING RESEARCH

In contrast to the international focus of ACC 512, ACC 513 focuses on the U.S. setting and in particular on new/emerging theories in financial economics. The course seeks to stimulate discussions on the implication of these theories for accounting research. Recent versions of the course focused on the feedback-effect of stock prices, where managers not only impound information into the stock price but also learn new information from their firms' stock prices; and on asset-pricing anomalies and the role of financial accounting information in mitigating or exacerbating the prevalence of these market-pricing "irregularities". Given the turnover of course topics over time, students are required to enroll in ACC 513 each time the course is offered. This course alternates with ACC 512. Prerequisites: ACC 510 and ACC 511

Prerequisites: ACC 510 and ACC 511

■ APPLIED ECONOMICS

PHD COURSES

AEC 505. REAL ANALYSIS

The course introduces mathematical tools especially useful in economics, econometrics, and finance. Topics include a basic topology of the real line, sequences and series, limits, continuity, differential and integral calculus. Offered in the summer, primarily for entering doctoral students.

AEC 506. PROBABILITY THEORY

This course teaches Random Variable, Distribution, Independence; Transformations and Expectations; Common Families of Distributions; Multiple Random Variables, and Markov Chains. Offered in the summer, primarily for entering doctoral students.

AEC 510. PHD WORKSHOP IN APPLIED ECONOMICS

The workshop provides a forum for the presentation of ongoing and completed research projects by PhD students in the economics core. Third- and fourth-year PhD students are expected to participate actively.

Prerequisite: permission of the instructor

AEC 511. ADVANCED PRICE THEORY I

Provides a survey of the substance and methods of contemporary price theory for students preparing to do research. Generally, the course covers the economic behavior of individuals and firms in a competitive market setting. Individual behaviors examined include responses to price and income changes, intertemporal planning (e.g., saving), household production, labor supply, investment in human capital, search, and reactions to uncertainty about future assets and goods prices. For firms, the implications of value-maximization for input demands and output supplies are explored thoroughly. Managerial choices related to multiple products, intertemporal production planning and uncertainty are explicitly modeled. Some extensions to monopoly behavior are considered. Finally, some implications of consumer and competitive firm behavior for industry (single market) and general equilibrium are examined. These include (for industry equilibrium) the technological determinants of industry responses (entry-exit, quantity changes, price changes) to economic shocks such as shifts in demand for the industry's product. For general equilibrium, the first and second welfare theorems will be covered. This course follows the semester schedule.

AEC 513. INDUSTRIAL ORGANIZATION THEORY

This course provides an introduction to the theory and practice of industrial organization. Broad areas of application include static oligopoly models, two-stage games and games with infinite horizons. Concepts from game theory such as Nash equilibria, subgame perfect equilibria, and perfect Bayesian equilibria will be used as needed. Special topics may include: contracts, patents, licensing, bundling, tying, buyer-seller networks, switching costs, price discrimination, mergers and entry barriers.

AEC 514. GAME THEORY

This course teaches the tools of game theory and contract theory, and applies them to topics in industrial organization, organizational economics and other areas. Game theory is the study of strategic interaction among a small number of decision-makers. Nowadays, it is applied in almost any area of economics, as well as in related disciplines such as finance, accounting, marketing, and operations research. Contract theory is concerned with the optimal design of contracts (and at a larger scale, organizations) that define the "rules of the game" under which agents (such as a firm's employees) interact. In this sense, it can be thought of as an extension of game theory. Contract theory is the methodological basis of much of modern organizational economics, but its methods are applied in many other contexts, too notably, finance. The course is organized by concepts and methods, but most time will be spent on applying them to a large variety of topics.

AEC 520. CAUSAL INFERENCE

The course will cover how to design compelling research, the focus of which is causal inference. The course covers the design of true experiments and concepts of validity (internal validity, external validity, replicability). The approach should follow the Rubin potential outcomes framework. The course then covers causal inference and related econometric methods in observational studies for cross-sectional, panel data, and time-series, and non-linear models including OLS, instrumental variables, heckman selection models, regression discontinuity designs, matched sample designs, granger causality, event studies, diff-in-diff, fixed effects, clustering standard errors, dynamic panel methods (e.g., Blundell and Bond 1998), and some issues in logit/probit/multinomial logit. Although the course will discuss many econometric techniques, the exception should be that students have already learned the mechanics of these methods, so that focus is on causal inference and its limitations in these methodologies.

AEC 523. MICRO-ECONOMETRIC MODELING: STATIC APPROACHES

This course introduces students to canonical modeling approaches for analyzing decision making by both firms and consumers, focusing on static environments. Central topics include demand estimation, models of strategic interaction, networks and platforms and auctions. Applications include firm pricing decisions, new product introductions, strategic entry and vertical relationships. The course generally includes coding assignments and student presentations, in addition to the weekly lectures on methods and applications.

AEC 524. MICRO-ECONOMETRIC MODELING: DYNAMIC APPROACHES

This course examines consumer and firm behaviors that involve inter-temporal trade-offs and as a result involve dynamic optimization on the part of both consumers and firms. It begins with an overview of dynamic programming methods, in both single and multi-agent settings, emphasizing methods that link estimation with computation. Single agent topics include models of capital replacement, dynamic demand, inventory models and salesforce management. Multi-agent topics include strategic innovation, learning by doing, demand smoothing, and product repositioning. A strong emphasis is placed on recent methods and frontier topics. The course generally includes coding assignments and several student presentations, in addition to weekly lectures.

■ APPLIED STATISTICS

MASTERS LEVEL COURSES

APS 425. ADVANCED MANAGERIAL DATA ANALYSIS

The objective of this course is to provide a systematic way to organize and make use of quantitative information in business decision-making. The course builds on what students have learned in introductory statistics, extending that knowledge to include the situations frequently encountered in decision-making.

Prerequisites: GBA 412 or GBA 462

■ BUSINESS COMMUNICATIONS

MGC 401/461. PROFESSIONAL COMMUNICATION: PERSUASION IN BUSINESS RELATIONS

This course establishes the conceptual foundation and the learning method for the MGC sequence. It anchors the course in two conceptual frameworks: the rhetorical principles of logic and persuasion, and the interactional approach to communication in groups and professional relationships. It introduces the teaching model for the course: speaking and writing assessments, case analyses and discussion, successive rounds of business presentations and writing assignments, and repeated practice in active listening, and giving and receiving performance feedback.

MGC 402 INFLUENCE IN INTERPERSONAL INTERACTIONS

This course applies the concepts of persuasive communication to a widened range of workplace settings, including team projects in business case analysis and persuasion for decision makers; one-to-one and multi-party negotiations; and managerial interactions employing feedback for skill development and improved performance. The course culminates with identification of goals for improving individual communication competency as related to career progress.

■ BUSINESS ENVIRONMENT AND PUBLIC POLICY

MASTERS LEVEL COURSES

*BPP 426. MACROECONOMICS

Macroeconomics is the study of how economies grow and fluctuate over time, and how they interact with one another. In this course, we discuss economic measurement, economic growth, and the business cycle. We also discuss the implication of modern theories of growth and fluctuation for the conduct of monetary policy and fiscal policy. There is a strong emphasis on the international linkage among economies and the implications of macroeconomics for the business environment.

BPP 431. LEGAL AND TAX CONSIDERATIONS OF NEW VENTURES

(Same as ENT 431)

(Offered at the discretion of the instructor)

This course surveys, from the entrepreneur's perspective, legal and tax considerations that impact strategic choices in organizing, funding, staffing, governing, and operating new ventures. The course's principal focus is on how to create and retain competitive advantage through the skillful ordering of legal affairs. Emphasis will be transactional and include analysis of such issues as the creation and protection of intellectual property, technology licensing, global expansion, and internet commerce. The course will include, as a context for applied learning, a term project involving the creation and evolution of a selected new venture opportunity.

BPP 432. BASIC BUSINESS LAW

(Same as ENT 432)

This course surveys the law of contracts, agency, and business associations – with the objective of developing familiarity with selected laws, regulations, legal principles, and legal processes that govern (a) efficient exchange, generally; and (b) how and in what ways managers and entrepreneurs organize and interact to facilitate exchange. Although emphasis will be on United States law, there will be selected reference throughout the course to issues related to international transactions and to pertinent differences in legal systems of countries outside the United States. The course has a distinct transactional focus, with heavy reliance upon contemporary cases, commercial practices, and issues. Particular attention will be given to the impact of the legal framework upon sound managerial decision-making, business risk management, commercial rights and responsibilities, and ultimately business valuation.

*BPP 442. INTERNATIONAL ECONOMICS AND FINANCE

(Same as FIN 442)

Topics include: theories of international trade; exchange-rate regimes; the determination of exchange rates in a world of flexible exchange rates; the Euromarkets; the pricing of assets in open economies; international financial management and the theory of multinational corporations; foreign exchange exposure; analysis of currency forward, future, option and swap contracts; capital budgeting for foreign projects; and financing international trade.

Prerequisite: FIN 402

Recommended: FIN 411

BPP 442X. INTERNATIONAL MACROECONOMICS & INDIA IMMERSION

Offered every other year, this course is designed to give students an immersive experience into the culture in India, business practices, traditions, and in-India coursework to support experiences. Class sessions held before departure will lay the foundation for monetary and policy effects in India and worldwide, leading to a richer experience when the students are immersed in the culture through company visits, interactions with local business owners and events including meals reflecting their culture. Students will attend classes in Delhi and Mumbai where local alumni and businesses will be encouraged to join, further enriching the experiential learning. The immersion will let the students experience the different business climates in New Delhi, Jaipur and Mumbai, as well as cultural adventures in Delhi and Mumbai, the splendor of the Taj Mahal and the Palace and marketplace in Jaipur.

■ COMPETITIVE AND ORGANIZATIONAL STRATEGY

Michael Raith, *Area Coordinator*

MASTERS LEVEL COURSES

*STR 401. MANAGERIAL ECONOMICS

The primary objective of the course is to train students to think in economic terms, to identify the relevant economic issue in a given situation, to separate the relevant from the irrelevant, and to analyze the implications of alternative actions. Another objective is to provide an increased understanding of markets. The course presents the basic analytical tools of microeconomics, particularly as those skills are relevant to managers. Important economic concepts used in subsequent courses, such as opportunity costs and a Nash Equilibrium, are covered. Applications of marginal analysis are stressed.

STR 403. ORGANIZATION AND STRATEGY

This course teaches how to approach and solve a wide range of organizational design problems, whether as manager at any level, entrepreneur, or consultant. In a world in which most sources of competitive advantage are fleeting, organizational effectiveness has emerged as a key source of long-run competitive advantage. Conversely, many corporate failures can be traced to poor internal organization. Problems covered range from individual job design to the structure of entire organizations and the boundaries of the firm (e.g., M&A decisions or vertical integration). The course discusses in detail the assignment of decision rights (including centralization vs. decentralization of decisions), performance measurement, and incentives and rewards. These are the three elements of "organizational architecture," a central framework of the course. Throughout, the course stresses the importance of fit between a firm's internal organization and its strategy. The course adopts an analytical-economic perspective grounded in agency theory, motivated by a wealth of evidence that people respond to incentives (very broadly defined) in predictable ways. That said, it does not reduce organizational problems to economics, but addresses their managerial and behavioral dimensions too, drawing on insights from psychology and sociology as appropriate.

Prerequisite: STR 401 or GBA 461

STR 421. COMPETITIVE STRATEGY

Competitive strategy deals with the most significant decisions that companies make in the marketplace, including entry into a market, product positioning, pricing, investments, technology choice and acquisitions. This course provides tools and concepts for analyzing these decisions and for designing business strategies that help firms make above-normal profits in the long run. Throughout the course, there is an emphasis on how firms interact with existing or potential competitors and other parties in the market. The tools and concepts used to understand this interaction are partly those of the traditional field of Strategic Management, but more importantly those of modern microeconomics, especially the field of Industrial Organization.

The first half of the course looks at the "big picture" and covers industry analysis, value creation and competitive advantage, and integration and diversification decisions. The second half of the course focuses on strategic interaction among firms, and covers specific topics such as the dynamics of price competition in oligopolies, commitment strategies of firms, entry and exit, networks and standards, and technological competition. The course is largely case-based. About one third of all classes are lectures; the other two thirds are case discussions.

Prerequisite: STR 401

*STR 422. GAME THEORY FOR MANAGERS

This course develops game-theoretic tools that can be used to provide both quantitative and qualitative prescriptions for profit-maximizing behavior in a variety of strategic settings. The basic concepts are introduced through applications to strategic settings that one encounters in typical business situations. However, the game-theoretic concepts themselves are quite general, as the goal of the course is provide students with both an understanding of these concepts, and a tool kit with which to evaluate a broad range of strategic problems. The set of strategic problems specifically discussed includes the pricing of new and existing goods in the presence of substitutes and complements, determining advertising and R&D expenditures, analyzing market entry, exit, and entry deterrence opportunities, and evaluating bargaining and auction environments. Extensive use is made of examples from both private- and public sector analyses of strategic interactions among firms.

Prerequisite: STR 401 or GBA 461

*STR 423. PRICING POLICIES

(Same as MKT 414)

This course prepares future managers to analyze the environment in which their firm operates in order to arrive at an appropriate pricing policy for their products or services. Topics include (i) relevant costs (i.e., which costs are relevant for pricing decisions), (ii) elasticity of demand, and (iii) market segmentation (e.g., through the offering of a product line, or by means of bundling, tying, menus of two-part tariffs, quantity discounts, and other direct and indirect means of price discrimination). The course will also cover essential pricing analytic tools such as break-even analysis and economic value analysis, and it will provide a solid introduction into the pitfalls of pricing in a competitive environment and how to anticipate competitor responses. Lastly, the course will cover the legal aspects of pricing as appropriate.

Prerequisites: STR 401 or GBA 461 and MKT 402

STR 424. HUMAN RESOURCE STRATEGY

This course analyzes human resource issues within the context of the firm's overall business strategy. The course is designed for general managers and is not limited to HR specialists. It presents an overview and analysis of the human resource function. It uses basic economic principles and concepts to study traditional human resource topics including hiring standards, employee selection, training and development, performance evaluation, compensation, unions, labor and employment laws, teams, diversity and the role of HR in business strategy. While these topics are standard, our treatment deviates from the distinctly non-economic approach adopted in much of the research and teaching in human resource management. The course, however, includes discussion of the implications of research in behavioral economics and psychology, which focuses on notions of fairness, equity, morale, trust, employees' needs, and corporate culture.

Prerequisite: STR 401 or GBA 461

Recommended: STR 403

STR 427. ORGANIZATIONAL BEHAVIOR

This course presents behavioral concepts that influence individual, group, and organizational effectiveness. Particular emphasis is given to motivation, culture, globalization, leadership, group dynamics, communication, organizational structure and change. Students develop ways of thinking about organizational problems to increase individual and organizational effectiveness. Multiple stakeholder perspectives and systemic approach to organizational problems are emphasized.

STR 429. ADVANCED COMPETITIVE STRATEGY

This course builds on STR421 to train students in conducting and communicating strategic

analysis. The course provides an end-to-end methodology for evaluating and developing business strategy. Students learn and practice framing an unstructured strategic challenge, constructing workable questions, collecting and evaluating the required evidence and formulating strategic recommendations. The course is split between work on a term-long project, lectures, and case studies.

Prerequisite: STR 421

STR 430. HEALTH SCIENCES MANAGEMENT AND STRATEGY

(Same as HSM 430)

This course applies the principles of organizational economics and strategy to the institutional setting of health sciences. The course focuses on the interdependence between the delivery, financing, and technology sectors of the health care marketplace. It discusses how management and strategy choices within each sector are responses to the unique institutional factors in the health care marketplace and how the strategies of each sector affect the behavior of the others. Students will leave the course with an ability to think productively about management and strategy challenges within each of the three health science sectors.

Prerequisite: STR 401 or GBA 461

Recommended: STR 403, STR 421

STR 438. B2B PRICING

(Same as MKT 438)

Students will learn the major differences in pricing strategies between selling to consumers (STR 423) and to other firms, which then deal with consumers. The course starts by analyzing the pricing problem of a manufacturer selling to a retailer. We examine the issue of double marginalization, and learn how two-part tariffs get us out of this problem. We also examine different forms of contractual relations—from vertical acquisitions to regular short-term contracts—and potential issues with every form, touching on transfer pricing and outsourcing. In the second part of the course, we analyze a crucial concept of cost pass-through (how much a retailer should decrease the retail price in response to a decrease in the wholesale price) and the effect of manufacturer's advertising on the retailer and on the channel overall. This course is a natural continuation of STR 423 Pricing Policies for those who are interested in working in an industry where a significant portion of sales is done through independently-owned retailers, whether students are planning on working on the retailer side or on the manufacturer side of this industry.

Prerequisite: STR 423

*STR 439. ADVANCED PRICING

(Same as MKT 439)

This course builds on MKT 414/STR 423 to equip students with the skills to make profitable pricing decisions in complex business environments. Topics include: pricing with constrained supply and uncertain demand; markdown management; advance selling; pricing on the internet; selling through auctions; pricing in markets with (direct and indirect) network effects; and psychological aspects of pricing.

Prerequisite: MKT 414 or STR 423

STR 440. CORPORATE GOVERNANCE

A firm's corporate governance is an important determinant of its cost of raising funds in capital markets and firm value. The course begins with an overview of corporate governance systems, basic concepts, internal control processes and the current regulatory environment. Subsequent discussions and analyses focus on the decision authority and incentives of the three major players in corporate governance: the board of directors, shareholders, and top management. Other watchdogs, such as auditors, stock analysts, bond-rating agencies, the SEC and attorneys are considered. While the course focuses on large publicly traded companies in the United States, it also provides an introduction to corporate governance issues outside the United States and in private startup companies and nonprofit organizations. The basic principles developed in the course are relevant to a wide range of organizations. Students are exposed to various case studies and contemporary examples that highlight major issues in corporate governance.

Recommended: STR 403 and or FIN402

STR 442D. LEADING ORGANIZATIONAL CHANGE

This course focuses on organizational culture change, personal branding, and leadership development. Two distinct facets of organizational change are covered: what leaders must do personally to lead positive change and what organizations must do to sustain profitable change. Students will work in teams where they will conduct a consulting project with an organization of the team's choice. In addition, students will be guided on a personal journey to create clarity on the core values that make up their personal brand of leadership.

Prerequisite: permission of the instructor

STR 442E. STRATEGY BEYOND MARKETS

In this course, you will develop a framework for constructing non-market strategies and integrating them with market strategies. It will cover a broad range of topics, including the legislative process, regulation, activism, corporate social responsibility, and crisis management. It will also study the special challenges facing global firms and innovative firms. Class sessions will be highly interactive and will emphasize the real-world applicability of the frameworks and theories we discuss in class.

STR 442F. STRATEGY, ORGANIZATION, AND FIRM VALUE

Finance professionals are playing increasingly important roles in strategic and business decision making, corporate restructurings, going private transactions, active investing, venture capital financing, mergers and acquisitions, business valuations and other activities that require a basic understanding of corporate strategy and organization. In addition to having basic finance and modeling skills, today's finance professionals must understand how firms create value and the circumstances under which they can earn superior economic returns. This course, which is designed specifically for finance masters students, introduces students to important concepts and tools related to strategy, such as industry analysis, sources of competitive advantage and business models. The course also introduces students to economic concepts concerning internal organizational policies (e.g., corporate divisional structure, performance evaluation and compensation). Finance professionals must have knowledge of the concepts covered in this course for properly valuing businesses and investment opportunities and for engaging in many other professional activities, such as corporate restructurings and active investing.

Prerequisite: permission of the instructor

STR 461. STRATEGY AND BUSINESS SYSTEMS CONSULTING PRACTICUM

(Same as CIS 461 and OMG 461)

This course provides an introduction to strategy and business systems consulting. It is primarily aimed at those exploring career opportunities in consulting but will also help students become savvy consumers of consulting services. It includes a live project helping a client at a real organization answer an important question or achieve a sig¬nificant business objective. Student teams work together to deliver a set of well- reasoned impactful recommendations based upon thoughtful analysis of the relevant facts. In this way students consolidate their understanding of the problem solving approaches introduced in GBA401 through experiential learning.

In addition, a mix of cases, readings, lectures, class discussions, and guest speakers are used to deepen students' knowledge of consulting and to help them enter the industry and hit the ground running. Students who fully participate in these activities will gain understandings of

- The sectors in the consulting industry and the positioning of the major consulting firms
- How consulting services are marketed and sold as well as how consulting firms are managed
- The importance of relationship building, the role of professionalism, the attributes of successful consultants, and how these elements play into how firms evaluate candidates for the typical post-MBA roles in the industry.

■ COMPUTERS AND INFORMATION SYSTEMS

MASTERS LEVEL COURSES

*CIS 401A/B. INFORMATION SYSTEMS FOR MANAGEMENT PART A & B

This course focuses on the theoretical foundations underlying management information systems and their vital role in the modern business environment. Topics include: information economics; innovative models of e-business and the impact of the Web on organizational transformation; the nature and operation of large-scale-enterprise in-formation systems; database and knowledge management systems; data communications; electronic commerce; business process re-engineering; and information-systems analysis, design and control. The strategic and economic impacts of competitive information systems are emphasized. Assignments and cases introduce students to modern quantitative business modeling concepts and analysis, and to sophisticated business applications of the Web and databases.

*CIS 413. MANAGING DIGITAL PRODUCTS & PLATFORMS

This course draws on a mix of concepts from economics, strategy, and technology to frame and understand issues relating to the management of digital products, services, and platforms. It is targeted at students who wish to pursue product management or similar roles in technology firms, or in firms that invest in technology companies. The course focuses on the interconnections between technology, business models, and user experience. Topics covered include the economics of digital products, innovation, platform architecture, design, monetization, and growth.

Prerequisites: CIS 401 and STR 401 or GBA 461

*CIS 415. BUSINESS PROCESS ANALYSIS AND DESIGN

This course studies the analysis, design, and automation of business processes. The course teaches system-modeling tools appropriate for the analysis and design of business processes and information systems. These tools are applied to electronic commerce ventures, the design of various service processes, logistics, and R&D activities. Key features of the course are: modern process analysis techniques, the study of cutting edge research results on work organization and design, and an introduction to rapid prototyping of new information systems. The course includes a comprehensive team-based field project involving a real business process. This project requires the application of the concepts and techniques taught in the course.

Prerequisite: CIS 401

*CIS 416. ADVANCED INFORMATION TECHNOLOGY

Information has become increasingly important to the modern corporation for conducting operations, improving efficiency, and maintaining competitiveness in rapidly changing markets. Effective use of information technology (IT) involves knowledge of the existing capacities, awareness of how information technology is changing, and imaginative use of the technology to enhance business performance. The course contains a broad coverage of trends in IT development (e.g., hardware, software, systems architecture, networks, security, etc.), and how these components can be used for new business applications. The emphasis is not on the technology, but rather on managerially evaluating its usefulness for solving business problems. Topics to be covered include: client-server architecture, data warehousing, data mining, decision support, enterprise resource planning, knowledge-based systems / artificial intelligence, networks and security, object-oriented and Web-based programming languages, and technology for project managers. All students are required to complete a group project on the business implications of these technologies. They have to look at these technologies from the perspective of a business consultant who needs to understand how to match the right technology with his or her customers' business problems.

Prerequisite: CIS 401

*CIS 417. INTRODUCTION TO BUSINESS ANALYTICS

This course covers the emerging field of business analytics (BA) or 'data mining' and expands and develops the students' analytical tool kit in analyzing massive data sets. Using case studies and hands-on data sets, students will learn advanced data query techniques, data cleaning and organization, explore various machine learning techniques including supervised and unsupervised classification schemes, text classification, clustering techniques as well as predictive analytics. Students will gain hands-on experience with a variety of software tools, including SQL, SAS, R, Tableau, and Weka – an open source platform for data mining.

Prerequisite: GBA 412 or GBA 462

*CIS 418. ADVANCED BUSINESS MODELING AND ANALYSIS USING SPREADSHEETS

The course expands and develops students' analytical tool kit through "hands on" training in the effective use of spreadsheet-based tools for advanced managerial analysis. Students perform quantitative analysis of advanced problems in options pricing, investments, corporate finance, marketing, and operations. The course enhances and reinforces the analytical skills developed in earlier MBA classes such as formulating and solving large-scale business problems using quantitative models, risk simulation and sensitivity analysis. Spreadsheet tools introduced in this class include Visual Basic for Applications (V.B.A.) and stochastic optimization using Optquest. Students who successfully complete the course should possess cutting-edge skills in spreadsheet business modeling and analysis.

*CIS 432 PREDICTIVE ANALYTICS USING PYTHON

This course is geared towards training informed practitioners of analytics methods that can construct, evaluate, and apply analytics models in variety of settings using modern tools. The course covers programming tools for handling data (in Python), computational frameworks (TensorFlow), cloud platforms (Google Cloud Platform), and an array of advanced ML algorithms. The course emphasizes hands-on work through class exercises, homework assignments and projects. The course is self-contained but basic programming skills are required (not necessarily in Python).

*CIS 434. SOCIAL MEDIA ANALYTICS

The rise of social media has empowered customers in an unprecedented way. They are well connected with each other through platforms like Facebook and Twitter, and they can easily express and distribute their comments, criticisms, or endorsements publicly to large audiences in real time. This fundamental media revolution not only forces companies to actively manage their presence and engage with customers on social media platforms but also offers them a golden opportunity to extract intelligence from the vast amount of unstructured data. Technology and strategies are increasingly intertwined in this new frontier of innovation and competition.

This course draws on a unique blend of social media strategies and the rapidly evolving information technologies supporting these strategies. We will discuss issues related to the monitoring and analyzing of social media for companies in different industries. The learning

objectives of this course include: (1) gaining a deeper understanding of social media and its implications in the business world; (2) becoming comfortable with text data; and (3) being able to understand and apply several commonly used methods to analyze text data.

*CIS 437. DIGITAL MARKETING STRATEGY

(Same as MKT 437)

This course examines the major issues involved in marketing on the Internet. Among the topics studied are: new product opportunities on the Internet; the changed role of advertising; the Internet as a two-way communication medium with consumers; targeting individual consumers; word-of-mouth among consumers on the Internet; the Internet as a distribution channel; and marketing research on the Internet.

Prerequisite: MKT 402

CIS 440. DIGITAL BUSINESS STRATEGY

This course covers electronic strategies for business-to-business and consumer e-commerce. This includes strategies for protecting market share by going online, ameliorating online competition using network effects and customer lock-in, positioning against other online presences, dealing disintermediation and re-intermediation, developing online communities for business or consumer e-commerce, and managing supply chain and customer relationships.

Prerequisite: CIS 401

*CIS 442D. ADVANCED BUSINESS ANALYTICS

This course introduces students to advanced business analytics techniques and the practical aspects of applying these techniques in

Python, one of the leading programming languages and platforms for data science. Topics include classification algorithms (such as

support vector machines), clustering algorithms (e.g., K-means), and ensemble methods. In addition to machine learning algorithms,

we will explore the software tools that constitute the Python data science ecosystem.

*CIS 442E. DATA MANAGEMENT ANALYTICS

This course is designed to provide students with concepts and skills in managing data using traditional and cloud based systems. The course covers theory of database systems, data manipulation techniques, data integration and cleaning, and working with modern and advanced data architectures. The class covers both theory and hands on activities using Microsoft Access, SQL, Tableau and R. Microsoft Access, SQL, Tableau and R may be used extensively in class, for assignments and exams.

*CIS 442F. BIG DATA

This class offers an introduction to big data concepts, environments, processes, and tools from the perspective of data analysts and data scientists. The course sets the scene for the emergence of big data as an important trend in the business world and explain the technical architectures that make analyzing data at scale possible. The hands-on portion of the class focuses on the major tools of the Hadoop big data ecosystem such as HDFS, Pig, Hive, Zeppelin, Spark and Spark MLlib (also Hue and Sqoop if time permits). In addition, students gain a broad understanding of the role of MapReduce, Tez, Impala, YARN, and other big data technologies. Students use a live Hadoop cluster hosted on Amazon Web Services (AWS) and thus also have an opportunity to understand the characteristics of cloud computing and storage solutions and their growing role in big data analytics.

Prerequisite: CIS 432

CIS 446. FINANCIAL TECHNOLOGY

(Same as FIN 446)

This course provides an introduction to the evolving use of technology in financial markets and applications. One area of focus is "blockchain" technology in financial transactions, markets, permanent historical records and cryptocurrencies. The other major area of focus is innovations such as peer-to-peer transactions and the use of artificial intelligence in evaluating and funding investments. Throughout we will consider the prospects for the success of the new technologies, asking questions such as: How revolutionary are the various parts of Fintech? What are the hidden pitfalls of the technology/business models to individuals, companies and/or society? How will major financial institutions and governments react? What changes are required in legal rules (including internationally) to accommodate Fintech? The course will require working with large data sets (the blockchain) and specific cryptocurrency implementations. While computer programming skills are not required as a pre-requisite, success in the course will require that students learn the basics of the computer science concepts of public-key cryptography, data verification, and simple programming structures (loops, branching).

CIS 461. STRATEGY AND BUSINESS SYSTEMS CONSULTING PRACTICUM

(Same as OMG 461 and STR 461)

This course provides an introduction to strategy and business systems consulting. It is primarily aimed at those exploring career opportunities in consulting but will also help students become savvy consumers of consulting services. It includes a live project helping a client at a real organization answer an important question or achieve a significant business objective. Student teams work together to deliver a set of well- reasoned impactful recommendations based upon thoughtful analysis of the relevant facts. In this way students consolidate their understanding of the problem solving approaches introduced in GBA401 through experiential learning.

In addition, a mix of cases, readings, lectures, class discussions, and guest speakers are used to deepen students' knowledge of consulting and to help them enter the industry and hit the ground running. Students who fully participate in these activities will gain understandings of

- The sectors in the consulting industry and the positioning of the major consulting firms
- How consulting services are marketed and sold as well as how consulting firms are managed
- The importance of relationship building, the role of professionalism, the attributes of successful consultants, and how these elements play into how firms evaluate candidates for the typical post-MBA roles in the industry.

*CIS 465. BUSINESS ANALYTICS PROJECT

This course provides MS and MBA students with the opportunity to use the skills they have developed through other coursework in statistics and analytics to the development and execution of a capstone project. The projects, using real-world situations and data, will serve as preparation for careers in industries such as marketing, consulting, and finance that require extensive knowledge and application of data science.

PHD COURSES

CIS 511. RESEARCH TOPICS AND METHODS IN INFORMATION SYSTEMS

There are three objectives of this course. The first objective is to review several important research streams that received extensive attentions in the IS community over the past

few years, and also explore potential topics that may emerge as important ones in the near future. The second objective is to review important methodology issues that IS researchers routinely take care of, and also introduce some less commonly used but prominent methods that may be valuable in future IS research. The third objective is to train PhD students to think critically and rigorously, and to gradually develop a good sense of how significant and interesting a given research project is and reviewers might react to it.

■ ENTREPRENEURSHIP

Duncan T. Moore, *Area Coordinator*

MASTERS LEVEL COURSES

*ENT 422. GENERATING AND SCREENING ENTREPRENEURIAL IDEAS

As the foundation course in Entrepreneurship, this course covers: idea generation, opportunities screening, entrepreneurial characteristics. This course outlines a critical evaluation process used by successful entrepreneurs to prioritize new venture ideas. The focus of this course is on the technical and market evaluation of very early-stage ideas when information is greatly lacking, and the time and money to research such answers is also limited. Students, in group format, generate and filter their own ideas and evaluate them based upon technical merit, business challenges, and early market indicators. Teams present their idea-filtering rationale to a panel for review and feedback.

Behind this evaluation process, the class review reference material on the subject and several accomplished entrepreneurs will share their personal experiences. While the nomenclature align most directly to high-technology for-profit start-up companies, parallels to low-tech-no-tech, intra-preneurship, non-profits, and social entrepreneurship will be discussed.

ENT 423. NEW VENTURE DEVELOPMENT AND MANAGING FOR LONG TERM SUCCESS

The focus of ENT 423 is learning how to prepare an effective business plan that will communicate the inherent value of the concept. Among the critical issues that will be addressed are: competitive conditions and industry trends, sustainable competitive advantages, management team, marketing plan, financial plan, exit possibilities, franchising, legal entities. The approach used is appropriate for start-ups and for corporate venturing. It is also suitable for both profit and for not-for-profit organizations. Also included is a social entrepreneurship module. At the same time plans are prepared, other entrepreneurial issues are studied, such as assembly resources, launching and building new ventures and harvesting results. Lectures, cases and guest speakers are utilized. The speakers will address a range of new venture topics from the development of management teams, marketing, finance, venture capitalists and legal issues. The completion of a business plan for a proposed new venture is required.

*ENT 425. TECHNICAL ENTREPRENEURSHIP

This course provides an opportunity to examine the management practices associated with technical innovation and new business development. The analysis of entrepreneurship is evaluated primarily from the perspective of a start-up venture that requires equity capital investment. Management issues discussed include organizational development, analysis of market opportunities, market engagement, financial planning and control, capitalization, sources of funds, the due-diligence process, and valuing the venture. An important reason for taking this course is to learn how to develop a business plan. Therefore, a significant component of a student's final grade will be based on this. In too many instances, a new venture does not become a viable entity because either there is no plan, or if there is, it is poorly conceived. Furthermore, a good plan is an effective communications tool for the investment community. An additional benefit is learning to work in multidisciplinary teams.

Teams of three to four students collaborate in the preparation of a business plan. The course includes time for students to share business ideas and identify possible team members. In general, each team includes two students and two science/technology graduate students. Other team configurations are possible with instructor approval. Each team's business plan will receive a grade and that grade will apply to each individual on the team. Each team has a coach who is an experienced businessperson. The coach is available to provide feedback to the team. This course is cross listed at OPT 481 and is taught by a faculty member at Simon and who is from Engineering.

ENT 426. TECHNOLOGY TRANSFER AND COMMERCIALIZATION

The creation of value in today's globally competitive environment is increasingly driven by technology. Corporations are reaching out for new technologies, and start-up companies with the highest potential are being formed around novel disruptive technologies. Radical innovation creates a "gale of creative destruction" which transform industries. The identification and evaluation of technologies with high potential is today a key to success. With the decline of corporate research functions, novel technologies are increasingly sourced from other firms and universities. This course examines the overall technology commercialization process, with an emphasis on the processes by which intellectual property is protected, valued and transferred from one organization to another. The course addresses the strategic decisions involving novel technology: the identification of target markets, the economic valuation along the phases of the commercialization process and the assessment of alternative commercialization strategies including licensing, startup company formation and venture capital funding. The course is taught by a combination of lectures and real-world case studies of current technologies, primarily from the University of Rochester in science, engineering and medicine.

ENT 427. PRACTICUM IN TECHNOLOGY TRANSFER AND COMMERCIALIZATION

Students in this course will work in the Office of Technology Transfer on projects which are a best fit to the student's background and the range of inventions from the University of Rochester in science, engineering and medicine. Projects can include either marketing to existing companies or work on catalyzing a startup company. Either type of project will require assessments of novel concepts based on discussion with the inventors and direct market research and interactions with potential customers. The skills required are primarily those of marketing and business assessment, but some facility with technical content will be helpful. The students will prepare a technology commercialization and/or new venture plan and assist the licensing executives in the University's Office of Technology Transfer in the negotiation process to implement the plan.

ENT 431. LEGAL AND TAX CONSIDERATIONS OF NEW VENTURES

(Same as BPP 431)

This course surveys, from the entrepreneur's perspective, legal and tax considerations that impact strategic choices in organizing, funding, staffing, governing, and operating new ventures. The course's principal focus is on how to create and retain competitive advantage through the skillful ordering of legal affairs. Emphasis will be transactional and include analysis of such issues as the creation and protection of intellectual property, technology licensing, global expansion, and internet commerce. The course will include, as a context for applied learning, a term project involving the creation and evolution of a selected new venture opportunity.

ENT 432. BASIC BUSINESS LAW

(Same as BPP 432)

This course surveys the law of contracts, agency, and business associations – with the objective of developing familiarity with selected laws, regulations, legal principles, and legal processes that govern (a) efficient exchange,

generally; and (b) how and in what ways managers and entrepreneurs organize and interact to facilitate exchange. Although emphasis will be on United States law, there will be selected reference throughout the course to issues related to international transactions and to pertinent differences in legal systems of countries outside the United States. The course has a distinct transactional focus, with heavy reliance upon contemporary cases, commercial practices, and issues. Particular attention will be given to the impact of the legal framework upon sound managerial decision-making, business risk management, commercial rights and responsibilities, and ultimately business valuation.

ENT 435. NEGOTIATION THEORY AND PRACTICE: BARGAINING FOR VALUE

(Same as GBA435)

This course surveys the theoretical and behavioral underpinnings of negotiation practices and develops skills that enhance the ability to capture value in cooperative and competitive bargaining scenarios. Students participate in and evaluate several cooperative and competitive negotiation simulations. Grades depend, in large part, on performance in these exercises.

ENT 441. MEDICAL ENTREPRENEURSHIP

This course aims at educating medical technology innovators how to increase their likelihood of success in identifying important clinical needs; inventing new medical practices, devices, and instruments; and transforming these advances into businesses that improve health. It covers several topics, including clinical cost effectiveness methodologies, needs finding and formulation, market analysis for biotech, patient searching strategies, and models of disease state and existing technologies. The course is unique in that it attracts both medical students and business students who are working on supervised projects together.

ENT 442A. SPECIAL TOPICS IN ENTREPRENEURSHIP: FUNDAMENTALS OF SOCIAL ENTREPRENEURSHIP

This course provides both an academic exploration of social impact and entrepreneurship, as well as real-world clinical projects with clients and deliverables. Readings will explore the background, overview, evolution, challenges, structures, and potentials of applying social entrepreneurial tools and attitudes to address critical societal issues, such poverty, education, public health, and environmental threats. The role of both for-profit and not-for-profit entities will be examined. Clinical projects will address business strategies, financing, and that have clearly defined, implementable solutions for real-world problems.

ENT 442C. SPECIAL TOPICS IN ENTREPRENEURSHIP: PRACTICUM IN URBAN ENTREPRENEURSHIP

With the loss of vital economic drivers, Rochester is a prime example of an urban environment experiencing infrastructure distress and stagnation with a marked decrease of quality of life for its inhabitants. Like any urban environment, promoting a virtuous cycle of economic growth is vital for the recovery of Rochester. Social entrepreneurs play a critical role by engaging business tactics and an understanding of market-efficient forces that deliver savvy and creative solutions to address core urban issues, such as reducing poverty (through job creation and other means), increasing access to capital (community banking and microfinance), promoting business growth (incubators, accelerators and the role of the university), residential and retail development, effectively delivering public health services, education for its populace and future work force (i.e. Khan Academy and charter schools) and ensuring a safe and healthy environment. By encouraging new entity formation and reengineering existing organizations, these challenges create opportunities for the social entrepreneur. Understanding the fundamental pieces of the urban puzzle is essential for an urban social entrepreneur to come up with effective and relevant solutions.

ENT 442X. INTERNATIONAL BUSINESS PRACTICUM & ISRAEL IMMERSION

This course is designed to provide students with a hands-on experiential learning opportunity for global entrepreneurship through a combination of lectures, a real-life business development project and learning about the Israeli entrepreneurial ecosystem. Students will be partnered with an Israeli startup that is looking to expand their markets served by penetrating the US market. The project will include following a consultative model, analyzing the markets and opportunities and presenting their recommendations to the client. Israel has built a stellar reputation for being one of the most innovative countries in the world and has the highest per capita number of startup companies in the world. Their citizens have a perseverant, take-charge approach to business, which has led a vast number of international conglomerates to base their R&D and New Product Development Centers in Israel. This class will introduce students to the Israeli culture and business climate along with multi-national corporations that have moved mission-critical centers and startup venture activities to Israel. The International Business Practicum will introduce students to Israel's history, which will help them understand how Israel came to be what it is today.

ENT 444. ENTREPRENEURIAL FINANCE

(Same as FIN 444)

This course provides an introduction to financial theories and tools an entrepreneur needs to start, build, and harvest a successful venture. Lectures and case studies cover financial planning, business valuation (including the venture capital and the real option approach), financing, venture capital funds, compensation structures, and exit strategies.

Prerequisites: FIN 402

■ FINANCE

Jerold B. Warner, *Area Coordinator*

MASTERS LEVEL COURSES

*FIN 402. CAPITAL BUDGETING AND CORPORATE OBJECTIVES

This course provides an introduction to financial analysis and capital budgeting with an emphasis on the valuation of real investment projects. Topics discussed include: analysis of the firm's choice among alternative investment projects, the term structure of interest rates, modern portfolio theory and the valuation of risky assets, the estimation of free cash flows, capital structure choices, and the cost of capital.

*FIN 411. INVESTMENTS

Investments includes discussion of the efficient-markets theory of the dynamic behavior of prices in speculative markets, along with empirical evidence for the validity of the theory; evaluation of the implications of the efficient-markets theory for the profitability of alternative investment strategies; exploration of the implications of portfolio theory for equilibrium asset prices and the measurement of risk; emphasis on the empirical evidence for various mean-variance and multifactor models of asset pricing and the use of these models for evaluating portfolio performance; and introduction to special topics in financial markets, such as arbitrage pricing theory, and options and futures contracts.

Prerequisites: GBA 412 or GBA 462 and FIN 402

*FIN 413. CORPORATE FINANCE

This course provides an intensive analysis of the effects of various corporate financial policy decisions on the value of the firm, including a discussion of the effects of taxes, bankruptcy costs and agency costs on these decisions. It then examines the interrelation of financing policy with executive compensation, leasing, hedging and payout policies. The course provides an understanding of the theoretical issues involved in the choice of these policies.

Prerequisite: FIN 402

*FIN 418. QUANTITATIVE FINANCE WITH PYTHON

The objective of this course is to equip you with the frameworks, tools, and methodologies necessary to build and/or be an educated user of quantitative models for financial decision making. The course is suitable for students seeking a career in finance, but also for students with broader interests who wish to strengthen their general modeling skills, and it does not require any quantitative background other than what is covered in the MBA core courses. Master modeling frameworks such as regression analysis, Monte-Carlo simulation, optimization, and binomial trees. Learn how to apply these frameworks in financial contexts such as portfolio management, term-structure estimation, capital budgeting, risk measurement, risk analysis in discounted cash flow models, and pricing of European, American, exotic, and real options. The modeling tools will be illustrated by applying them to a variety of real-world cases.

*FIN 424. OPTIONS AND FUTURE MARKETS

This course provides intensive study of the fundamental ideas of option-pricing theory and their application to options, financial futures and other securities; analysis of hedging with forward and futures contracts; development of the Black-Scholes option-pricing formula, its uses and modifications, and generalizations of the model; and discussion of the structure and organization of options and futures markets, and the exploration of empirical evidence on the validity of option-pricing models. Analyses of the pricing of options on futures, foreign currency, portfolios and indexes, commodity prices, bond prices, and interest rates are included as time permits.

Prerequisites: FIN 402 and FIN 411

*FIN 430. RISK MANAGEMENT

This course focuses on analysis of the mutual fund, investment banking, commercial banking, and insurance industries. Particular emphasis is placed on the effects of contracts and organizational structure on the incentives of the participants in these industries.

Prerequisites: FIN 402; FIN 411 and FIN 413 (may be taken concurrently)

*FIN 434. INVESTMENT MANAGEMENT AND TRADING STRATEGIES

This course explores selected topics in the management of equity portfolios. Course content may vary from year to year. Topics include: active portfolio management with particular emphasis on risk analysis, multifactor risk / return models and performance evaluation and style analysis. The course also considers issues and evidence on different forms of market structure and trading systems, including the role of specialists/dealers, optimal trading behavior for institutions, price impact of trades, and related information technology. Extensive use is made of investment software.

Prerequisite: FIN 411

*FIN 441A. SPECIAL TOPICS IN FINANCE: REAL ESTATE

This course provides an introduction to, and an overview of, real estate as a capital asset and as a major component of our financial markets. The course will focus on the basic economics of real estate markets, market analysis, and real estate finance. Concepts used in the real estate industry will be covered throughout the course. The course will specifically consider market analysis, valuation, capital structure, and risk analyses for income-producing (commercial) properties. The securitization of both commercial and residential properties has been a critical factor in our current economy, and the structure of real estate securities and investment vehicles such as real estate investment trusts will be studied. The course also introduces real estate development and current trends in the market.

FIN 441B. SPECIAL TOPICS IN FINANCE: PRIVATE EQUITY

The Private Equity and Venture Capital [PE/VC] industry is more in the popular press than ever before; funds are larger and more diverse than in any past generation, deals are bigger, scope is worldwide, and wealth-generation seems to be at levels heretofore unseen. Many argue that PE/VC drives major segments of national economies more than ever before, and that it is essential that the industry is better understood and weighed more heavily in the thinking and plans of policy-makers in government and commerce. This course provides exposure to what PE/VC is and how it works. We cover, among other things; the make-up of funds, the composition and operation of PE/VC firms, dealing sourcing, due diligence and investment process, and the roles of partnerships, GPs, LPs, 'activists' and Boards. At a higher level, we cover industry performance and competition, fund creation, some international aspects of the business, and differing approaches to financing in different alternative asset categories.

FIN 441F. SPECIAL TOPICS IN FINANCE: CORPORATE RESTRUCTURING

This course will enable the students to acquire a good understanding of the fundamental causes of restructuring events; the legal framework in which restructuring occurs; the likely consequences and risks involved in pursuing various restructuring strategies. After taking the course, students will be capable of deriving the value of securities issued by firms undergoing a restructuring events (with a particular focus on

distresses firms. They will learn about famous restructuring cases and controversies, and will be exposed to the views of guest speakers who pursued a career in M&A and restructuring.

FIN 441G. SPECIAL TOPICS IN FINANCE: ASSET MANAGEMENT

The course will provide students with a fundamental understanding of the principles and analytics of asset management as applied to both institutional and private clients. It should be of great interest to anyone aspiring to a career in asset, portfolio, private wealth, endowment, foundation, sovereign wealth, or pension fund management. A fundamental understanding of the issues in asset management, whether institutional or private, will also be helpful in other areas of finance such as investment banking, insurance, accounting and personal finance, as well as operations and marketing in these types of firms. In addition, students will learn how to better manage their future personal wealth.

This class will focus on the more practical aspects of asset management to prepare students for the actual demands of a job in the industry. The course will also describe the challenges in managing such portfolios from the perspective of an institutional or individual investor and a fund manager (public equity, fixed income, hedge, or liquid).

Prerequisites: FIN 402 and FIN 411

*FIN 442. INTERNATIONAL ECONOMICS AND FINANCE

(Same as BPP 442)

Topics include: exchange-rate regimes; the determination of exchange rates in a world of flexible exchange rates; speculation in foreign exchange markets; the Eurocurrency and measurement of foreign exchange exposure; analysis of currency forward, future, option, bond, and swap contracts; hedging of foreign exchange exposure.

Prerequisite: FIN 402

Recommended: FIN 411

*FIN 442X. INTERNATIONAL FINANCE & SWITZERLAND IMMERSION

This course is designed to give students an immersive experience into Swiss culture, business and international finance. The three elements of this experience are classwork, cultural experiences and company visits. The classwork is taught both in the US and in Switzerland and focuses on elements of international finance and the macro and micro-effects on the Swiss and other international economies. Class sessions are held in Thun and business trips are scheduled to Swiss companies in Bern and Zurich where students hear directly from the company about economic influences discussed in class. Cultural experiences are designed to help understand how the public lives in Switzerland, including historic sites in Lucerne and towns in the Swiss Alps.

*FIN 444. ENTREPRENEURIAL FINANCE

(Same as ENT 444)

This course provides an introduction to financial theories and tools an entrepreneur needs to start, build and harvest a successful venture. Cases and lectures will cover business evaluation and valuation, including the venture capital and the real option approach, financing, venture capital funds, compensation structures, and exit strategies.

Prerequisites: FIN 402

*FIN 446. FINANCIAL TECHNOLOGY

(Same as CIS 446)

This course provides an introduction to the evolving use of technology in financial markets and applications. One area of focus is "blockchain" technology in financial transactions, markets, permanent historical records and cryptocurrencies. The other major area of focus is innovations such as peer-to-peer transactions and the use of artificial intelligence in evaluating and funding investments. Throughout we will consider the prospects for the success of the new technologies, asking questions such as: How revolutionary are the various parts of Fintech? What are the hidden pitfalls of the technology/business models to individuals, companies and/or society? How will major financial institutions and governments react? What changes are required in legal rules (including internationally) to accommodate Fintech? The course will require working with large data sets (the blockchain) and specific cryptocurrency implementations. While computer programming skills are not required as a pre-requisite, success in the course will require that students learn the basics of the computer science concepts of public-key cryptography, data verification, and simple programming structures (loops, branching).

Pre-requisites: FIN402 or equivalent

*FIN 448. FIXED-INCOME SECURITIES

The objective of this course is to undertake a rigorous study of fixed-income securities and markets. A variety of fixed-income securities will be discussed including coupon bonds, callable and putable bonds, sinking fund provisions, and floating rate notes. Interest rate derivatives such as forwards and futures on fixed-income securities, bond options, options on bond futures, caps, floors, and collars will also be discussed. In addition, we will study some tools that are useful in bond portfolio management including horizon analysis, duration, optimization techniques for constructing bond portfolios and modes for pricing fixed-income securities. While the perspective of this course is from the viewpoint of a bond investor, a person in corporate finance needs to understand similar material. Evaluating an investment in a fixed-income security is the mirror image of the problem faced by a corporation in deciding whether or not to issue a bond.

Prerequisites: FIN 402 and FIN 411

*FIN 461. INTRODUCTORY FINANCE FOR MS STUDENTS

This course serves as an introduction to finance and investments for MS students. It includes discussion of the efficient-markets theory of the dynamic behavior of prices in speculative markets, along with empirical evidence for the validity of the theory; evaluation of the implications of the efficient-markets theory for the profitability of alternative investment strategies; exploration of the implications of portfolio theory for equilibrium asset prices and the measurement of risk; emphasis on the empirical evidence for various mean-variance and multifactor models of asset pricing and the use of these models for evaluating portfolio performance; and introduction to special topics in financial markets, such as arbitrage pricing theory, and options and futures contracts.

FIN 462. FOUNDATIONS IN FINANCIAL ECONOMICS

This course serves as an introduction to the theory and practice of corporate finance. It provides a market-oriented framework for analyzing the investment and financing decisions made by corporations. The two major questions, which this course aims to answer, are: 1) How do corporate managers decide which projects to undertake?; and 2) How do they decide how to finance these projects? Topics discussed include valuation of financial assets, capital budgeting techniques, theories of capital structure, and capital market efficiency.

FIN 465 A/B. APPLIED FINANCE PROJECT I & II

The experience of working on actual projects provides the opportunity for the student to incorporate subjects, skills and tools, introduced through the classroom, into the prob-

lem identification, assessment, and solution process used with and for clients. The project work also provides visibility and use of measurement schemes, statistical analysis, and engages the student in activity that supports the development and use of business judgment; skills and perspective driven by practice, with consequences associated with results - as they hear frequently in the courses they take. The projects offer visibility to varied management processes, internal and external political processes, and continually provides emphasis on measurable results - not simply activity. This course integrates and expands classroom education with 'real-world' experience - providing opportunities for, among other things; project management; process management; task planning; testing and use of class concepts/tools in an actual work environment; focus on results, not simply activity, business planning; performance planning and management; inter/intra group collaborative efforts on goal-oriented work activity; business assessment; development/practice/testing of business judgment; organizational and functional assessments, management and personnel assessment; time management; measurements of 'value-added' and 'effectiveness' in consultative roles in widely-varied organizations; goal, task, and process negotiations; expectation development and communication; feedback development; and planning and coaching through change processes.

PHD COURSES

FIN 505. THEORY OF FINANCE

The goal of this course is to present the theory of asset pricing and portfolio selection in multi-period settings under uncertainty. The asset pricing results are based on three increasingly restrictive assumptions: single-agent optimality, absence of arbitrage and equilibrium. These results are unified with two key concepts: pricing kernels and martingales. The course draws connections between these concepts and makes plain the similarities between discrete and continuous time models. Applications include term structure models, portfolio choices, and the pricing of corporate securities. This course will follow the semester schedule.

FIN 511. CONTINUOUS TIME THEORY IN FINANCE

The course builds on the basic theory presented in FIN 505 Theory of Finance. FIN 511 will emphasize some relatively advanced mathematical methods that are used in the research literature of financial economics. The objective of the course is to provide the student with enough knowledge of these methods that he or she can begin to use them in nontrivial ways in his or her research. Particular emphasis is given to topics that are costly or difficult to learn on an individual basis.

The methods surveyed in the course are primarily techniques for constructing and analyzing continuous-time models of trading and of stochastic asset price behavior. Virtually all of the derivative security pricing models and many of the multifactor models of asset prices and the term structure of interest rates are of this type.

FIN 512. EMPIRICAL ASSET PRICING

This course covers classic contributions and recent developments in capital markets research, both applied theoretical and empirical, in relation to corporate policies, business cycle and economic growth. Specific topics include time-series predictability of stock market returns, empirical methods and evidence on the cross-section of returns, evidence on mutual fund performance and the closed-end fund puzzle, event studies and the empirical relations between stock returns and corporate policies, consumption-based asset pricing, applied equilibrium modeling of asset pricing anomalies and behavioral finance.

FIN 513. AGENCY THEORY

The course studies game-theoretic foundations of the theory of the firm. The strong emphasis is placed on corporate finance. The topics include capital structure, asymmetric information and signaling, contract design, and optimal security design. We also look into information aggregation in financial markets, bargaining with asymmetric information, and dynamic signaling – important and fascinating topics in the broader area of information economics and their applications to finance.

FIN 514. EMPIRICAL CORPORATE

This course covers cross-sectional and panel data empirical methods used in corporate finance research. The course will expose students to a variety of methods commonly employed in empirical research. While the course will cover the efficiency and consistency of various estimators, the primary focus will be on how econometric tools can be used to identify unbiased causal effects. Lectures and econometric readings will provide students with econometric intuition behind each method covered in the course. Course readings will expose students to examples of the methods being used in published and working papers. Assignments will familiarize students with standard datasets used in corporate finance and will enable students to apply the methods covered in the course and to analyze and criticize other researchers' use of common empirical methods.

FIN 522. ADVANCED EMPIRICAL ASSET PRICING

This course covers the methods and facts of asset pricing. Although theories are covered when necessary, the course is meant to be empirical in nature. The course starts with time-series and quickly moves to the cross-section. It will start with consumption- and production-based asset pricing. Then will move to recent developments in intermediary and behavioral asset pricing. The course will also cover alternative asset classes such as currency and commodity. The objective of the course is to get you up-to-date of the cutting edge empirical asset pricing research.

FIN 523. ADVANCED AGENCY THEORY

The course studies dynamic aspects of the theory of the firm. The strong emphasis is placed on the role of time and repeated decisions in firm management. The topics include real options, dynamic lemons markets, dynamic contracts, and investment under constraints. The course is research intensive, requiring completion of several referee reports and a term project.

FIN 524. FINANCIAL AND ECONOMIC NETWORKS

Networks have experienced a tremendous growth in the past years in many areas of finance and economics. The course teaches tools and methodologies needed for performing cutting edge empirical and theoretical research that relies on modeling and analyzing networks of economic agents (individuals, banks, firms, countries). The topics include over-the-counter financial markets, production networks, payment networks and more. The applications will cover all three areas of finance: asset pricing, corporate finance and financial intermediation. The course is research intensive, requiring completion of several referee reports and a term project.

■ GENERAL BUSINESS ADMINISTRATION

MASTERS LEVEL COURSES

GBA 401. STRUCTURED PROBLEM SOLVING IN TEAMS

Problem solving is one of the most important competencies at all levels of management and an essential skill for just about all post-MBA careers. This course introduces a high-level problem solving methodology used by top management consulting firms that can be adapted to a wide range of challenges encountered in business. The methodology provides a thoughtful process for bringing structure to ambiguous situations as well as for bringing your creativity and growing business knowledge to bear on real world problems. The key learning objectives are to develop your ability to (a) frame and scope a wide range of business related problems, (b) structure efficient data gathering and analysis, (c) ensure effective teamwork during the process, and (d) logically communicate actionable recommendations.

*GBA 411. BUSINESS MODELING

This course has two major objectives: to develop the ability to frame business decision problems in a way that makes them amenable to quantitative analysis and to train in fundamental quantitative analysis techniques useful for business problems. The course is structured in three parts: 1. Using spreadsheets to model business decision problems. 2. Solving complex decision problems involving many variables and constraints. 3. Monte Carlo simulation is introduced as a framework for understanding and analyzing uncertainty in business. Examples from different functional areas will demonstrate how the techniques taught can be applied in a practical way to a variety of settings.

*GBA 412. DATA ANALYTICS

This course provides an introduction to utilizing data and data analytics to inform decision-making. Extracting information from data has become an integral part of modern business management, from sports teams, to Wall Street, to Silicon Valley. GBA 412 will de-mystify statistics, enabling students to thrive in a competitive market for data-based decision-making. After building core statistical and decision theoretic tools, this course will introduce you to different types of data and provide you with a set of analytical methods that apply to each. We introduce basic notions of probability and randomness, transition to data visualization techniques, and conclude with the basis of modern data science: prediction and multiple regression. Connections to other Simon classes will be emphasized, as will a hands-on approach to data analysis (laptop computers are required for every class). In the process, students learn to ask the right questions, seek out the relevant data, apply appropriate methods, and effectively communicate your insights to your target audience.

GBA 419A/B. LEADING TEAMS I AND II

This sequence of courses spans fall and winter terms and prepares Simon MBA Coaches and Workshop leaders to lead 1st project teams and problem solving groups in areas of setting expectations; establishing process; employing collaborative problem-solving frameworks; managing conflict; and giving and receiving performance feedback. The course rests on theoretical frameworks from the fields of education, psychology, and communication; its focus is the practical application of these concepts to facilitate the successful functioning of team-based problem solving and project management groups. The course provides weekly opportunity to review Workshop and Coach meeting related issues. Workshop leaders increase their mastery of business modeling and operations management concepts, and coaches improve their skills in developing presentations, managing projects and giving feedback for improved performance.

GBA 435. NEGOTIATION THEORY & PRACTICE: BARGAINING FOR VALUE

(Same as ENT435)

The course is subtitled “Bargaining for Value” because the notion of “bargaining” implies interaction and communication among self-interested players of diverse backgrounds and styles. “Bargaining for value” implies that the quantum of value extracted in a deal may vary within a range of potential values. “Negotiation” is a commonly-accepted term that captures the essence of these processes in a competitive or cooperative environment. This course surveys the theoretical and behavioral underpinnings of negotiation practices and develops skills that enhance the ability to capture value in cooperative and competitive bargaining scenarios.

GBA 441. BUSINESS ETHICS & CORPORATE SOCIAL RESPONSIBILITY

This course deals with business ethics and the social responsibility of business organizations. It is designed to inform decision-making about ethical challenges arising in business. It helps students identify and manage difficult ethical dilemmas they are likely to encounter in their future careers. The course is organized into four parts. It begins by looking at the place of business ethics in a competitive economy and discussing fundamental questions about the ethical responsibility of business corporations. Next, it addresses ethical issues faced by individuals in business organizations, including the complex nature of managerial responsibilities, whistle-blowing, and insider trading. It also explores the responsibilities of business corporations vis-à-vis clients, customers, and employees, discussing issues such as professional conflicts of interest in financial services, information disclosure in advertising, fairness in sales practices and in hiring and treating employees. Finally, it analyzes some ethical questions specific to business decisions in the health sector.

GBA 442B. APPLIED BUSINESS PROJECTS

This course integrates and expands classroom education with ‘real-world’ experience - providing opportunities for, among other things; project management; process management; task planning; testing and use of class concepts/tools in an actual work environment; focus on results, not simply activity, business planning; performance planning and management; inter/intra group collaborative efforts on goal-oriented work activity; business assessment; development/practice/testing of business judgment; organizational and functional assessments, management and personnel assessment; time management; measurements of ‘value-added’ and ‘effectiveness’ in consultative roles in widely-varied organizations; goal, task, and process negotiations; expectation development and communication; feedback development; and planning and coaching through business transitions.

GBA 442C. ELEMENTS OF LEADERSHIP

This course approaches leadership as a set of learned skills that are subject to personal intention and choice. The focus is on cultivating core leadership mindsets and capacities: sense-making amid multiple perspectives, setting a vision, relating to others, and inventing solutions. These capacities are especially useful in team-oriented work settings and even in situations where one must influence without authority. The course draws on contemporary theories of adult development and leadership, such as leader-member exchange and the philosophy of servant leadership. The intention is to prepare Simon graduates for the challenges they will face a few years out of school as they transition to roles where leadership and greater complexity come to the fore. Assignments will blend conceptual models and practice, leading to a personal philosophy of leadership and an agenda for continued development.

GBA 442X. DOING BUSINESS IN SOUTH AFRICA

Offered every other year, the South Africa International Immersion allows the students to experience corporate and cultural interactions that will change their perspectives on how business is done internationally and allow them to learn how business is done in South Africa. Through a combination of lectures, a real-life business analysis of a community revitalization and company meetings, the students will grow their understanding and appreciation for the cultural and community effect on business in South Africa. Students will examine a revitalized community and compare and contrast this live case study with the Rochester revitalization, presenting their findings to City of Rochester officials. Students will also experience the contrast of a safari and being housed near a watering hole, with the corporate world of Cape Town. Students will travel to Johannesburg, George and Cape Town. In addition to the cultural aspects of the tour, company visits, industry tours and alumni meetings will allow students to apply their learning to engage better with doing business in South Africa.

GBA 461. CORE ECONOMICS FOR MS STUDENTS

This course covers the fundamentals of economic theory, and discusses marketing-relevant applications. Specific concepts include understanding demand and demand elasticity, marginal revenue, key cost concepts (fixed costs, variable costs, marginal costs, sunk costs), profit maximization, understanding the competitive environment and strategic decision making, and net present value calculations.

*GBA 462. CORE STATISTICS FOR MS STUDENTS

This course equips MS students with statistical skills necessary for data-driven decision making. The course covers central tendency and variability, probability, binomial and normal distributions, standard scores, hypothesis testing, z and t tests, ANOVA, correlation and regression, and non-parametric tests.

*GBA 462R. CORE STATISTICS FOR MS STUDENTS USING R

This course equips MS students with statistical skills and the language R necessary for data-driven decision making. The course covers central tendency and variability, probability, binomial and normal distributions, standard scores, hypothesis testing, z and t tests, ANOVA, correlation and regression, and non-parametric tests.

GBA 463. ECONOMICS AND MARKETING STRATEGY FOR MS STUDENTS

This course introduces students to the basics of economics and marketing strategy through interactive lectures and case discussions. Consumer choice, demand curves, the impact of competition and costs form the nucleus of the economics topics. Marketing strategy builds on these consumer, competition and company considerations to understand the segmentation, targeting, positioning and promotional decisions of the firm.

*GBA 464. PROGRAMMING FOR ANALYTICS

This course provides a foundation in programming within the R environment. Traditional programming concepts--operators, data structures, control structures, repetition, user-defined functions, and scoping--will be central to the learning objectives, but the concepts will be taught in context of marketing and business analytics problems related to data management and visualization. In addition to high-level programming, the students will gain a foundational understanding of how data is organized and pulled from databases, including the querying process that turns raw data into the kinds of datasets that more advanced analytics tools leverage. In the process, students will learn rudimentary SQL and the related core concepts (e.g., aggregation and joins). The course involves hands-on tutorial assignments involving practical pattern matching as well as less structured programming assignments, where the students are expected to write their own programs.

GBA 466. ACCOUNTING AND FINANCE FOR MS STUDENTS

This course presents the basics of financial accounting, and will provide a framework for analyzing financial data, and understanding concepts developed throughout subsequent courses in the Business Analytics program. The course begins with an overview of the four financial statements, and then advances to more in depth coverage of Revenue and Expenses, Assets, Liabilities, Stockholder's Equity, and Cash Flow. The course will then survey topics in corporate finance, centered on the analysis of financial data. The course includes a survey of financial metrics used to analyze operations, then proceeds to a discussion of project evaluation with a focus on relevant cash flows, and then finishes with a discussion of the appropriate required rate of return to be used in evaluating those cash flows.

GBA 484A/B. SIMON SCHOOL VENTURE FUND PRACTICUM FOR ANALYSTS/ MANAGEMENT

This course is a 1-credit practicum for 1st-year MBA and MS students who are accepted by the Management Team of the Simon Venture Fund (SVF) as an analyst. Students receive 1 credit in their first year for successful participation as analysts, registering in the Winter of their first year, and receiving a grade of Incomplete until their commitments to the Fund are completed in the Spring. Students returning for a second year at Simon, that are accepted into the Management Team of the SVF by the SVF Board, may then register for a 2-credit SVF Practicum in the Fall of their 2nd year to complete the sequence, receiving a grade of Incomplete until their Fund commitments are completed in the following Spring.

The purpose of this practicum is to recognize and support the effective analysis and portfolio management functions of the SVF throughout the academic year. Instructor interaction with students is primarily advisory and ad hoc. 1st years primary contacts, training, evaluation and performance coordinators will be the SVF Student Management Team.

The SVF provides an environment where students can practice applying theories and skills acquired throughout the MBA and MS curriculums to such matters as venture capital fund operations; early stage business analysis; deal structure; and funding considerations faced by startups seeking capital investments. Vehicles for applied learning include performing due diligence on startups seeking SVF investment and making thoughtful and well-reasoned investment recommendations to the SVF Student Managers and Board; updating status and performance information for existing SVF investments; participating in creating portfolio reports for SVF stakeholders; participating as required in reporting and investment calls with the SVF Board; and participating as required in approved investment closing procedures.

GBA 490. AMERICAN BUSINESS PRACTICE

Credit—one hour

This course is designed to give non-U.S. students an opportunity to apply business-management theories they have learned in their Simon School studies while they are assigned as interns (minimum of six weeks) with U.S. companies. Internships allow students to work in business settings/situations in which they receive on-the-job training from management personnel and gain valuable practical experience in performing professional-level tasks in their area(s) of concentration. GBA 490, which cannot be used to complete a concentration in the

MBA program, is open only to non-U.S. students who are eligible to work in the United States. An eligible student, as defined by immigration regulations, is a degree candidate who has lawfully resided in the United States on visa status for at least one academic year (eight to nine months) prior to starting an internship position. Students who plan to enroll in GBA 490 must communicate with the University of Rochester's International Services Office (ISO) regarding the submission of proper documentation for employment. They should inform Simon School Career Management of their plans to seek a business internship, and they should schedule an appointment with Career Management to discuss career interests and employment-search strategies. When/if an internship is obtained, the student must meet with a GBA 490 faculty advisor to prepare a proposal describing the location and nature of the assignment and the planned functional area of study. The proposal, which will include specific learning objectives, must be approved by the faculty advisor prior to the student's acceptance of the internship. Upon completion of the internship assignment, the student must prepare a 10- to 12-page report detailing its outcome(s) and stating whether the proposed learning objectives were met.

Prerequisite: completion of all core courses

GBA 490E. INTEGRATING BUSINESS THEORY AND PRACTICE

Credit—one hour

This course is designed to give students an opportunity to apply business-management theories they have learned in their Simon School studies while they are assigned as unpaid interns.

These unpaid internships allow students to work in business settings and situations in which they receive on-the-job training from management personnel and gain valuable practical experience in performing professional-level tasks in their area(s) of concentration.

GBA 491. READING COURSE

(Offered at the discretion of individual faculty)

Supervised reading and study on topics beyond those covered in existing formal courses.

GBA 493 INTERNATIONAL EXCHANGE PROGRAM

The Simon Business School offers International Exchange Programs to provide experience abroad to second year MBA students anticipating careers with an international focus. Students who participate in the program can receive up to nine hours of credit toward their Simon M.B.A. program.

Students whose GPA is 3.0 or higher may apply to spend one term of their second year at one of the Simon partner schools.

Students will take classes with native students as well as students from around the world. The program provides the opportunity to live and study in a foreign country, to further develop language skills and to increase students' multicultural awareness.

All courses must be approved before departure (or once the schedule for partner school is available). In general, courses transferred count as unrestricted electives.

GBA 494. FOREIGN LANGUAGE TRANSFER CREDIT

Credit—three hours

PHD COURSES

GBA 595. PHD RESEARCH

GBA 999. WRITING DISSERTATION

■ HEALTH SCIENCES MANAGEMENT

Gerard J. Wedig, *Area Coordinator*

MASTERS LEVEL COURSES

*HSM 420. BUSINESS ECONOMICS OF THE HEALTH CARE INDUSTRY

HSM 420 uses the tools of managerial economics (such as cost-benefit analysis, organizational architecture, and the role of incentives) to analyze the business institutions, practices, and regulation of the health care industry. The course covers the health care value chain including: i) purchasers of health care services (e.g., government, private insurers, and employers); ii) providers of health care services (e.g., hospitals and physicians); and iii) manufacturers of medical devices, pharmaceuticals, and supplies. We seek to understand: the US healthcare system in an international context; the role technology plays in driving change in the industry; the fiscal crises that have spurred health care reform; how health care providers have used mergers, product line management, and information technology to address contemporary management challenges; the next stages in the evolution of managed care as embodied in Accountable Care Organizations and consumer-driven health care; important trends in health care delivery including quality measurement and reward, disease management, and pay-for-performance; and the adoption and financing of medical technology by health care organizations.

HSM 425. MANAGERIAL ACCOUNTING FOR HEALTH CARE ORGANIZATIONS

(Same as ACC 445)

Costs for health services continue to rise faster than overall economic growth drawing ever-greater attention from employers, governments, and consumers. The front line of the cost battle is within the health services entities where decision-making depends on accurate reporting of internal costs. This course allows the students to understand how costs are reported and how to use this information to make decisions within the health services entity. The following topics will be examined within a health services setting: cost allocation, cost-volume-profit analysis, budgeting and variance analysis, and transfer pricing.

HSM 430. HEALTH SCIENCES MANAGEMENT AND STRATEGY

(Same as STR 430)

This course applies the principles of organizational economics and strategy to the institutional setting of the health sciences. The course focuses on the interdependence between the delivery, financing, and technology sectors of the health care marketplace. It discusses how management and strategy choices within each sector are responses to the unique institutional factors in the health care marketplace and how the strategies of each sector affect the behavior of the others.

Prerequisite: STR 401 or GBA 461

Recommended: STR 403, STR 42

HSM 437. MANAGING HEALTH CARE OPERATIONS

(Same as OMG 437)

The health care industry is undergoing rapid growth as well as rapid structural changes. New technology, changing reimbursement mechanisms, and increased competition create many interesting management problems, least of which in the area of health care operations. In this course, we will study the operations of various types of health care provider organizations (such as hospitals, HMO's, group practices, nursing homes, etc.) and other participants in the industry (such as insurance companies, pharmaceutical companies, suppliers and consulting companies). Topics that will be studied include: patient and provider scheduling, capacity management, providing services and supplies to health care providers, new product development and integrated delivery systems.

Students who took OMG 402 or similar need to obtain instructor's permission prior to registration.

HSM 440. EVOLVING MEDICAL MARKETS

Firms supplying products and services to the health care industry face a variety of regulatory and marketing challenges that will be explored in this course. Topics include: the economics of developing and marketing new medical technologies, regulations affecting market structure, health and safety regulations and insurance markets. The course will cover evaluation tools frequently used in public policy debates and in marketing medical technologies including cost-benefit and cost-effectiveness analysis and quality of life indices.

HSM 450. ACCOUNTING, ECONOMICS, AND FINANCE FOR MS STUDENTS*

**Available only to MS students concentrating in Marketing and Health Sciences Management*

This course is designed to present the fundamentals of economic analysis, financial accounting, and financial analysis that will serve as a foundation for concepts developed throughout subsequent courses in the Medical Management program. The objectives of this course are to enable participants to understand and productively use the principles of managerial economics and accounting information to better structure business decisions. In addition, the course will address the principles of capital budgeting. The economics section covers foundational principles of microeconomics. The focus is on those principles with the greatest application for managers in health care, including supply and demand, the economic model of behavior, decision-making under uncertainty, gains from trade, externalities, demand, production, and cost functions, and basics of pricing. The accounting and finance module presents skills required to interpret and analyze common financial statements, and evaluate a company[1]s past performance and potential future performance. Specific topics of discussion include differences in financial statements of for-profit vs. not-for-profit entities, cash vs. accrual accounting, depreciation methodologies, and capital budgeting. Capital budgeting will include net present value (NPV), pay-back, accounting rate of return (ARR) and internal rate of return (IRR).

HSM 451. HEALTH CARE STRATEGY AND BUSINESS PLAN DEVELOPMENT

Basic marketing and economic concepts are integrated with the unique institutional features of health care markets to develop a framework for strategic and business planning for a health care organization. A special focus is placed on the practical elements of plan development.

HSM 452. HEALTH CARE ACCOUNTING AND FINANCE

Basic concepts in finance and financial accounting are combined with material developed in ACC 410 to develop a framework for financial decision making, financial planning, assessment, and control. The goal of the class is to provide students with a set of tools to first make financial decisions about programmatic development. In addition, students will be taught to assess and control programs toward specified financial goals.

HSM 453. HEALTH CARE OPERATIONS

This is an advanced course on operations management for health delivery organizations. We study the application of operations management concepts to the management of health care provider organizations (such as hospitals, group practices, HMO's, nursing homes, etc.), and other participants in the health industry (such as insurance companies, pharmaceutical companies, consulting businesses, etc.). Applications include both medical and administrative operations. The course uses a mixture of cases, lectures, in-class exercises, and guest lecturers.

Part of this course is closely integrated with OMG 402, Operations Management extending and applying concepts from the introductory course to practical problems in health care administration. However, a significant part of the course focuses on quality and process improvement, a topic that is not covered in OMG 402.

HSM 454. LEADING HEALTH CARE ORGANIZATIONS

Concepts developed in STR 403 Organization and Strategy are applied within the evolving healthcare setting to teach the student how to organize tasks and motivate staff to achieve coordination and efficiency (including leadership, culture, change management, and team effectiveness).

HSM 455. HEALTH CARE PRACTICUM I

This course provides students with hands-on experience with a medical management project. It develops skills in identifying a problem, working with data, finding possible solutions and delivering recommendations, all within a fixed time frame. Students learn to produce analysis, but also have to argue persuasively that the recommendations based on the analysis are valuable and should be implemented. Projects require that students not only apply analyses learned in the classroom, but also that they argue persuasively that the recommendations based on the analyses are valuable and should be implemented. Teams of three to four students are responsible for the individual projects, and meet with the instructor individually. The organizations submitting projects must be willing to spend time with students and to provide appropriate data.

HSM 456. HEALTH CARE PRACTICUM II

A continuation of the project from HSM 455.

Prerequisite: HSM 455

HSM 464. CREATING AND USING INFORMATION TO MANAGE HEALTHCARE

The objective of this course is to provide Healthcare executives with an understanding of the role that Information Technologies can play in driving care quality and financial performance in their organizations. It is intended to improve their ability to invest strategically and thoughtfully in IT to achieve the desired organizational returns. The course discusses how information technologies are reshaping and redefining the healthcare sector through better care, efficiencies in the delivery of care, advanced tools for patient involvement and continuum of care, decision support tools for clinicians, and the generation of insight from digital exhaust. It teaches students how to critique and analyze various technology tools and systems currently available to health care professionals. The focus is largely on strategic level issues, although some implementation issues will also be discussed.

■ MANAGEMENT SCIENCE METHODS

MASTERS LEVEL COURSES

MSM 400. MATHEMATICS REVIEW

Non-credit

Review of mathematical concepts prerequisite to the MBA program. Topics include: sets, vectors and matrices, functions and relations, linear equations, laws of exponents, limits and continuity, differentiation, maxima-minima, partial derivatives and simple integration.

MSM 491. MATH FOR MANAGEMENT

Credit—two hours

This is a master's level math class that is more intensive than MSM 400. Analysis and concepts in modern business analysis rely heavily on quantitative methods. Necessary theories and intuition behind them will be covered. The

focus of the course is primarily on applications in business, economics and related areas.

PHD COURSES

MSM 502. LINEAR ALGEBRA

The goal of this course is to give an introduction to linear algebra. Topics include: Gaussian elimination, matrix operations, matrix inverses. Vector spaces and subspaces, linear independence, and the basis of a space. Row space and column space of a matrix, fundamental theorem of linear algebra, linear transformations. Orthogonal vectors and subspaces, orthogonal bases, and Gram-Schmidt method. Orthogonal projections, linear regression. Determinants: how to calculate them, properties, and applications. Calculating eigenvectors and eigenvalues, basic properties. Matrix diagonalization, application to difference equations and differential equations. Positive definite matrices, tests for positive definiteness, singular value decomposition. Classification of states, transience and recurrence, classes of states. Absorption, expected reward. Stationary and limiting distributions. Offered in the summer, primarily for entering doctoral students.

MSM 503. OPTIMIZATION

This course covers Optimization in Rn, Weierstrass Theorem, Unconstrained optimization, Lagrange Theorem and equality constraints, Kuhn-Tucker Theorem and Inequality constraints, Convexity, Parametric Monotonicity and Supermodularity. Offered in the summer, primarily for entering doctoral students.

MSM 504. THEORY OF PROBABILITY AND STOCHASTIC PROCESSES I

The course provides an introduction to stochastic processes. Topics include the Poisson process, renewal theory, Markov chains, semi-Markov and Markov renewal processes, and regenerative processes.

Prerequisite: Some knowledge of functions of a real variable (MTH 265) and probability (BST 401)

MSM 505. THEORY OF PROBABILITY AND STOCHASTIC PROCESSES II

This course will study advanced topics in stochastic processes, with emphasis on problem modeling and computation. The following topics will be covered: models using discrete time Markov chains, optimal stopping and discrete time Markov chains, models using continuous time Markov chains, Markov decision processes for discrete time Markov chains, and if time permits, diffusion processes/martingales.

MSM 511. ADVANCED TOPICS IN CIS AND OM

This course introduces students to research areas in Computers and Information Systems (CIS) and Operations Management (OM). Multiple lectures will be dedicated to each topic, covering the necessary mathematical background, primary analysis techniques, and important, seminal, or recent papers within each area. The course aims to attain the following objectives: learn about what constitutes research in CIS and OM, develop critical thinking about academic papers, familiarize students with new research areas, provide opportunity to think about new research problems, and practice constructing and delivering academic talks.

MSM 522. OPTIMIZATION

This course introduces unconstrained and constrained optimization in finite dimensional spaces. Topics include convex sets and functions, Kuhn-Tucker theory, Lagrangian duality, parametric continuity, dynamic programming, and parametric monotonicity.

Prerequisite: Some knowledge of linear algebra and functions of a real variable

MSM 542. QUEUING THEORY AND APPLICATIONS

The course offers in-depth study of queues and networks of queues, including single- and multi-server-queues; Markovian models of phase-type systems; open-and-closed networks of queues; product-form solutions and local balance; bottleneck-analysis approximations and computational aspects. It also covers applications to scheduling, resource allocation and capacity-expansion decisions in service systems, computer systems and job shops.

Prerequisite: MSM 504 or Medical School course BST 402, or permission of the instructor

■ MARKETING

Paul Ellickson, *Area Coordinator*

MASTERS LEVEL COURSES

MKT 402. MARKETING MANAGEMENT

This course is our introduction to marketing. The viewpoint is that of a manager making marketing decisions in a variety of competitive and institutional settings. Considered are: consumer behavior, marketing research, product design, advertising, salesforce management, pricing and distribution channels.

Prerequisites: STR 401 or GBA 461 and GBA 412 or GBA 462 (may be taken concurrently)

*MKT 412. MARKETING RESEARCH

This course deals with the collection and use of data to support marketing decisions. The first part of the course teaches the student how to formulate the research problem, design the research and collect the data. Among the data-collection techniques discussed are: questionnaire design; telephone, mail and electronic surveys; and laboratory and field experiments. The second part of the course examines various techniques for analyzing data: cross-classification analysis, factor analysis, multidimensional scaling, conjoint analysis, etc. As part of the course requirements, teams of students design, administer, analyze and report on an actual marketing-research study.

Prerequisites: MKT 402 and GBA 412 or GBA 462

*MKT 412R. MARKETING RESEARCH USING R

This course deals with the collection and use of data to support marketing decisions while utilizing the basics of R. Among the data-collection techniques discussed are: questionnaire design; telephone, mail and electronic surveys; and laboratory and field experiments. The second part of the course examines various techniques for analyzing data: cross-classification analysis, factor analysis, multidimensional scaling, conjoint analysis, etc. As part of the course requirements, teams of students design, administer, analyze and report on an actual marketing-research study.

Prerequisites: MKT 402 and GBA 412R or GBA 462R

*MKT 414. PRICING POLICIES

(Same as STR 423)

Pricing is one of the most important, least understood, and most controversial decisions a manager has to make. These decisions often have significant long-term implications for a firm's bottom line. The purpose of this course is to help future managers make good decisions by preparing them to analyze the environment in which their firm operates and to arrive at an appropriate pricing policy for their product or service. More specifically, the objectives of the course are: 1) to develop an understanding of the relationship between a firm's environment (e.g., cost, demand, competition, and legal aspects) and its optimal pricing strategy, and 2) to develop skills in applying this understanding.

There are several components to the course: elasticity of demand and relevant costs, price discrimination and market segmentation, and competitive pricing. Students will learn the fundamentals of economic-value analysis and break-even analysis, and will be made familiar with strategies such as bundling, tie-in sales, quantity discounts, product-line pricing, and demand buildup. The course will cover ways of predicting competitor-pricing responses, and it will discuss a firm's legal environment as it pertains to pricing.

Prerequisites: STR 401 and MKT 402 (may be taken concurrently)

MKT 421. ADVANCED MARKETING STRATEGY

This course has three main threads. First and most centrally is practicing and extending concepts related to strategic marketing decisions about R&D, production, pricing, product, advertising, and channels. Second, students learn to infuse these decisions with market intelligence. Third, students learn to develop spreadsheet models to support strategic decisions and presentations to communicate the business case for strategic plans. In the process, the course extends frameworks related to segmentation, targeting, product positioning, advertising, and channels. In addition, the course will introduce frameworks related to negotiation and crisis management. Through the process of a course-long simulation, teams will be challenged through the simulation experience to understand their own strengths and weaknesses and to work better as a team.

MKT 431. CONSUMER BEHAVIOR

The course studies buyer behavior in consumer and industrial markets. Topics include: culture, social class, consumer involvement, motivation, knowledge, attitudes and group decision making. Besides theory, the course also covers applications to product, advertising and pricing decisions.

Prerequisite: MKT 402

MKT 432. NEW PRODUCT STRATEGY

This course examines the issues involved in the planning, justification, and development of new products. We will fold in best practices from organizations like Pragmatic Marketing and Strategyzer (Business Model Canvas/Value Proposition Design), along with the standard go-to processes and approaches followed in the business world today. The course explores the fundamentals of understanding market and customer needs to ensure products are developed based on market reality. We study the processes associated with the ideation, iteration and development of value propositions and explore how these value propositions must fit into a broader business model to find true success. Leading from this, we study new product development (NPD) processes, and explore the impact of disruptive innovation on crafting new solutions. We conclude with the exploration of the unique leadership skills required in a new product role. Select cases will be analyzed and discussed to embellish critical learnings. A term long project will have teams develop a value proposition and its associated business model.

Prerequisites: MKT 402 and GBA 412 or

GBA 462

MKT 433. ADVERTISING STRATEGY

This course explores the tools available to marketers for the promotion of products and services. The integrated marketing communications philosophy is stressed, and principles of consumer behavior are discussed as the starting point for the analysis of promotion decisions. Advertising is the main focus of the class, and issues such as the setting of campaign objectives, segmentation and targeting, budgeting, media placement, message strategy, creative development, persuasion and measurement of advertising effectiveness are discussed. More specialized units consider Internet and global/cross-cultural advertising. Sales promotion techniques are also discussed, including consumer promotions (e.g., sampling, coupons, premiums, contests) and trade promotions (e.g., buying allowances, cooperative advertising). Other elements of promotion discussed include public relations, sponsorships and personal selling.

Prerequisite: MKT 402

MKT 435. CHANNELS STRATEGY

This course deals with the issues that arise in designing and managing distribution channels and salesforces. A central theme of the course is that these entities perform both a tactical/operational function as well as a strategic function and that both aspects need to be con-

sidered in their design and management. The course looks at a number of design options, ranging from direct distribution through a salesforce to a complex, multi-layered channel consisting of several layers of intermediaries such as wholesalers and retailers.

Managing a channel requires an understanding of the competitive and cooperative aspects of manufacturer-distributor relationships. The course evaluates the efficiency of contractual arrangements like exclusive territories, exclusive dealing requirements and resale-price maintenance from the manufacturer's and the distributor's point of view. Finally, an assortment of contemporary issues in channels—such as everyday low pricing versus promotional pricing, slotting allowances, the shift in bargaining power from manufacturers to retailers for consumer goods, growth of store-labeled brands, the role of the Internet and new forms of retailing—are discussed. In addition, a number of modeling and quantitative techniques are studied that help implement the strategies discussed in the course.

On the salesforce front, the course delves into a number of critical issues such as performance measurement, territory decision, quotas and compensation design.

Prerequisite: MKT 402

*MKT 436. MARKETING ANALYTICS

Firms can now gather detailed real-world data on their customers, competitors and marketplace on an unprecedented scale. This volume of information will provide significant competitive advantages to those companies that are able to analyze and leverage these data sets to derive actionable business-building insights. This course will focus on what datasets, both big and small, can and cannot tell us. This analysis, however, requires a different toolset, and a different mindset than traditional survey data analysis. The tools and metrics of three kinds of data analysis will be covered: predictive, explanatory, and causal. Students will be introduced to basic programming through R, a widely used and state of the art statistical analysis software which is constantly updated. Students will learn how to prepare their data for analysis, and to then turn these results into actionable insights.

*MKT 436R. MARKETING ANALYTICS USING R

Firms can now gather detailed real-world data on their customers, competitors and marketplace on an unprecedented scale. This volume of information will provide significant competitive advantages to those companies that are able to analyze and leverage these data sets to derive actionable business-building insights. This course will focus on what datasets, both big and small, can and cannot tell us. This analysis, however, requires a different toolset, and a different mindset than traditional survey data analysis. The tools and metrics of three kinds of data analysis will be covered: predictive, explanatory, and causal. These analyses require the use of modern programming languages due to their flexibility, and their ability to scale to large-scale and complex data sets. The course therefore expands students knowledge of R, a widely used, multiplatform language. Students can also use RStudio[1], which provides a more user friendly interface to this language.

*MKT 437. DIGITAL MARKETING STRATEGY (Same as CIS 437)

This course examines the major issues involved in marketing on the Internet. Among the topics studied are: new product opportunities on the Internet; the changed role of advertising; the Internet as a two-way communication medium with consumers; targeting individual consumers; word-of-mouth among consumers on the Internet; the Internet as a distribution channel; and marketing research on the Internet.

Prerequisite: MKT 402

MKT 438. B2B PRICING

(Same as STR 438)

Students will learn the major differences in pricing strategies between selling to consumers (as in MKT414/STR423) and to other firms which then deal with consumers. The course starts by analyzing the pricing problem of a manufacturer selling to a retailer. We examine the issue of double marginalization, and learn how two-part tariffs get us out of this problem. We also examine different forms of contractual relations—from vertical acquisitions to regular short-term contracts—and potential issues with every form, touching on transfer pricing and outsourcing. In the second part of the course, we analyze a crucial concept of cost pass-through (how much a retailer should decrease the retail price in response to a decrease in the wholesale price) and the effect of manufacturer's advertising on the retailer and on the channel overall. This course is a natural continuation of Pricing for those who are interested in working in an industry where a significant portion of sales is done through independently-owned retailers, whether students are planning on working on the retailer side or on the manufacturer side of this industry.

*MKT 439. ADVANCED PRICING

(Same as STR 439)

This course builds on MKT 414/STR 423 to equip students with the necessary skills to make profitable pricing decisions in complex business environments. Topics include: pricing with constrained supply, pricing in the presence of uncertainty about demand, markdown management, advance selling, pricing on the internet, pricing in the presence of direct or indirect network effects, selling through auctions, and behavioral and ethical aspects of pricing. The course also includes a comprehensive pricing simulation.

Prerequisite: STR 423 or MKT 414

*MKT 440. PRICING ANALYTICS

The objective of this course is to prepare students for the intuition and tools to make pricing recommendations in a variety of industrial contexts, and to meet the booming demand in pricing and consulting related careers. The course builds around key economic intuitions behind customer- and competition- driven pricing strategies, and focuses on the application of these strategies to a variety of pricing problems using state-of-the-art data analysis toolkit. We primarily study the decisions on price levels, and changes of prices along time, product line, market segments and competitor structure. We also explore synergies between pricing and marketing and new product launch decisions.

Prerequisite: MKT 436

*MKT 441. BRAND & PRODUCT MANAGEMENT WORKSHOP

This course is the capstone course of the Brand Management Track. Lectures focus on scanner data analysis, and guest speakers discuss timely brand management topics. The main focus is a team project performed for a major consumer packaged goods firm, requiring the analysis of various current data sources, most notably scanner data. The major deliverable is a presentation to the client by each team of their findings. Typically, this amounts to performing a brand review.

MKT 442. SPECIAL TOPICS IN MARKETING

Special topics are generally those which are not well covered in other courses, or they may deal with marketing in selected industries (e.g., financial services, high-tech marketing, etc.). The specific content of the course varies, depending on faculty interests.

Prerequisite: permission of the instructor

MKT 442G. APPLIED PRODUCT MANAGEMENT

Product Management requires outstanding business skills, strong cross-functional leadership, and the ability to discover market/customer needs and to develop profitable solutions to meet those needs. It also requires a set of very specific applied skills, and this course is intended to develop those skills. The class will focus on three primary areas:

- Ensuring Market Driven Development
- Ideating and Developing/Testing Prototypes
- Building Market Driven Product Roadmaps/Leading an Agile Development Process

Prerequisite: permission of the instructor

MKT 444. B2B MARKETING

This course involves all of the basic marketing functions but it takes on a totally different complexion in that it involves organizations (profit and not profit) that acquire goods and services that are utilized in the production of others goods and services or are used in the overall operation of the organization.

Besides the major commercial organizations that make up a sizable percentage of B2B companies, there are institutional organizations in the mix as well – hospitals, colleges, universities and government. B2B marketing involves several distinct characteristics such as: larger, fewer purchases, centralized buying decisions, multiple buying influences, close supplier/customer relationships etc.

The overall market tends to be global in nature and technology is a major influence.

Prerequisites: Dependent upon instructor.

MKT 448. BRAND STRATEGY

In this project-based course, students consult with the senior leadership teams of local companies that are in need of a brand strategy. In doing so, students address the following questions:

- What is the firm's desired brand strategy?
- How does the firm currently see its brand?
- How does the marketplace perceive the firm? (Internal and external perceptions rarely match.)
- What can the firm do organizationally (hiring, structure, incentives, etc.) to move toward providing the desired brand?
- What can the firm do using marketing activities, including product and service experiences, to move consumer perceptions toward this desired positioning?

The course introduces students to an intuitive framework in which to develop answers to these questions and a series of research tools to collect the needed information. Students then actually use these tools to help a local company design brand strategy.

Students in this course realize several meaningful benefits:

- Greater preparedness to add immediate value in the corporate workforce, where they are sure to come across the topic of brand building. This class provides them with practical exposure to a proven methodology and an array of appropriate tools for aligning organizations going through a brand transformation or engaging in a brand-related project.
- Access to senior level leadership challenges. This course provides an opportunity for students to interact regularly with the upper management of the participating company, thereby enabling them to learn from real-life, demanding experiences.

Class sessions consist of lectures relating to brand strategy development methodologies and tools and discussions pertaining to the course project. Multiple team meetings with the client firm outside of the scheduled class times are required. Grading is based on peer, professor and client evaluations of team success.

Prerequisite: MKT 402

MKT 449. GLOBAL MARKETING STRATEGY

This course will develop the concepts of marketing strategy in the context of the resource-based view of the firm and the market focus view of the firm. Marketing strategy formulation and implementation will be related to strategies at the corporate and business unit level as well as other functional areas of the organization. The analytical tools and concepts for strategic analysis will be developed from basic economic principles. Core MBA subject matter will be integrated in the course as a part of the analysis and construction of a marketing strategy. The course examines the importance of bilateral information flows between the firm and the marketplace in defining new product requirements, changing competitive conditions, product advertising, and strategic commitment.

The definition of new core capabilities and the use of existing unique resources in creating competitive advantage will be explored. Special emphasis will be given to the impact of globalization and technology on the formulation and implementation of marketing strategy.

Prerequisite: MKT 402

*MKT 451. CONSUMER AND BRAND RESEARCH

This course is designed to give students the knowledge, vocabulary, and confidence to implement customized data analysis, using flexible and adaptable approaches. The course will cover the use of state-of-the-art computational data analysis techniques that are now possible with the widespread adoption of modern computing, including maximum likelihood estimation, and fitting models with custom metrics, optimization, bootstrapping, time series data, binary data, and discrete choice data.

Expanding on the topics covered in MKT 436, the course will explore questions such as: How do you customize your analysis approach to new problems? When should you or should you not use regression? How do you integrate the next big thing in data analysis?

The course will also discuss potential computational bottlenecks, and the techniques, software, and hardware to avoid them. Students' basic R programming skills will be expanded. All instruction is "hands on" and students should expect to be proficient in R by the end of the course.

This course has been designed for students who have completed an introductory statistics course and who have also either taken MKT 436 or have a basic working knowledge of R.

MKT 465A/B. MARKETING ANALYTICS PROJECTS I & II

This course serves as a practical capstone experience for the MS Marketing Analytics program. Partnering with corporate sponsors, student teams put their training to use in database projects which address practical marketing issues. Corporate guest speakers and practicing analysts guide students in their project work. Strong emphasis is placed on the "context" for applied analytics: the competitive market environment of the firm, customer attributes and sensitivities, marketing program recommendations and optimum business decision-making.

PHD COURSES

MKT 505. MARKETING RESEARCH PHD WORKSHOP

This workshop provides a forum for the presentation of research ideas and completed research by students. The course includes discussion of current job market papers and job market presentations, journal reviewing, and generating new research ideas. In addition, some topics are covered to illustrate current research areas of interest for the faculty. All marketing PhD students who are not on the job market are expected to participate actively.
Prerequisite: permission of the instructor

Prerequisite: permission of the instructor

MKT 511. CORE RESEARCH TOPICS IN QUANTITATIVE MARKETING

This course is designed for first, second, and third year students to provide exposure to the literature related to core research methods used in quantitative marketing research and to build student appreciation of what goes into conducting research in quantitative marketing. The content of the course varies by year with similar core topics, but rotating papers, and some rotating topics. The core topics include choice models, aggregate demand models, Bayesian models, consumer heterogeneity, and state dependence. Rotating topics have included structural model identification, experimentation, causal inference, search, learning, advertising effects, and conjoint analysis, and rotate each year. In addition, the course provides exposures to other perspectives on quantitative research. Course evaluation includes coding assignments and homework's, and the final exam has both coding and conceptual parts to it. In addition, the students are expected to submit a paper and present their own research.

Prerequisite: permission of the instructor

MKT 512. ADVANCED TOPICS IN QUANTITATIVE MARKETING RESEARCH

This course covers advanced topics in quantitative marketing research. The topics rotate each time offered and are selected based on current topical areas in the marketing, economics, and related fields as well as student and faculty research interests. Part of the evaluation in the course is to submit a paper and present their own research. All marketing PhD students who are not on the job market are expected to participate actively.

Prerequisite: permission of the instructor

■ OPERATIONS MANAGEMENT

Abraham Seidmann, *Area Coordinator*

MASTERS LEVEL COURSES

*OMG 402. OPERATIONS MANAGEMENT

Operations Management introduces the concepts and skills needed to design, manage, and improve service and manufacturing operations. The course develops a managerial perspective of the operations function and an appreciation of the role that operations plays in creating and maintaining a firm's competitive edge. The course introduces process analysis, performance measurement systems for operations, and production control systems.

Quantitative models and case studies apply these skills to service process management, manufacturing, inventory control, supply chain management and project management. The course highlights the role of effective operations management in the strategic direction of the firm as well as the connections between operations and other functional areas.

Prerequisites: CIS 401, GBA 411, and GBA 412 or GBA 462

*OMG 411. SUPPLY CHAIN ANALYTICS

This course gives an overview of supply chain management in a wide variety of industries such as: groceries, style goods, consumer electronics and services. The impact of shifts from traditional channels to e-commerce will be emphasized. New initiatives introduced to address these new challenges, such as vendor managed inventory (VMI), variety postponement, cross docking, real options contracts and quick response, will be studied and applied both in class and assignments. Supporting software, such as Enterprise Resource Planning (ERP) and supply chain tools, will also be discussed.

Prerequisite: OMG 402

*OMG 412. SERVICE MANAGEMENT

Success of service management critically depends on managing the integration of business processes with customers as well as all related support systems (technology, human resources, information flow). This integration presents a challenge to service managers who need to address significant variation in customer expectations and requirements while controlling costs and remaining competitive. This course provides a foundation for the analysis and improvement of businesses, paying particular attention to the service sector. The type of analysis learned in this course is required in virtually every industry as companies work to improve their bottom-line performance. The best way to improve performance is through a holistic approach, where the structure of processes, information and technological requirements, and the managerial implications, are considered concurrently.

Prerequisite: OMG 402

OMG 413. OPERATIONS STRATEGY

For many firms, the operations function marshals the majority share of a firm's assets and resources while producing products and services. Decision-making in operations can have a decisive effect on both the cost and the attractiveness of the firm's outputs. Thus the management of operations activities is a critical factor in a firm's competitive strategy. This is a course that explores operations related decisions in the context of overall business, operations, financial and marketing strategies. Strong emphasis is given to valuation of different operational strategies and NPV analysis. Many types of operations decisions are considered: location, capacity, sourcing, flexibility, and process choice. Risk management and financial evaluation of capital projects will be discussed. In addition to financial evaluation, students will analyze the fit of strategic choices in the competitive context a firm faces.

Prerequisite: OMG 402

OMG 415. PROCESS IMPROVEMENT

This course will teach a systematic method for understanding and improving ongoing business processes. The techniques learned in this class provide a systematic method of asking questions, collecting data, and analyzing that data to learn how processes work (or are failing) and what can be changed to improve them. The statistical techniques you will learn are SPC (Statistical Process Control, used as a proactive tool for investigation rather than its traditional role as a reactive tool), MSA (Measurement Systems Analysis, for determining if your measurement system is capable), FMEA (Failure Modes and Effects Analysis), and DOE (Design of Experiments). In addition to these analysis tools, there will be a strong emphasis on the process of data acquisition. To support the process of acquiring the right data and learning the analysis tools, you will do a small outside project for the class and a series of in-class simulations. You will learn to use two additional tools that support the questioning that leads to good data acquisition: process mapping (of the process you will be improving) and thought process mapping (of the process you use to solve the client's problem).

Prerequisite: OMG 402

*OMG 416. PROJECT MANAGEMENT

The topics treated in this course span a wide spectrum of issues, concepts, systems, and techniques for managing projects effectively in today's complex business environment. Students are led through a complete project life cycle, from requirements analysis and project definition to start-up, reviews, and phaseout. Important techniques for controlling project costs, schedules, and performance are studied. The course employs a combination of lectures, case analyses, business/project simulations, videos, Internet resources, and group discussions to develop the conceptual understanding and operational skills needed for effective managerial role performance.

Prerequisite: OMG 402

OMG 437. MANAGING HEALTH CARE OPERATIONS

(Same as HSM 437)

The health care industry is undergoing rapid growth as well as rapid structural changes. New technology, changing reimbursement mechanisms, and increased competition create many interesting management problems, not in the least in the area of health care operations. In this course, we will study the operations of various types of health care provider organizations (such as hospitals, HMO's, group practices, nursing homes, etc.) and other participants in the industry (such as insurance companies, pharmaceutical companies, suppliers and consulting companies). Topics that will be studied include: patient and provider scheduling, capacity management, providing services and supplies to health care providers, new product development and integrated delivery systems.

Students who took OMG 402 need to obtain instructor's permission prior to registration.

OMG 460. SPECIAL TOPICS IN OPERATIONS MANAGEMENT

This course provides a critical study of selected topics in operations management focusing on best practice and the status of research efforts to date. Potential topics are: yield management, operations and information management issues in retail fashion and media, transportation management, or customers' relationship management.

Prerequisite: OMG 402

OMG 461. STRATEGY AND BUSINESS SYSTEMS CONSULTING PRACTICUM

(Same as CIS 461 and STR 461)

This course provides an introduction to strategy and business systems consulting. It is primarily aimed at those exploring career opportunities in consulting but will also help students become savvy consumers of consulting services. It includes a live project helping a client at a real organization answer an important question or achieve a significant business objective. Student teams work together to deliver a set of well- reasoned impactful recommendations based upon thoughtful analysis of the relevant facts. In this way students consolidate their understanding of the problem solving approaches introduced in GBA401 through experiential learning.

In addition, a mix of cases, readings, lectures, class discussions, and guest speakers are used to deepen students' knowledge of consulting and to help them enter the industry and hit the ground running. Students who fully participate in these activities will gain understandings of

- The sectors in the consulting industry and the positioning of the major consulting firms
- How consulting services are marketed and sold as well as how consulting firms are managed
- The importance of relationship building, the role of professionalism, the attributes of successful consultants, and how these elements play into how firms evaluate candidates for the typical post-MBA roles in the industry.

ADMINISTRATION

ANDREW AINSLIE
Dean; Frontier Communications/ Rochester Telephone Professor of Business Administration; Professor of Marketing

As dean of Simon Business School, Andrew Ainslie will lead efforts to differentiate and strengthen the School's curriculum, attract and retain faculty of the highest caliber, improve the student experience, and develop strong relationships with alumni and the business community. Before joining Simon, he served as senior associate dean for the full-time MBA program at the UCLA Anderson School of Management from 2010 to 2014. While at UCLA, Ainslie's responsibilities included admissions, student services, and career placement. In the four years Ainslie was at Anderson, the school increased its admissions more than 60 percent, increased placements more than 20 percent, and revised its curriculum to better meet the demands of the market and the needs of the students. In addition to his duties as Anderson's senior associate dean, Ainslie was associate professor of marketing at UCLA Anderson, and previously was assistant professor of marketing from 2000 to 2005. Prior to his time at Anderson, Ainslie was assistant professor of marketing at Cornell University's Johnson Graduate School of Management from 1997 through 2000.

Dean Ainslie's major research interests are in economic and statistical models of consumer behavior and in direct marketing. In particular, he is focused on developing variance components models for a variety of environments. Topics he has investigated include: new products and movie diffusion, model performance, and consumer behavior uncovered through choice modeling. Most recently, he is studying the effect of store characteristics on consumer purchasing behavior.

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RON GOETTLER
Senior Associate Dean of Faculty and Research; James N. Doyle Sr. Professor of Entrepreneurship; Professor of Economics, Marketing, and Entrepreneurship

Professor Goettler's research spans quantitative marketing, industrial organization, and finance, with an emphasis on structural econometric methods to understand consumer and firm behavior. He is particularly interested in high-tech industries, focusing on the relationship between competition and innovation and on the marketing of new products.

Goettler's research has been published in various academic journals including the *Journal of Political Economy*, the *RAND Journal of Economics,* and the ***Journal of Marketing Research***. His paper, "Equilibrium in a Dynamic Limit Order Market," which appeared in the *Journal of Finance*, was nominated for the journal's Smith-Breeden Prize and won the NYSE award for the best paper on equity trading at the 2004 Western Finance Association Meeting. Before joining the Simon School in 2012, Goettler was an assistant professor of marketing at the University of Chicago.

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GREGORY H. BAUER
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Professor Bauer's main area of research is international finance. He has published papers in the *Review of Economic Studies,* the *Journal of Financial Economics,* the *Journal of Econometrics* and the *Journal of International Money and Finance,* as well as in several policy-oriented journals. He is currently working on incorporating macroeconomic factors into term structure models using high frequency data.

Prior to joining Simon as Associate Dean, Bauer was the assistant director and research adviser in the Financial Markets Department at the Bank of Canada. At the bank, he was responsible for managing a group of nine PhD researchers who specialize in analyzing fixed income and foreign exchange markets. In addition, he coordinated the department's annual research workshops.

Bauer holds the Chartered Financial Analyst (CFA) designation. Prior to obtaining his doctorate, Bauer was a foreign exchange trader at the Bank of Canada and a macroeconomist at the Ontario Ministry of Finance. Bauer is a four-time winner of the Superior Teaching Award from the Simon MBA program and a multiple winner of awards from the Executive MBA program.

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