



2023-2024  
**COURSE CATALOG**



UNIVERSITY of  
ROCHESTER

**SIMON  
BUSINESS  
SCHOOL**

Information in this publication is current as of July 2023 and is subject to change.

# COURSE CATALOG

## Academic Year 2023–2024

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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.

While the study grids contained in this book are current for the 2023-2024 academic year, the arrangement of courses is subject to change.

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  
2341 Carol Simon Hall  
Phone: (585) 275-8071

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

To view the current Academic Calendar, please go to:

<https://simon.rochester.edu/registrar/academic-calendars>

**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. All students must take 9 required core courses, GBA401, the MGC course sequence, a project elective, two breadth electives, and a summer internship (or an approved alternative). The remaining credits will be fulfilled through electives. Any credit achieved to meet the summer internship requirement (GBA490) will not be counted towards MBA graduation credits. 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, presentation, and word-processing software. The programs most widely used are Microsoft Excel, PowerPoint, and Word. Although not required, a student may complete a specialization or minor. Students can earn a STEM designation for their MBA, if 50% (34 credits) or more of the minimum credits required for the degree come from STEM designated courses. STEM designated courses are indicated with an asterisk (\*) in this catalog. For more details on specializations and minors please refer to pages 21-25.

**CORE COURSES**

- ACC 401. Corporate Financial Accounting
- \*CIS 401. Information Systems for Management
- \*FIN 402. Capital Budgeting and Corporate Objectives
- GBA 401. Structured Problem Solving
- \*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. Interpersonal Persuasion: Influence in Dynamic Interaction

**FULL-TIME MBA CLASS OF 2025  
TWO-YEAR MBA PROGRAM: YEAR 1**

FALL SEMESTER			SPRING SEMESTER		SUMMER TERM
PRE-FALL	FALL A	FALL B	SPRING A	SPRING B	
*STR 401 Managerial Economics	ACC 401 Corporate Financial Accounting	*GBA 412 Data Analytics	Project Elective (3 Credits)		Required Internship
GBA 401 Structured Problem Solving (1 Credit)	MKT 402 Marketing Management	Elective	*GBA 411 Business Modeling	*CIS401 Information Systems for Management	
Introductory Probability for Finance (0 credits)	*FIN 402 Capital Budgeting and Corporate Objectives	Elective	*OMG 402 Operations Management	MGC 402 Interpersonal Persuasion: Influence in Dynamic Interaction	
	MGC 401 Professional Communication: Persuasion in Business Relationships	Elective	Elective	Elective	
Fall Semester Credit Hours: 21			Spring Semester Total Credit Hours: 18		

## TWO-YEAR MBA PROGRAM: YEAR 2

FALL SEMESTER		SPRING SEMESTER	
FALL A	FALL B	SPRING A	SPRING B
Elective	Elective	Elective	Elective
Elective	Elective	Elective	Elective
Elective	Elective	Elective	Elective
Fall Semester Credit Hours: 15		Spring Semester Credit Hours: 15	

## Other Degree Requirements

- STR421 is a required class that must be taken in an elective slot.

Two electives must be selected from the following five listed below 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

Project Elective must be selected from one of the classes below:

- \*MKT441 Brand Management Workshop
- MKT450 Product Management Workshop
- FIN450 MBA Finance Project
- CIS461 Strategy and Business Systems Consulting Practicum

All courses are 2.5 credits unless noted otherwise.

Minimum Degree Total Credit Hours: 68

## 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 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
- \*ACC 447. Reporting Analytics in Financial Markets
- BPP 432. Basic Business Law
- \*GBA 462P. Core Statistics for MS Students Using Python
- 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)

FALL SEMESTER		SPRING SEMESTER	
FALL A	FALL B	SPRING A	SPRING B
*GBA 462P Core Statistics for MS Students Using Python	*ACC 417 Auditing	ACC 424 Financial Reporting II	*ACC 411 Applied Financial Statement Analysis with Data Analytics
*ACC 410 Managerial Accounting and Performance Management	BPP 432 Basic Business Law	ACC 437 Basic Federal Income Tax Accounting	ACC 440 Basic Income Tax – Business Entities and Gift/Estate Taxes
ACC 423 Financial Reporting I	*ACC 447 Reporting Analytics in Financial Markets	<u>Choose 1 Elective:</u> *ACC 418 Taxes and Business Strategy  *ACC 439 Accounting Analytics for Forensics	ACC 436 Research into Professional Accounting Standards
MGC 461 Professional Communication (4 credits)		*ACC 438 Auditing II - Auditing and Information Systems (4 credits)	
Fall Total Credit Hours: 19		Spring Total Credit Hours: 19	

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

FALL SEMESTER		SPRING SEMESTER		SUMMER TERM	FALL SEMESTER	
FALL A	FALL B	SPRING A	SPRING B		FALL A	FALL B
*GBA 462P Core Statistics for MS Students Using Python	*ACC 417 Auditing	ACC 424 Financial Reporting II	*ACC 411 Applied Financial Statement Analysis with Data Analytics	Internship	ACC 436 Research into Professional Accounting Standards	
*ACC 410 Managerial Accounting and Performance Management	BPP 432 Basic Business Law	ACC 437 Basic Federal Income Tax Accounting				
ACC 423 Financial Reporting I	*ACC 447 Reporting Analytics in Financial Markets	Choose 1 Elective: *ACC 418 Taxes and Business Strategy  *ACC 439 Accounting Analytics for Forensics	ACC 440 Basic Income Tax – Business Entities and Gift/Estate Taxes			
MGC 461 Professional Communication (4 credits)		*ACC 438 Auditing II - Auditing and Information Systems (4 credits)				
Fall Total Credit Hours: 19		Spring Total Credit Hours: 16.5				

All courses are 2.5 credits unless noted otherwise. Minimum Degree Total Credit Hours: 38

## 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.
- Course substitutions are limited to 3 courses.
- Students must have earned a grade of B or better in the prior coursework in order to be eligible for a course substitution.
- Petitions must be submitted to your academic advisor by September 15th for the entire academic year.
- Petitions must include a course description and syllabus from the course they believe meets the requirements for a substitution.
- If a substitution is approved, a meeting will be scheduled with your academic advisor to determine an appropriate substitute course.
- Final approval is given by Professor Tribunella.

## Internship Track

- MSA students in the Internship Track will not take ACC436 in the Spring but will take ACC436 the following Fall as their last class. There are no exceptions on this class.
- The last class of ACC436 can be taken in a hybrid format, but it is required that all students return during the last week of the semester for an in-person component of the hybrid class. Failure to attend the in-person component will result in failing the class. Details on the in-person requirements will be shared by the Academic Advising team.
- Requests to change tracks must be made to your academic advisor. The deadline to change tracks is December 15.

## 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 semester 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 11 core courses, 1 elective, 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. Applied Financial Statement Analysis with Data Analytics
- \*CIS 468. Spreadsheet Modeling using Excel for MS
- \*FIN 411. Investments
- \*FIN 413. Corporate Finance
- \*FIN 418. Quantitative Finance with Python
- \*FIN 424. Options and Futures with Python
- \*FIN 430. Risk Management
- \*FIN 448. Fixed Income Securities
- \*FIN 462. Foundations in Financial Economics
- \*FIN 465. Applied Finance Project

- \*GBA 462P. Core Statistics for MS Students using Python
- MGC 461. Professional Communication

**ELECTIVE OPTIONS**

- ACC 424. Financial Reporting II
- \*BPP 426. Macroeconomics
- FIN 441G. Special Topics in Finance: Asset Management
- \*FIN 442X. International Finance & Switzerland Immersion
- \*FIN 444. Entrepreneurial Finance(ENT444)
- \*FIN 446. Financial Technology
- STR 442F. Strategy, Organization, and Firm Value

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

FALL SEMESTER			SPRING SEMESTER	
PRE-FALL	FALL A	FALL B	SPRING A	SPRING B
GBA 485A Foundations of Python (.5 credit)	*GBA 462P Core Statistics for MS Students using Python	*FIN 424 Options and Futures with Python	*FIN 448 Fixed Income Securities	*FIN 418 Quantitative Finance with Python
*FIN 462 Foundations in Financial Economics	*FIN 413 Corporate Finance	*FIN 411 Investments	*CIS 468 Spreadsheet Modeling using Excel	*FIN 430 Risk Management
	ACC 401** Corporate Financial Accounting	*ACC 411 Applied Financial Statement Analysis with Data Analytics	*FIN 465 Applied Finance Project (By Topic) (3 credits)	
	MGC 461 Professional Communication (4 credits)		<u>Choose 1 Elective Option in Spring</u>	
			*BPP 426 Macroeconomics	*FIN 444 Entrepreneurial Finance
			FIN 441G Asset Management	*FIN 446 Financial Technology
			STR 442F Strategy, Organization and Firm Value	ACC 424 Financial Reporting II (Stretched across Spring)
			*FIN 442X International Finance (Switzerland Immersion)	
Fall Total Credit Hours: 22			Spring Total Credit Hours: 15.5	

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

FALL SEMESTER			SPRING SEMESTER		SUMMER TERM	FALL SEMESTER	
PRE-FALL	FALL A	FALL B	SPRING A	SPRING B		FALL A	FALL B
GBA 485A Foundations of Python (.5 credit)	*GBA 462P Core Statistics for MS Students using Python	*FIN 424 Options and Futures with Python	*FIN 448 Fixed Income Securities	*FIN 418 Quantitative Finance with Python	Internship		
*FIN 462 Foundations in Financial Economics	*FIN 413 Corporate Finance	*FIN 411 Investments		*FIN 430 Risk Management			
	ACC 401** Corporate Financial Accounting	*ACC 411 Applied Financial Statement Analysis with Data Analytics	*FIN 465 Applied Finance Project (By Topic) (3 credits)				
	MGC 461 Professional Communication (4 credits)		Choose 1 Elective Option in Spring				
*BPP 426 Macroeconomics			*FIN 444 Entrepreneurial Finance				
FIN 441G Asset Management			*FIN 446 Financial Technology				
		STR 442F Strategy, Organization and Firm Value	ACC 424 Financial Reporting II (Stretched across Spring)				
		*FIN 442X International Finance (Switzerland Immersion)					
Fall Total Credit Hours: 22			Spring Total Credit Hours: 13			Fall Total Credit Hours: 2.5	

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

All courses are 2.5 credits unless noted otherwise.

Minimum Degree Total Credit Hours: 37.5

### 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 18.
- 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 CIS468 in the Summer but will take CIS468 the following Fall as their last class. There are no exceptions on this class.
- The last class of CIS468 can be taken in a hybrid format, but it is required that all students return during the last week of the semester for an in-person component of the hybrid class. Failure to attend the in-person component will result in failing the class. Details on the in-person requirements will be shared by the Academic Advising team.
- Requests to change tracks must be made to your academic advisor. The deadline to change tracks is January 15.

### 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 semester 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, pricing and digital marketing.

Students take 7 core courses, 5 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**

- \*CIS467. Data Management, Warehousing and Visualization
- \*GBA424. Analytics Design and Applications
- \*GBA 436R. Causal and Predictive Analytics
- \*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 Communication
- \*MKT 414. Pricing Policies
- \*MKT 465. Marketing Analytics Projects

**ELECTIVE OPTIONS**

- \*CIS432. Advanced Predictive Analytics with Python
- \*CIS 434. Social Media and Text Analytics
- \*CIS 468. Spreadsheet Modeling using Excel
- \*GBA 465. Python Analytics for R Programmers
- \*GBA 468P. Prescriptive Analytics with Python
- MKT 431. Consumer Behavior
- \*MKT 437. Digital Marketing Strategy
- \*MKT 439. Advanced Pricing
- \*MKT 440. Pricing Analytics
- \*MKT 451. Consumer and Brand Research

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

PRE-FALL	FALL SEMESTER		SPRING SEMESTER	
	FALL A	FALL B	SPRING A	SPRING B
*GBA 464 Programming for Analytics	*GBA 462R Core Statistics for MS Students Using R	*GBA 424 Analytics Design and Applications	*MKT 465 Marketing Analytics Project (3 credits)	
	GBA 463 Economics and Marketing Strategy for MS Students	*GBA 436R Causal and Predictive Analytics	<u>Choose at least 5 electives:</u>	
	*CIS 467 Data Management, Warehousing, and Visualization	*MKT 414 Pricing Policies	*GBA 468P Prescriptive Analytics with Python	*CIS 432 Advanced Predictive Analytics with Python
	MGC 461 Professional Communication (4 credits)		*CIS 468 Spreadsheet Modeling using Excel	*CIS 434 Social Media and Text Analytics
			*MKT 437 Digital Marketing Strategy	MKT 431 Consumer Behavior
MGC 461 Professional Communication (4 credits)		*GBA 465 Python Analytics for R Programmers	*MKT 439 Advanced Pricing	
		*MKT 440 Pricing Analytics	*MKT 451 Consumer and Brand Research	
Fall Total Credit Hours: 21.5			Spring Total Credit Hours: 15.5	

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

PRE-FALL	FALL SEMESTER		SPRING SEMESTER		SUMMER TERM	FALL SEMESTER	
	FALL A	FALL B	SPRING A	SPRING B		FALL A	FALL B
*GBA 464 Programming for Analytics	*GBA 462R Core Statistics for MS Students Using R	*GBA 424 Analytics Design and Applications	Choose at least 5 electives:		Internship		*MKT 465 Marketing Analytics Project (3 credits)
	GBA 463 Economics and Marketing Strategy for MS Students	*GBA 436R Causal and Predictive Analytics	*GBA 468P Prescriptive Analytics with Python	*CIS 432 Advanced Predictive Analytics with Python			
	**CIS 467 Data Management, Warehousing, and Visualization	*MKT 414 Pricing Policies	*CIS 468 Spreadsheet Modeling using Excel	*CIS 434 Social Media and Text Analytics			
	MGC 461 Professional Communication (4 credits)		*MKT 437 Digital Marketing Strategy	MKT 431 Consumer Behavior			
			*GBA 465 Python Analytics for R Programmers	*MKT 439 Advanced Pricing			
			*MKT 440 Pricing Analytics	*MKT 451 Consumer and Brand Research			
Fall Total Credit Hours: 21.5			Spring Total Credit Hours: 12.5			Fall Total Credit Hours: 3	

All courses are 2.5 credits unless noted otherwise.

Minimum Degree Total Credit Hours: 37

#### 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 MKT465 in the Spring but will take MKT465 the following Fall as their last class. There are no exceptions on this class.
- The last class of MKT465 can be taken in hybrid format, but it is required that all students return during the last week of the semester for an in-person component of the hybrid class. Failure to attend the in-person component will result in failing the class. Details on the in-person requirements will be shared by the Academic Advising team.
- Requests to change tracks must be made to your academic advisor. The deadline to change tracks is December 15.

#### 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 semester 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 9 core courses, 3 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**

- \*CIS 434. Social Media and Text Analytics
- \*CIS 465. Business Analytics Project
- \*CIS467. Data Management, Warehousing and Visualization
- \*GBA 424. Analytics Design and Applications
- \*GBA 436R. Causal and Predictive Analytics
- \*GBA 462R. Core Statistics for MS Students Using R
- GBA 463. Economics and Marketing Strategy for MS Students
- \*GBA 464. Programming for Analytics
- \*GBA 465. Python Analytics for R Programmers
- \*GBA 468P. Prescriptive Analytics with Python
- MGC 461. Professional Communication

**ELECTIVE OPTIONS**

- \*CIS 432. Advanced Predictive Analytics with Python
- \*CIS 442F. Big Data
- \*FIN430. Risk Management
- GBA466. Intro to Accounting + Finance
- \*OMG402. Operations Management
- \*OMG411. Supply Chain Analytics
- \*MKT414. Pricing Policies
- \*MKT439. Advanced Pricing
- \*MKT440. Pricing Analytics

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

PRE-FALL	FALL SEMESTER		SPRING SEMESTER	
	FALL A	FALL B	SPRING A	SPRING B
*GBA 464 Programming for Analytics	MGC 461 Professional Communication (4 credits)		*CIS 465 Business Analytics Project (3 credits)	
	*GBA 462R Core Statistics for MS Students Using R	*GBA 424 Analytics Design and Applications	*GBA468P Prescriptive Analytics with Python	*CIS 434 Social Media and Text Analytics
	GBA 463 Economics and Marketing Strategy for MS Students	*GBA 436R Causal and Predictive Analytics	*GBA465 Python Analytics for R Programmers	
	*CIS 467 Data Management, Warehousing, and Visualization	<u>Choose 1 Elective</u>	<u>Choose at least 2 electives:</u>	
		*OMG 402 Operations Management  GBA 466 Intro to Accounting + Finance  *MKT 414 Pricing Policies	*MKT 440 Pricing Analytics  *OMG 411 Supply Chain Analytics	*CIS 432 Advanced Predictive Analytics with Python  *CIS 442F Big Data  *FIN 430 Risk Management  *MKT 439 Advanced Pricing
	Fall Total Credit Hours: 21.5		Spring Total Credit Hours: 15.5	

FULL-TIME MS IN BUSINESS ANALYTICS (INTERNSHIP TRACK)

PRE-FALL	FALL SEMESTER		SPRING SEMESTER		SUMMER TERM	FALL SEMESTER	
	FALL A	FALL B	SPRING A	SPRING B		FALL A	FALL B
*GBA 464 Programming for Analytics	MGC 461 Professional Communication (4 credits)		*GBA468P Prescriptive Analytics with Python	*CIS 434 Social Media and Text Analytics	Internship	*CIS 465 Business Analytics Project (3 credits)	
	*GBA 462R Core Statistics for MS Students Using R	*GBA 424 Analytics Design and Applications	*GBA465 Python Analytics for R Programmers				
	GBA 463 Economics and Marketing Strategy for MS Students	*GBA 436R Causal and Predictive Analytics					
	*CIS 467 Data Management, Warehousing, and Visualization	<u>Choose 1 Elective</u>	<u>Choose at least 2 electives:</u>				
		*OMG 402 Operations Management  GBA 466 Intro to Accounting + Finance  *MKT 414 Pricing Policies	*MKT 440 Pricing Analytics  *OMG 411 Supply Chain Analytics	*CIS 432 Advanced Predictive Analytics with Python  *CIS 442F Big Data  *FIN 430 Risk Management  *MKT 439 Advanced Pricing			
Fall Total Credit Hours: 21.5			Spring Total Credit Hours: 12.5			Fall Total Credit Hours: 3	

All courses are 2.5 credits unless noted otherwise.

Minimum Degree Total Credit Hours: 37

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.

Internship Track

- MSBA students in the internship track will not take CIS465 in the Spring but will take CIS465 the following Fall as their last class. There are no exceptions on this class.
- The last class of CIS465 can be taken in hybrid format, but it is required that all students return during the last week of the semester for an in-person component of the hybrid class. Failure to attend the in-person component will result in failing the class. Details on the in-person requirements will be shared by the Academic Advising team.
- Requests to change tracks must be made to your academic advisor. The deadline to change tracks is December 15.

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 semester 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.

## CERTIFICATE PROGRAMS

### ADVANCED CERTIFICATE OF ACHIEVEMENT IN ANALYTICS TEAM LEADERSHIP

To earn the Advanced Certificate of Achievement in Analytics Team Leadership, an analytics student must complete 10.5 credits minimum with 4 courses of study. Students take 3 credits of Workshop Leader Training Courses (GBA419), STR427, OMG416, as well as one "focus" elective course, choosing from a select set of Simon electives in Fall A or Fall B, or from data science during the Fall semester. Students must be full-time MSBA or MSMA students entering their second year of study to be considered for the program. STEM designated courses are indicated with an asterisk (\*).

PRE-FALL	FALL SEMESTER		
	FALL A	FALL B	
	GBA 419 Leading Teams (3 credits)		
	*OMG 416 Project Management	Choose 1 Elective	
		*OMG 402 Operations Management	MKT 433 Advertising Strategy
	STR 427 Organizational Behaviour	GBA 466 Accounting and Finance for MS Students	MKT 442G Applied Product Management
		*MKT 414 Pricing Policies	*OMG 412 Service Management
	DSCC 475 Time Series Analysis and Forecasting in Data Science (Fall Semester, 4 credits)		

All courses are 2.5 credits unless noted otherwise.

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

## 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, the required Managerial Communications course, GBA401, and 10 electives, one of which must be a project course, with a minimum 3.0 grade-point average to complete the degree. Although not required, students may complete a specialization. Students can earn a STEM designation for their MBA, if 50% or more of the minimum credits required for the degree come from STEM designated courses. STEM designated courses are indicated with an asterisk (\*).

#### 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
- STR 421 Competitive Strategy
- \*CIS 401 Information Systems For Management
- MKT 402 Marketing Management

#### EXAMPLE PROGRAM SCHEDULE YEAR 1

FALL SEMESTER		SPRING SEMESTER		SUMMER TERM
FALL A	FALL B	SPRING A	SPRING B	
*STR 401 Managerial Economics	*GBA 412 Data Analytics	*GBA 411 Business Modeling	*FIN 402 Capital Budgeting and Corporate Objectives	*OMG 402 Operations Management
MKT 402 Marketing Management	*CIS 401 Information Systems for Management	ACC 401 Corporate Financial Accounting	STR 421 Competitive Strategy	Elective
Fall Total Credit Hours: 10		Spring Total Credit Hours: 10		Summer Total Credit Hours: 5

All courses are 2.5 credits unless noted otherwise.

Minimum Degree Total Credit Hours: 51.5

In subsequent academic years, PMBA students will complete outstanding core and elective requirements, working with their academic advisor to construct a personalized program of study to meet their individual schedule needs. Students will typically complete GBA401 and their project elective during the Spring semester in their last academic year.

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

## EMBA REQUIREMENTS AND CORE COURSE SEQUENCES

### EXECUTIVE MBA (EMBA)

The Simon Executive MBA Program is geared toward working professionals. The unique lockstep curriculum sequence moves students through the initial foundational tools and functional knowledge before culminating in strategic application. There are 15 required courses, 3 electives, plus 2 optional complimentary courses. Students follow the lockstep program for the 15 courses and can take advantage of several course and delivery options for the electives. Students can earn a STEM designation for their MBA, if 50% or more of the minimum credits required for the degree come from STEM designated courses. STEM designated courses are indicated with an asterisk (\*).

#### EXAMPLE PROGRAM SCHEDULE YEAR 1

FALL SEMESTER		SPRING SEMESTER		SUMMER TERM
FALL A	FALL B	SPRING A	SPRING B	
*STR 401 Managerial Economics	*CIS 401 Information Systems for Management	ACC 401 Corporate Financial Accounting	*FIN 402 Capital Budgeting and Corporate Objectives	*OMG 402 Operations Management
*EXP 420 Managerial Decision Analysis	*EXP 422 Managerial Data Analysis	MKT 402 Marketing Management	STR 403 Organization and Strategy	EXP 476 Contemporary Marketing Strategy
Fall Total Credit Hours: 10		Spring Total Credit Hours: 10		Summer Total Credit Hours: 5

#### YEAR 2

FALL SEMESTER		SPRING SEMESTER	
FALL A	FALL B	SPRING A	SPRING B
*ACC 410 Managerial Accounting and Performance Measurement	*FIN 413 Corporate Finance	EXP 485 New Venture Development	Elective
*STR 422 Game Theory for Managers	STR 421 Competitive Strategy	Elective	Elective
Fall Total Credit Hours: 10		Spring Total Credit Hours: 10	

All courses are 2.5 credits unless noted otherwise.

While the study grids contained in this book are accurate for the current 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**

FALL SEMESTER		SPRING SEMESTER		SUMMER TERM	FALL SEMESTER
FALL A	FALL B	SPRING A	SPRING B		
HSM 420 Business Economics of the Health Care Industry	HSM 425 Managerial Accounting for Health Care Organizations	HSM 452 Health Care Accounting and Finance	HSM 437 Managing Health Care Operations	HSM 465 Health Care Analytics	HSM 455* Health Care Practicum I (Fall A Term - 3 credits)
HSM 454 Leading Health Care Organizations	HSM 451 Health Care Marketing and Business Plan Development	HSM 430 Health Sciences Management and Strategy	STR 403 Organization and Strategy	HSM 464 Health IT and Analytics	HSM 456* Health Care Practicum II (Fall B Term - 3 credits)

All courses are 2.5-credit hours unless indicated otherwise.

Minimum Degree Total Credit Hours: 31

\*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.

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

**ONLINE MS IN BUSINESS ANALYTICS FOR MANAGERS**

The Online MS in Business Analytics for Managers provides the technical and management skills needed to lead your organization at the next level. This program focuses on teaching students how to evaluate investments in analytics—which tools, data, and skills are most critical—and how to manage these investments—managing analytics teams, communicating analytics content, and leading with data.

**Logistics and Time Requirements**  
 The Online MSBA is a 14-month program targeted to managers and aspiring managers with 3-15 years of work experience. The degree is offered on a part-time basis, primarily through online evening classes, along with two in-person immersion experiences.

**ONLINE MS IN BUSINESS ANALYTICS FOR MANAGERS**

FALL SEMESTER		SPRING SEMESTER			SUMMER TERM	FALL SEMESTER	
FALL A	FALL B	SPRING A	SPRING BREAK	SPRING B		FALL A	FALL B
*GBA471 Probability and Descriptive Analytics	*CIS467 Data Management, Warehousing & Visualization	*GBA474 Advanced Analytics-Driven Decisions	Immersion (0 credits)	GBA444 Ethics & Policy in Tech	CIS414 Digital Business Strategy	*GBA475 Online Business Analytics Capstone Project (launches and is billed in Summer)	
*GBA473 Data-Driven Decision Making	*GBA472 Causal and Predictive Analytics	*MKT472 Marketing Management Analytics		*OMG472 Operations and Supply Chain Analytics	*GBA478 AI & Business		
MGC473 Communication and Leadership for Business Analytics							

All courses are 2.5 credits unless noted otherwise.

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

## 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. They 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. Adv. Causal inference plus Machine Learning  
 ACC 513. Contemporary Topics in Acct.  
 ECO484. 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

**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 term 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:

ECO484. 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. Intro 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 term 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. Adv. Causal Inference plus Machine Learning  
 ECO 485. Intro to Econometrics  
 AEC 523. Micro-Econ Model: Static Approach  
 ECO 487. Research in Applied Econometrics  
 AEC 524. Micro-Econ Model: Dynamic Approach

**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. Adv. Causal Inference plus Machine Learning

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 microeconomics.

**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 term 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

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

AEC 514. Game Theory

CIS512. Advanced Topics in Information Systems

AEC520. Adv. Causal Inference plus Machine Learning

MSM 522. Optimization

ECO 484. Intro to Math Stat & Econometrics

MSM 542. Queuing Theory and Applications

ECO 485. Intro 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 504. Theory of Probability and Stochastic Processes I

MSM 522. Optimization

AEC 511. Advanced Price 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). The topic 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. The student will present his/her work to a committee of IS Faculty, to be selected by the PhD Faculty Committee, that will grade the first-year paper using the PhD Standard Evaluation Grading.

**Second Year Paper:** The Information Systems second year paper 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. The student will present his/her work to a committee of IS Faculty, to be selected by the PhD Faculty Committee, that will evaluate the papers using the PhD Standard Evaluation Grading.

**Candidacy Qualifying Exam:** The Information Systems Qualifying Exam 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 second year papers. The paper should be presented to the committee

(formed before the second year paper) by January 15th that will evaluate the paper and presentation.

## Operations Management

Required Courses:

AEC 511. Adv. Price Theory

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

AEC 514. Game Theory

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

AEC520. Adv. Causal Inference plus Machine Learning

MSM 511. Advanced Topics in Operations Management

BST401. Probability Theory

MSM512. Ops Mngt: Bus. Problem Context

MSM518. Adv. Business Modeling

MSM 522. Optimization

MSM532. Predictive Analytics using Python

MSM 542. Queuing Theory and Applications

and presentation constitutes passing the Preliminary requirement and first-year paper.

Second Year Paper: The Operations Management Second Year Papers 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. The student will present his/her work to a committee of OM Faculty, to be selected by the PhD Faculty Committee, that will evaluate the papers and the presentation.

Candidacy Qualifying Exam: The Operations Management Qualifying Exam 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 second year papers. The paper should be presented to the committee (formed before the second year paper) by January 15th and will be evaluated using the PhD Standard Evaluation Grading.

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. The student will present his/her work to a committee of OM Faculty, to be selected by the PhD Faculty Committee, that will grade the first-year paper using the PhD Standard Evaluation Grading. Successful completion of the initial drafts

## MBA SPECIALIZATIONS

Students are not required to, but can choose one or more Specializations. They provide opportunities for students to tailor curriculum to better meet job market needs. The specializations are focused on entry-level MBA positions, have curricular and co-curricular content, and students will work closely with the 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

<p>Strategy No required courses</p> <p>Choose 4: STR403 Organization and Strategy *STR422 Game Theory for Managers *STR423/MKT414 Pricing Policies STR424 Human Resource Strategy *STR/MKT439 Advanced Pricing STR440 Corporate Governance *HSM420 Business Economics of the Health Care Industries</p> <p>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 ENT423 New Venture Development and Managing for Long Term Success *FIN413 Corporate Finance *FIN438 Mergers and Acquisitions *FIN441F Special Topics in Finance: Corporate Restructuring GBA435 Negotiation Theory and Practice: Bargaining for Value *MKT421 Advanced Marketing Strategy MKT432 New Product Strategy MKT/STR438 B2B Pricing OMG413 Operations Strategy *OMG415 Process Improvement STR428 Strategy Beyond Markets STR429 Advanced Competitive Strategy</p>	<p>Pricing *MKT414/STR423 Pricing Policies</p> <p>Choose 2: MKT/STR438 B2B Pricing *MKT/STR439 Advanced Pricing *MKT440 Pricing Analytics *STR422 Game Theory for Managers</p> <p>Choose 3, including any from above: *ACC410 Managerial Accounting and Performance Measurement GBA435 Negotiation Theory and Practice: Bargaining for Value *GBA436 Causal and Predictive Analytics *HSM420 Business Economics of the Health Care Industries *MKT412 Marketing Research *MKT421 Advanced Marketing Strategy STR429 Advanced Competitive Strategy</p>
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## CONSULTING SPECIALIZATIONS (continued)

## Technology

\*CIS415 Business Process Analysis and Design  
 \*CIS417 Introduction to Business Analytics  
 CIS461 Strategy and Business Systems Consulting Practicum

## Choose 3:

\*ACC410 Managerial Accounting and Performance Measurement  
 \*CIS413 Managing Digital Products and Platforms  
 CIS414 Digital Business Strategy  
 \*CIS418 Advanced Business Modeling and Analysis Using Spreadsheets  
 \*CIS434 Social Media and Text Analytics  
 \*CIS/MKT437 Digital Marketing Strategy  
 \*CIS/FIN446 Financial Technology  
 \*OMG411 Supply Chain Analytics  
 \*OMG412 Service Management  
 OMG413 Operations Strategy  
 \*OMG415 Process Improvement  
 \*OMG416 Project Management

## Operations

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

## Choose 2:

\*CIS415 Business Process Analysis and Design  
 \*CIS418 Advanced Business Modeling and Analysis Using Spreadsheets  
 CIS414 Digital Business Strategy  
 \*OMG412 Service Management  
 OMG413 Operations Strategy  
 \*OMG416 Project Management  
 STR403 Organization and Strategy  
 STR424 Human Resource Strategy

## FINANCE SPECIALIZATIONS

## Banking

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

## Choose 3:

ACC423 Financial Reporting I  
 ACC424 Financial Reporting II  
 \*BPP426 Macroeconomics  
 \*FIN424 Options and Future Markets  
 \*FIN438 Mergers and Acquisitions  
 \*FIN441F Special Topics in Finance: Corporate Restructuring  
 \*FIN/CIS446 Financial Technology  
 \*FIN448 Fixed-Income Securities

## Asset Management

\*ACC411 Applied Financial Statement Analysis with Data Analytics  
 \*FIN411 Investments  
 \*FIN424 Options & Future Markets  
 \*FIN434 Investment Management and Trading Strategies

## Choose 3:

\*ACC447 Reporting Analytics in Financial Markets  
 \*BPP426 Macroeconomics  
 \*FIN418 Quantitative Finance with Python  
 \*FIN441A Special Topics in Finance: Real Estate  
 FIN441G Special Topics in Finance: Asset Management  
 \*FIN442 International Economics and Finance  
 \*FIN448 Fixed-Income Securities

## FINANCE SPECIALIZATIONS (continued)

## Venture Capital and Private Equity

\*ACC411 Applied Financial Statement Analysis with Data Analytics

\*FIN411 Investments

\*FIN413 Corporate Finance

\*FIN/ENT444 Entrepreneurial Finance

STR440 Corporate Governance

Choose 3:

ACC423 Financial Reporting I

\*CIS413 Managing Digital Products and Platforms

ENT423 New Venture Development and Managing for Long Term Success

ENT442F Venture Investing and Business Valuation

\*FIN424 Options and Future Markets

\*FIN434 Investment Management and Trading Strategies

\*FIN438 Mergers and Acquisitions

\*FIN441A Special Topics in Finance: Real Estate

\*FIN441B Special Topics in Finance: Private Equity

\*FIN441F Special Topics in Finance: Corporate Restructuring

\*FIN/CIS446 Financial Technology

GBA442A Deal Making

## Corporate Finance

\*ACC411 Applied Financial Statement Analysis with Data Analytics

\*ACC410 Managerial Accounting and Performance Measurement

\*FIN411 Investments

\*FIN413 Corporate Finance

\*FIN441F Special Topics in Finance: Corporate Restructuring

Choose 2:

\*ACC418 Taxes and Business Strategy

ACC423 Financial Reporting I

ACC424 Financial Reporting II

\*FIN424 Options and Future Markets

\*FIN438 Mergers and Acquisitions

\*FIN442 International Economics and Finance

STR440 Corporate Governance

## MARKETING SPECIALIZATIONS

## Brand Management

\*MKT412 Marketing Research

\*MKT414/STR423 Pricing Policies

\*MKT421 Advanced Marketing Strategy

\*MKT441 Brand Management Workshop

Choose 3:

\*CIS434 Social Media and Text Analytics

MKT431 Consumer Behavior

MKT432 New Product Strategy

MKT433 Advertising Strategy

MKT435 Channels Strategy

\*CIS/MKT437 Digital Marketing Strategy

\*MKT/STR439 Advanced Pricing

\*MKT440 Pricing Analytics

MKT448 Brand Strategy

## Product Management

\*MKT412 Marketing Research

\*MKT414/STR423 Pricing Policies

\*MKT421 Advanced Marketing Strategy

MKT432 New Product Strategy

MKT442G Applied Product Management

Choose 2:

\*CIS413 Managing Digital Products & Platforms

\*CIS417 Introduction to Business Analytics

\*CIS/MKT437 Digital Marketing Strategy

\*CIS434 Social Media and Text Analytics

ENT423 New Venture Development and Managing for Long Term Success

GBA435 Negotiation Theory and Practice: Bargaining for Value

\*GBA436 Causal and Predictive Analytics

MKT433 Advertising Strategy

\*MKT/STR439 Advanced Pricing

\*MKT440 Pricing 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. Also, a student cannot use more than two courses counting towards their specialization to also count towards a cross-functional minor. STEM designated courses are indicated with an asterisk (\*)

CROSS-FUNCTIONAL MINOR	FUNCTIONAL MINOR
Analytics	Accounting
Leadership	Finance
Innovation and Entrepreneurship	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**

**FUNCTIONAL**

<p><b>ANALYTICS</b></p> <ul style="list-style-type: none"> <li>*ACC447 Reporting Analytics in Financial Markets</li> <li>*CIS417 Introduction to Business Analytics</li> <li>*CIS418 Advanced Business Modeling and Analysis Using Spreadsheets</li> <li>*CIS432 Predictive Analytics Using Python</li> <li>*CIS434 Social Media and Text Analytics</li> <li>*CIS437/MKT437 Digital Marketing Strategy</li> <li>*CIS442F Big Data</li> <li>*CIS467 Data Management, Warehousing and Visualization</li> <li>*FIN418 Quantitative Finance with Python</li> <li>*GBA424 Analytics Design &amp; Applications</li> <li>*GBA436 Causal and Predictive Analytics</li> <li>*GBA464 Programming for Analytics</li> <li>*MKT412 Marketing Research</li> <li>*MKT440 Pricing Analytics</li> </ul> <p><b>LEADERSHIP</b></p> <ul style="list-style-type: none"> <li>GBA435 Negotiation Theory and Practice: Bargaining for Value</li> <li>GBA441 Business Ethics &amp; Corporate Social Responsibility</li> <li>GBA442C Elements of Leadership</li> <li>STR403 Organization and Strategy</li> <li>STR424 Human Resource Strategy</li> <li>STR427 Organizational Behavior</li> <li>STR440 Corporate Governance</li> <li>STR442G Leading a Culture of Innovation</li> </ul>
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<p><b>ACCOUNTING</b></p> <ul style="list-style-type: none"> <li>*ACC410 Managerial Accounting and Performance Measurement</li> <li>*ACC411 Applied Financial Statement Analysis with Data Analytics</li> <li>*ACC418 Taxes and Business Strategy</li> <li>ACC423 Financial Reporting I</li> <li>ACC424 Financial Reporting II</li> <li>*ACC447 Reporting Analytics in Financial Markets</li> </ul> <p><b>FINANCE</b></p> <ul style="list-style-type: none"> <li>*BPP426 Macroeconomics</li> <li>ENT442F Venture Investing and Business Valuation</li> <li>*FIN411 Investments</li> <li>*FIN413 Corporate Finance</li> <li>*FIN418 Quantitative Finance with Python</li> <li>*FIN424 Options and Future Markets</li> <li>*FIN430 Risk Management</li> <li>*FIN434 Investment Management and Trading Strategies</li> <li>*FIN438 Mergers and Acquisitions</li> <li>*FIN441A Special Topics in Finance: Real Estate</li> <li>*FIN441B Special Topics in Finance: Private Equity</li> <li>*FIN441F Special Topics in Finance: Corporate Restructuring</li> <li>FIN441G Special Topics in Finance: Asset Management</li> <li>*FIN442 International Economics and Finance</li> <li>*FIN/ENT444 Entrepreneurial Finance</li> <li>*FIN/CIS446 Financial Technology</li> <li>*FIN448 Fixed-Income Securities</li> <li>STR440 Corporate Governance</li> </ul>
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**CROSS-FUNCTIONAL**

(continued...)

**INNOVATION AND ENTREPRENEURSHIP**

BPP432/ENT432 Basic Business Law

\*ENT422 Generating and Screening Entrepreneurial Ideas

ENT423 New Venture Development and Managing for  
Long Term Success

\*ENT425 Technical Entrepreneurship

ENT442C Special Topics in Entrepreneurship: Practicum in  
Urban Entrepreneurship

ENT442F Venture Investing and Business Valuation

\*ENT/FIN444 Entrepreneurial Finance

\*FIN441A Special Topics in Finance: Real Estate

GBA435 Negotiation Theory and Practice: Bargaining for  
Value

GBA442A Deal Making

\*MKT421 Advanced Marketing Strategy

MKT432 New Product Strategy

MKT442G Applied Product Management

STR442G Leading a Culture of Innovation

**GLOBAL BUSINESS**

\*BPP426 Macroeconomics

BPP442X International Macroeconomics & India  
Immersion

ENT442X International Business (Israel)

\*FIN442X International Finance (Switzerland)

\*FIN442 International Economics and Finance

GBA442X Doing Business in South Africa

GBA443X Singapore Immersion

MKT449 Global Marketing Strategy

**HEALTH SCIENCES MANAGEMENT**\*HSM420 Business Economics of the Health Care  
IndustryHSM425 Managerial Accounting for Health Care  
OrganizationsHSM/STR430 Health Sciences Management and  
Strategy

HSM440 Evolving Medical Markets

HSM452 Health Care Accounting and Finance

HSM454 Leading Health Care Organizations

**FUNCTIONAL**

(continued...)

**MARKETING**

\*GBA 436 Causal and Predictive Analytics

\*MKT412 Marketing Research

\*MKT414 Pricing Policies

\*MKT421 Advanced Marketing Strategy

MKT431 Consumer Behavior

MKT432 New Product Strategy

MKT433 Advertising Strategy

MKT435 Channels Strategy

\*MKT437 Digital Marketing Strategy

MKT438 B2B Pricing

\*MKT439 Advanced Pricing

\*MKT440 Pricing Analytics

\*MKT441 Brand Management Workshop

MKT442G Applied Product Management

MKT444 B2B Marketing

MKT448 Brand Strategy

MKT449 Global Marketing Strategy

MKT451 Consumer and Brand Research

\*MKT465 Marketing Analytics Project

**CONSULTING: STRATEGY AND PRICING**

STR403 Organization and Strategy

\*STR422 Game Theory for Managers

\*STR423/MKT414 Pricing Policies

STR424 Human Resource Strategy

STR428 Strategy Beyond Markets

STR429 Advanced Competitive Strategy

STR/MKT438 B2B Pricing

\*STR/MKT439 Advanced Pricing

STR440 Corporate Governance

**CONSULTING: OPERATIONS AND TECHNOLOGY**

\*CIS413 Managing Digital Products and Platforms

CIS414 Digital Business Strategy

\*CIS415 Business Process Analysis and Design

\*CIS417 Introduction to Business Analytics

\*CIS418 Advanced Business Modeling and Analysis Using  
Spreadsheets

\*CIS434 Social Media and Text Analytics

\*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.

## EASTMAN SCHOOL OF MUSIC

## MA/MBA PROGRAM

The Eastman School of Music and Simon Business School, both of the University of Rochester, are offering students the opportunity to earn a Master of Arts in Music Leadership in combination with a Master of Business Administration for Professionals degree. Drawing upon the resources of Eastman and Simon, this combined degree opportunity is the first to pair a conservatory level music administration degree with an MBA. Increasingly, musicians are expected to demonstrate artistic and managerial skills to succeed in these leadership roles. The opportunity to combine the Master of Arts in Music Leadership and Masters of Business Administration courses of study provides a one-of-a-kind experience for comprehensive preparation in music leadership and business.

Students will be accepted into the combined degree program through each school's separate admissions process and will complete the full Eastman Music Leadership curriculum as part of Eastman's Institute for Music Leadership, and Simon's MBA mandatory core. Students will spend the first summer and full academic year at Eastman, then transition to full-time Simon for a second summer and full academic year, and conclude both programs with the Music Leadership capstone internship or mentorship during the third summer.

Applicants wishing to pursue the combined Music Leadership and MBA degrees must apply through both Eastman's Master of Arts in Music Leadership application process and the Simon Business School's application processes.

For additional information, contact:

Andrew Brayda  
Director of Admissions  
Simon Business School  
245 Gleason Hall  
Rochester, N.Y. 14627-0107  
(585) 275-3533

E-mail: [andrew.brayda@simon.rochester.edu](mailto:andrew.brayda@simon.rochester.edu)

## 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. MD/MBA applicants are required to take the MCAT for the MD program, while the MBA program has moved to a test-optional policy that allows applicants to be considered for the MBA without submitting the GMAT or GRE. 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 additional information, contact:

Michelle Vogl  
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: [Michelle\\_Vogl@URMC.Rochester.edu](mailto:Michelle_Vogl@URMC.Rochester.edu)

Andrew Brayda  
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## 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 additional information, contact:

E-mail: [rebecca.crocker@rochester.edu](mailto:rebecca.crocker@rochester.edu)  
Website: [www.rochester.edu/team](http://www.rochester.edu/team)

## INTERNATIONAL IMMERSIONS

International Immersions are classes that bring both a corporate and cultural element to the coursework. Teaching occurs both in the US and in 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.

#### SINGAPORE IMMERSION: GBA 443X. BUSINESS, GOVERNMENT AND SOCIETY

The Singapore International Immersion allows the students to experience government, corporate and cultural interactions that will change their perspectives on how business is done internationally and allow them to see and hear first-hand from local experts how government and private companies can effectively partner. Through a combination of lectures, a real-life business analysis of projects and areas and company meetings, the students will grow their understanding and appreciation for the cultural and community effect business in Singapore. Students will examine the companies, people and culture of the 58-year-old country and community and compare and contrast this live case study with the Rochester business climate, presenting their findings in a capstone video. Students will also experience how innovation and self-care is part of their culture, how a government can support this, and how intentionality and building for the future works together. Students will be expected to participate actively in class discussions and to take positions in different topics and to defend their position with analysis.

## 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 (\*). All courses are 2.5 credits unless noted otherwise.

### ACCOUNTING

Joanna Wu, Area Coordinator

#### 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; STR403 (may be taken concurrently)

##### \*ACC 411. APPLIED 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 knowl-

edge 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 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 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, 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 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 consum-

ers. 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.

#### \*ACC 447. REPORTING ANALYTICS IN FINANCIAL MARKETS

The objective of this course is to introduce students to the concepts and methodologies of financial reporting-based data analytics from a USER-driven rather than a producer-driven mindset. It is NOT to train students to become data scientists or data analysts, but rather to train business managers to utilize new types of data and techniques to solve business problems more effectively.

The primary focus will be to build predictive models using financial statement information that can predict future outcomes of interest such as future earnings; future stock prices; future economic growth etc. The first part will focus on traditional models based on sales, earnings per share etc., while the latter part will expand the repertoire to non-quantitative data such as textual analysis of annual reports.

The learning objectives are (i) bringing students up-to-date with the latest developments in the field of predictive analytics (as it pertains to financial reporting); and (ii) demonstrating how students can design and implement prediction models built on economic theory that harness the power of modern tools to more effectively solve business problems. Students will be taught to use these tools from the perspective of a business manager who uses the data once these are made available rather than a data analyst who creates the data and delivers them.

The course will be general enough to be interesting to the wider student pool irrespective of career tracks – but it is more likely to be chosen by students who have an interest in financial markets.

Prerequisite: ACC401 or equivalent

## PHD COURSES

### ACC 501. SEMINAR IN ACCOUNTING

1 credit (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

3 credits

This course focuses recent developments in capital markets research by exploring topics such as how technology intertwines with the production, dissemination, and consumption of accounting information, the incentives and impact of financial intermediaries, and financial reporting regulation and externalities. In addition to the informational role of accounting information, the course also explores its stewardship role by covering recent papers related to executive compensation and incentive structure. Finally, the course expands beyond the U.S. setting by covering topics related to international accounting. Given the turnover of course topics over time, students are required to enroll in ACC 510 each time the course is offered.

### ACC 511. ACCOUNTING RESEARCH II

3 credits

Content varies from year-to year based on faculty and student's interests. Topics selected reflect areas of active interest to accounting researchers/accounting profession. Topics covered in recent offerings of the course include: "Information Acquisition";

"Soft Information in Financial Markets"; "Private Interactions: Broker Conferences, Roadshows, In-House Meetings"; "The Financial Reporting Environment"; "The Role of Accounting in the Municipal Bond Market"; "Textual Analysis/Information and Financial Markets"; "Rivals, Information Transfer, Spillovers and Investment Decisions"; "Rivals, Information Transfer, Spillovers and Financial Policies and Corporate Governance and Other Decisions"; "Rivals, Information Transfer, Spillovers and Proprietary Costs"; "Aggregate Market Relations"; "Patents and Patent Disclosure"; "Return Predictability" and "Anomalies". Given the turnover of course topics over time, students are required to enroll in ACC 511 each time the course is offered.

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). This course alternates with ACC 513. Given the turnover of course topics over time, students are required to enroll in ACC 512 each time the course is offered.

Prerequisites: ACC 510 and ACC 511

### 513: CONTEMPORARY TOPICS IN ACCOUNTING RESEARCH

3 credits

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 mit-

igating 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.

Prerequisites: ACC 510 and ACC 511

## APPLIED ECONOMICS

### PHD COURSES

#### 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

3 credits

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

3 credits

This course is the first part of the Simon School's economics core sequence for PhD students, and covers fundamentals of microeconomic theory at a graduate level. It deals with modeling the economic choices faced by consumers and firm managers in a market economy (with competitive or monopolistic markets), and studying how those choices, and the resulting market outcomes, respond to changes in the economic environment. The material is mathematical, and familiarity with the required math is assumed. The course focuses on economic concepts, methods, intuition and applications.

#### AEC 513. INDUSTRIAL ORGANIZATION THEORY

3 credits

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

1 credit

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. ADVANCED CAUSAL INFERENCE PLUS MACHINE LEARNING

3 credits

This class is intended to provide PhD students with an advanced treatment of causal inference as well as a gentle introduction to frontier machine learning techniques that are useful in economic applications. From the machine learning toolkit, we will cover Lasso and Random Forests in detail, along with recent approaches to inference with HD nuisance parameters. Deep Learning will be covered only briefly. R packages for implementation of Lasso and Forests will be introduced. We will then consider the three canonical approaches to causal inference: the Rubin framework, the Pearl framework and the Heckman synthesis.

Randomized control trials and associated methods of inference (Fisher exact p-values and randomization inference) will

be covered briefly. We will then consider recent approaches based on synthetic control and matrix completion. We next turn to methods based on selective choice, including Roy models and control functions.

Finally, we will consider some issues related to IV approaches, including problems of weak or many instruments (and a Lasso-based solution) and the local/selected nature of resulting estimands (LATE and MTE).

#### AEC 523. MICRO-ECONOMETRIC MODELING: STATIC APPROACHES

3 credits

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.

## MANAGEMENT COMMUNICATION

Carol Shuherk, Area Coordinator

### MGC 401. PROFESSIONAL COMMUNICATION: PERSUASION IN BUSINESS RELATIONSHIPS

MGC 401 establishes the conceptual foundation and skill building method for the MGC sequence. It draws on classical principles of argument and persuasion and on current communication research that illuminates the ways influence is accomplished in business today. These theories are applied through business case analysis, self-assessment and experiential learning. Students develop performance skills through successive rounds of professional presentations, receiving individualized feedback on their work. The course objective is development of the communication skills key to success in any field, those required to adapt effectively to any given audience, and to express ideas with a fitting blend of logic and feeling.

### MGC 402. INTERPERSONAL PERSUASION: INFLUENCE IN DYNAMIC INTERACTION

MGC 402 applies the core concepts of persuasion to five professional environments where communication takes place on teams and one-to-one: negotiations, change initiatives, conflict resolution, cultural diversity, and leadership with direct reports. It focuses on the dynamics between two or more people who are trying to influence one another, and teaches the communication skills required to succeed. The communication theories underlying the course are applied through case analysis, self-assessment, and business simulations that enable students to practice their ability to communicate persuasively in each of the five environments. The course culminates with development planning for improving communication competency as key to career success.

### MGC 461. PROFESSIONAL COMMUNICATION

4 credits

MGC 461 is based on classical principles of argument and persuasion and current communication research that reveals the keys to having influence in a global business world. Its goal is to develop professional-level presentation skills, individually and in teams. The course is performance based; all class sessions require students

to speak and interact extensively. Over two mini-semesters, students develop professional presentation skills through four individual and two team-based speaking assignments, for which they receive extensive, individualized feedback. They also learn a systematic process for assessing their own communication, and for giving feedback to others. At the end of the course students will have developed skills key to success in any field: the ability to adapt effectively to a given audience, and to express ideas with an appropriate combination of logic and feeling.

### MGC 471. PERSUASIVE WRITING FOR EXECUTIVE AUDIENCES

MGC 471 builds skill in writing for demanding, time-pressured executive audiences. It draws on classical principles of persuasion and current communication research to help writers cogently present their perspectives while setting the stage for collaboration. Built around three Saturday morning workshops, the course examines tools for generating insights, organizing ideas into logically sound arguments, and powerfully conveying ideas in words, numbers, and visuals. Students produce work in formats typically directed to executives, such as emails, memos, and slide presentations. The course cultivates the editorial skills of managers and individual contributors alike as they seek to increase the impact of work produced in writing.

### MGC 472. PROFESSIONAL PRESENTATIONS

1 credit

MGC 472 draws on classical principles of argument and persuasion, as well as current communication research, to cultivate the communication skills key to career success. Designed to contribute to your development as a business professional, MGC 472 aims to improve your ability to work with and influence others and succeed in a variety of communication encounters throughout your business career. Through interactive lectures, experiential lab activities, and extensive individualized feedback, MGC 472 will teach you to think about communication strategically and to use a set of tools for creating and communicating persuasive messages in a variety of settings, from formal presentations to professional network building.

### MGC 473. COMMUNICATION AND LEADERSHIP FOR BUSINESS ANALYTICS

This course has a singular goal: to cultivate the communication skills required for leadership in data-driven environments. The course contributes to your growth as a business professional, improving your ability to work with and influence others, and to succeed as a communicator throughout your career. The course will teach you to think about communication strategically and to use a set of tools for communicating persuasively in settings ranging from formal presentations to partnership building to leading teams.

## BUSINESS ENVIRONMENT AND PUBLIC POLICY

Michael Raith, Area Coordinator

### 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 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

### 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

#### \*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 and MKT 402

#### STR 424. HUMAN RESOURCE STRATEGY

Intended for general managers and not limited to HR specialists, this course addresses human resource management issues and practices that align with organizational strategy, mission, vision, and values. It explores recruitment, selection, training, career development, performance evaluation, compensation, unions, labor and employment law, equity, and inclusion such that HR initiatives improve organizational, group and individual outcomes. Students learn and practice data/people analytical tools to increase decision-making effectiveness and efficiency.

Prerequisite: STR 401

#### STR 425. INNOVATION STRATEGY

Innovation is central to most modern businesses. This course introduces frameworks to analyze and develop strategies for innovative firms: What determines the profitability of a technological innovation? Which risks are more worth taking? How do firms transform innovation into a competitive advantage? When should incumbents buy an innovative entrant? How does internal firm structure adapt to innovation?

The course is designed for students anticipating taking product or development management positions in innovative firms, new-technology analyst positions in investment firms, or management consultant or strategy positions for such firms.

Throughout the quarter, we will develop

concepts and frameworks grounded in economic and business strategy principles to address these and related questions. By the end of the quarter, you will be able to identify and discuss:

- The form and function of good innovation strategy
- The “Technological S-curve” and the emergence of dominant design
- Disruptive and Sustaining innovation
- Business eco-systems and the role of enabling technologies
- Strategy for Data Products
- Commercialization strategies for innovation: collaboration, licensing, patenting and entrepreneurship
- Acquiring and integrating innovative firms
- Open vs. Closed innovation
- Outsourcing and crowdsourcing innovation

#### 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 428. STRATEGY BEYOND MARKETS

We repeatedly observe top executives caught off-guard when faced with “nonmarket” threats such as proposed government regulations or activist pressure. But the concept of strategy beyond markets extends further than reactively responding to threats. Managers also have the opportunity to shape the nonmarket environment in ways that advantage their firm. In this course, we will develop a framework for constructing nonmarket strategies and integrating them with market strategies. We will cover a broad range of topics, including the legislative process, regulation, activism, corporate social responsibility, and crisis management. We 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 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.

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.

**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 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. This course is not suitable for students who have taken STR421 and STR403 as it has significant overlap with both.

Prerequisite: Permission of the instructor

**STR 442G. LEADING A CULTURE OF INNOVATION**

Creativity is our only unlimited resource. Time, money, and physical resources are restricted and limited, but creativity is not. As a leader, it then follows that the creativity of the people you serve is the only unlimited resource that a company has, and it is the leader's responsibility to maximize it. This course teaches leaders how to tap into creativity, through the purposeful development of culture as it occurs in the language, context, experience, and mindsets of the people you lead. The goal is to maximize the innovation that occurs on your teams because of your leadership. The focus of this course is on developing an understanding of the language of leadership, the integration of different forms of empathy into leadership practices, and the criticality of crisp language constructs for building the shared context which enhances innovation. We will study the leadership

behaviors that lead to innovation and those that impede it. We will leverage the sciences of human intrinsic motivation, social intelligence, group motivation, business leadership and culture building. The intention is to develop capacities that will help students understand and deploy leadership behaviors that will help the teams and companies that they lead be more resilient and adaptable in the face of complexity, uncertainty, volatility, and incessant technological change.

**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 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.

**COMPUTERS AND INFORMATION SYSTEMS**

Huaxia Rui, Area Coordinator

**MASTERS LEVEL COURSES****\*CIS 401 INFORMATION SYSTEMS FOR MANAGEMENT**

Information technology is transforming firms, markets, products, and processes with remarkable speed. Recent developments in AI have the potential to further accelerate the transformation. This presents managers with new challenges and valuable opportunities. This course dives into the strategic use of information technology within a business context, focusing on how it can enable competitive advantage, enhance business processes, and drive innovation. The course introduces a number of useful frameworks for analyzing the use of information technology and AI in organizations and includes some exposure to database and data visualization tools. The strate-

gic and economic impacts of information technology are emphasized. The course is designed with line and senior managers in mind, as opposed to the managers of the IS function.

**\*CIS 413. MANAGING DIGITAL PRODUCTS & PLATFORMS**

This course draws on a mix of concepts from economics 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, revenue models, and growth.

Prerequisite: CIS 401

**CIS 414. DIGITAL BUSINESS STRATEGY**

This course covers digital business strategy for both online and traditional firms. Topics include retail business models, business model innovation, and AI. We examine market entry, development, and monetization strategies for a number of different firms. Recent firms have included: Autodesk, Best Buy, Dropbox, Haven, IPSY, JoyRun, OpenTable, PayPal, Shoes of Prey, Salesforce, Tiktok, Wealthfront, and Zume. The culmination of the course is a team project in which students examine the digital strategy of a firm of their choosing.

Note: students who have taken CIS 440 are not allowed to take CIS 414.

Prerequisite: CIS 401

**\*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 intro-

duction 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 417. INTRODUCTION TO BUSINESS ANALYTICS**

This course focuses on how analytics can support/improve business operations. It covers the fundamental principles and techniques of business analytics, in particular supervised and unsupervised machine learning methods, and uses real world examples and cases to illustrate these. The objective is to train students to approach business problems data-analytically—translate business problems into one or more related analytic problems; identify the appropriate techniques to solve these problems; and critically evaluate the results and their impact on business performance. The material will be presented in an intuitive manner, with the goal of making students intelligent consumers of these widely applicable techniques. However, hands-on learning using appropriate software is required to achieve sufficient mastery of the material.

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 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. Students who successfully complete the course should possess cutting-edge skills in spreadsheet business modeling and analysis.

Prerequisite: GBA411 or equivalent

**\*CIS 432. ADVANCED PREDICTIVE ANALYTICS USING PYTHON**

The course introduces students to advanced machine learning (ML) algorithms, techniques, and the practical aspects of applying them for solving prediction problems that arise in various important business contexts. We will use the Python programming language, which supports the largest data analytics ecosystem. The course emphasizes hands-on work through class exercises, homework assignments, and a final project. It covers fundamental concepts in predictive modeling, popular software tools (e.g., scikit-learn, keras, streamlit), an intuitive and powerful computational platform for analytics (Google Cloud Platform), case-studies that illustrate how industry leaders leverage predictive modeling to improve decision-making and gain competitive edge, as well as emerging topics in ML such as interpretable ML and explainable AI. The course is self-contained but basic Python programming proficiency is expected.

**\*CIS 434. SOCIAL MEDIA AND TEXT 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 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, Hive, Zeppelin, Spark and Spark MLlib. 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)

3 credits

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.

**\*CIS 465. BUSINESS ANALYTICS PROJECT**

3 credits

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.

**\*CIS 467 DATA MANAGEMENT, WAREHOUSING, AND VISUALIZATION**

Companies and organizations in every industry rely heavily on their data, not only for the day to day tactical needs of running the business but also to generate information and analysis to support problem-solving and decision-making in a wide variety of applications. Database design and management along with systems/techniques for data retrieval, transformation and analysis have the potential to play a key role in business strategy and to create business value and competitive advantage.

CIS 467 builds an understanding of system data design to enable analytics as well as the concepts and tools necessary to leverage system data to meet an organization's analytics needs. The course covers MySQL programming skills for data retrieval, including writing and executing queries; updating, inserting and deleting database records; creating views; and writing user-defined functions and stored procedures. CIS 467 also introduces a conceptual framework for analytics activities surrounding data warehousing, including creating ETL code to transform and transport data from a transitional database into a data warehouse for further analysis. Finally, students will use Tableau to design and create data visualizations and dashboards, both for exploratory data analysis and effective communication.

**\*CIS 468 SPREADSHEET MODELING USING EXCEL**

This 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. The course enhances and reinforces the analytical skills taught in previous modeling coursework such as formulating and solving large-scale business problems using quantitative models, risk simulation and sensitivity analysis. Spreadsheet tools introduced in this class include optimization and simulation. Students who successfully complete the

course should possess cutting-edge skills in spreadsheet business modeling and analysis.

## PHD COURSES

### CIS 511. RESEARCH TOPICS AND METHODS IN INFORMATION SYSTEMS

3 credits

This course introduces important research methods/topics for IS researchers, covering analytical modeling, causal inference, and machine learning.

For analytical modeling, we will discuss auction and mechanism design for information/computation goods.

For causal inference, we will establish the probabilistic foundation of commonly used methods such as DID, matching, IV, and regression discontinuity.

For machine learning, we will introduce the statistical learning theory, SVM, EM, MCMC, variational inference, and deep learning.

### CIS 512. ADVANCED TOPICS IN INFORMATION SYSTEMS

3 credits

This course introduces students to research in Information Systems (IS). Multiple lectures will be dedicated to each topic, covering the necessary mathematical background, primary analysis techniques, and important, seminal, or recent papers. The course aims to attain the following objectives: learn about what constitutes research in IS, 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.

## 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, intra-preneurship, non-profits, and social entrepreneurship will be discussed.

### ENT 423. NEW VENTURE DEVELOPMENT

The focus of ENT 423 is learning how to prepare an effective business plan that will communicate the value of the concept. Among the critical issues that will be addressed are competitive conditions and industry trends, sustainable competitive advantages, management, marketing, financial plan, exit possibilities, franchising, and 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. 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, a prominent case study, and guest speakers are utilized. The speakers are entrepreneurs at various stages in their careers and will provide an interesting context to the entrepreneurial endeavor. The course will address a range of new venture topics from the development of management teams, marketing, finance, venture capital and legal issues. The completion of a business plan for a proposed new venture is required.

### \*ENT 425. TECHNICAL ENTREPRENEURSHIP

4 credits

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 business person. The coach is available to provide feedback to the team. This course is cross listed as OPT 481 and is taught by a faculty member at Simon and who is from Engineering.

### 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 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 as 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 442F. VENTURE INVESTING AND BUSINESS VALUATION**

This course focuses on the entrepreneurial skill set applied to finding and selecting venture investment opportunities. The course is taught from the point of view of the investor, business plan reader, and the decision maker who must decide the course of action to take in order to generate a high return on investments made from a \$100 to \$150 million seed venture fund. These decisions include: determining risk factors, valuing investments, selecting from alternatives, building relationships with principals, structuring investments and deal structures, adding value as a non-executive manager, and realizing the value of the investment.

This is a very hands-on course. The reading, assessment, and critiquing of business proposals, feasibility plans, or formal business plans, along with proposed structural solutions constitute a large measure of the class's activities.

By the end of the course a student will be able to:

- Evaluate potential future trajectories and assess the related industry, business, and financial risks.
- Determine investment risk through an understanding of the interaction between industry future state scenarios and how various technology, product and business strategies are impacted by those industry forces.
- Value investments and use valuation methods for budgeting and managing a venture portfolio. The key factors to value and create the financial plan will be based on a business model that will potentially mitigate and reduce the levels of risk associat-

ed with an uncertain future and risky individual company investments.

- Understand capital structures and structure investments in individual venture backed start-ups.

**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 U.S. 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

Ron Kaniel, 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, agency costs and asymmetric information on these decisions. It then examines the interrelation of financing policy with payout policies, trade credit, executive compensation, leasing, and hedging. 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 FUTURES WITH PYTHON

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 is a quantitative course in risk management within banks. We will study the business model of banking: why banks exist, how and why banks make money, and the risks that banks face when managing their business. We will learn how to estimate and then manage banks' exposures to risks (esp. interest rate risk, market risk, credit risk, and liquidity risk). We will then analyze the collapse of the banking system during the past financial crisis; we will study what went wrong and how banks mismanaged risk. We will then discuss optimal regulatory intervention.

Prerequisites: FIN411

#### \*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 438. MERGERS AND ACQUISITIONS

This course is a comprehensive graduate course in corporate finance that is taught using in-class lectures, class notes, and cases, each of which requires a team report and negotiated deals involving co-operation and competition with other teams. The subjects covered include corporate valuation as applied to friendly mergers and hostile takeovers. We also will cover relevant issues in securities regulation, insider trading law, and corporate-governance law

#### \*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 distressed 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.

Prerequisites: FIN402 and ACC401

**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 fundamen-

tal 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 441H. ESG AND SUSTAINABLE INVESTING**

This course introduces environmental, social, and governance (ESG) investing. This ecosystem has reached enormous scale (\$30+ trillion world-wide) and scope and continues growing very rapidly. All professional investors and corporate officers are obliged to be familiar with this new environment. The course provides economic foundations, which are generally lacking in popular and even industry-level discussions. It outlines various approaches to equity and fixed income ESG investing, including screening, inclusion, integration, and engagement/impact investing. It examines and explains the responses of corporate boards, regulators and data providers.

**\*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 cul-

ture, 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 verifica-

tion, 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 puttable 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 450. MBA FINANCE PROJECT**

This course serves as a practical project-based experience for the MBA students concentrating in finance. Students work in self-selected teams on a finance-themed project topic of their own choosing. The project requires application of significant analytic techniques and data wrangling. Oral and written communication of the interim and final project results are also key components. The projects provide valuable content for job interviews and other career-based conversations, and the project work is guided with that in mind. Numerous examples of past completed projects are provided.

**\*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**

3 credits

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 problem 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**

4 credits

This course provides an introduction to financial economics. Its main objective is to rigorously develop the foundations of modern finance theory regarding asset pricing and financial markets. The topics include arbitrage asset pricing, optimal consumption-portfolio choices, static equilibrium models of asset pricing, asymmetric information, and dynamic

modeling. The course prepares students for further study of asset pricing theories, corporate finance and econometric work in finance. The course is designed for first-year PhD students in finance, and assumes familiarity with basic microeconomics and macroeconomics.

**FIN 511. CONTINUOUS TIME THEORY IN FINANCE**

3 credits

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**

3 credits

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 infor-

mation 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

3 credits

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

Michael Raith, Area Coordinator

#### MASTERS LEVEL COURSES

#### GBA 401. STRUCTURED PROBLEM SOLVING

1 credit

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 your ability to frame business decision problems in a way that makes them amenable to quantitative analysis, and to train you in some fundamental

techniques useful for analyzing and solving these problems. The course draws on three toolkits: 1. Spreadsheets to model business problems. 2. Optimization techniques to solve complex decision problems involving many variables and constraints. 3. Monte Carlo simulation for understanding and analyzing uncertainty. Examples from different functional areas will demonstrate how the techniques taught can be applied in a practical way to a variety of settings.

Recommended: GBA 412 or GBA 462

#### \*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 Main Street 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 review the basic notions of probability and randomness, transition to data visualization techniques, and then present the basis of modern data science: prediction and multiple regression methods. We will use 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, and apply appropriate methods.

#### GBA 419A/B. LEADING TEAMS I & II

1 credit each

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 busi-

ness modeling and operations management concepts, and coaches improve their skills in developing presentations, managing projects and giving feedback for improved performance.

Prerequisite: Permission of the Instructor

#### \*GBA 424. ANALYTICS DESIGN & APPLICATIONS

The course centers around four key questions that need to be answered to design effective analytics that solve managerial problems:

- 1) What analysis can support or be used to make the managerial decision?
- 2) What information do you need to conduct that analysis?
- 3) How do you get that information?
- 4) How do you present this analysis to communicate the key insights or conclusions?

The course will introduce and apply frameworks related to answering these questions. The course will use a series of real-world cases and examples involving managerial decisions to connect analytics to real world problems. These cases will take the students through an active learning process that builds on and extends the skills and knowledge gained in previous courses. The course focuses heavily on “soft” skills related to structuring complex problems, decision-making with imperfect information, and designing analysis to address analytics research questions. The course also reinforces and expands on “hard” skills related to data wrangling, programming, descriptive, predictive, and causal analytics, as well as introducing some unsupervised learning methods. The course will leverage software tools such as sql, R, and Tableau.

#### 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 negotia-

tion practices and develops skills that enhance the ability to capture value in cooperative and competitive bargaining scenarios.

#### \*GBA 436. CAUSAL AND PREDICTIVE ANALYTICS

Businesses now gather data on their customers, competitors, and marketplace on an unprecedented scale. Simultaneously, the adoption of machine learning has made the cost of estimating sophisticated predictive models cheaper than ever. As the cost of making predictions has decreased, the need for decision-makers who can critically examine these analyses has increased. This is because implementations of sophisticated machine learning methods can lead to dramatically incorrect decisions and inferences if decision-makers do not correctly link their statistical models to the business context and the problem at hand.

This course is fundamentally about how to learn from data. We will demonstrate the stark differences in the goals and implementations of descriptive, predictive, and causal analysis. Students will be expanding their analytic toolkit in each of these areas and learning how to select the right tool for the job. Particular attention will be paid to the usage of these analysis to drive business decisions, and how to respond to data analytics questions in job interviews.

This course emphasizes a hands-on approach. We will apply data analysis in six unique cases and four assignments which span a wide variety of topics and feature real world data. The course uses the R programming language and RStudio. While some background in R is helpful, materials are provided for those who are new to the language or need a refresher.

The ultimate objective of this class is to prepare you to be a producer and consumer of data analytics, and to enhance your ability to correctly utilize data when making business decisions. Whether working with data directly or communicating with people who do, these skills are essential for the more sophisticated and successful business decision-maker.

#### \*GBA 436R. CAUSAL AND PREDICTIVE ANALYTICS

Businesses now gather data on their customers, competitors, and marketplace on an unprecedented scale. Simultaneously, the adoption of machine learning has

made the cost of estimating sophisticated predictive models cheaper than ever. As the cost of making predictions has decreased, the need for decision-makers who can critically examine these analyses has increased. This is because implementations of sophisticated machine learning methods can lead to dramatically incorrect decisions and inferences if decision-makers do not correctly link their statistical models to the business context and the problem at hand.

This course is fundamentally about how to learn from data. We will demonstrate the stark differences in the goals and implementations of descriptive, predictive, and causal analysis. Students will be expanding their analytic toolkit in each of these areas and learning how to select the right tool for the job. Particular attention will be paid to the usage of these analysis to drive business decisions, and how to respond to data analytics questions in job interviews.

This course emphasizes a hands-on approach. We will apply data analysis in six unique cases and four assignments which span a wide variety of topics and feature real world data. The course uses the R programming language and RStudio.

The ultimate objective of this class is to prepare you to be a producer and consumer of data analytics, and to enhance your ability to correctly utilize data when making business decisions. Whether working with data directly or communicating with people who do, these skills are essential for the more sophisticated and successful business decision-maker.

#### GBA 441. BUSINESS ETHICS & CORPORATE SOCIAL RESPONSIBILITY

This course deals with business ethics and the social responsibility of business organizations. Through class discussions and case studies, students explore the theory and practice of business ethics and develop their ability to recognize and address ethical issues. The course equips students with analytical skills in ethical reasoning and provides them with a substantive framework to deal with ethical challenges they are likely to encounter in their careers. Topics include corporate responsibilities vis-à-vis employees, customers, and society; insider trading; discrimination in employment

and in the sharing economy; advertising and sales tactics; ethics in pricing; bribery; executive pay; intellectual property in the pharmaceutical industry; censorship; health care resource allocation; and environmental responsibilities.

#### GBA 442A. SPECIAL TOPICS: DEAL MAKING

This course will focus on the creation of value through deal architecture – that is, transaction design and implementation. The goals of the course are to survey how private parties order significant commercial interactions and to understand the theoretical underpinnings of how they might maximize value in these interactions. In this sense, the course develops a heightened awareness and sophistication with commercial transacting, as well as a set of general skills that enhance the ability to create and preserve value in these circumstances.

#### 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 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 443. DIVERSITY, EQUITY AND INCLUSION IN BUSINESS

1 credit

This course deals with the theory and practice of diversity, equity and inclusion in business. We will use a blend of class discussions, case studies and lectures to explore ways to make business more inclusive and equitable. The course is organized into two parts. Part I. discusses theoretical and empirical analyses of discrimination, diversity and equity in business and society. Part II. focuses on the design and implementation of corporate policies aimed at increasing diversity and building inclusive workplaces in an equitable manner. We will discuss issues such as race and gender disparities in employment, finance and health care; algorithmic discrimination in machine learning; diversity in corporate boards; pay equity; fairness in the workplace and in markets; equal opportunity in hiring and promotion, and impact investing.

#### GBA 444. ETHICS AND POLICY IN TECH

Tech firms—from start-ups to industry leaders—face a range of ethical and policy challenges. Start-ups may face barriers to entry or regulations ill-suited to their innovation. Industry leaders must consider antitrust considerations if they dominate a market. Tech firms of all sizes face ethical quandaries on issues such as artificial intelligence, to give just one example. The globalization of business adds to the complexity of these policy and ethical considerations. This course will equip you with the tools you need to consider the policy and ethical environments of tech firms and how they connect with firms' market environments. The tools you develop in the course will also be applicable to the analysis of other types of firms.

#### \*GBA 462P. CORE STATISTICS FOR MS STUDENTS USING PYTHON

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.

#### 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 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 465. PYTHON ANALYTICS FOR R PROGRAMMERS**

Created in 1989, Python is one of the most popular programming languages in the world - attributable to its power, simplicity, and flexibility. Data analysts of all kinds (including business and marketing analysts, data scientists, management consultants, and product managers) can use Python - in combination with powerful, third-party packages including NumPy, Pandas, Matplotlib, and Seaborn - to import, explore, manipulate, analyze, and visualize data. By completing this course, you will be able to think like a programmer (with the practiced ability to break down complex problems into a series of smaller steps and pseudocode), write basic computer programs using Python (to implement your pseudocode and achieve your desired outcomes), and perform basic data analytics using Python (to import, explore, manipulate, analyze, and visualize data).

**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. The course begins with an overview of the four financial statements, and the accounting underlying those statements, and includes ratio analysis based on those statements. 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 investigates the appropriate required rate of return to be used in evaluating those cash flows. The course also covers methods for estimating firm value, and includes an overview of options and futures.

**\*GBA 468P. PRESCRIPTIVE ANALYTICS WITH PYTHON**

GBA468 expands and develops the students' analytical tool kit to include prescriptive analytics methodologies for managerial decision-making. The coursework follows the FACT approach to business problem solving and will cover diverse applications in operational management, supply chain analytics, marketing and finance. Modeling techniques covered include: decision tree models, constrained optimization models and Monte Carlo simulation. The course will be taught primarily using Python.

**\*GBA 468R. PRESCRIPTIVE ANALYTICS WITH R**

GBA468 expands and develops the students' analytical tool kit to include prescriptive analytics methodologies for managerial decision-making. The coursework follows the FACT approach to business problem solving and will cover diverse applications in operational management, supply chain analytics, marketing and finance. Modeling techniques covered include: decision tree models, constrained optimization models and Monte Carlo simulation. The course will be taught primarily using R.

**\*GBA 471. PROBABILITY AND DESCRIPTIVE ANALYTICS**

A key goal of Business Analytics is to generate insights from data to support business decision making. This course starts with an introduction to the basic techniques for data exploration and visualization. The emphasis is on understanding and reasoning with data, and clearly communicating the results to a managerial audience. The course will also introduce the fundamental concepts in probability and inferential statistics that are necessary for understanding model building and the use of data in decision making. Students will be introduced to R for statistical computing, and to Tableau for data visualization.

**\*GBA 472. CAUSAL AND PREDICTIVE ANALYTICS**

This course introduces utilizing data and data analytics to inform decision-making in today's business environment. Extracting information from data has become an integral part of modern business management, from Main Street to Wall Street to Silicon Valley. This course will de-mystify statistical learning and data analytics, enabling students to thrive in a competitive market for data-based decision-making.

**\*GBA 473. DATA-DRIVEN DECISION MAKING**

The objectives of this course are to understand the analytics environment, including people and organizational challenges, data, and the role of models, and to understand concepts and apply frameworks of data-driven decision-making for business decisions. Learning to apply analytics design concepts for decision-oriented projects and pushing through systematized dashboards within the organization are key components of the course.

**\*GBA 474. ADVANCED ANALYTICS-DRIVEN DECISIONS**

Advanced Analytics-Driven Decisions covers the concepts and tools needed for the effective design of analytics using non-system data and experiments to solve business problems. In addition, the course extends the statistical and analytics tools developed in previous coursework in the use of predictive, causal, and prescriptive analytics techniques in managerial decision-making.

**\*GBA 475. ONLINE BUSINESS ANALYTICS CAPSTONE PROJECT**

The Business Analytics Capstone project is an opportunity to bring all of the conceptual theories, analytical methodologies and technical skills from your coursework, as well as your creativity and intellectual enthusiasm, to bear on a real-world project that will directly impact your sponsor organization. There is the potential for students to develop a project proposal from their current job opportunities and use this as the subject for their capstone project.

**\*GBA478. AI & BUSINESS**

This class introduces students to AI models at the conceptual level and teaches how recent advances in AI can spur financial innovation for startups and corporations. The class relies on an analytical framework that combines financial frictions analysis and AI applications. Financial frictions provide opportunities for AI-driven FinTech solutions. The class covers the evolution of deep learning models in the last decade, discusses the cutting-edge AI applications, and helps students to identify new opportunities for value creation.

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

GBA484A - 1 credit; GBA484B - 2 credits

The SSVF provides an environment where students can practice applying theories and skills acquired throughout the MBA and MS curricula 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 SSVF investment and making thoughtful and well-reasoned investment recommendations to the SSVF Student Managers and Board; updating status and performance information for

existing SSVF investments; participating in creating portfolio reports for SSVF stakeholders; participating as required in reporting and investment calls with the SSVF Board; and participating as required in approved investment closing procedures.

GBA 484A is a 1-credit practicum for MBA and MS students who are accepted by the Management Team of the Simon School Venture Fund (SSVF) as an analyst. Students receive 1 credit for successful participation as analysts, registering in Fall B and receiving a grade of Incomplete until their commitments to the Fund are completed in the following Spring.

Second-year MBA students who are accepted into the Management Team of the SSVF by the SSVF Board register in Fall A for GBA 484B, a 2-credit SSVF Practicum, receiving a grade of Incomplete until their Fund commitments are completed in the following Spring.

The purpose of these practicum courses is to recognize and support the effective analysis and portfolio management functions of the SSVF throughout the academic year. Instructor interaction with students is primarily advisory and ad hoc. Analysts primary contact, training, evaluation and performance coordinators will be the SSVF Student Management Team.

#### GBA 490. AMERICAN BUSINESS PRACTICE

1 credit

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.

### PHD COURSES

#### GBA 548. BUSINESS FUNDAMENTALS EXAM

1 credit

This course can serve as the culminating experience for the Masters of Science in Business Fundamentals for some concentrations. This course involves intense independent preparation for the exam, including student-directed regular faculty interactions to receive guidance, clarifications, or additional practice problems. Two components of the course demark the culminating experience. First, the students take the preliminary exam for their intended concentration. Second, the students complete an oral exam for their intended concentration. If the student does sufficiently well enough on the written prelim exam, the oral exam can be waived.

#### GBA 549. BUSINESS FUNDAMENTALS PAPER

1 credit

This course is the culminating experience for the Masters of Science in Business Fundamentals for some concentrations. The culminating experience requires the students to produce a paper and present that paper. The course consists of contact with the faculty member(s) who are advising the student on this paper. The course involves significant directed or independent research activities and minimal, if any, classroom time. Through this process, students demonstrate their readiness to conduct research and their mastery of the masters-level content. The course will normally culminate in a research paper presentation in the weeks following submission of the paper.

#### GBA 579. MASTERS RESEARCH THESIS

This course is the culminating experience for the Masters of Science in Business Research program. The culminating experience requires the students to integrate their program content to address

relevant theoretical and/or empirical issues in their field. This course involves an intense independent research and study as well as individualized faculty-student interactions to support this independent research. Through this process, students demonstrate their readiness to conduct original research and their mastery of related field courses at a PhD level. The course will normally require submission of a substantial original research paper along with an oral defense of that research paper.

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 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. Each unit of the course consists of an economic overview of the industry segment, including a review of the managerial economics issues that are currently important in the industry segment. Topics include the economic structure of the U.S. healthcare industry, including its vertical relations; placing the US healthcare system in international context and understanding the role that technology plays in driving long term change in the industry; the fiscal crises that beset Medicare and recent payment innovations that Medicare has made that may fundamentally change the organization and delivery of health care services; private health insurance in the U.S.; provider sector restructuring, both horizontally and vertically, to meet the challenges posed by population health and capitation; the evolution of managed care as embodied in Accountable Care Organizations and consumer driven health care; quality measurement and reward, disease management and pay-for-performance; management chal-

lenges of the pharmaceutical and medical device industries, including managing the flow of innovation and marketing and distributing new products; current trends in both the adoption of and payment for medical technology including cost-effectiveness analysis; and the likely effects of health care reform on the health economy.

#### 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.

#### 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

Pharmaceutical and medical device firms create, produce, and market products that save lives and improve the quality of life for billions of people worldwide, with global sales revenue of approximately \$2 trillion. This course is designed to help students understand and analyze the strategic decisions made by executives of pharmaceutical and medical device firms. The course assumes that students understand the fundamentals of economic analysis (e.g., minimum efficient scale, Bertrand Trap, etc.) and are at least familiar with common frameworks for strategic analysis (e.g., Porter's Five Forces). We will build on that foundation by understanding issues specific to this industry such as regulations and development costs and timelines to explore challenges facing industry executives and the strategic decisions they make in response.

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

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'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 MARKETING 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 managerial accounting to develop a framework for financial planning, assessment and control and well as for financial valuation and decision making in health care organizations. The goal of the class is to provide students with a set of tools to first analyze financial condition and make and assess a viable strategic financial plan for a health care organization. In addition, students will be taught basic principles of financial valuation in order to make financial decisions about programmatic development. Course topics include: understanding the various sources of revenue for health care providers and the methodologies for computing them; analysis of the financial statements of nonprofit Medical Centers and other providers; analysis of the statement of cash flows to determine the financial sustainability of a strategic financial plan; use of projected sources and uses of funds to construct a simple strategic financial plan; description of various Medical Center budgets and their relation to the strategic financial plan; methods of measuring budget variances and budget control; principles of financial valuation of an economic entity using a financial multiple; discounted cash flow (DCF) valuation of an economic entity given relevant cash flows and risk parameters; analysis of capital investment opportunities in nonprofit

organizations; construction of simple pro forma forecasts of financial statements and cash flows for an economic entity; analysis of the merger synergies and strategic issues behind health care mergers; mechanics behind a nonprofit merger; analysis of the strategic considerations of Medical Centers vertically integrating into the health insurance market; and simple valuations of medical practices.

Prerequisites: HSM 450 or equivalent (ACC 401 and FIN 402)

#### 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

This course explores behavioral concepts including leadership, motivation, decision-making, communication, group dynamics, culture, and change management in the context of healthcare organizational and individual performance and engagement. Students systematically analyze healthcare organizational behavior issues and propose solutions that improve healthcare outcomes.

#### 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 deliver-

ing 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

3 credits

A continuation of the project from HSM 455.

Prerequisite: HSM 455

#### HSM 464. HEALTH IT AND ANALYTICS

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

Harry Groenevelt, Area Coordinator

### 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

2 credits

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  $R^n$ , 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

3 credits

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.

#### MSM 505. THEORY OF PROBABILITY AND STOCHASTIC PROCESSES II

3 credits

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 OPERATIONS MANAGEMENT

3 credits

This course introduces students to research in 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. The course aims to attain the following objectives: learn about what constitutes research in 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 512. OPERATIONS MANAGEMENT: BUSINESS PROBLEMS CONTEXT

3 credits

It is important for Operations Management PhDs to understand the research domain not only from the point of view of tools but also from the point of view of business problems that the field studies. In this class you will develop an understanding of how to manage the operational aspects of key business processes. We will explore the following

topics: Process capacity analysis, Process Quality Control, Recourse requirements for service processes, Demand Forecasting, Inventory Management of input materials and finished products, Management of perishable inventory and Management of Supply Chains.

#### MSM 518. ADVANCED BUSINESS MODELING

3 credits

This course will train students in the effective use of spreadsheet based tools to solve business problems involving quantitative analysis. This course will provide additional practice in the predictive and prescriptive analytics tools including Monte Carlo simulation, sensitivity analysis, linear and nonlinear optimization, decision trees. In addition, students will be introduced to Visual Basic for applications, simulation optimization, dynamic programming and Bloomberg Terminals.

#### MSM 522. OPTIMIZATION

3 credits

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

Prerequisite: Linear Algebra and functions of a real variable

#### MSM 532. PREDICTIVE ANALYTICS USING PYTHON FOR PHD STUDENTS

3 credits

This course introduces students to advanced predictive models and the practical aspects of applying them using Python, one of the leading programming languages for data science. The course covers fundamental concepts in statistical modeling, machine learning algorithms, and the software tools that constitute the Python data science ecosystem. Learning objectives: • Learn how to perform exploratory data analysis using Python (loading, representing, cleaning, manipulating, and visualizing data) • Learn about fundamental concepts in statistical modeling • Learn about advanced algorithms for predictive analytics and how and when to apply them • Learn about online platforms for data

analysis and their analytics capabilities (Google Cloud Platform).

## MSM 542. QUEUING THEORY AND APPLICATIONS

The course offers in-depth study of queues and networks of queues, including single- and multiserver-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 management. The key objectives of the course are (1) to provide the student with a series of frameworks for identifying, analyzing, and solving marketing problems and (2) to enhance the student's ability to effectively communicate analyses and solutions. We first focus on understanding the three C's – customers, the company, and competitors. Based on this analysis, we develop a strategy for our product(s) and discuss how a marketing strategy can be implemented through the elements of the marketing mix: product design, pricing, advertising & promotion as well as channels of distribution.

The class sessions consist of classroom lectures and case study discussions. Rather than focusing on internalizing facts and institutional detail, the emphasis is on critical thinking and application of the fundamental marketing strategy principles to business situations at hand.

Prerequisites: STR 401

#### \*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 formu-

late 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 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 breakeven 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. Integrated marketing communication philosophy is stressed and principles of consumer behavior are discussed as the starting point for the analysis of promotion decisions. Key elements are Digital Advertising, Creative Strategy, Media Planning, Media Mix Modeling, Measurement of Advertising Effectiveness, Coupons and Sales Promotions. Groups develop and present an advertising campaign for a New Product or Underperforming Product in an extremely competitive product category.

Prerequisite: MKT 402

**MKT 435. CHANNELS STRATEGY**

This course deals with the issues and processes that arise in designing and managing distribution channels to allow firms to deliver its products whenever, wherever, and in whatever form the customer desires. Distribution channels and sales forces perform both a tactical/operational function as well as a strategic function and both aspects need to be considered in their design and management. The course discusses several design options, including innovative ways to architect differentiated customer experience systems, ranging from direct distribution through a salesforce to a complex, multi-layered channel consisting 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 dealing requirements and resale-price maintenance from the opposing perspectives of the manufacturer and the distributor. 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, including an omni-channel approach—are discussed. On the salesforce front, the course delves into a few critical issues such as performance measurement, territory decision, quotas, and compensation design.

At the end of the course, students will be able to assess distribution and sales force strategies to make decisions based on quantitative and qualitative information.

Prerequisite: MKT 402

**\*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 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.

Prerequisite: MKT 414

**\*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 uncer-

tainty 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: MKT 414

**\*MKT 440. PRICING ANALYTICS**

The objective of this course is to prepare students with the intuition and tools to make pricing recommendations, and to meet the booming demand in pricing and consulting related careers. The course builds around applying state-of-the-art data analysis toolkit to data of historical sales to predict underlying consumer demand. We study analytical methods suitable for different types of data structure and different pricing objectives. Topics covered include pricing against competing products, product positioning and finding market segments.

Prerequisite: GBA 436 or CIS 417

**\*MKT 441. BRAND MANAGEMENT WORKSHOP**

3 credits

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-function-

al 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 448. BRAND STRATEGY

This course outlines essential brand building strategies to sustain growth, as practiced by industry leaders. This interactive course consists of a combination of guest speakers from leading CPG companies, local agencies and brand consultants. In addition, team members will conduct a consulting project for a local company, addressing the following questions:

- How does the marketplace perceive the firm?
- What is the firm's competitive branding advantage?
- What marketing recommendations should be leveraged to obtain the firm's desired point of difference and positioning?

A series of frameworks and tools will be introduced throughout the semester to develop specific brand strategies, focusing on the following:

1. Identifying consumer behavior to develop insights, targets and segments, determining which consumers to serve.
2. Defining brand equity and leveraging iconic assets and campaigns, including brand purpose and cause marketing to determine competitive advantage.
3. Analyzing Path to Purchase, including zero, first and second moments of truth to generate consumer acquisition and retention.
4. Assessing competition in the marketplace to understand what's working/not working.

The synthesis of all these elements is carried out using case studies and classroom lectures and discussion to prepare students for the branding

consultation project. Multiple team meetings with the client firm may be required outside of the scheduled class times. Grading is based on class participation, case preparation, and professor and client evaluation of team final project presentation.

At the end of the course, students will be able to develop a consumer centric branding strategy, illuminating the strength of any particular brand.

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 450. PRODUCT MANAGEMENT WORKSHOP

3 credits

This class provides students an opportunity to apply previous skills and experiences, along with new Simon skills, to a real client project. Students work on, and solve, an actual product centric challenge for the client. These are not tertiary projects. They are projects that will change the course of these businesses. Every one of them is rich with the opportunity to learn and to provide true value.

Two primary frameworks will be used to develop client recommendations. The first is the Structured Problem-Solving

framework taught in GBA 401. The second is the Momentum framework. The Momentum Framework will help teams to organize and communicate their solution's inputs and outputs into a clear strategy, an executable set of tactics and a well-articulated set of product goals and metrics that are tied to the product's contribution to margin.

### \*MKT 451. CONSUMER AND BRAND RESEARCH

This course focuses on key marketing research topics related to consumer and brand measurement and the analysis of this information to generate insights leading to improved marketing decisions. Class time will consist of lectures by the professor and guests concerning key consumer measures and related analysis tools and methodologies. Topics include churn analysis and consumer lifetime value, discrete choice methods, segmentation and targeting methods, store scanner data measurement, sampling and scenario analysis. In conjunction with these topics, students will be introduced to associated R and Excel/Tableau programming and example data sets. The idea is to provide students with not just an understanding of what the key consumer and brand metrics, tools and methods are, but also provide experiences in designing research plans, analyzing relevant data sets and making managerially useful recommendations.

### \*MKT 465 MARKETING ANALYTICS PROJECTS

3 credits

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.

### \*MKT 472 MARKETING MANAGEMENT ANALYTICS

Marketing management is a complex business function that requires various skills for effective strategy formulation and marketing plan implementation. The key objectives of this course are (1) to

provide you with a series of frameworks for identifying, analyzing, and solving-marketing problems with an emphasis on analytic tools to achieve this aim, and (2) to enhance your ability to effectively communicate your analyses and solutions.

## PHD COURSES

### MKT 505. MARKETING RESEARCH PHD WORKSHOP

3 credits

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

### MKT 511. CORE RESEARCH TOPICS IN QUANTITATIVE MARKETING

3 credits

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

3 credits

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

Harry Groenevelt, 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 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. 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 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.

#### \*OMG 472. OPERATIONS AND SUPPLY CHAIN ANALYTICS

In this course we study how analytics tools can be applied to modern operations problems. The emphasis will be on building and using performance evaluation, simulation, and optimization models to solve operations problems, and on communicating the results in a convincing manner, both in written reports and in oral presentations.

## ADMINISTRATION

## SEVIN YELTEKIN

Dean; Professor of Economics

As dean of Simon Business School, Sevin Yeltekin oversees the administrative and academic functions of the school, shapes the school's vision and priorities, and serves as the leading advocate of its faculty, programs and students to alumni, the business community and other external constituencies. From 2017-2020, she served as Senior Associate Dean, Education at Carnegie Mellon University's Tepper School of Business. At Tepper, Yeltekin's responsibilities included advancing the academic and student experience for the school's undergraduate and graduate programs. In addition to her duties as senior associate dean, she was a Professor of Economics and has been a Tepper faculty member since 2005. Immediately prior, she was on faculty at the Kellogg School of Management at Northwestern University. Dean Yeltekin is a highly respected macroeconomics scholar, she is well-known for her research in the design of sustainable monetary and fiscal policies in environments where policymakers and the public have informational asymmetry. Her research spans fiscal policy design, social insurance design, computational economics and asset pricing implications of macro policy. She has been a member of the advisory board for the Carnegie Rochester NYU Series on Public Policy since 2012. The series has been a semi-annual event occurring on a rotating basis at each university and encourages the interchange of scientific ideas among analysts with different approaches, and gives greater understanding by academic economists of practitioner's environments.

BA, Economics and Mathematics, Wellesley College

MA, Economics, Stanford University

PhD, Economics, Stanford University

## JIM BRICKLEY

Senior Associate Dean of Faculty and Research; Gleason Professor of Business Administration; Professor of Economics and Management

Brickley has served as a full-time faculty member at the Simon School since 1990. He is currently the Gleason Professor of Business Administration and Senior Associate Dean of Faculty and Research. His primary research interests are in the areas of corporate governance and the economics of organizations. Brickley is a past winner of the Simon School's Distinguished Teaching Award. He has also been listed multiple times on the School's Teaching Honor Roll. Brickley has consulted with various corporations and law firms.

Professor Brickley has research and teaching interests in the economics of organizations, corporate governance, executive compensation, corporate finance, franchising, and banking. His papers have been published in the *Journal of Business*, the *Journal of Law and Economics*, the *Journal of Finance*, the *Journal of Accounting and Economics*, the *Journal of Financial Economics*, the *Journal of Economic Perspectives*, the *Journal of Law Economics and Organizations*, the *Journal of Empirical Legal Studies*, the *Journal of Economic Behavior and Organization*, *Health Economics*, the *Journal of Risk and Insurance*, the *Journal of Financial and Quantitative Analysis*, *Financial Management*, and the *Journal of Corporate Finance*. The seventh edition of *Managerial Economics and Organizational Architecture* (authored by Brickley, Clifford W. Smith Jr. and Jerold L. Zimmerman) was published by McGraw-Hill/Irwin in 2021. Brickley, Smith, Zimmerman and Janice Willett authored a trade version of this text entitled *Designing Organizations to Create Value* in 2003. Brickley and Smith published *An Advanced Introduction to Corporate Finance* in 2022 (Edward Elgar Publisher). Brickley has served as associate editor of finance and accounting journals. Various studies have reported that Brickley is among the more cited researchers in leading finance journals. In 2002, three of his published papers received the *Journal of Financial Economics All Star Paper Award* (based on number of citations).

BS, Economics, University of Oregon

MS, Economics, University of Oregon

PhD, Finance, University of Oregon

## MITCHELL J. LOVETT

Senior Associate Dean of Education and Innovation; Associate Professor of Marketing; center of Excellence in Data Science Distinguished Researcher, Goergen Institute of Data Science

Professor Lovett's research interests span many areas of quantitative marketing including pricing and retail strategy, targeted advertising, online and offline word-of-mouth, branding and social media, as well as firm and consumer learning. He develops and applies marketing models to address research questions in a range of domains from entertainment brands to CPG to retail to political marketing. Professor Lovett's research has been published in *Marketing Science*, the *Journal of Marketing Research*, *Quantitative Marketing and Economics*, *Quarterly Journal of Political Science*, and the *International Journal of Research in Marketing* among others. His paper "On Brands and Word of Mouth" was a finalist for the William F. O'Dell award for long-term impact and his research has been awarded the ISBM Study of Business Markets' Research Grant Silver Medalist Award and multiple grants from the Marketing Science Institute (MSI). His research has earned him the prestigious MSI Young Scholar and Scholar distinctions, and his research has garnered national media attention in relevant publications such as *Ad Age* and *Marketing News*. Professor Lovett is an associate editor at *Quantitative Marketing and Economics* and the chair of the ISMS Marketing Science Conference in 2021.

Professor Lovett teaches graduate level courses in *Advanced Marketing Strategy*, *Analytics Design and Applications*, and *PhD Quantitative Models*, and since joining Simon in 2008 has taught a range of other courses including *Consumer Behavior*, *Advertising Strategy*, and *Marketing Research* as well as *Exec Ed* and *EMBA* courses. He has won the Gerald and Deanne Gitner Prize for Teaching Excellence, the Superior Teaching Award for Master of Science in Marketing Analytics, and the Superior Teaching Award for the MBA program. In his research and teaching, he engages regularly with companies to solve problems such as evaluating social media impact, forecasting new product sales, designing rebate programs, and evaluating store redesigns.

BA, Mathematics, Economics, German, Ohio Wesleyan University

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2023-2024 ACADEMIC YEAR UPDATES