Business and Economics Graduate Programs and Courses

The College of Business (https://business.lehigh.edu/graduate/) is accredited by AASCB International; the Association to Advance Collegiate Schools of Business.

Graduate degree programs offered by the college include:

- Master of Business Administration
- Master of Science in Applied Economics
- Master of Science in Business Analytics
- Master of Science in Management
- Ph.D. in Business and Economics

Interdisciplinary degree programs (http://catalog.lehigh.edu/coursesprogramsandcurricula/interdisciplinarygraduatestudyandresearch/) are offered through partnerships with other colleges:

- P.C. Rossin College of Engineering and Applied Science - Master of Business Administration and Engineering
- P.C. Rossin College of Engineering and Applied Science and the College of Arts and Sciences - Master of Science in Financial Engineering
- College of Education - Master of Business Administration and Educational Leadership
- College of Health - Master of Business Administration and Master of Public Health (dual-degree)

Courses for the programs are taught by faculty from the Accounting (http://catalog.lehigh.edu/coursesprogramsandcurricula/businessandeconomics/accounting/#faculty), Data and Technology Analytics (DATA, Business Information Systems (https://catalog.lehigh.edu/coursesprogramsandcurricula/businessandeconomics/businessinformationsystems/) and Supply Chain Management (https://catalog.lehigh.edu/coursesprogramsandcurricula/businessandeconomics/supplychainmanagement/)), Economics (http://catalog.lehigh.edu/coursesprogramsandcurricula/businessandeconomics/economics/#faculty), Finance (http://catalog.lehigh.edu/coursesprogramsandcurricula/businessandeconomics/finance/#faculty), Management (http://catalog.lehigh.edu/coursesprogramsandcurricula/businessandeconomics/management/#faculty), and Marketing (http://catalog.lehigh.edu/coursesprogramsandcurricula/businessandeconomics/marketing/#faculty) departments.

GRADUATE DEGREES IN BUSINESS ADMINISTRATION AND ECONOMICS

Candidates for admission to graduate study in the College of Business may be required to provide the results obtained in the Graduate Management Admissions Test (GMAT) or the Graduate Record Examination general test (GRE).

International applicants are required to submit evidence of English proficiency through one of the following methods: a) prior study in a country where the primary language is English, b) by taking the Test of English as a Foreign Language (TOEFL) examination, c) by taking The International English Language Testing System (IELTS) examination, or d) by taking the Duolingo English Assessment for admission to the program. Please consult with your program of choice to determine which requirements are appropriate for submission.

MASTER OF BUSINESS ADMINISTRATION

Lehigh MBA programs provide rich learning experiences for students. The College of Business offers three MBA programs: one-year, full-time MBA program (1-MBA); online, part-time MBA program (FLEX); Executive MBA program.

ONE YEAR, FULL-TIME MBA PROGRAM

1-MBA Mission Statement:

The One Year, Full-Time MBA Program develops and positions students for organizational and career success as strategic thinkers in an environment that seeks solutions beneficial to business and society. In a 12-month program format, it provides not only a rigorous and comprehensive coverage of fundamental business principles but also helps students use an integrated framework for addressing large, multi-stakeholder organizational challenges. Students in the 1-MBA program will apply their learning in a year-long consulting practicum experience, where students will learn about the consulting mindset and translate this, along with their other MBA coursework, into C-level consulting engagements with real companies. 1-MBA students also have opportunities for extensive networking with peers, alumni, experienced executives, faculty, and coaching professionals.

The One Year Full-Time MBA Program (henceforth 1-MBA) is designed for individuals who already have at least two years of work experience and wish to either pivot their careers into a business-related area that may not be in their previous field of employment or accelerate their career within their chosen field. This MBA program is designed to accommodate those from non-business-related fields, as well as students whose undergraduate major is in business but who may want to change their focus, such as from finance to marketing.

The 1-MBA program, which starts each summer, is a cohort-based, lockstep program initially to develop core knowledge of functional areas and team building. These courses emphasize a stakeholder perspectives approach. A consulting practicum provides students with substantive and practical hands-on experience. The final part of the program emphasizes building domain expertise via electives or concentrations, with a focus on data analytics and leadership. Another feature is a dedicated coaching team consisting of a professional staff member, an alumnus, and a faculty member.

The program offers concentrations in Business Analytics, Financial Management, Marketing, and Supply Chain Management. Students may also opt to complete electives of their choice and earn the Business Administration (general) major.

Program Requirements

The following are pre-requisites for students prior to arrival on campus to begin the program:

1. Calculus knowledge as evidenced by an acceptable grade in a college-level calculus class
2. English proficiency (for international students) as evidenced by a high TOEFL or IELTS score and via interviews with the admissions committee
3. Economics knowledge as evidenced by an acceptable grade in a college-level elementary economics course
4. Acceptable grades in Approved Online Tests as determined by program faculty, such as
(a) Quantitative Methods, (b) Statistics, (c) Excel

ONE-YEAR FULL-TIME MBA PROGRAM, GENERAL (MAJOR: BUSINESS ADMINISTRATION)

Summer Semester		**9**
PMGT 409	Project Management Fundamentals	3
MBA 440	Quantitative Methods	3
MBA 441	Professional Development	1
MBA 442	Societal Shifts I	2
Orientation (Non-credit requirement)		
Fall Semester		**18**
Module I (7 weeks)		
Functional Area Core Knowledge		
MBA 451	Accounting 1-MBA	1.5
MBA 452	Economics and Markets 1-MBA	1.5
MBA 453	Finance 1-MBA	1.5
MBA 454	Management - OB/HR 1-MBA	1.5
MBA 455	Marketing 1-MBA	1.5
Module II (7 weeks)		
Stakeholders Perspective		
MBA 456	Strategy 1-MBA	1.5
MBA 461	Financial Claimants 1-MBA	1.5
MBA 462	Government & Society 1-MBA	1.5

MBA 463	Suppliers and Customers 1-MBA	1.5
MBA 464	Employees 1-MBA	1.5
Module III (14 weeks)		
MBA 441	Professional Development	1
MBA 457	Consulting Practicum I	2
Winter Intersession		
MBA 443	Societal Shifts II	4
Spring Semester		**16**
MBA 465	Consulting Practicum II	4
BIS 456	Business Analytics for Decision Making	3
Graduate Elective I		3
Graduate Elective II		3
Graduate Elective III		3
Summary of credit hours		
Summer Session		9
Fall Semester		18
Winter Intersession		4
Spring Semester		16
TOTAL		**47**

ONE-YEAR FULL-TIME MBA PROGRAM, BUSINESS ANALYTICS (MAJOR: BUSINESS ANALYTICS), supply chain management (Major: supply chain management)

Summer Semester		**9**
PMGT 409	Project Management Fundamentals	3
MBA 440	Quantitative Methods	3
MBA 441	Professional Development	1
MBA 442	Societal Shifts I	2
Orientation (non-credit requirement)		
Fall Semester		**18**
Module I (7 weeks)		
Functional Area Core Knowledge		
MBA 451	Accounting 1-MBA	1.5
MBA 452	Economics and Markets 1-MBA	1.5
MBA 453	Finance 1-MBA	1.5
MBA 454	Management - OB/HR 1-MBA	1.5
MBA 455	Marketing 1-MBA	1.5
Module II (7 weeks)		
Stakeholders Perspective		
MBA 456	Strategy 1-MBA	1.5
MBA 461	Financial Claimants 1-MBA	1.5
MBA 462	Government & Society 1-MBA	1.5
MBA 463	Suppliers and Customers 1-MBA	1.5
MBA 464	Employees 1-MBA	1.5
Module III (14 weeks)		
MBA 441	Professional Development	1
MBA 457	Consulting Practicum I	2
Winter Intersession		
MBA 443	Societal Shifts II	4
Spring Semester-Business Analytics		**16**
MBA 465	Consulting Practicum II	4
BIS 456	Business Analytics for Decision Making	3
Approved Graduate Business Analytics I Elective		3
Approved Graduate Business Analytics II Elective		3
Approved Graduate Business Analytics III Elective		3
Summer Session - Business Analytics		**6**
BIS 458	Data Management for Managers	3
Approved Graduate Business Analytics IV Elective		3
Spring Semester - Supply Chain Management		**16**
MBA 465	Consulting Practicum II	4
BIS 456	Business Analytics for Decision Making	3
GBUS 453	Transportation and Logistics Management	3
SCM 309	Supply, Cost, and Risk Managment	3
SCM 330	Analytics for Service Operations	3
OR		
SCM 342	e-Business Enterprise Applications	3
Summer Session - Supply Chain Management		**6**
BIS 458	Data Management for Managers	3
GBUS 432	Demand and Supply Chain Planning	3
Approved Graduate Level SCM course(s) as determined by the DATA department		
Summary of Credit Hours		
Summer Session (entry)		9
Fall Semester		18
Winter Intersession		4
Spring Semester		16
Summer Session (last semester)		6
TOTAL		**53**

ONE-YEAR FULL-TIME MBA PROGRAM, FINANCIAL MANAGEMENT (MAJOR FINANCIAL MANAGEMENT), OR MARKETING (MAJOR MARKETING)

Summer Semester		**9**
PMGT 409	Project Management Fundamentals	3
MBA 440	Quantitative Methods	3
MBA 441	Professional Development	1
MBA 442	Societal Shifts I	2
Orientation (Non-credit requirement)		
Fall Semester		**18**
Module I (7 weeks)		
Functional Area Core Knowledge		
MBA 451	Accounting 1-MBA	1.5
MBA 452	Economics and Markets 1-MBA	1.5
MBA 453	Finance 1-MBA	1.5
MBA 454	Management - OB/HR 1-MBA	1.5
MBA 455	Marketing 1-MBA	1.5
Module II (7 weeks)		
Stakeholders Perspective		
MBA 456	Strategy 1-MBA	1.5
MBA 461	Financial Claimants 1-MBA	1.5
MBA 462	Government & Society 1-MBA	1.5
MBA 463	Suppliers and Customers 1-MBA	1.5
MBA 464	Employees 1-MBA	1.5
Module III (14 weeks)		
MBA 441	Professional Development	1
MBA 457	Consulting Practicum I	2
Winter Intersession		4
MBA 443	Societal Shifts II	4
Spring Semester		16
MBA 465	Consulting Practicum II	4
BIS 456	Business Analytics for Decision Making	3
Approved Concentration Course I		3

Approved Concentration Course II		3
Approved Concentration Course III		3
Summer Semester		3
Approved Concentration Course IV		3
Marketing Major		**12**
A minimum of two approved marketing elective courses must be at the 400 level		
Approved Marketing Elective I (from current or future offering)		3
Approved Marketing Elective II (from current or future offering)		3
Approved Marketing Elective III (from current or future offering)		3
Approved Marketing Elective IV (from current or future offering)		3
Financial Management		**12**
GBUS 419	Financial Management (spring)	3
GBUS 420	Investments (spring)	3
Select 3 of the following 4 courses:		
GBEN 407	Startups & Pivots (spring)	
GBEN 409	Financial Forecasting (spring)	
GBEN 410	Financing Startups (spring)	
GBEN 412	Going Public (spring)	
GBUS 424	Advanced Topics in Financial Management (summer)	3

Summary of Credit Hours

For Majors in Financial Management, Marketing, and Supply Chain Management	
Summer Session (entry)	9
Fall Semester	18
Winter Intersession	4
Spring Semester	16
Summer Session (last semester)	3
TOTAL	**50**

Program Admission Requirements

Admission to the 1-MBA program (https://business.lehigh.edu/academics/graduate/masters-programs/one-year-mba/admissions-information/) will be based on the applicants essay, resume or CV, transcripts, 2 letters of recommendation, interview, and/or GMAT/GRE test scores if the applicant chooses to submit test scores. Two years of professional work experience is required. International students must show English proficiency. (https://business.lehigh.edu/graduate/english-language-proficiency/)

Dual Degree Option: MBA and Public Health

The One Year, Full-Time MBA program offers a dual degree program (https://business.lehigh.edu/academics/graduate/masters-programs/one-year-mba/mph-dual-degree/) with the Masters of Public Health through the College of Health. Students are able to earn the two degrees in a two years.

Questions? Contact us (p. 8) or visit our website: https://business.lehigh.edu/1-mba (https://business.lehigh.edu/one-year-mba/)

FLEX MBA PROGRAM

Lehigh's FLEX MBA curriculum is a fully integrated model that simulates the business environment in the classroom. Business issues are viewed and taught from the perspective of the firm as a whole rather than along departmental lines. FLEX MBA students acquire leadership, managerial communication, and resource allocation skills coupled with a comprehensive understanding of complex domestic and global business issues.

Due to the compact and integrated core, students have increased flexibility to tailor the program to their individual needs. Students may select a concentration in business analytics, corporate entrepreneurship, finance, international business, marketing, project management, public health, or supply chain management, or pursue a broader experience by selecting courses from a variety of disciplines. Students may only have one concentration.

The FLEX MBA program is available both on-campus and online. Students may opt to attend class through both methods of delivery. All FLEX MBA concentrations are available through online study.

FLEX MBA Mission Statement:

The FLEX MBA program will further the development of organizational leaders and managers. This is accomplished by honing students' knowledge, skills, and abilities through a comprehensive and integrated core curriculum and customized concentrations designed to meet individual needs. The FLEX MBA program will also foster life-long learning through continuing professional education programs.

Core Courses		
MGT 431	Leadership in Contemporary Organizations	1.5
ACCT 432	Accounting for Managers	3
FIN 433	Financial Analysis for Managers	3
BIS 434	Decision Analytics for Managers	3
SCM 435	Operations and Supply Chain Management	3
MGT 436	Managing People	3
MKT 437	Customer Insights and Marketing Strategy for Managers	3
MGT 438	Strategy for Competitive Advantage	3
MGT 439	Applied Capstone Experience (ACE)	1.5
Electives		
Select 12 credit hours of elective coursework. Students may design an area of study in consultation with their advisor or select an area of concentration. Concentrations require the completion of 12 credit hours. Students may undertake, with proper approvals, a maximum of six credit hours of electives outside of the College of Business, but within Lehigh University. The exception to this 6-credit rule is for students who undertake the concentration in Public Health. The Public Health concentration requires the completion of 12 credit hours in courses within the College of Health. All elective courses must be at the 400 level.		12
Total Credits		**36**

Business Analytics Concentration

Credits Required		12
Directed Electives (6 credits)		
BIS 458	Data Management for Managers	3
AND		
BUAN 448	Predictive Analytics in Business	3
OR		
BIS 456	Business Analytics for Decision Making	3
Choose 6 credits:		
BUAN 452	Business Analytics and Modelling	3
ECO 403	Econometric Software	3
GBUS 424	Advanced Topics in Financial Management	3
GBUS 466	Marketing Research and Analysis	3
MACC 430	Data Analytics for Accountants	3

Corporate Entrepreneurship Concentration

Credits Required		12
Select 12 credits from any of the following courses:		
GBEN 401	Business Plan I	2
GBEN 402	Business Plan II	2
GBEN 403	Anatomy of Entrepreneurship	1
GBEN 404	Market Opportunity	1
GBEN 405	Intellectual Property	1
GBEN 406	Performing Due Diligence	1

GBEN 407	Startups & Pivots	1
GBEN 409	Financial Forecasting	1
GBEN 410	Financing Startups	1
GBEN 412	Going Public	1
GBEN 413	Integrative Experience/New Venture Internship	1-4
GBEN 414	Ventures in Brand Licensing	1
GBEN 415	LehighSiliconValley	1-3
GBEN 492	Special Topics	1-3

Finance Concentration

Credits Required		12
Directed Electives (6 credits)		
GBUS 419	Financial Management	3
GBUS 420	Investments	3
Choose 2 of 3 courses (6 credits)		
GBUS 424	Advanced Topics in Financial Management	3
GBUS 426	Financial Markets and Institutions	3
GBUS 473	International Finance	3

International Business Concentration

Credits Required		9
Select 9 credits from the following courses:		
GBUS 473	International Finance	3
GBUS 475	Global Marketing Strategies	3
GBUS 492	Special Topics (Repeatable, includes immersion trips)	1-4

Marketing Concentration

Credits Required		12
Select 12 credits from the following:		
GBUS 460	Strategic Marketing Management	3
GBUS 465	Creating Breakthrough Innovations	3
GBUS 466	Marketing Research and Analysis	3
GBUS 467	Sales Management	3
GBUS 468	Future of Marketing	3
GBUS 470	Marketing Communications Strategies	3
GBUS 471	Strategic Brand Management	3
GBUS 475	Global Marketing Strategies	3

Project Management Concentration

Credits Required		12
Directed Electives (7 credits)		
PMGT 409	Project Management Fundamentals	
PMGT 410	Project Requirements and Scope Management	
PMGT 411	Project Scheduling, Estimating & Budgeting	
PMGT 413	Project Risk Management	
PMGT 416	Decision Making and Ethics on Projects	1
Choose 5 credits:		
PMGT 412	Advanced Scheduling & Scheduling Tools	
PMGT 414	Managing Project Quality	
PMGT 415	Project Procurement & Negotiation	
PMGT 417	Project Leadership	1
PMGT 418	Facilitation and Teamwork for Projects	1
PMGT 419	Adaptive and Agile Project Management	1
PMGT 420	Managing Projects for Innovation	1
PMGT 421	Project Management Capstone	

Public Health Concentration

Credits Required:		12
Required Courses		
BSTA 402	Biostatistics in Health	3
PUBH 402	Health Services, Administration, Politics, and Policy	3
POPH 405	Qualitative Research Methods	3
Select One:		
EPI 404	Methods in Epidemiology I	3
PUBH 401	Health Promotion and Education	3
PUBH 403	Health Program Planning and Implementation	3
POPH 409	Social Determinants of Health	3
POPH 431	Environmental Health Justice	3

Supply Chain Management Concentration

Credits Required:		12
Directed Electives (9 credits)		
GBUS 432	Demand and Supply Chain Planning	3
GBUS 450	Strategic Supply Management	3
GBUS 453	Transportation and Logistics Management	3
Select 3 credits		
GBUS 447	Negotiation	3
GBUS 456	Applied Supply Chain Models	3
BIS 456	Business Analytics for Decision Making	3
GBUS 492	Special Topics	1-4

Prerequisites

Students should have completed undergraduate courses in computer literacy, and principles of microeconomics and macroeconomics. The prerequisites of financial accounting and statistics may be completed after acceptance into the Flex MBA program

The statistics prerequisite may be fulfilled by having taken a class within the past 5 years and receiving a “B” or better, by taking a proficiency exam administered through the College, or by enrolling in Basic Statistics for Business and Industry or equivalent. The Accounting prerequisite may be waived by enrolling in Financial Accounting for Managers and Investors at Lehigh or by taking a proficiency exam administered by the College.

If a student has no previous background in financial accounting or statistics, he/she is encouraged to take a course in the subject area. If a student has previously taken coursework but has not achieved a grade of “B” or the course has exceeded the time limit, self-directed learning and a proficiency exam may be appropriate.

The prerequisites of financial accounting and statistics must be completed before enrolling in ACCT 432 Accounting for Managers, BIS 434 Business Analytics for Managers and/or SCM 435 Operations and Supply Chain Management.

Waiver Policy

There are no waivers for courses in the Flex MBA Program.

GMAT or GRE Scores

The submission of test scores through the Graduate Management Admissions Test (GMAT) administered by Pearson Vue or the Graduate Record Exam (GRE) administered by the Educational Testing Service (ETS) is optional.

Work Experience

Students are required to have a minimum of 2 years of full-time, professional work experience.

International Students/English Language assessment

International students must have 16 years of formal education, including four years at the university level, to be considered for admission to Lehigh’s graduate programs. Applicants whose native language is not English are required to take one of the following English Assessments: TOEFL, IELTS, or DuoLingo.

Flexible Class Scheduling

Classes are scheduled Monday through Thursday evenings, with seminars offered on Fridays and Saturdays and full-week immersions available. Part-time students may complete the entire program with evening classes. Many students accelerate the completion of the program by taking courses during the two six-week summer sessions.

Questions? Contact us (p. 8) or visit our website: business.lehigh.edu/flex-mba (https://business.lehigh.edu/flex-mba/)

MASTER OF BUSINESS ADMINISTRATION AND EDUCATIONAL LEADERSHIP

The MBA & Educational Leadership joint degree program offers students the opportunity to acquire a solid foundation in both business and education. Designed to develop the administrative skills required in today's educational systems, the MBA and Educational Leadership program provides a framework where excellent education and sound business practices can flourish. The MBA/Ed. Leadership will provide an additional option for business students in educational leadership. The program will enhance the student's marketability in private and public sector education while providing students with an understanding of the cultures of both business and education. Core courses from both colleges will ensure that recipients of the joint degree will bring to their future positions an extraordinary medley of skills to manage human and financial resources efficiently while employing expertise in instructional supervision and training in both education and corporate settings. This program of study will enhance training and skills for those currently in the area of business and financial management in the field of education. The Lehigh MBA and Educational Leadership degree is a joint, 45-credit-hour program.

ADMISSION REQUIREMENTS

Applications need to be approved through both the MBA program and the Educational Leadership program. Students must have at least 2 years of professional post-graduate work experience to apply for this joint degree program.

Further information about the program may be obtained by contacting Dr. Floyd D. Beachum, Associate Professor, College of Education, at 610-758-5955 / fdb209@lehigh.edu, or the Graduate Programs Office of the College of Business at (610) 758-4450 / business@lehigh.edu.

Visit our website: business.lehigh.edu/academics/graduate/masters-programs/flex-mba/mba-educational-leadership (https://business.lehigh.edu/academics/graduate/masters-programs/flex-mba/mba-educational-leadership/)

MASTER OF BUSINESS ADMINISTRATION AND ENGINEERING

The University is committed to developing leaders in business and in industry: the MBA & Engineering degree unites two premier programs in one powerful joint degree by offering a solid foundation in both business and engineering.

Graduates of the MBA & Engineering program will be prepared to assume leadership positions in industrial planning, venture capital, and engineering management; and as senior managers in roles requiring both technical and business acumen.

The 45 credit hour program is taught in an interactive manner by faculty who are leaders in their fields with a wealth of practical experience; it also combines core business courses and a core of engineering courses:

The basic 45 credit hour course sequence consists of:

MBA core courses	18
Engineering core courses	12
Business electives	5
Engineering electives	6
Free electives	3
Integrated project	1
Total Credits	**45**

Students can choose an appropriate engineering curriculum from any of the following programs – chemical engineering, civil engineering, computer engineering, computer science, electrical engineering, environmental engineering, industrial and systems engineering, manufacturing systems engineering, materials science and engineering, mechanical engineering, or polymer science and engineering.

MBA Core Courses

MBA 401	Introduction to the Organization and its Environment	2
MBA 402	Managing Financial and Physical Resources	4
MBA 403	Managing Information	4
MBA 404	Managing Products and Services	4
MBA 405	Managing People	4

ENGINEERING CORE COURSES

Each engineering program has its own set of core courses. Course choices are intended to be as flexible as possible, and are tailored to meet the needs of individual students. Further information can be obtained from the appropriate departmental graduate coordinator, or from the Office of Graduate Studies (610-758-6310) in the P.C. Rossin College of Engineering and Applied Science.

Electives

Engineering electives are chosen from courses in the appropriate P.C. Rossin College of Engineering and Applied Science (RCEAS) engineering program and the business electives are selected from course offerings in COB. Electives can also be chosen from joint courses that are being developed by RCEAS & COB.

Project

All students are required to do a short interdisciplinary project. Project topics, based on the specific interests of each student, will be developed by RCEAS faculty.

Admissions

Applications must be accepted by the MBA program and the relevant department in the P.C. Rossin College of Engineering and Applied Science. Consult with admissions to determine if GRE or GMAT scores are necessary for admission.

Further information can be obtained from:

Office of Graduate Studies
P.C. Rossin College of Engineering & Applied Science
610-758-6310

or

The Graduate Programs Office
College of Business
610-758-4450

Visit our website: business.lehigh.edu/academics/graduate/masters-programs/flex-mba/mba-engineering (https://business.lehigh.edu/academics/graduate/masters-programs/flex-mba/mba-engineering/)

EXECUTIVE MBA PROGRAM (EMBA)

The Lehigh Executive MBA Program (EMBA) program is designed to cultivate already seasoned business leaders with greater strategic vision, more global and societal perspectives, enhanced innovativeness, and a sincere commitment to the greater good in the Data Age. EMBA Students will develop a better understanding of their strengths and passions and will challenge them to consistently think critically about ways to transition organizations for success in today's dynamic, ever-changing global environment. While students will learn the fundamentals in all business disciplines and their integrations with data-driven decision making, they will also learn how to diagnose and solve complex business problems in dynamic global and societal settings in their quest for driving sustainable value creation.

MODULE 1: Business Essentials in Data Age

18 credits required in the following courses:		
MBA 471	Accounting for Executives	3
MBA 472	Essentials of Economics for Executives	3
MBA 473	Financial Management for Executives	3
MBA 474	Marketing Essentials for Executives	3

MBA 475	Operations and Supply Chain Management for Executives	3
MBA 476	Talent Management for Executives	3
MODULE 2: Strategic Management and Leadership		
9 credits required in the following courses:		
MBA 481	Mastering Strategy	3
MBA 482	Executive Leadership	3
MBA 483	Digital Strategies for Organization Transformation	3
MODULE 3: Global and Societal Perspectives		
6 credits required in the following courses:		
MBA 484	Societal Challenges: Implications for Business	3
Plus 1 course from this list:		
GBUS 473	International Finance	3
GBUS 475	Global Marketing Strategies	3
Special Topics or Experimental Courses as approved by program administration		3
MODULE 4: Elective Module		
Choose 9 credits from Graduate Business Electives		9
MODULE 5: Experiential Learning Module		
6 credits required in the following courses:		
GBUS 493	Experiential Learning Study Trip	3
GBUS 494	Field Projects	3
Total Credits		48

Program Format

The program is designed for 16 months in time to completion. Courses are delivered in person one weekend per month, complemented with online preparation and summary discussion before and during weekend meetings.

Admission Requirements

- A bachelor's degree from an accredited university
- A minimum of six years of full-time work experience
- Demonstrated potential for success at senior management levels
- Demonstrated ability and motivation to complete a rigorous and intensive course of study while employed
- For international students, demonstrated proficiency in English through standard tests such as TOEFL, IELTS, or Duolingo is required.
- Three recommendation letters
- Candidate essays
- Interview required

Questions? Contact us (p. 8) or visit our website: business.lehigh.edu/academics/graduate/masters-programs/executive-mba (https://business.lehigh.edu/academics/graduate/masters-programs/executive-mba/)

MASTER OF SCIENCE IN APPLIED ECONOMICS

The program requires 30 credit hours, typically completed in 16 months starting in the fall of one academic year and finishing in the fall of the subsequent year. Some students may complete the program in 12 months by taking extra courses in the fall and spring semesters and in the summer session.

Core Required Courses		**15**
ECO 402	Managerial Economics	3
ECO 403	Econometric Software	3
ECO 412	Mathematical Economics	3
ECO 415	Econometrics I	3
ECO 417	Advanced Macroeconomic Analysis	3
Program Tracks - choose one of the two tracks below		**9**
A. Competition and Market Analysis		
ECO 404	Applied Microeconometrics	3
ECO 447	Economic Analysis of Market Competition	3
Plus one of the following:		
BIS 448		3
ECO 431	Quantitative Market Analysis	3
ECO 456	Industrial Organization	3
ECO 463	Topics in Game Theory	3
ECO 325	Consumer Insights through Data Analysis	3
ECO 336	Antitrust, Regulation, and the New Economy	3
B. Policy Economics		
ECO 404 Applied Microeconometrics		3
Plus two of the following:		
ECO 425	Cost-Benefit Analysis	3
ECO 428	Electricity Economics	3
ECO 440	Labor Economics I	3
ECO 441	Labor Economics II	3
ECO 460	Time Series Analysis	3
ECO 303	Economic Development	3
ECO 311	Environmental Economics	3
ECO 322	Competitor and Market Analysis	3
ECO 328	Electricity Economics	3
ECO 339	International Trade	3
ECO 340	International Finance	3
ECO 345	Political Economy of Iraq	3
ECO 353	Public Economics	3
ECO 365	Business, Government, and Macroeconomic Policy	3
ECO 368	Health Economics	3
ECO 336 Antitrust, Regulation, and the New Economy		3
Elective Courses		**6**

Substitutions may be permitted for courses that count toward the program tracks, with the approval of the M.S. program advisor. Students may choose to write a master's thesis as part of their elective credits. The thesis is worth up to six credit hours and is most relevant for those who may be considering a Ph.D. in economics.

The M.S. in Applied Economics Director must approve all elective coursework outside of economics.

PROGRAM ADMISSION REQUIREMENTS

Admission to the MSAE program (https://business.lehigh.edu/academics/graduate/masters-programs/ms-applied-economics/admissions-information/) will be based on the applicants essay, resume or CV, transcripts, 2 letters of recommendation, and/or GMAT/GRE test scores if the applicant chooses to submit test scores. International students must show English proficiency. (https://business.lehigh.edu/graduate/english-language-proficiency/)

Lehigh undergraduate students may opt for a 4+1 program (https://business.lehigh.edu/academics/graduate/masters-programs/ms-applied-economics/accelerated-program/) that would allow the M.S. in Applied Economics degree to be completed in an accelerated mode.

Further information about the MS in Applied Economics program may be obtained by contacting Alex Nikolsko-Rzhevskyy, Program Director M.S. in Applied Economics, at (610) 758-0240 / aln812b@lehigh.edu.

Questions? Contact us (p. 8) or visit our website: business.lehigh.edu/msae (https://business.lehigh.edu/ms-applied-economics/)

MASTER OF SCIENCE IN BUSINESS ANALYTICS

The Master of Science in Business Analytics (MSBA) program is designed to prepare students with cutting-edge knowledge and skillsets that will enable them to be competitive in the rapidly growing field of business analytics. This program starts in the summer term and is designed to be completed in one year. Students may opt to pursue a concentration in Financial Engineering Analytics, Marketing Analytics, Data Science, or Supply Chain Analytics.

The curriculum features three components that ensure students understand theory in-depth and develop practical skillsets:

- Disciplinary knowledge. Students learn the fundamentals of business and economics so that they understand business data and problems.
- Technical skills. Students learn software skills, such as SQL, R, Python, and Tableau, on collecting, preparing, modeling, and interpreting business data.
- Professional skills. Students develop soft skills in leadership, communication, teamwork, etc. They also develop their networks and are prepared for the job market.

Prerequisites (At Least 9 Credits)		
Calculus I (MATH 021 or MATH 081 or equivalent)		
Principles of Economics (ECO 001 or equivalent)		
Statistics (ECO 045 or equivalent)		
Summer Courses		**6**
Orientation Required		
BUAN 446	Python Applications for Business	3
DSCI 310	Introduction to Data Science	3
OR		
BIS 497	(Introduction to Data Science)	3
Fall Courses		**13.5**
BIS 411	Storytelling in Business Analytics	1.5
BUAN 448	Predictive Analytics in Business	3
BUAN 457	Artificial Intelligence for Business	3
BIS 458	Data Management for Managers	3
GBUS 405	Career and Professional Development I	1
Elective I		3
Spring Courses		**13.5**
BIS 412	Data Ethics and Security in Business	1.5
BIS 415	Capstone Project	3
BUAN 452	Business Analytics and Modelling	3
Elective II		3
Elective III		3
Elective List		
DSCI 321	Algorithms and Software Foundations for Data Science	3
DSCI 411	Data Management for Big Data	3
DSCI 421	Accelerated Computing for Machine Learning	3
DSCI 431	Introduction to Statistical Modeling	3
DSCI 441	Statistical and Machine Learning	3
ECO 404	Applied Microeconometrics	3
ECO 415	Econometrics I	3
FIN 377	Advanced Topics--Investments (Financial Data Science)	3
GBUS 421	Advanced Investments	3
GBUS 422	Derivatives and Risk Management	3
GBUS 432	Demand and Supply Chain Planning	3
GBUS 449	Talent Analytics	3
GBUS 453	Transportation and Logistics Management	3
GBUS 461	Marketing Analytics	3
GBUS 466	Marketing Research and Analysis	3
ISE 426	Optimization Models and Applications	3
ISE 447	Financial Optimization	3
MACC 419	Auditing	3
MACC 430	Data Analytics for Accountants	3
MATH 312	Statistical Computing and Applications	3,4
MKT 312	Marketing Research	3
MKT 325	Consumer Insights through Data Analysis	3
MKT 326	Marketing Analytics and Artificial Intelligence in the Digital Space	3
PMGT 409	Project Management Fundamentals	3
SCM 330	Analytics for Service Operations	3
SCM 345	Analytical Approaches to Supply Chain Management	3
STAT 410	Random Processes and Applications	3
Data Science Concentration (9 credits, choose 3 courses)		
DSCI 321	Algorithms and Software Foundations for Data Science	3
DSCI 411	Data Management for Big Data	3
DSCI 421	Accelerated Computing for Machine Learning	3
DSCI 431	Introduction to Statistical Modeling	3
DSCI 441	Statistical and Machine Learning	3
Marketing Analytics Concentration (9 credits, Choose 3 courses)		
GBUS 461	Marketing Analytics	3
GBUS 466	Marketing Research and Analysis	3
MKT 312	Marketing Research	3
MKT 325	Consumer Insights through Data Analysis	3
MKT 326	Marketing Analytics and Artificial Intelligence in the Digital Space	3
Supply Chain Analytics Concentration (9 credits, Choose 3 courses)		
GBUS 432	Demand and Supply Chain Planning	3
GBUS 453	Transportation and Logistics Management	3
SCM 330	Analytics for Service Operations	3
SCM 345	Analytical Approaches to Supply Chain Management	3
Financial Engineering Analytics Concentration (9 credits)		
Choose One:		3
GBUS 421	Advanced Investments	
GBUS 422	Derivatives and Risk Management	
Choose One:		3
MATH 312	Statistical Computing and Applications	
STAT 410	Random Processes and Applications	
Choose One:		3
ISE 426	Optimization Models and Applications	
ISE 447	Financial Optimization	
Degree Requirements		**33**
Prerequisite Courses (at least 9 credits, do not count towards the degree)		
MATH 021	Calculus I (or equivalent)	4
ECO 001	Principles of Economics (or equivalent)	4
ECO 045	Statistical Methods (or equivalent)	3
ORIENTATION REQUIRED		
REQUIRED COURSES:		**26**
BIS 411	Storytelling in Business Analytics	
BIS 412	Data Ethics and Security in Business	
BIS 415	Capstone Project	
BIS 458	Data Management for Managers	
BUAN 446	Python Applications for Business	3
BUAN 448	Predictive Analytics in Business	3

BUAN 452	Business Analytics and Modelling	3
BUAN 457	Artificial Intelligence for Business	3
BIS 497 Introduction to Data Science OR		
DSCI 310 Introduction to Data Science		
ELECTIVES		**9**
Choose 9 credit hours from the approved elective list or electives as approved by Program Management		

The M.S. in Business Analytics Director must approve all elective coursework outside of the stated courses.

PROGRAM ADMISSION REQUIREMENTS

Admission to the MSBA program (https://business.lehigh.edu/academics/graduate/masters-programs/ms-business-analytics/admissions-information/) will be based on the applicants essay, resume or CV, transcripts, 2 letters of recommendation, and/or GMAT/GRE test scores if the applicant chooses to submit test scores. An interview may be required. Students must not have more than 2 years of professional work experience to be eligible. International students must show English proficiency. (https://business.lehigh.edu/graduate/english-language-proficiency/)

Further information about the M.S. in Business Analytics Program may be obtained by contacting Dr. Dawei (David) Zhang, Faculty Director M.S. in Business Analytics Program, at (610) 758-4225 / daz215@lehigh.edu, or Alyssa Clapp, Program Director M.S. in Business Analytics Program, at (610) 758-2353 / alcb@lehigh.edu.

Questions? Contact us (p. 8) or visit our website: business.lehigh.edu/msba (https://business.lehigh.edu/academics/graduate/masters-programs/ms-business-analytics/)

MASTER OF SCIENCE IN MANAGEMENT

The M.S. in Management (M^2) is a lock-step cohort based degree with a prescribed course of study. The program is designed to build core business education onto the foundation of a liberal arts or STEM degree. Students have the option to complete the program full time over two semesters (9 months) or three semesters (less than 18 months). All members of the M.S. in Management community are required to attend a mandatory academic and professional orientation the week before the Fall semester begins. M^2 prepares students with liberal arts or STEM undergraduate education to enter the workforce and ready to hit the ground running from day one. Eligible applicants are college seniors or recent (one year out) graduates without undergraduate business degrees or majors. Economics majors are welcome. College calculus is helpful but not mandatory for admission.

Students will have classes that include accounting, finance, statistics, management, economics, and marketing. The program is structured to provide classroom instruction in the fall and spring semesters. In addition, a strong focus on professional development and career preparation is emphasized throughout the duration of the program that include career exploration (such as trips to New York and Philadelphia), and workshops emphasizing career readiness skills with themes of career and self-development and leadership. During the January intersession, students will have the opportunity to have an optional experiential engagement through internships, consulting projects, and/or international immersion experiences.

ACCT 442	Financial Reporting and Analysis	2
ACCT 444	Accounting for Decision Making	2
BIS 423	Management Information Systems	2
BIS 456	Business Analytics for Decision Making	3
ECO 427	Statistical Analysis for Management	2
ECO 448	Business Economics	3
FIN 418	Principles of Corporate Finance and Investments	3
GBUS 405	Career and Professional Development I	1
LAW 417	Regulatory Environment of Business	2
MGT 416	Managing Talent	3
MGT 462	Experiential Learning Capstone	3
MKT 415	Marketing Foundations	3
MKT 425	Contemporary Topics in Marketing	2
SCM 423	Supply Chain Operations Management	2
Total Credits		**33**

PROGRAM ADMISSION REQUIREMENTS

Admission to the MiM program (https://business.lehigh.edu/academics/graduate/masters-programs/ms-management/admissions-information/) will be based on the applicants essay, resume or CV, transcripts, 2 letters of recommendation, and/or GMAT/GRE test scores if the applicant chooses to submit test scores. Students must not have more than 1 year professional work experience to be eligible. International students must show English proficiency. (https://business.lehigh.edu/graduate/english-language-proficiency/)

Further information about the MS in Management program may be obtained by contacting Alyssa Clapp, Program Director M.S. in Management Program, at (610) 758-2353 / alcb@lehigh.edu.

Questions? Contact us (p. 8) or visit our website: business.lehigh.edu/mim (https://business.lehigh.edu/ms-management/)

DOCTOR OF PHILOSOPHY

Program Requirements

The Ph.D. program requires a minimum of 48 credit hours of study (including dissertation) beyond a master's degree or 72 credit hours of study beyond a bachelor's degree. Each student is required to choose one primary field and one secondary field of specialization. Students must take and complete with satisfactory grades core courses in microeconomic theory, macroeconomic theory, econometrics, and mathematical economics. Students are also required to pass written qualifying examinations in microeconomic theory and econometrics as well as a field exam in their primary field.

PROGRAM ADMISSION REQUIREMENTS

Admission to the Ph.D. program (https://business.lehigh.edu/academics/graduate/phd-program/business-and-economics/admissions-information/)will be based on the applicants essay, resume or CV, transcripts, letters of recommendation, and/or GMAT/GRE test scores if the applicant chooses to submit test scores. International students must show English proficiency.

CourseWORK

In order to advance to Ph.D. candidacy, a student must complete, under the guidance of a faculty, an original third-year research paper no later than the end of their third year in the program. Under the guidance of a dissertation committee, which typically consists of a chairperson (the main advisor) and three committee members one of which being an external member sought outside the Economics Department, a Ph.D. candidate undertakes research culminating in a doctoral dissertation. The Ph.D. is awarded upon the successful completion of the dissertation and its oral defense.

Further information about the Ph.D. program may be obtained by contacting Ahmed Rahman, Ph.D. in Business and Economics Program Director, at (610) 758-2750 / asr418@lehigh.edu.

Visit our website: business.lehigh.edu/phd (https://business.lehigh.edu/phd-business-and-economics/)

CONTACT US

College of Business, Graduate Programs Office
Business Innovation Building, Suite 201
201 E. Packer Avenue, Bethlehem, PA. 18015
Phone 610-758-4450 / Email business@lehigh.edu

Business Analytics Courses

BUAN 446 Python Applications for Business 3 Credits
This class is designed to introduce students to the processes involved in acquiring, cleaning, arranging, analyzing, and visualizing business data using the Python programming language. It will be fast-paced, but assumes only a basic familiarity with coding, and requires no specific expertise in Python to start. Students cannot receive credit for both BUAN 346 and BUAN 446.

BUAN 448 Predictive Analytics in Business 3 Credits
The course covers theories and practices in predictive analytics in business. Students will have hands-on experience on analyzing business data for business intelligence and improved business decision making. Includes: key theories, concepts, and models of predictive analytics; and data mining tools to formulate and solve business problems. The course uses data analytics software and real data. Topics include prediction, forecasting, classification, clustering, data-visualization and data reduction techniques. Not available to students who have credit for BUAN 348 or BIS 456.

BUAN 452 Business Analytics and Modelling 3 Credits
This course covers advanced analytic methods for understanding and solving business problems. The emphasis is on understanding and applying a wide range of modern techniques to specific decision-making situations. Using the programming language R, the course covers advanced topics such as machine learning, text mining, and social network analysis. Upon completion, students will have valuable practical analytical skills to handle large datasets and make business decisions. Credits will not be given for both BUAN 352 and BUAN 452.
Prerequisites: ECO 045 or BUEC

BUAN 457 Artificial Intelligence for Business 3 Credits
This course covers fundamental concepts of artificial intelligence (AI) and how it is applied to solve business problems, to increase business value, transform businesses and to gain competitive advantage. A brief technical overview will be covered. Common machine learning (ML) algorithms will be covered and students will have hands-on experience with AI tools/frameworks. Example use cases of these ML algorithms in various business functional areas will be examined. Finally, ethical challenges in the AI context will be explored.
Prerequisites: BUAN 446

Business Information Systems Courses

BIS 411 Storytelling in Business Analytics 1.5 Credit
Focuses on training students to visualize business data and communicate implications from business data through visualization and storytelling. Covers techniques and algorithms for creating effective visualizations of complex business data. Students will implement data analysis and visualization through hands-on programming and visualization tools. Enhances students' business communications related to data. Students will translate data and analysis into narratives that provide context for their messages and make persuasive recommendations in written and oral formats.

BIS 412 Data Ethics and Security in Business 1.5 Credit
Focuses on the management of data security, the frameworks of business data ethics, and the integration of data ethics with data security management. Students will be introduced to critical security principles that enable them to plan, develop, and perform data security tasks. Addresses business ethics as it relates to a variety of data management issues.

BIS 415 Capstone Project 3 Credits
The capstone project course immerses students in projects on how business analytics skills can be applied ethically in an organization to create business value. Built on the foundational courses in business analytics, the capstone integrates classroom lectures with a combination of company visits and externship projects.

BIS 423 Management Information Systems 2 Credits
This course examines the role of information systems (IS) and information technology (IT) in the organization. The focus of the course is the organizational uses of IS and IT to compete effectively. Both technical and managerial aspects of information systems are explored. The course includes technical infrastructure, management decision-making, trends and innovations in IS, and business process issues critical to the understanding of operational and strategic information systems.

BIS 434 Decision Analytics for Managers 3 Credits
This course focuses on the key concepts and methods that relate to information management and business decision making, and how managers can create value and make better business decisions by turning information into competitive advantage. It also introduces fundamental concepts and analytic methods in business analytics. In addition, this course provides an overview of how modern information systems support business decision making as well as technology-enabled business models.
Prerequisites: (ECO 045 or BUEC) and MGT 431
Can be taken Concurrently: MGT 431

BIS 456 Business Analytics for Decision Making 3 Credits
Provides students with a theoretical and practical understanding of core data analytics concepts and techniques, and develops hands-on experience in applying these techniques to practical real-word business problems using R software. As an applied course, the emphasis will be less on the inner working of each method and more on when and how to use each technique and how to interpret the results. Not available to students who have credit for BIS 348, 448, 352 or 452.
Prerequisites: MBA 440 or ECO 045 or ECO 427 or BUEC

BIS 458 Data Management for Managers 3 Credits
Covers fundamentals of database management, including database development, processing, logical and physical design, access, implementation and administration, and design and deployment of cloud services solutions. Students will gain extensive experience in developing data models, creating relational databases, formulating and executing complex queries, and understanding cloud services solutions in cloud resource costing, deployment management, network design, data storage, security, scalability and elasticity, cloud migration and hybrid architecture. Hands-on experiences such as such as Oracle Database and Amazon Web Services are included.

Economics Courses

ECO 402 Managerial Economics 3 Credits
Application of economic and statistical analysis to managerial decision-making. Business and economic forecasting. Empirical estimation of demand, production, and cost functions. Resource allocation and pricing strategies in various market structures. Decisions under risk and uncertainty. Government regulation of business cases.
Prerequisites: MATH 021 and (MATH 022 or MATH 096) and ECO 401

ECO 403 Econometric Software 3 Credits
The fundamentals of data management and analysis using statistical software, such as Stata and/or SAS. Students will develop data management and programming skills using the Stata or SAS system. An introduction to R and basic programming in R will be included as well. Working with big data will provide hands-on, practical experience. Upon completion of this course, students will be able to manage data to boost their research and analysis skills.

ECO 404 Applied Microeconometrics 3 Credits
The purpose of this course is to expose students to econometric techniques frequently used in applied microeconomic research. The course features critical reading of empirical research papers and the implementation of econometric methods on actual data sets.

ECO 409 Money, Banking and Macroeconomic Analysis 2 Credits
The role of financial intermediation in the U.S. economy, the process of money creation, impacts of fiscal and/or monetary policy on the goals of macroeconomic policy, inflation and unemployment.

ECO 412 Mathematical Economics 3 Credits
Applications of various mathematical techniques in the formation and development of economic concepts and theories. Consent of instructor required.

ECO 413 Advanced Microeconomics Analysis 3 Credits
A survey of methods of decision-making at the microeconomic level; price theory and econometric applications.

ECO 414 Advanced Topics in Microeconomics 3 Credits
Resource allocation and price determination. Theories of choice of consumers, firms, and resource owners under various market forms.
Prerequisites: ECO 413

ECO 415 Econometrics I 3 Credits
Computer applications of standard econometric techniques using regression analysis in a single-equation context. Discussion of problems of multicollinearity, heteroscedasticity and autocorrelation. An introduction to simultaneous equation models, identification and estimation problems.

ECO 416 Econometrics II 3 Credits
Mathematical and statistical specification of economic models. Statistical estimation and tests of parameters in single and multiple equation models. Prediction and tests of structural change.
Prerequisites: ECO 415

ECO 417 Advanced Macroeconomic Analysis 3 Credits
This course aims to familiarize students with the current research in modern empirical macroeconomics, with emphasis on the intersection of theoretical models and macroeconomic policy analysis.

ECO 418 Advanced Topics in Macroeconomics 3 Credits
Models of employment, income and growth in monetary economies. Policies for economic stability and growth.
Prerequisites: ECO 417

ECO 425 Cost-Benefit Analysis 3 Credits
Theory and methods of cost-benefit analysis; efficiency and equity as criteria in program evaluation; rationale(s) for government intervention in free market economies; proper measurement of market and non-market costs and benefits; consideration of risk, uncertainty, appropriate discounting techniques and distributional consequences.
Prerequisites: ECO 402 and ECO 415

ECO 427 Statistical Analysis for Management 2 Credits
Descriptive statistical measures, probability and probability distributions, statistical inference (estimation and hypothesis testing), correlation and regression. EXCEL will be used for statistical computing.

ECO 428 (ECE 428) Electricity Economics 3 Credits
Course focuses on the intersection between economics & electricity systems, and market structures available in the electric energy industry. Background provided on basic economic theory applied to power systems to understand operations objectives, pricing & incentives, as well as non-perfect competition situations that arise in the network. Different dispatch optimization problems used in electricity market restructuring, approaches to solving these, and the existence of non-convex markets will be discussed. Credit will not be given for both ECO/ECE328 and ECO/ECE428.

ECO 430 Public Finance 3 Credits
The economics of public spending and taxation; principles of government debt management; theories of budgeting and cost-benefit analysis and public choice.

ECO 431 Quantitative Market Analysis 3 Credits
The course covers the application of empirical approaches to theoretical frameworks in the analysis of market structure, firm strategies, and consumer behavior. Students learn econometric methods to identify causal relationships, and the course emphasizes the role of theoretical models in developing hypotheses and interpreting data. The course covers methods of field experiments and causal inference using non-experimental data. Topics include pricing and market conduct, demand analysis, marketing, and online marketplaces. Students cannot receive credit for both ECO 366 and ECO431.

ECO 440 Labor Economics I 3 Credits
The economics of labor markets and various labor-market institutions with emphasis on current theoretical and empirical research. Topics include labor supply and demand, human capital, the structure of labor markets, labor market regulation, information and job search, labor mobility, unionism, and labor market discrimination.
Prerequisites: ECO 401 and ECO 402

ECO 441 Labor Economics II 3 Credits
An examination of empirical research in labor economics, focusing on topics such as human resource management and internal labor market outcomes, wage and income inequality, and poverty, unemployment, and other issues current in the literature.
Prerequisites: ECO 415

ECO 447 Economic Analysis of Market Competition 3 Credits
Mathematical models based on game theory and industrial organization. Cases are used to analyze the strategic interaction of firms and governments as competitors and partners.
Prerequisites: ECO 402

ECO 448 Business Economics 3 Credits
Applications of economic analysis to business decision-making; technology in economic systems; resource allocation and pricing strategies in various market structures; decisions under risk and uncertainty; and government regulation and support of business and innovation.

ECO 452 Behavioral Economics 3 Credits
The study of human behavior in economic contexts incorporating ideas from Psychology and other disciplines. Covers both theory and applications. Topics include non-standard preferences (e.g., loss-aversion), decisions under risk, intertemporal choices, heuristics and biases, and more.

ECO 455 Health Economics I 3 Credits
Economic theory and empirical analysis of health production, the demand for health services, and health insurance. Implications for the current institutional structure of health care and health delivery systems will also be discussed. Additional topics and extensions will be selected based on developments in the literature.
Prerequisites: ECO 416

ECO 456 Industrial Organization 3 Credits
The goal of the course is to review theoretical and empirical attempts by economists to understand market structures lying between the extremes of perfect competition and monopoly. The course will focus first on describing the current U.S. industrial structure and reviewing models of imperfect competition. The course then shifts to a closer study of individual firm behavior. The final segment of the course is an overview of two significant relationships between government and industry caused by the existence of imperfect.
Prerequisites: ECO 415 and ECO 447

ECO 460 Time Series Analysis 3 Credits
Classical decomposition of time series, trend analysis, exponential smoothing, spectral analysis and Box-Jenkins autoregressive and moving average methods.

ECO 463 Topics in Game Theory 3 Credits
A mathematical analysis of how people interact in strategic situations. Topics include normal-form and extensive-form representations of games, various types of equilibrium requirements, the existence and characterization of equilibria, and mechanism design. The analysis is applied to micro-economic problems including industrial organization, inter-national trade, and finance.

ECO 464 Applied Econometrics I 3 Credits
This course focuses on the identification of causal relationships using cross-sectional and panel data. The objectives are to 1) familiarize students with identification assumptions for causal inference; and 2) enable students to select appropriate econometric tools for empirical economic problems and policy evaluation.Topics include robust inference and bootstrap; instrumental variables and generalized method of moments (GMM); quantile and nonparametric regression methods; treatment effect analysis, and models for discrete choices, panel data, and social interactions.
Prerequisites: ECO 416

ECO 465 Applied Econometrics II 3 Credits
Econometric analysis of skewed and truncated distributions, discrete outcomes, and missing or incomplete data. The first part of this course will involve the functional specification and testing of appropriate estimators in these situations, while the second part of the course will focus on conducting causal inference using nonlinear models in the presence of unobserved heterogeneity. Emphasis will be given to common applications in health and labor economics.
Prerequisites: ECO 416

ECO 466 Health Economics II 3 Credits
Selected topics in the literature on health economics with an emphasis on the application and evaluation of econometric techniques and identification strategies. Both demand and supply side issues will be addressed. Examples of the former include the demand for health, health insurance and health care services, while examples of the latter include the regulation of supplier behavior and industrial organization issues.
Prerequisites: ECO 416

ECO 490 Master's Thesis 1-6 Credits
Master's Thesis.

ECO 492 Special Topics in Economics 1-3 Credits
Extended study of an approved topic not covered in scheduled courses.
Repeat Status: Course may be repeated.

ECO 493 Doctoral Pre-Dissertation Research Project - Independent Study 1-9 Credits
Independent study on a topic that is being pursued to fulfill the third year paper requirement, and has been approved by the student's interim advisor.

ECO 499 Dissertation 1-15 Credits
Repeat Status: Course may be repeated.

Finance Courses

FIN 418 Principles of Corporate Finance and Investments 3 Credits
This course provides students with a basic foundational knowledge of finance principles, working knowledge of various aspects of corporate finance, and the principles of investments. Short-term financial decisions will be discussed. Long-term capital investment will be explored starting with the basics of time value of money and capital investment techniques. Topics include the determination of the appropriate investment discount rate, the organizationâ€™s cost of capital and hurdle rates, the risk-reward tradeoff, and specific financial instruments.

FIN 433 Financial Analysis for Managers 3 Credits
The class introduces the key elements of financial reporting, budgeting, and analysis in corporate finance decision-making. From understanding the financial statements to implementing strategic plans, operational budgets, and financial forecasts, the course prepares students to make capital-investment decisions that lead to improved financial efficiencies and operating performance.
Prerequisites: MGT 431 and GBUS 401
Can be taken Concurrently: MGT 431

Grad Business Entrepreneurship Courses

GBEN 401 Business Plan I 2 Credits
This course focuses on the need to validate that a market exists for a new product or service. As a project-based course, students work independently on a venture of their own choosing. They are challenged to make use of primary market research methods to identify demand determinants and test for the presence of first-time buyers. Students search available databases and gather information to estimate market size and growth potential.

GBEN 402 Business Plan II 2 Credits
This course focuses on the need to create a business plan to launch a new enterprise. As a project-based course, students work independently on a venture of their own choosing. Emphasis is given to all the elements needed to commercialize a new enterprise from a marketing, sales, operations, technology, facilities, and financial perspective. The presentation format of the business plan receives close attention as a tool to attract potential investors.
Prerequisites: GBEN 401

GBEN 403 Anatomy of Entrepreneurship 1 Credit
This course focuses on the personality traits and characteristics of a founder. The leadership style and management of a startup are highlighted as the venture moves through various stages of development. Real-life situations are brought into the classroom and students are challenged with decision-making in a startup environment marked by enormous uncertainty and rapid change. Students learn the critical role of the founder in attracting investors and raising capital.

GBEN 404 Market Opportunity 1 Credit
This course focuses on entrepreneurial marketing and the methods employed by emerging growth companies to successfully penetrate and disrupt markets. Speakers and cases illustrate branding strategies, selling approaches, pricing alternatives, and digital marketing tactics peculiar to startups who are constrained by scarce resources and saddled with expertise in the hands of a few.

GBEN 405 Intellectual Property 1 Credit
This course focuses on IP strategy and valuation with emphasis on the technology-driven startup. Early stage companies must demonstrate proof-of-concept to their investors, a huge milestone that verifies the potential of real-world application. Speakers and cases deal with the harsh trade-offs of IP decision-making and the constant need to raise capital to accelerate technology development.

GBEN 406 Performing Due Diligence 1 Credit
This course focuses on due diligence as a creative and time-sensitive process that can open or close doors for startups. Speakers and cases illustrate what potential investors or acquirers do to validate the accuracy, integrity, and completeness of information provided before finalizing an investment decision. Students learn performing due diligence is a labor-intensive investigative process that unfolds in stages where the results also speak to the credibility of the entrepreneur.

GBEN 407 Startups & Pivots 1 Credit
This course focuses on the need to pivot, or shift direction, when market conditions and revenue shortfalls dictate major change. Speakers and cases highlight what startups do to breathe new life into a troubled venture. Students learn how founders raise capital under adverse circumstances in order to buy time to re-configure product, transition to another market and type of customer, and test a new business model.

GBEN 409 Financial Forecasting 1 Credit
This course focuses on the use of pro forma financial statements and projections to value and finance an early stage company. Cases illustrate key assumptions and various scenarios that figure into a multi-year forecast. Business models are evaluated for their profit potential during a period of expansion and growth. Students learn the art and science of valuing a startup.

GBEN 410 Financing Startups 1 Credit
This course focuses on the separate but overlapping worlds of angel investors, venture capitalists, and strategic investors. Their funding role, investment objectives, and market behaviors are analyzed in capital raises for seed through late stage companies. Cases give attention to venture capital and their term sheets. The course culminates in a simulated deal negotiation involving students.

GBEN 412 Going Public 1 Credit
The course focuses on the initial public offering [IPO] or how the venture capital-backed company moves from being privately-held to publicly-held. Major emphasis is placed on the role of the investment banker and the workings of the Securities & Exchange Commission [SEC]. Actual IPOs traded on the NYSE or NASDAQ are dissected from every angle before, during, and after a company goes public.

GBEN 413 Integrative Experience/New Venture Internship 1-4 Credits
Only students enrolled in the Entrepreneurial concentration may elect one of these hands-on, project-orientated s. Integrative Experience must meet the requirements of formal independent study and involve a new venture situation with a startup or existing company. Students employed in a New Venture Internship may also qualify for credit if the same requirements are satisfied.

GBEN 414 Ventures in Brand Licensing 1 Credit
This course focuses on the art and science of building new enterprises by utilizing licensing strategies to leverage the power and influence of brands. A wide cross-section of deal structures and negotiation strategies are explored. Key elements of a licensing contract are dissected from a market, economic, and legal perspective. The approach to learning is hands-on with speakers, interactive exercises, and real-life situations shedding light on the emergence of brand licensing as an alternative path to new venture creation.

GBEN 415 LehighSiliconValley 1-3 Credits
Immersion study-abroad-like program focused on venture capital-backed companies and the paths taken to start, build, and exit an enterprise. Offered in the hub of entrepreneurship, Silicon Valley, live cases draw on seasoned practitioners from all reaches of the venture community. Students strategically analyze and evaluate startups, lead discussion, and assess team performance in recommending go-forward strategies. Emphasis on real companies, real players, and real situations in real time create a highly charged learning environment. Winter term. Includes pre-trip sessions. Competitive admission. Program fees.

GBEN 424 Entrepreneurship & Innovation: From Idea to Opportunity 3 Credits
Thought about starting a business but wonder where to begin? focuses on the idea stage of new venture creation where discovery plants seeds of future enterprises. Student projects, case studies and speakers introduce personal, interpersonal, financial, and legal challenges startups encounter. Drawing on research on entrepreneurial decision-making, students learn to think and behave entrepreneurially. Participants "kick the tires" on their own and others' just-emerging ideas and improve them. For those interested in starting a business sometime in their lives.

GBEN 492 Special Topics 1-3 Credits

GBEN 497 1-3 Credits
Repeat Status: Course may be repeated.

Graduate Business Courses

GBUS 401 Financial Reporting for Managers and Investors 3 Credits
Corporate financial reporting under Generally Accepted Accounting Principles. Analysis and interpretation of financial statements: accrual accounting, balance sheet valuation, income determination and cash flow analysis.Profit manipulation, window dressing and "creative accounting" through accounting policy choices. Fraudulent financial reporting, uses and limitations of accounting information. Accounting information as a tool for strategic decision making.

GBUS 405 Career and Professional Development I 1 Credit
Enables foundations to navigate career journeys and transition into the workforce. Focuses on strengths, interests, personal leadership, strategic communication, and professional networking. Includes business content, exercises, facilitation, readings, assignments, and thought leadership. Students must show progress toward crafting their professional profile and presenting to networks and employers through required and completed course deliverables and activities that tie into the course's learning objectives and build upon course-related activities such as mock interviews, Career Expo, etc.

GBUS 408 Advanced Business Speaking and Pragmatics 2 Credits
Designed to assist international business students become capable communicators within the U.S. and the global marketplace. Students will increase their oral communicative competence and socio-cultural communication awareness through assignments designed to help them learn successful behaviors and customs that are essential elements of oral communication in U.S. graduate business courses, job searching, networking, business presentations, and career development. Students are assessed through their successful use of advanced language functions during the application of face-to-face business settings including business-style negotiations, interviews, presentations, and panel discussions.

GBUS 409 Advanced Business Writing and Reading 2 Credits
Designed to introduce international business students to the types of rhetoric and written structures required in an American university graduate business program, as well as in most business environments; and to provide them with the skills and strategies that are necessary to produce cogent academic essays and papers, as well as business summaries and briefs for the global marketplace. Utilizing a process writing approach, students model expository, chronological order/process, compare and contrast, cause and effect, argumentative, and problem-solution styles, as well as formal and informal business written communication styles. Students are assessed through their successful use of these rhetorical models in writing, their advanced level of academic vocabulary and grammatical structures, as well as through summaries and analyses of research-level articles that include appropriate academic publication conventions.

GBUS 413 Advanced Management Accounting 3 Credits
Issues in management accounting including activity-based costing, activity-based management, strategic cost management, theory of constraints, advanced manufacturing technologies, cost of quality and lifecycle costing. Readings and cases.
Prerequisites: MBA 403

GBUS 414 Financial Statement Analysis and Interpretation 3 Credits
This course focuses on analysis of financial statements. It develops the skills necessary to interpret and use financial statement information effectively to assess profitability and risk and is intended for individuals likely to become intensive users of financial accounting information. Requirements include readings, case studies, presentations, and written analysis of actual financial statements.
Prerequisites: (MBA 402) or (ACCT 151 and FIN 125 or FIN 225)

GBUS 419 Financial Management 3 Credits
An intermediate level course in corporate finance. Coverage includes capital budgeting techniques including real options, decision tree analysis, risk analysis, advanced cost of capital theories, capital structure theory, dividend policy, working capital management, mergers and acquisitions, restructuring, and bankruptcies. The course emphasizes both theory and practice through lectures, cases, and financial modeling exercises. Students not possessing the relevant prerequisites must obtain waivers from the designated finance faculty representative.
Prerequisites: MBA 402 or MBA 461 or FIN 433 or (ACCT 151 and FIN 125)

GBUS 420 Investments 3 Credits
A survey course in investments. Overview of financial institutions and markets involved in the issuance and trading of securities. Emphasis on valuation and risk assessment of fixed income and equity securities. Construction of optimal portfolios and examination of performance measures. Students not possessing the relevant prerequisites must obtain waivers from the designated finance faculty representative.
Prerequisites: MBA 402 or MBA 461 or FIN 433 or (ACCT 151 and FIN 125)

GBUS 421 Advanced Investments 3 Credits
Advanced topics relating to specific areas within investment finance such as valuation/security analysis; portfolio/risk mamangement; fixed investment securities;mutual funds; hedge funds; microstructure; and trading. Consent of designated finance faculty representative required.
Repeat Status: Course may be repeated.
Prerequisites: GBUS 420

GBUS 422 Derivatives and Risk Management 3 Credits
The theory and application of a variety of derivative instruments (options, futures contracts, etc.) used in corporation finance and the financial services industry. The focus is on the risk management application vs. a rigorous development of option pricing theory and similar topics. Consent of designated finance faculty representative required.
Prerequisites: GBUS 420

GBUS 424 Advanced Topics in Financial Management 3 Credits
Advanced topics relating to specific areas of corporate finance such as: theoretical and empirical examination of recent developments in financial management, asset valuation and capital budgeting including the role of uncertainty, imprecise forecasts, risk preferences, inflation, market conditions, and the global marketplace, working capital management, leasing, mergers, and financing. The course content may vary between instructors or each time the course is offered. Consent of designated finance representative.
Repeat Status: Course may be repeated.
Prerequisites: GBUS 419

GBUS 425 Real Estate Financing and Investing 3 Credits
An upper-level course in modern real estate financing techniques from the perspectives of both the borrower and the lender. Subject matter encompasses the following areas: The principles of financing decisions; financing methods and techniques; institutional sources of funds for real estate; and real estate financing decisions. Consent of designated finance faculty representative required.
Prerequisites: (MBA 402 and GBUS 420)

GBUS 426 Financial Markets and Institutions 3 Credits
Functions and portfolios of financial intermediaries. Sectional demand and supply of funds, nature and role of interest rates, term structure and forecasting, impact of inflation and regulations on financial intermediaries and markets, and current developments in the financial system. Management of assets and liabilities within the U.S. financial institution's legal and economic constraints. Consent of designated finance faculty representative.
Prerequisites: (GBUS 420)

GBUS 431 Quantitative Finance 3 Credits
Relationship of quantitative models to financial theory and applications. Capital budgeting, portfolio selection, security evaluation, cash management, inventory policy and credit analysis. Consent of designated finance faculty.
Prerequisites: MBA 402

GBUS 432 Demand and Supply Chain Planning 3 Credits
Students will learn how businesses work together to build relationships and integrate demand and supply planning activities across the supply chain to deliver superior value to customers. They will also learn about tools and technologies that enable integration as well as the critical drivers and the key metrics that support supply chain performance. Current readings and case studies, simulations and written assignments will be used.

GBUS 437 Federal Taxation and Business Decisions 3 Credits
Impact of federal taxation on the structure and timing of business decisions. Problem-solving methods and research techniques from a managerial perspective.
Prerequisites: ACCT 307

GBUS 441 Business Ethics 3 Credits
Presents several frameworks by which to view ethics and decision-making. Links theory and practice through the study of business ethics as it relates to a variety of management issues. Course content is structured along three dimensions: ethics and the individual, managing ethics in the organization, and organizational ethics and social responsibility.

GBUS 442 Seminar in Management Consulting 3 Credits
A study of consulting practices in general and their application to small business. Processes include a field study/counseling service to a local business. Emphasis is on the identification and analysis of multidisciplinary problems and opportunities and the implementation of recommendations. Must have completion of MBA background courses (or equivalent). Consent of instructor required.

GBUS 443 Advanced Leadership Topics: Leadership Skill Building 1 Credit
Beyond intelligence and technical skills, what separates effective from less effective leaders is an understanding of the human psychology that drives business. This course offers students an opportunity to learn more about themselves, to get feedback, to practice getting out of their comfort zones. It focuses on providing students with essential leadership knowledge and abilities, including topics at the heart of relational leadership (e.g, listening, coaching, feedback giving/receiving, EI) to grow into the leader they want to become.

GBUS 447 Negotiation 3 Credits
The class examines the behavioral foundations of the negotiation process. Topics include: The negotiation process, negotiation planning, power in negotiations, communications in negotiations, tactics, concepts of win-win and win-lose, social styles, individual and team negotiations, ethical considerations, cultural differences, negotiating in sole source (customer) situations, using third parties. The concepts will be exposed through both lectures and simulations.

GBUS 448 Leadership 3 Credits
This course is an examination of leadership at the organization and group/team levels, and aims to develop and build a student's leadership skills and the ability to diagnose leadership needs in different situations. In identifying and building these leadership skills, the course will focus on the decisions leaders need to make, and the appropriate leadership decision-making processes required in various contexts and at different stages of an organization's existence. Cases and developmental exercises including in-depth decision-making exercises are utilized and cover diverse situations and cross-cultural dimensions including specific situations such as a crisis or ethically difficult decisions.

GBUS 449 Talent Analytics 3 Credits
Addresses the growing need for data-driven, analytical approaches to managing talent. To implement business strategies effectively and to gain competitive advantage through people, leaders must deal with people issues. The organizations that will win the “war for talent” will be those, which are better at identifying and keeping key talent, motivating high performance, developing and promoting staff, and predicting future people needs accurately. HR professionals need analytics to address these challenges.
Prerequisites: MBA 405 or MGT 436 or MBA 464

GBUS 450 Strategic Supply Management 3 Credits
A survey course designed to introduce the MBA/MSE student to the vital role played by supply management in achieving overall effectiveness for the firm in today's global economy. The course starts by examining the traditional purchasing process and then moves on to an examination of the evolution of purchasing into supply management and, finally, to the role purchasing plays in improving effectiveness of the entire value chain. consists of lectures, discussion and case analysis.

GBUS 453 Transportation and Logistics Management 3 Credits
The control of physical distribution and inventories; the flow of information, products and cash through the integrated supply chain.

GBUS 456 Applied Supply Chain Models 3 Credits
This course will present applied and analytic approaches for developing inventory and forecasting models, supplier selection, supply chain quality management, and production planning and supply chain network design.

GBUS 460 Strategic Marketing Management 3 Credits
The course studies the management of contemporary organizations from the perspective of a marketing manager. While the course content addresses the activities required to maintain a strategic fit between an organization's environment and its particular set of objectives and resources, the central focus is on designing strategic marketing actions for various types of organizations. The course pedagogy emphasizes the application of marketing and other business principles through seminars, simulations, or case discussion.
Prerequisites: MBA 404

GBUS 461 Marketing Analytics 3 Credits
With principles of marketing as its underpinning, this course provides an overview of both theories and practice of marketing analytics. Topics and skill sets include customer data, machine learning, artificial intelligence, search engine marketing, digital metrics, dataset queries, statistical programming, text analysis, and data visualization. Through class discussions and hands-on exercises, students will gain a basic understanding and working knowledge of analytics, allowing them to make strategic decisions and derive customer insights to support businesses in today's data-driven world.

GBUS 462 Pharmaceutical Marketing 3 Credits
The course provides an introduction and overview of the various healthcare system components as they relate to the pharmaceutical industry. This course will (1) focus on product decisions of the firm, requiring an occasional shift in focus from that of corporate management to that of operating managers of new product activities or established brands; (2) recognize the importance of marketing research as input to product decisions; (3) take a managerial orientation; (4) recognize the need to tailor product policy approaches to the characteristics of the decision-maker and the firm. The course will be a mixture of lectures, discussions, case analyses, and group exercises. Graduate students only.
Prerequisites: MBA 404

GBUS 464 Business-to-Business Marketing 3 Credits
This course focuses on marketing strategies and tactics in firms whose customers are other institutions, not individuals. Topics covered include organizational buying behavior, managing strategic buyer-seller relationships, sales force deployment, communication strategies, and so on. Specific attention is given to the impact of information technology and globalization in the business to business context.

GBUS 465 Creating Breakthrough Innovations 3 Credits
Most products and services either fail or do average business, but some are phenomenally successful. Such products and services that provide phenomenal financial returns and become market leaders can be called "Breakthrough Products and Services". The main objective of the course is to improve our understanding of the process of creating breakthrough products and services. It is accomplished by in-class discussions of cases, assignments, and the state-of-the-art research work in academia and industry. The course concludes with a term paper that integrates the concepts learned from class discussions, reference books, and research papers and applies them to a real product. Must have graduate student status plus two years of postgraduate work experience.

GBUS 466 Marketing Research and Analysis 3 Credits
This course focuses on procedures for collecting and analyzing relevant information for informed decision making by managers. The process of identifying research questions, developing instruments for collecting information, appropriate interpretation of information, and appropriateness of research methods are some of the topics discussed in this course. The course focuses on the process of doing marketing research as well as the techniques for analyzing information. Discussion of concepts and cases, developing data collection instruments, and doing actual marketing research projects will form the key elements of this course.
Prerequisites: (ECO 401 or BUEC)

GBUS 467 Sales Management 3 Credits
This course takes an integrated approach to the study of sales management, including formulation of strategically sound programs and the implementation of selling initiatives and the evaluation and control of the organization's sales activities. Topics include the role of the sales manager in the divergent demands of multiple constituencies; the development of effective sales organizations; lead generation and quota setting; territory management; and motivation and reward systems. Learning methods include case studies where students' diagnose problems and develop viable alternatives.

GBUS 468 Future of Marketing 3 Credits
The course focuses on emerging trends that significantly influence the future of marketing. A variety of methods and contemporary materials will be used to discuss future scenarios: (1) how marketing is conceptualized and implemented; and (2) how marketing impacts and is impacted by society.

GBUS 470 Marketing Communications Strategies 3 Credits
This course focuses on how various elements of communications are integrated to achieve various organizational objectives. In addition to the traditional communication media such as advertising and point of purchase media, emphasis will also be placed on new media and strategies made possible due to the advances in technology. The course will involve discussion of concepts, case analysis and discussion, insights from practitioners, and group projects.

GBUS 471 Strategic Brand Management 3 Credits
This course approaches the study of brand management by illustrating the formulation of strategically sound brand management programs and the evaluation and control of the implementation of key brand initiatives (new products, advertising support, etc.). Focus is on theories and models to develop and manage brand equity. Specific learning modules include customer development, brand strategy development, brand extension development and annual brand planning. Specific attention is focused on case studies and team projects in building, measuring and managing brand equity.

GBUS 472 Strategies for Services Marketing 3 Credits
The course focuses on the challenges of marketing and managing services (whether in a manufacturing or service business) and discusses the development of strategies for addressing these challenges. The need for cross-functional integration to provide effective service is stressed. Illustrative topics include service quality gap analysis, relationship between superior service and profitability, service encounter analysis, customer lifetime value analysis, services guarantees, and service demand and capacity management.

GBUS 473 International Finance 3 Credits
Consideration of problems arising from the risks associated with international investing and multinational corporation finance (currency, political, etc.). Focus is on (a) investing in international market given the institutional constraints and differences between domestic markets, and (b) managerial issues relating to corporations, investors, and financial institutions. Consent of designated finance faculty representative.
Prerequisites: GBUS 419

GBUS 475 Global Marketing Strategies 3 Credits
The course is designed to provide a framework within which global marketing operation can be analyzed, understood, and undertaken. The course focuses on issues that are being faced by firms in today's global marketplace, particularly those that are related to strategy formulation and implementation. The learning experience in this course is placed on global business decision-making, through the use of case studies, projects, exercises, and lectures.

GBUS 482 Financial Engineering Professional Development I 1 Credit
MFE alumni speakers provide weekly insights on coding languages and industry trends. Preparations for placement in internships and full-time positions are undertaken for finance and data science positions. Students must show progress toward crafting their professional profile and are required to submit bi-weekly summaries of completed course activities that tie into the learning objectives of the course and build upon prior course activities to advance job preparations and career foundations.

GBUS 483 Financial Engineering Professional Development II 1 Credit
MFE speakers provide insights into job search strategies and current job opportunities. Mock interviews and further preparation targeted to tracks (Trading, Data Analytics, Advisory, Risk), prepare students for targeted interviews. Students must show progress toward crafting their professional profile and are required to submit bi-weekly summaries of completed course activities that tie into the learning objectives of the course and build upon prior course activities to advance job preparations and career foundations.
Prerequisites: GBUS 482

GBUS 484 Financial Engineering Professional Development 0 Credits
The program's size and selectivity lead to an intense experience enabling the student to benefit from development opportunities such as: Alumni Connections, Alumni speaker series, corporate connections gained through practicum capstone projects, standard University job tools and programs, Quant Career fairs, Quant Trading Competition, Quant Conference and Networking, internships and job opportunities.
Repeat Status: Course may be repeated.

GBUS 485 Financial Engineering Practicum Capstone I 2 Credits
MFE students work in teams with a faculty mentor on the scoping, reach, coding, and technical feasibility of portfolio theory-based tools, risk management models, trading algorithms, or blockchain-based trading strategies initiated by the course’s corporate sponsors. Projects can be initiated by enterprising students. These sponsors are asset managers, algorithmic traders, blockchain professionals, bankers, published authors, investor advisors to ensure that the projects have real-world applicability. Written reports and oral presentations to sponsors are required. Open to MFE students only.

GBUS 487 Financial Engineering Practicum Capstone II 2 Credits
MFE students continue to work on team projects designed in GBUS 485 via conference participation, reaching to experts in the field, further developing their coding, risk assessment skills. Written reports and oral presentations to sponsors are required. Open to MFE students only. Class meets every week while periodic team meetings with and without sponsors are also held.
Prerequisites: GBUS 485

GBUS 490 Thesis 0-6 Credits

GBUS 492 Special Topics 1-4 Credits
Repeat Status: Course may be repeated.

GBUS 494 Field Projects 1-4 Credits
The field projects course will provide MBA students with an opportunity to apply MBA concepts with an employer, corporate partner or other suitable organization. Students will work with a supervising professor and a corporate representative on a project designed by the student. Students must prepare a written proposal for the project including the expected outcomes and an estimate of the hours required for completion. Students will present their proposal to a faculty member of their choice for approval. The academic rigor and time required to complete the project will determine the number of credits earned.

GBUS 499 Dissertation 1-12 Credits

Graduate MBA Core Courses

MBA 401 Introduction to the Organization and its Environment 2 Credits
An MBA core course designed to provide a thorough understanding of business organizations by examining strategies middle and senior managers use to create and sustain organizational competitive advantage. The course examines the organization from an overall perspective within the context of the firm's internal and external environment. The second aspect of this course deals with the ability to communicate effectively in today's business and professional environment. Students will examine and practice the written and verbal communications strategies and skills that are essential to their success in business.

MBA 402 Managing Financial and Physical Resources 4 Credits
An MBA core course designed to integrate financial and managerial concepts into operations decisions. Disciplines of accounting, finance and economics are combined to provide substantive foundations for discussing and analyzing data. Implications of analysis are applied to facilitate decision-making in other areas such as marketing, operations (manufacturing, logistics and engineering), human resources, information technology and general management. The major learning objectives will be applied through a series of "living" cases that are centered on analyzing historical financial performance, preparing a business plan, and valuing a business.
Prerequisites: (MBA 401 and GBUS 401 or BUAC)
Can be taken Concurrently: MBA 401

MBA 403 Managing Information 4 Credits
An MBA core course dealing with concepts and methods involved in the collection, organization and dissemination of information that helps managers make operational and strategic decisions. The course also deals with attributes of information and examines enterprise-wide impacts of local decisions. Revenue, cost, time and quality-based information are accorded equal emphasis, while students are exposed to alternative evaluation methods for decisions related to different parts of the value chain. Topics include: activity-based costing; activity-based management; transaction analysis; operational and strategic decisions such as outsourcing, design partnerships, etc; investment analysis for short lifecycle investments; evaluation of uncertainty, risk and ambiguity; metrics development; compensation policies; segment evaluation methods; target costing and functional analysis; quality function deployment; total cost of ownership; and transfer pricing. In addition, the course deals with: information technology enablers which allow firms to improve value delivered to customers; and evaluation and management of emerging forms of Cooperation, such as joint ventures and project based strategic alliances.
Prerequisites: (ECO 401 or BUEC) and (GBUS 401 or BUAC and MBA 401)
Can be taken Concurrently: MBA 401

MBA 404 Managing Products and Services 4 Credits
An MBA core course focusing on the management of products and services within a firm's value chain. The course addresses exceeding customer expectations, establishing total quality as the core foundation, developing a strong customer focus, creating value through supply chain management, developing new products for competitive advantage, matching aggregate supply with customer demand, and designing market channels and influencing customers.
Prerequisites: MBA 401
Can be taken Concurrently: MBA 401

MBA 405 Managing People 4 Credits
An MBA core course that examines how effective organizations are created, maintained, and improved. The course will focus on how good people are attracted to an organization and how to make them productive. Topics include: organizational design, job design, staffing, training and development, performance, teams, influence, diversity, change, ethical decision-making and current people issues facing today's organizations.
Prerequisites: MBA 401
Can be taken Concurrently: MBA 401

MBA 406 Integrative Experience 3 Credits
An MBA course where students apply the body of knowledge acquired in MBA 401 through 405 through a simulation, case presentations and the cross core project. This course places an emphasis on strategic management and takes the point of view of the general manager to view the organization from an overall perspective in the context of the firm's internal and external environment. In doing so, students examine historical perspectives, contemporary theories, and practical applications all in the spirit of helping them develop a broad understanding of strategic management issues and solutions. By combining high-level class discussions, case analyses, a computer simulation competition and the crosscore project this course exposes students to rigorous theoretical analysis while providing hands-on, simulated real world business experiences.
Prerequisites: (MBA 401 and MBA 402 and MBA 403 and MBA 404 and MBA 405)
Can be taken Concurrently: MBA 403

MBA 440 Quantitative Methods 3 Credits
The course develops an understanding of the foundational methods and skills of quantitative analysis to a variety of business and economic situations. Areas of focus include probability concepts, data description and visualization, estimation, hypothesis testing, correlation, and regression. Software packages are used for statistical computing and data analysis.

MBA 441 Professional Development 1 Credit
The course focus is on career-enhancing skills that aid professional development. Assessment tools are used to understand preferred communication styles, motivators and competencies, and facilitation of effective collaboration through high-performance team building. Networking, interviewing, presentation, and communication skills are also covered.
Repeat Status: Course may be repeated.

MBA 442 Societal Shifts I 2 Credits
This course will introduce eight societal shifts and the societal divides that each may lead to. The course explores the linkage between the Societal Shifts and the UN Sustainable Development Goals (SDGs), and focuses on three Societal Shifts in particular, Climate Change, Changing Demographics, and Rapid Urbanization, leading to a focus on Sustainable Cities (SDG 11) and Climate Action (SDG 13), and how society needs to think about sustainable growth in the coming decades.

MBA 443 Societal Shifts II 4 Credits
This course will take an in-depth look at eight societal shifts that were introduced in MBA 442. The societal shifts will be examined in pairs and then integrated to form scenarios for society in the coming decades. The focus is on the impacts of these societal shifts at the industry and individual company level.
Prerequisites: MBA 442

MBA 451 Accounting 1-MBA 1.5 Credit
This course trains students in corporate decision making using financial information that is prepared under mandated accounting principles for external financial statement users. The course also covers accounting practices which provide information for internal users. It studies the use and interpretation of financial statements with a focus on the effect of economic transactions on financial statements and key ratios. Topics include: introduction to financial accounting concepts and principles, the accounting cycle, cost accounting information processing and impact on decision making.

MBA 452 Economics and Markets 1-MBA 1.5 Credit
Fundamental principles and tools of microeconomics with a focus on managerial decision-making. Topics include consumer behavior, input selection, cost analysis, production and pricing strategies in various market structures, decision making under uncertainty, international trade, information asymmetry and organizational design, and game theory as it applies to business strategy. .

MBA 453 Finance 1-MBA 1.5 Credit
This course explores the application of fundamental finance concepts in modern business. Topics covered include Risk and return, Capital budgeting techniques and analysis, financial statement analysis and forecasting, valuation basics, corporate cost of capital, and other corporate finance issues such as capital structure, dividend policy, and working capital policy.

MBA 454 Management - OB/HR 1-MBA 1.5 Credit
This course focuses on understanding human behavior at work and how it is influenced by individual differences, group dynamics, and by the organizational context in which people are employed. Key organizational behavior theories will be applied to fundamental human resource management issues with an emphasis on aligning an organization’s talent with its strategy to maximize performance. Topics will include: staffing and selection, training and development, motivation, performance management, leadership, and optimizing effectiveness by understanding behavioral factors of individuals and groups.

MBA 455 Marketing 1-MBA 1.5 Credit
This course provides a contemporary perspective to introduce the student to the fundamentals of strategic marketing. The course explores the functional marketing operations of organizations and tracks the marketing manager’s decision processes including segmentation and target market development, product/brand positioning and the development of the value proposition, and the integration of the marketing mix elements into a cohesive strategy. Specific learning modules are concerned with the development, evaluation, and implementation of strategic marketing plans.

MBA 456 Strategy 1-MBA 1.5 Credit
Within the context of a multi-stakeholder approach to organizations, strategic management covers overall organizational issues in intent, analysis, strategy formulation, execution, and control within a global environment. The objectives of this course are to provide the student with a better understanding of business organizations and to clarify the way senior managers create and sustain organizational competitive advantage.

MBA 457 Consulting Practicum I 2 Credits
The course enables students to analyze and dissect strategies that speak to market leadership and growth trajectories. The format is intensely interactive. High profile consulting firms shed light on wide-ranging topics from business transformation to board governance. The public company is seen from an analyst or investor perspective. Emphasis is given to the role of CEO as chief strategist and organization builder. The classroom experience comes alive through fast-moving cases and wide-angle discussions with a host of speakers.

MBA 461 Financial Claimants 1-MBA 1.5 Credit
This course will focus on various financial claimants in the modern corporation. The focus will be on the theory behind and practice related to information needs and use by stockholders, bondholders, and other intermediate financial claimants (e.g., preferred stockholders, warrant holders). Coverage will include related governance and agency theory principles as well as the impact of disclosure, fair value accounting, and regulation on financial claimants.
Prerequisites: MBA 451 and MBA 453

MBA 462 Government & Society 1-MBA 1.5 Credit
Economic and strategic analysis of the role of government and social forces in markets and business policies. Topics include environmental controls, consumer protection, antitrust and the promotion of market competition, intellectual property and inventions, and taxation.

MBA 463 Suppliers and Customers 1-MBA 1.5 Credit
Explores how organizations identify customer needs and develop supply chain flows – upstream (backward through the supply levels) and downstream (forward through the channel systems) to deliver goods and services that exceed customer expectations and creates societal value. Covers demand/customer management, supply/capacity planning, raw material/component sourcing, inventory planning, distribution/merchandising, and quality management. Focused on how marketing and supply chain managers make decisions regarding effectiveness vs. efficiency trade-offs. Concerned with the development, evaluation, and implementation of marketing strategy and supply chain.
Prerequisites: MBA 455

MBA 464 Employees 1-MBA 1.5 Credit
This course will focus on the evolving social contract between employers and employees in the modern corporation, their causes and consequences. Topics will build on the basics from the Management OB/HR course from the first session. In particular, coverage will include the following issues: procedural justice and fairness; privacy and freedom of speech; work-life balance, diversity, inclusion, and the bottom line; job security and alternative work arrangements, compensation; employee ownership; performance management and career development.

MBA 465 Consulting Practicum II 4 Credits
Students move from the classroom setting of Consulting Practicum I to the practice or field environment in serving an actual client in Consulting Practicum II. Emphasis is placed on applying analytic, listening, and communication skills through the various stages of a client engagement that include preparation, initial meeting, proposal development, work-in-process, deliverable, and formal presentation at semester's end. The course challenges students to assume the role of management consultant in creating value through a strategic-level assignment that is time-sensitive.
Prerequisites: MBA 457

MBA 471 Accounting for Executives 3 Credits
This course incorporates both financial reporting and managerial accounting topics emphasizing the analysis and evaluation of accounting data as part of the managerial processes of planning, decision-making, and control. Topics include: financial accounting concepts and principles, cost accounting information processing and its impact on decision making and strategy development and the application of accounting information in the firm's management of ESG (environmental, social, and corporate governance) issues.

MBA 472 Essentials of Economics for Executives 3 Credits
Applications of concepts and tools of economics to broader topics such as markets and government; open-economy macroeconomics; international trade and finance; and growth, inequality, and poverty. Real data will be used to demonstrate how current issues can be explained by economic analysis.

MBA 473 Financial Management for Executives 3 Credits
This course provides the background to optimally manage the financial well-being of corporations. Topics include: time value of money, capital-budgeting analysis, net present value, internal rate of return (IRR) and its pitfalls, real options, making cash-flow forecasts from accounting data, financial statement ratio analysis, tradeoff between risk and return, portfolio theory, and Capital Asset Pricing Model (CAPM), estimating a project's or firm's cost of capital, corporate claimants and capital structure theory, dividend policy, and elements of corporate restructuring.

MBA 474 Marketing Essentials for Executives 3 Credits
The course equips professionals with emerging and time-tested marketing management principles and techniques for the changing world shaped by technological advances, social media, and unprecedented amounts of data. From decisions on targeting to developing and communicating brands' value propositions, professionals will examine the ways in which marketing creates a lasting strategic impact. Participants will engage in a dynamic learning environment that uses the latest case studies, readings, simulations, and other learning modules to apply marketing knowledge for solving complex problems.

MBA 475 Operations and Supply Chain Management for Executives 3 Credits
The course is designed to explore how organizations develop supply chain flows from upstream supply management, to internal processes, and to distribution channels, in order to deliver goods and services that exceed customer expectations and create societal value. New business models and forms of operations enabled by technological innovations will be explored. Topics covered include operations strategy, demand/customer management, supply/capacity planning, raw material/component sourcing, inventory planning, fulfillment and distribution, sustainability, and industry 4.0.

MBA 476 Talent Management for Executives 3 Credits
This course highlights key principles of human behavior at work to address talent management issues in organizations and delves into how those principles can be ethically applied in a data analytics age, not just to attract and select the right employees for a given organization, but also to motivate, lead, empower, and develop others. Students will acquire skills and knowledge that will enhance your ability to analyze and resolve individual performance issues and organizational talent challenges with a global perspective.

MBA 481 Mastering Strategy 3 Credits
This course emphasizes strategic management from a general manager standpoint. Students apply essential business knowledge through simulation, case presentations, and the cross core project. We examine historical perspectives, contemporary theories, and practical applications to develop students' broad understanding of strategic management issues and solutions. By combining high-level class discussions, case analyses, a computer simulation competition, and the cross core project, this course exposes students to rigorous theoretical analysis while providing hands-on, simulated real-world business experiences.
Prerequisites: MBA 471 and MBA 472 and MBA 473 and MBA 474 and MBA 475 and MBA 476

MBA 482 Executive Leadership 3 Credits
This course examines leadership at the organization and team levels. It aims to develop leadership skills and the ability to diagnose leadership needs in different situations. The course focuses on the decisions leaders need to make, and the appropriate leadership decision-making processes required in various contexts and at different stages of an organization's existence. Cases and developmental exercises including in-depth decision-making exercises are utilized and cover diverse situations and cross-cultural dimensions including crisis and change management or ethically difficult decisions.
Prerequisites: MBA 471 and MBA 472 and MBA 473 and MBA 474 and MBA 475 and MBA 476

MBA 483 Digital Strategies for Organization Transformation 3 Credits
The course is designed to develop an understanding of how new business strategies can be developed and existing business strategies be improved through the introduction of technologies and digital systems. The course will highlight opportunities created by new digital technologies, artificial intelligence, and big data, identify organizational challenges and barriers to digital transformation, and present frameworks and roadmaps to developing and implementing digital transformation strategies.
Prerequisites: MBA 471 and MBA 472 and MBA 473 and MBA 474 and MBA 475 and MBA 476

MBA 484 Societal Challenges: Implications for Business 3 Credits
This course examines societal shifts (e.g., artificial intelligence, blockchain, changing demographics, and climate change) and how society needs to think about sustainable growth in the coming decades. The societal shifts will be examined in pairs and then integrated to form scenarios for society in the coming decades. The focus is on the impacts of these societal shifts at the industry and individual company level.
Prerequisites: MBA 471 and MBA 472 and MBA 473 and MBA 474 and MBA 475 and MBA 476

Law Courses

LAW 417 Regulatory Environment of Business 2 Credits
This course is designed to provide students with a basic understanding of the various legal, regulatory, and market constraints in which business operates. Students are introduced to the interplay between legislation, regulations, and court decisions in establishing the regulatory environment in which a business operates as well the allocation of power among federal and state authorities. Conflict of law issues will also be explored for businesses that operate internationally. Contract law, forms of business, and ethics are covered in depth.

Management Courses

MGT 416 Managing Talent 3 Credits
The course is fundamentally about understanding and improving the behavior and performance of individuals in the workplace. As such, we will draw upon key theories in organizational behavior to address human resource issues arising from the employment relationship. Topics will address key areas in the talent pipeline from sourcing and selection, training and development, motivation and performance management, to talent management metrics and analytics.

MGT 431 Leadership in Contemporary Organizations 1.5 Credit
Leadership skill development for increasingly complex environments. This course covers concepts that will enable students to navigate their mutual interdependence in modern, complex, organizations. It focuses on personal leadership concepts (e.g., growth mindset; emotional intelligence), as well as relational leadership concepts (e.g., listening; giving and receiving feedback; coaching; how to have difficult conversations) and/or team leadership concepts.

MGT 436 Managing People 3 Credits
This course examines how effective organizations are created, maintained, and improved. The course will focus on how good people are attracted to an organization and how to make them productive. Topics include: organizational design, job design, staffing, training and development, performance, teams, influence, diversity, change, ethical decision-making, and current people issues facing today's organizations.
Prerequisites: MGT 431
Can be taken Concurrently: MGT 431

MGT 438 Strategy for Competitive Advantage 3 Credits
The focus of this course is on how the organization creates and maintains competitive advantage in a rapidly shifting, complex environment. This course will give you the critical thinking skills to evaluate the current environment, predict how that environment is likely to shift in fundamental ways in the future, and build a resilient, adaptive strategy for your organization.
Prerequisites: MGT 431
Can be taken Concurrently: MGT 431

MGT 439 Applied Capstone Experience (ACE) 1.5 Credit
The Applied Capstone Experience, or ACE, challenges students to grapple with a complex issue facing their organization. It builds on the functional topics and projects from other core courses, such that the ACE integrates different functional lenses in addressing a complex problem or opportunity that is critical to the organization. Students identify this substantive challenge facing the organization, work to understand its interconnectedness with the other operations of the organization, and seek to provide implementable strategic and operational solutions.
Prerequisites: ACCT 432 and FIN 433 and BIS 434 and SCM 435 and MGT 436 and MKT 437 and MGT 438
Can be taken Concurrently: ACCT 432, FIN 433, BIS 434, SCM 435, MGT 436, MKT 437, MGT 438

MGT 461 Strategic Management 1 Credit
Strategic Management covers overall organizational issues in determination, analysis, execution, and control within a global environment. This capstone course integrates theories and concepts from production, marketing, finance, and accounting and provides an opportunity to simulate the function of top level management as it relates to the total business environment through a team-based business simulation. Through readings, written assignments, presentations, in-depth group discussions, and a team-based simulation competition, students will broaden their understanding and practice the art of strategic decision making.

MGT 462 Experiential Learning Capstone 3 Credits
The Experiential Learning Capstone in the M2 curriculum immerses students in the study of how historical, iconic companies, under the guise of strategic management principles, created disruptive/game-changing industry innovation. Built on the foundational courses in the M2 curriculum, the capstone integrates classroom lectures with a combination of company visits and externship projects. Students apply their foundational learning in the study of how birth was given to a select set of companies.

Marketing Courses

MKT 415 Marketing Foundations 3 Credits
This course is designed to provide students with a comprehensive analytical framework to develop, implement and evaluate competitive marketing strategies that achieve organizational goals and objectives. It explores the functional marketing operations of organizations and examines the key elements of a marketing manager’s decision making process. Examples of learning modules include: customer and market analysis, segmentation, targeting and positioning, marketing mix decisions (product, price, placement and promotion).

MKT 425 Contemporary Topics in Marketing 2 Credits
The objective of this course is to build on the principles learned in Marketing Foundations and study a series of contemporary topics relevant for the marketing function in organizations. The focus is on key factors that are driving changes in the marketplace and the implications to the organization when devising strategies. Students will obtain an understanding of how to identify emerging trends, explore the underlying antecedents and consequences of these trends, and learn how organizations can proactively manage these trends.
Prerequisites: MKT 415

MKT 437 Customer Insights and Marketing Strategy for Managers 3 Credits
This course presents principles, tools, and techniques to understand customers and the marketplace that enable marketers to create, communicate, and deliver superior value to all stakeholders. Select topics include segmenting and targeting prospective customers, assessing competitors, positioning offerings, managing customer relationships, and creating lifetime value. Building on the fundamentals, more advanced conceptual frameworks, analytical tools, and contemporary perspectives for managerial decision-making will be applied to effectively develop and manage new and existing customer offerings in the increasingly data-rich environment.
Prerequisites: MGT 431
Can be taken Concurrently: MGT 431

Masters Accounting Courses

MACC 407 Federal Income Taxation 3 Credits
An introductory study of the principles and concepts of federal income taxation of individuals, corporations, partnerships, and fiduciaries; and federal gift and estate taxes. Determination of tax liabilities and opportunities for planning are emphasized. Problem-solving using the source materials of tax law and tax research are important components of the course. Credit will not be given for both MACC 407 and ACCT 307.
Prerequisites: MACC 415

MACC 409 Advanced Federal Income Taxation 3 Credits
An advanced study of the taxation of business organizations, estates, trust, and wealth transfer taxes. Planning and research are the basic components of the course. Problem-solving and written research are emphasized. Credit will not be given for both ACCT 309 and MACC 409.
Prerequisites: ACCT 307

MACC 411 Accounting Information Systems 3 Credits
An introduction to the concepts underlying information systems as they relate to organizational structure, managerial decision making and accounting. The course acquaints students with the reports and documents generated by information systems, as well as procedures and controls employed in a variety of business applications. Students apply these concepts, techniques and procedures to the planning, analysis and design of manual and computer-based information systems. Credit will not be given for both MACC 411 and ACCT 311.

MACC 412 IT Auditing 3 Credits
Addresses internal control and audit issues in an Information Technology (IT) environment. structured around the COSO internal control framework. Audit procedures for the review of IT general and application controls are examined. Students perform substantive tests on financial databases using audit software. Topics covered: Internal controls in centralized and distributed IT environments, IT outsourcing, IT governance, Data modeling, network and database security ACL software, SAP process and control issues.

MACC 413 The Corporate Financial Reporting Environment 3 Credits
This course addresses the nature of corporate financial reporting, its role in providing decision-useful information to capital market participants, standard-setting and the FASB conceptual framework, and theoretical and empirical assessments of its performance.

MACC 415 Intermediate Accounting I 3 Credits
Intensive study of the basic concepts and principles of financial accounting, emphasizing the problems of fair presentation of an entity's financial position, operating results and cash flows. Understanding of the conceptual framework of accounting, review of the accounting process, and recognition, measurement, valuation and disclosure of current assets, fixed assets, and intangibles. Problem-solving skills and critical analysis are stressed. Credit will not be given for both MACC 415 and ACCT 315.

MACC 416 Intermediate Accounting II 3 Credits
The sequel to MACC 415, this course continues with intensive study of recognition, measurement, valuation and disclosure issues relating to such topics as investments, liabilities, leases, pensions, income-taxes, share-based payments, revenue issues, earnings per share, and complexities related to the statement of changes in financial position. Analysis and interpretation of financial statements and problem-solving skills are integral parts of the course. Credit will not be given for both MACC 416 and ACCT 316.
Prerequisites: MACC 415

MACC 417 Advanced Financial Accounting 3 Credits
A study of specialized topics in financial accounting, including partnership accounting, business combinations and consolidated financial statements, segment and interim reporting, foreign currency transactions and translation, and accounting and reporting for governmental and other nonprofit organizations. Involves considerable problem-solving and critical evaluation of controversial theoretical issues. Credit will not be given for both MACC 417 and ACCT 317.
Prerequisites: MACC 416

MACC 419 Auditing 3 Credits
An introduction to auditing theory, objectives, and practices related largely to the responsibilities of independent professional accountants. The auditing environment, generally accepted auditing standards, internal control theory, and reporting alternatives are considered. Exposure to operational auditing is provided. Credit will not be given for both MACC 419 and ACCT 320.
Prerequisites: MACC 415 and MACC 411

MACC 420 Fraud Examination and Forensic Accounting 3 Credits
This course focuses on developing student understanding of forensic accounting and fraud investigation for introduction to the forensic accounting profession. Course provides enhanced knowledge of occupational fraud, with emphasis on financial statement fraud. Topics include the nature/theories of fraud, fraud prevention/detection techniques and the legal and auditing framework for fraud investigation. Course integrates data analytic techniques in fraud examination and detection, analysis of SEC cases involving fraud allegations and incorporates materials provided by the Association of Certified Fraud Examiners (ACFE).
Prerequisites: ACCT 320

MACC 423 Managerial Accounting 3 Credits
An in-depth study of concepts and methods involved in the collection, organization, dissemination and interpretation of information that facilitate operational and strategic decisions. Topics include: product costing; relevant costs for outsourcing and other operational decisions; metrics development; budgeting, performance evaluation; target costing; and transfer pricing. Credit will not be given for both MACC 423 and ACCT 324.

MACC 424 Governance, Risk and Control 3 Credits
This course focuses on developing in students an understanding of corporate governance, risk oversight and internal control monitoring from an accounting professional’s perspective. Topics include agency theory, fundamentals of corporate governance, risk and internal control, functions of the board of directors and the audit committee, independent auditor and impediments to audit quality, internal auditor’s role, and SEC regulations and laws impacting governance, risk and control. Class discussions, interactive group exercises, role plays, field projects, and real-life cases are used.
Prerequisites: ACCT 320 or BUA2

MACC 427 Accounting Research and Regulation 3 Credits
Explores the mechanics of performing professional accounting research through analysis of the authoritative accounting literature applied to emerging accounting issues. While emphasizing U.S. GAAP and the Accounting Standards Codification, students will also work with SEC reporting requirements, PCAOB and AICPA auditing standards, and International Financial Reporting Standards. Students will develop skills to conduct research, determine the appropriate accounting for new and complex business transactions, and document the rationale for the accounting method chosen.
Prerequisites: ACCT 316 or MACC 416

MACC 430 Data Analytics for Accountants 3 Credits
This course uses publicly available financial statement information to programmatically analyze company activities. Obtaining, cleaning, exploring, analyzing with statistical and machine learning methods, and presenting accounting data are explored in a project based format. Non-financial related information analyses are linked to audit and risk assessments. Projects and papers involve actual entities and associated financial information. Credit will not be given for both MACC 430, Data Analytics for Accountants and ACCT 330, Accounting Data and Analytics.
Prerequisites: ECO 045

MACC 490 Business Skills for Accounting Professionals 3 Credits
Enhances key skills necessary to function effectively in a professional accounting environment. Topics include oral and written communication, exercising professional judgment, protecting and upholding professional integrity, developing and maintaining professional relationships, analyzing data to inform business decisions. Weekly participation in the Segal Accounting Distinguished Speaker Series is an integral part of this course.

MACC 491 Internship in Accounting 3 Credits
Supervised internship experience in auditing, tax consulting, corporate accounting of at least eight weeks duration.
Prerequisites: MACC 419

Project Management Courses

PMGT 409 Project Management Fundamentals 3 Credits
Introduction to project management – survey of the knowledge areas and approaches to managing projects. Looks at the relationship of projects to organizational strategy and culture, how to initiate a project, principles of planning and project execution and control, managing stakeholders, and communicating effectively. A review of the competencies required to address the complexities and challenges of projects. Hands-on approach to developing project management work artifacts and simulated project management game are used.

PMGT 410 Project Requirements and Scope Management 1 Credit
Focuses on understanding the principles and nuances of managing project and product scope: the boundaries of inclusion and exclusion of the product – its features and functions, and of the project – the work involved to create the project's product. Addresses the methods for eliciting and managing product and project requirements, defining the project scope, creating a scope baseline, and managing changes to control scope creep.
Prerequisites: PMGT 409
Can be taken Concurrently: PMGT 409

PMGT 411 Project Scheduling, Estimating & Budgeting 1 Credit
This course explores the methods and challenges of developing project estimates, schedules, and budgets. Expectations about project timelines and costs cause a great deal of friction and frustration in projects. In this course students will learn how to build a schedule using the critical path method, methods for resource loading, developing contingency reserves, and time and cost estimates. They will also learn how to present schedule information to manage expectations and deal with slips when they occur.
Prerequisites: PMGT 409 and PMGT 410
Can be taken Concurrently: PMGT 409, PMGT 410

PMGT 412 Advanced Scheduling & Scheduling Tools 1 Credit
This course deals with developing a schedule in MS Project in a hands-on class. Students will learn to build a fully resource loaded, networked, and baselined schedule in MS Project, and how to manage from that schedule. Students will also explore the principles of critical chain scheduling, dealing with risks in schedules, and using the schedule to forecast outcomes and communicate effectively with stakeholders about time expectations.
Prerequisites: PMGT 409 and PMGT 410 and PMGT 411

PMGT 413 Project Risk Management 1 Credit
As projects always involve a new and unique endeavor to the performing organization, uncertainty is a part of every project. Effective project management prepares for the risks - both jeopardies and opportunities - presented by these uncertainties. In this class we will explore both the classic and some more advanced methods for dealing with project risks.
Prerequisites: PMGT 409 and PMGT 410
Can be taken Concurrently: PMGT 409, PMGT 410

PMGT 414 Managing Project Quality 1 Credit
Students will explore the key concepts of quality management and how they apply in projects. This class discusses the use of the quality management tools and methods, practices for holding quality reviews, and for developing project quality management plans.
Prerequisites: PMGT 409 and PMGT 410
Can be taken Concurrently: PMGT 409, PMGT 410

PMGT 415 Project Procurement & Negotiation 1 Credit
This class focuses on the tools and practices used in managing procurement on projects, and best practices for negotiation and supplier management. It explores the role of the contract, types of contracts, developing the statement of work, RFP, screening & selection criteria, and the procurement management plan. It also looks at how to manage contractors throughout the project.
Prerequisites: PMGT 409 and PMGT 410
Can be taken Concurrently: PMGT 409, PMGT 410

PMGT 416 Decision Making and Ethics on Projects 1 Credit
This class examines the factors and processes for making effective and ethical project decisions. The unknowns, complexities, time and cost pressures, and cross-functional stakeholders make good decision-making imperative for long-term and short-term success. Students will use a variety of tools and techniques for team decision-making. The class includes a case study to explore decision-making and ethical issues.

PMGT 417 Project Leadership 1 Credit
Good management skills alone will not create project success. Leadership, which is much more elusive, is equally if not more important. This class will explore models of leadership and how they apply to projects, styles of leadership, motivation, influence, politics, and dealing with difficult stakeholders.

PMGT 418 Facilitation and Teamwork for Projects 1 Credit
This class focuses on the principles and practices of teamwork, an essential element for projects. Students will examine the effectiveness of different types of team structures and maturity levels for teams and organizations. They will learn methods for dealing with conflict, facilitating groups, and the different types of meetings used in projects. This class will use case studies as well as hands-on methods.

PMGT 419 Adaptive and Agile Project Management 1 Credit
In this class we will explore the new methods used for more extreme projects – those with more complexity, market acceptance, time pressure, and advanced technology. Students will examine the factors affecting complex projects with cross-functional and dispersed teams as well as principles for Agile project approaches. This class will use case studies as well as hands-on methods.
Prerequisites: PMGT 409 and PMGT 410

PMGT 420 Managing Projects for Innovation 1 Credit
Traditional project management tries to instill discipline in a seemingly chaotic process, but for innovation to thrive we must couple discipline with creativity. In this class students will explore the paradoxes innovations create, and look at ways to remove blocks and spark imagination while producing value for the organization. Case studies and hands-on techniques will be utilized in this course.
Prerequisites: PMGT 409 and PMGT 410

PMGT 421 Project Management Capstone 1-3 Credits
This class is conducted as an independent study and involves applying the principles and practices of the previous project management classes to a real-life project or approved case study. You will develop a set of project documents and provide a critical analysis of the project to demonstrate your mastery of the project management skills prescribed for a predictive (plan-based) project.
Prerequisites: PMGT 409 and PMGT 410 and PMGT 411 and PMGT 413 and PMGT 416

Supply Chain Management Courses

SCM 423 Supply Chain Operations Management 2 Credits
This course provides an essential understanding of managing global supply chains and operations within the context of an integrated value chain. Topics addressed include the fundamentals of supply chain management; supply chain risk management; quality management; demand and supply chain planning, including forecasting, capacity planning, aggregate planning, and scheduling; the components of a lean supply chain; inventory and working capital management; distribution and transportation management; and performance measurement. Special emphasis is given to managing supply chains from a financial perspective.

SCM 435 Operations and Supply Chain Management 3 Credits
This course provides students with an overview of supply chains, operations of organizations within the supply chain and the impact of their designs on organizational competitive strategies. It provides basic techniques organizations use when operating within modern supply chains and reviews key decision tools such as demand planning, capacity management and processes improvement.
Prerequisites: (ECO 045 or BUEC) and MGT 431
Can be taken Concurrently: MGT 431