Accounting

**ACCT 6009** Accounting Internship (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: (MAS 6102 or ACCT 6388 or MBA major) and department consent required. (0-0) S

**ACCT 6193** Professional Accounting - Regulation (1 semester credit hour) This course is designed to help students prepare for careers in professional accounting and professional examinations. Prerequisites: (ACC T 6350 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area) and ACCT 6353. (1-0) R

**ACCT 6194** Professional Accounting - Business (1 semester credit hour) This course is designed to help students prepare for careers in professional accounting and professional examinations. Prerequisite: ACCT 6331 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (1-0) R

**ACCT 6195** Professional Accounting Practicum (1 semester credit hour) This course is a practicum focused on preparation for the Certified Public Accountant Exam. This course will review testing strategies, enhance application skills, and supplement various exam topics through the use of in-class quizzes and problem-solving activities. Department consent required. Corequisite: ACCT 6193 or ACCT 6194 or ACCT 6291 or ACCT 6292. (1-0) S

**ACCT 6201** Introduction to Financial Accounting (2 semester credit hours) This course explores the role of financial accounting information in the economy and explains how accounting information found in financial statements and annual reports is used in decision-making by investors, analysts, creditors and managers. This course cannot be used for MS Accounting degree credit. (2-0) S

**ACCT 6202** Accounting for Managerial Decision Making and Control (2 semester credit hours) This course presents a framework to identify, measure, analyze, interpret, and communicate information in pursuit of an organization's goals by managing resources, activities, and people effectively and efficiently. In particular, the course discusses various managerial accounting and cost management practices that can be strategically applied across various business functions of an organization to improve organizational performance. This course cannot be used for MS Accounting degree credit. (2-0) S

**ACCT 6287** Board Membership, Risk Management and Compliance (2 semester credit hours) Executive Education Course. This course will consider the functions of the board of directors. Topics include strategy, risk management and compliance. (2-0) Y

**ACCT 6291** Professional Accounting - Financial (2 semester credit hours) This course is designed to help students prepare for careers in professional accounting and professional examinations. Prerequisites: (ACC T 6330 and ACCT 6332) or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area), and (ACCT 6333 or ACCT 6365). (2-0) R
ACCT 6292 Professional Accounting - Audit (2 semester credit hours) This course is designed to help students prepare for careers in professional accounting and professional examinations. Prerequisites: (ACCT 6301 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area), and ACCT 6335. (2-0) R

ACCT 6301 Financial Accounting (3 semester credit hours) This course focuses on the development, analysis and use of the information contained in financial statements. It discusses what the financial statements contain, what assumptions and concepts accountants use to prepare them, and why they use those assumptions and concepts. May not be used to fulfill degree requirements in MS Accounting program. (3-0) S

ACCT 6305 (SYSM 6337) Accounting for Managers (3 semester credit hours) Fundamental concepts in accounting and financial reporting are presented from the perspective of business managers. May not be used to fulfill degree requirements in MS Accounting. Credit cannot be received for both courses, (ACCT 6301 or ACCT 6202) and ACCT 6305. (3-0) S

ACCT 6309 (MIS 6309) Business Data Warehousing (3 semester credit hours) This course provides the student with in depth knowledge of data warehousing principles, data warehouse techniques, and business intelligence systems. The course introduces the topics of data warehouse design, Extract-Transform-Load (ETL), data cubes, and data marts. Students will create business intelligence using data warehouses with several OLAP and analytical tools. SAP, Business Objects, Cognos, or other data warehousing tools will be used to illustrate data warehousing concepts. (3-0) Y

ACCT 6313 (MIS 6330) Cybersecurity Fundamentals (3 semester credit hours) This course prepares business decision makers to recognize the threats and vulnerabilities present in current information systems and how to design and develop secure systems. This course introduces the concept of defense-in-depth and covers different layers in a typical security architecture. Topics include security risk management, cyber laws related to security and privacy, access controls, network security, host security, detective controls, cryptography, and communications security. (3-0) Y

ACCT 6320 (MIS 6320 and OPRE 6393) Database Foundations (3 semester credit hours) The course provides database knowledge for non-MIS business students to function effectively in their functional area. The course covers conceptual data modeling with the entity-relationship diagram, the fundamentals of relational data model and database queries, and the basic concepts of data warehousing. Structured Query Language will be used extensively. Applications of databases for accounting, finance, marketing, and other areas of business will be emphasized. May not be used to fulfill degree requirements in MS Information Technology and Management. Credit cannot be received for more than one of the following: ACCT 6320 or ACCT 6321 or BUAN 6320 or MIS 6320 or MIS 6326 or OPRE 6393. (3-0) Y

ACCT 6321 Database Applications for Business Analytics in Accounting (3 semester credit hours) This course develops an understanding of the role of databases in accounting, including Structured Query Language (SQL), NoSQL and other databases deemed appropriate. Students learn how to effectively query SQL and NoSQL databases and use analytics tools to present accounting information. Topics include ER models, SQL, PL/SQL, query optimization, NoSQL database types, and NoSQL querying. Accounting applications will be emphasized. Prerequisite or Corequisite: ACCT 6330 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) Y

ACCT 6330 Intermediate Financial Accounting I (3 semester credit hours) A study of external financial reporting, including revenue recognition and the measurement and reporting of cash, receivables, inventories, property, plant, and equipment, and intangibles. Financial statement presentation issues are...
analyzed to gain an appreciation for the impact of generally accepted accounting principles on business decisions. (3-0) S

**ACCT 6331** Cost Accounting: Foundations and Evolutions (3 semester credit hours) This course focuses on the process of measuring, analyzing, and reporting financial and non-financial information related to the costs of acquiring or using resources in an organization. Evolving cost accounting practices in measuring product costs and using cost information in performance evaluation are discussed in detail. The use of appropriate cost information in both short and long term decisions and continuous improvement of operations is deliberated in detail. (3-0) S

**ACCT 6332** Intermediate Financial Accounting II (3 semester credit hours) This course is a continuation of topics in external financial reporting, including: issues related to the measurement and reporting of current liabilities and contingencies, bonds, leases, deferred taxes, pensions, stock-based compensation plans, shareholders equity, earnings per share, accounting changes, and cash flows. Current generally accepted accounting principles for financial reporting are analyzed. Prerequisite: **ACCT 6330** or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) S

**ACCT 6333** Advanced Financial Reporting (3 semester credit hours) The application of accounting principles in complex settings is studied. Topics include accounting for business combinations, consolidated entities, partnerships, transactions in foreign currency, hedging of foreign currency, and translation of financial statements reported in foreign currency. Prerequisite: **ACCT 6332** or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) S

**ACCT 6334** Auditing (3 semester credit hours) This course introduces the basic concepts, philosophy, standards, procedures, and practices of auditing. Topics include generally accepted auditing standards, the role of the independent auditor, professional conduct and ethics, auditor's reporting responsibilities, risk assessment, internal control, evidential matter, and management fraud. Prerequisite: **ACCT 6330** or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) S

**ACCT 6335** Ethics for Professional Accountants (3 semester credit hours) This course provides a thorough examination of ethical issues in business, with an emphasis on the accounting profession. This course presents ethical philosophies and reasoning, along with the key principles of the American Institute of Certified Public Accountants Code of Professional Conduct, including integrity, objectivity, and independence. This course also addresses the governance structure of companies with respect to the regulatory requirements of the Sarbanes-Oxley Act. This course is approved to meet the ethics requirements established by the Texas State Board of Public Accountancy. (3-0) S

**ACCT 6336 (HMGT 6336 and MIS 6337)** Information Technology Audit and Risk Management (3 semester credit hours) Management's role in designing and controlling information technology used to process data is studied. Topics include the role of internal and external auditors in systems development, information security, business continuity, information technology, internet, change management, and operations. Focus is placed on the assurance of controls over information technology risks and covers topics directly related to the Certified Information Systems Auditor (CISA) exam. (3-0) Y

**ACCT 6338 (MIS 6338)** Accounting Systems Integration and Configuration (3 semester credit hours) Using SAP or similar software, this course focuses on accounting information systems as part of integrated enterprise systems and modern systems analysis and design of integrated accounting systems and related internal control. Emphasis will be on integrated business processes and related financial transaction flows, system analysis and design methods in SAP with a focus on configuration methods. Prerequisite or Corequisite: **ACC**
T 6202 or ACCT 6305 or ACCT 6331 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) R

ACCT 6340 (MIS 6308) System Analysis and Project Management (3 semester credit hours) Provides the student with an in-depth knowledge of object oriented systems analysis and design procedures. Software project management techniques will be introduced. At the end of the course, the student will be able to analyze business solutions and design computer based information systems using object-oriented methodologies. Prerequisite or Corequisite: MIS 6326 or BUAN 6320 or MIS 6320. (3-0) R

ACCT 6341 Planning, Control and Performance Evaluation (3 semester credit hours) The application of management accounting for planning, control and performance evaluation is studied for various business situations. Topics include planning, budgeting, performance evaluation, centers of responsibility, modern control methods, management compensation, and transfer pricing. Extensive use of cases is used to apply strategic management accounting concepts. Prerequisite: ACCT 6202 or ACCT 6305 or ACCT 6331 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) Y

ACCT 6342 Strategic Cost Management (3 semester credit hours) Cost analysis is integrated with strategic analysis to understand the role of financial and non-financial information in operational and strategic decision-making. Topics may include strategic value chain analysis, strategic positioning analysis, activity based management, line of business evaluation, life cycle costing, technology costing, target costing, quality cost management, balanced scorecard, and sustainability reporting. Prerequisite: ACCT 6202 or ACCT 6305 or ACCT 6331 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) R

ACCT 6343 Accounting Information Systems (3 semester credit hours) Managing the design, control and operation of accounting information systems in a computerized organizational environment is studied. The emphasis is on identifying the information needs of decision makers and developing appropriate business process control in the design of accounting information systems. Prerequisite: ACCT 6301 or ACCT 6305 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area, or ACCT 6320. (3-0) S

ACCT 6344 Financial Statement Analysis (3 semester credit hours) Analysis of financial statements for evaluating firm performance and risk. Topics include interpretation of financial statements and footnotes, managers' incentives for earnings manipulation, comparative analysis of firms, and ethics in financial reporting. Prerequisite: ACCT 6301 or ACCT 6305 or ACCT 6330 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) S

ACCT 6345 Business Valuation (3 semester credit hours) Financial statement based valuation models are studied. Topics include earnings management, income measurement and profitability assessment, discounted cash flow, and accounting-based valuation models. Prerequisite: ACCT 6301 or ACCT 6305 or ACC T 6330 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) Y

ACCT 6349 (MIS 6302) Managing Digital Strategy (3 semester credit hours) This course explores the strategic management issues associated with the transformation of all businesses into digital businesses. It focuses on developing an understanding of how to develop a business models to implement strategies that are based on digital systems across different industries. This includes understanding how to develop business plans, how to align the business architecture with the digital systems architecture, and appropriately managing the digital systems to maximize business value. The course will deal with assessing and
developing business strategies by harnessing contemporary phenomena in the digital world, such as the Internet of Things, Mobility strategies, and include applications of emerging techniques based on machine learning, artificial intelligence and semantic analysis to craft appropriate business strategies for firms. Credit cannot be received for both ACCT 6349 and MIS 6302. (3-0) Y

ACCT 6350 Fundamentals of Taxation I (3 semester credit hours) Introduction to the role of taxes in today's society and their impact on individuals and business entities; emphasis on federal individual income taxation. Prerequisite: ACCT 6301 or ACCT 6330 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) S

ACCT 6353 Fundamentals of Taxation II (3 semester credit hours) This course covers certain common and special federal tax laws for individuals, partnerships, and corporations, estates, trusts, and miscellaneous entities. Topics include income tax returns for partnerships and business corporations as well as survey coverage of corporate tax issues, including formation, taxable income, and distributions. The course also covers IRS audits, exposure to partnerships, estate and gifts, and international taxation. Prerequisite: ACCT 6350 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) S

ACCT 6354 Partnership Taxation (3 semester credit hours) This course covers the tax law as it relates to the formation of a partnership, the determination of the taxable income of the partnership, the distributive shares of the partners, the tax consequences of distributions by a partnership, and transfers of interests in a partnership. Prerequisite: ACCT 6350 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) S

ACCT 6356 Tax Research (3 semester credit hours) This course covers identification and evaluation of legal authorities applicable to tax issues for individual and business taxpayers. The course emphasizes practice in applying research techniques for tax planning, compliance, and controversy scenarios commonly encountered by CPAs. Prerequisite: ACCT 6350 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) Y

ACCT 6362 International Accounting (3 semester credit hours) Accounting and auditing functions and activities in various international environments are evaluated also in the context of international accounting and auditing harmonization. Causes of international differences and international classification efforts are examined. Comparison between International Financial Reporting Standards (IFRS) and prevailing US Accounting Principles (FASB) and contemplated convergence between the two systems are appraised. Accounting concepts, standards, methods, and practices in foreign environments and their relationship to US accounting are assessed. Topics include foreign currency translation, consolidation, performance measurement of international entities, accounting for international operations, comparative accounting systems, transfer pricing, and financial reporting of foreign and multinational corporations. Prerequisite: ACCT 6301 or ACCT 6305 or ACCT 6330 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) Y

ACCT 6365 Governmental and Not-For-Profit Accounting (3 semester credit hours) Accounting practices for governmental and not-for-profit organizations are studied, including accounting requirements for institutions, municipalities, and state and federal government. Topics include performance budgeting, systems analysis, and accounting implications of economic decisions. Prerequisites: ((ACCT 6301 or ACCT 6330) and (ACCT 6202 or ACCT 6331)) or ACCT 6305, or undergraduate degree in Accounting and adequate foundation/academic performance in corresponding area. (3-0) R

ACCT 6367 Multijurisdictional Taxation (3 semester credit hours) This course introduces the taxation of
business entities and individuals by competing taxing jurisdictions. This course also addresses state taxation concepts, including nexus, allocation, and apportionment issues and examines cross-border and international tax issues emphasizing "outbound" investments and activities of U.S. taxpayers. Prerequisite: ACCT 6350 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. Corequisite: ACCT 6353. (3-0) Y

**ACCT 6368** Forensic Analysis of Corporate Disclosures (3 semester credit hours) This course examines the mandatory reporting requirements of publicly-traded entities and analysis of the disclosures required by the Securities and Exchange Commission (SEC), the role of the SEC in combating corporate fraud, EDGAR, XBRL, SEC comment letters, and restatements. The course also discusses various voluntary disclosures through which management can disseminate information to the capital markets, including conference calls, management earnings forecasts, and social media. The main focus is on the implications of disclosure for capital market participants. This course is beneficial to students with interests in pursuing careers in auditing (external and internal), corporate accounting or finance, management, consulting, compliance, or public relations. Prerequisite: ACCT 6301 or ACCT 6305 or ACCT 6330 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) Y

**ACCT 6370** Business Law (3 semester credit hours) Laws affecting business organizations and laws influencing managerial decision-making are examined. Topics include contract law, law of agency, law of commercial transactions, and the uniform commercial code and the laws relating to the formation and operation of corporations. (3-0) Y

**ACCT 6374** Data Analytics for Accountants and Auditors (3 semester credit hours) This course provides an understanding of data analytics and how its theories and procedures can benefit accounting and auditing professionals. The primary focus is on the use and application of analytic techniques for decision making and the examination of "big data" involving accounting information. The course also covers the application of data analytics concepts and techniques to accounting, auditing, and risk management scenarios. Prerequisites: (ACCT 6301 and ACCT 6202) or ACCT 6305 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) R

**ACCT 6377** Corporate Governance (3 semester credit hours) Corporate governance is a system of policies and processes established and maintained by a board of directors and top management to oversee an organization's strategic activities and resulting performance. The system seeks to ensure proper accountability, probity, and openness in the conduct of an organization's business for the long-term benefit of its shareholders by causing the right questions to be asked and by placing checks and balances in place to ascertain the answers reflect reality. Thus, corporate governance focuses on enhancing the relationships among a company's board of directors, top management, investors (particularly institutional investors), and other stakeholders. Each session has two themes: issues are addressed academically by the instructor and pragmatically by prominent practitioners. (3-0) S

**ACCT 6380 (HMGT 6380)** Internal Audit (3 semester credit hours) The course covers internal audit from a broad perspective that includes information technology, business processes, and accounting systems. Topics include internal auditing standards, risk assessment, governance, ethics, audit techniques, consulting and emerging internal audit issues. This is the first course leading to Internal Auditing Education Partnership (IAEP) Certificate and prepares students for the Certified Internal Auditor Exam. Students work on internal audits as part of class along with learning the latest internal audit techniques. (3-0) Y

**ACCT 6383** Fraud Examination (3 semester credit hours) This course introduces theory and techniques used in solving financial crimes including forensic accounting procedures, interviewing techniques, rules of
evidence, sources of information, and current issues in financial investigations. The course will include the application of criminal statutes related to investigating, solving, and prosecuting financial crimes. Case studies and practical exercises will be used to augment course topics. Various financial documents and instruments will be discussed and reviewed as part of the documentary evidence to support financial investigations. Prerequisites: (ACCT 6330 and ACCT 6332) or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) S

ACCT 6384 (MIS 6339) Analytical Reviews Using Audit Software (3 semester credit hours) This course introduces the theory and tools used to leverage automated auditing software such as ACL and IDEA. The course includes an analytical review of accounting and operational data for internal auditors and hands-on use of audit software and the development of an audit dashboard. The course also explores ways to leverage the enterprise technology and use available technology to monitor controls and detect fraud. (3-0) R

ACCT 6386 Governance, Risk Management and Compliance (GRC) (3 semester credit hours) GRC examines, from the perspective of corporate directors, senior officers, professional service providers, and consultants the relationship between Corporate Governance and selected components: risk management, compliance, regulations, and regulatory reporting. In addition, these will be linked to two other aspects of Corporate Governance: ethics and corporate culture. Experts in the field provide insights into how systems of corporate governance are designed, developed, and implemented. GRC benefits graduates interested in pursuing careers as auditors (external and internal), consultants, forensic accountants, risk management experts, compliance officers, and ethics officers. (3-0) Y

ACCT 6388 Accounting Communications (3 semester credit hours) This course is designed to improve professionalism and communication skills necessary in the field of accounting through individual and team assignments. The course includes lectures, discussions, readings, and a variety of assignments that allow students to apply effective oral and written communication skills. Typical assignments include professional branding and written pieces required in the profession of accounting, such as memos, emails, proposals, project reports, presentations, and interviews. This course also satisfies the one semester credit hour Professional Development course required for JSOM master's students. (3-0) S

ACCT 6389 Volunteer Income Tax Assistance Practicum (3 semester credit hours) This course is designed to provide students with an opportunity to expand and apply their tax compliance skills in a community service environment through the execution of the Volunteer Income Tax Assistance (VITA) program through a combination of in-class seminars, out-of-classroom application, and a research project. Prerequisite or Corequisite: ACCT 6350 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) R

ACCT 6392 (HMGT 6393) Advanced Auditing (3 semester credit hours) This course provides an in-depth study of issues related to auditing including audits of financial statements, internal audits, internal controls, operations, reporting, and compliance. The course covers current and emerging issues such as enterprise risk management, regulatory compliance, advanced communication techniques, audit management, best practices, sourcing, and quality assessment. Case studies, class discussion, and engagement with audit practitioners supplement class instruction. Prerequisite: ACCT 6334, or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area, or ACCT 6380 or HMGT 6380. (3-0) S

ACCT 6393 Sustainability and the Role of Modern Corporations (3 semester credit hours) The course explores in depth corporate strategic designs around redefining shareholder value and aligning financial,
human, social, and technology capital. We study corporate disclosure choices and the introduction of new accounting measurements in communicating a sustainability strategy. We further examine the interplay between the societal purpose of modern corporations and the purpose of capital in financing sustainable businesses. Prerequisite: **ACCT 6301** or **ACCT 6305** or **ACCT 6330** or (an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area). (3-0) Y

**ACCT 6V98** Accounting Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). JSOM Internship Coordinator consent required. Prerequisites: **ACCT 6388** or **MAS 6102** or MBA major and department consent required. ([1-3]-0) S

**ACCT 6V99** Special Topics in Accounting (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

**ACCT 7313** Contemporary Research in Accounting and Economics (3 semester credit hours) This course will introduce analytical and empirical methods appropriate for addressing accounting questions in the capital markets arena. The emphasis will be to provide a foundation for research methods in accounting. Topics will include use of accounting information for valuation, value relevance, earnings management, accounting and audit as corporate mechanisms, and some anomalies. May be repeated for credit as topics vary (9 semester credit hours maximum). Instructor consent required. (3-0) T

**ACCT 7314** Empirical Research in Financial Reporting (3 semester credit hours) Presents current areas of research in the area of financial reporting. Emphasis is ongoing and recently completed research studies, including understanding of their antecedents and research methodologies. Capital market based empirical research topics will be covered. In particular, the role of analysts as financial information intermediaries will be examined. May be repeated for credit as topics vary (9 semester credit hours maximum). Instructor consent required. (3-0) T

**ACCT 7323** Empirical Research in Accounting and Economics (3 semester credit hours) This course is designed to further the ability of the students to critically analyze completed research efforts, to provide insight into how a given stream of research (e.g. earnings return association studies, trading volume) develops over time and to further the students' knowledge of academic accounting research in the area of financial accounting/reporting. May be repeated for credit as topics vary (9 semester credit hours maximum). (3-0) T

**ACCT 7324** Empirical Research in Financial Accounting (3 semester credit hours) Presents a detailed study of past and current empirical research in the areas of financial accounting and other related fields. Emphasis is on a clear understanding of hypothesis formulation, research design, sample selection and statistical techniques used in these studies. Topics include financial reporting, valuation, and analyst forecast. May be repeated for credit as topics vary (9 semester credit hours maximum). (3-0) T

**ACCT 7333** Analytical Research in Accounting and Economics (3 semester credit hours) Presents a detailed study of economics based analytical research in accounting. Emphasis is on a clear understanding of theoretical paradigms, modeling issues, interpretation of the results, and empirical applications of analytical models. Topics will include the role of information for valuation, contracting, and performance evaluation, and analysis of financial and non-financial performance measurement. Empirical implications
will be discussed. May be repeated for credit as topics vary (9 semester credit hours maximum). (3-0) T

**ACCT 7334** Research Foundations in Accounting (3 semester credit hours) Presents a detailed study of economics based research in financial accounting reporting. Emphasis is on providing an understanding of the current research in capital market based financial accounting. This course provides a platform for supplementing and integrating the students' knowledge of basic research methods and tools and requires the students to identify an accounting topic that they are interested in and to write a research paper in that topic. May be repeated for credit as topics vary (9 semester credit hours maximum). (3-0) T

**ACCT 7343** Empirical Research in Managerial Accounting (3 semester credit hours) Presents a detailed study of empirical research in the area of managerial accounting. Emphasis is on providing an understanding of the current research in managerial accounting. Topics covered include managerial incentives, design of compensation contracts, performance measurement and cost management. May be repeated for credit as topics vary (9 semester credit hours maximum). (3-0) T

**ACCT 7344** Advanced Research in Accounting (3 semester credit hours) This course exposes the students to a wide range of empirical research methodologies including large sample archival research. Emphasis is on providing a clear understanding of the research methods including the theoretical aspects that underlie. May be repeated for credit as topics vary (9 semester credit hours maximum). (3-0) T

## Business Policy and Strategy

**BPS 6151** Executive Study Trip - Americas (1 semester credit hour) Executive Education Course. This course focuses on economic and political strategy. Considers international business, political, and cultural issues for doing business globally. Instructor consent required. (1-0) Y

**BPS 6233** Private Equity Project (2 semester credit hours) This Private Equity course will take you from the fringes to the inside - from building a strategy and valuation for corporate value creation to the close process and ultimately selling the company to other investors. As equity markets are strengthening, the Federal Reserve has kept the low interest rates, and business sentiment is increasing, PE firms are uniquely positioned to expand their portfolios. This course will expose you to new PE approaches and find new pathways for achieving significant growth and increase returns on invested capital. Prerequisites: **FIN 6253** and **FIN 6301** and **BPS 6254** and **BPS 6256**. (2-0) Y

**BPS 6254** Performance Transformation (2 semester credit hours) Executive Education Course. This course provides students with a toolbox of strategy models to develop corporate strategies and implement corporate transformation. Instructor consent required. (2-0) Y

**BPS 6255** Field Project (2 semester credit hours) Executive Education Course. Students work with a local business to understand and evaluate current corporate issues. Students develop a transformational strategy and present their findings to corporate sponsors and faculty. Prerequisites: **BPS 6254** and instructor consent required. (2-0) Y

**BPS 6256** C-Suite Leadership (2 semester credit hours) Executive Education Course. This course explores the leadership of executive officers in influencing and implementing public policy; creating the public image of the firm; and corporate social responsibility. Instructor consent required. (2-0) Y

**BPS 6310 (ENTP 6310)** Strategic Management (3 semester credit hours) Strategic management consists of the analysis, decisions, and actions that organizations take to create sustainable competitive advantages.
The course examines a variety of issues including environmental, competitor, and stakeholder analysis; strategy formulation; and strategy implementation and control. The central role of ethics and corporate governance as well as global issues will be addressed. Credit cannot be received for both BPS 6310 and ENT P 6310. Prerequisites: ((ACCT 6301 and ACCT 6202) or ACCT 6305) and FIN 6301 and MKT 6301 and OB 6301. (3-0) S

**BPS 6311** Strategy Implementation (3 semester credit hours) Implementation issues of strategic planning. Topics include: planning system design, organizing for planning, situation analysis, and corporate/divisional relationships. Cases and selected readings illustrate the key planning concepts. Prerequisite: BPS 6210 or BPS 6310. (3-0) Y

**BPS 6332** (SYSM 6320) Strategic Leadership (3 semester credit hours) Addresses the challenge of leading organizations in dynamic and challenging environments. Overall goal is to not only question one's assumptions about leadership, but also enhance skills and acquire new content knowledge. Topics include visionary and transformational leadership, post-heroic leadership, empowerment, leveraging and combining resources, designing organizations and ethics. (3-0) Y

**BPS 6360** Management and Organizational Consulting: Theory and Practice (3 semester credit hours) Management consulting now accounts for more than $120 billion in global annual revenues. In addition to these full-time consultants, more and more employees are also in roles of a consultative nature, as the knowledge-intensive nature of work increases. This course will begin with a review of the theoretical foundations of the client-consultant relationship, drawing from counseling psychology and other disciplines, then broaden to cover theories of Organizational Behavior, Organizational Learning and Strategy. Through various workshops and hands-on exercises, participants will apply these theories in a number of scenarios relevant for consulting. Special attention will be given to prepare students to become confident practitioners, by bridging the theory-practice gap in the practice of management and organizational consulting. Prerequisite: OB 6301. (3-0) T

**BPS 6379** Business Strategies for Sustainability (3 semester credit hours) The course introduces student to sustainable business practices. The role of legislation and its impact on business practices as well as proactive business strategies firms use to differentiate themselves and obtain a competitive advantage will also be addressed. By viewing a firm through an environmental lens, managers find opportunities to reduce risks, drive down costs, and create intangible value. Further, firms can build stronger connections with a broad range of stakeholders. (3-0) Y

**BPS 6V99** Special Topics in Business Policy and Strategy (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

**BPS 7300** Advanced Strategic Management Seminar I (3 semester credit hours) This is the first of a two-part series of PhD seminars in strategic management that (1) expose students to various theories and topics in strategic management research, and (2) train students to become informed researchers who will be able to contribute to this literature. This seminar covers the major theories in current research addressing strategy formulation and implementation. Corequisite: OB 7300. (3-0) T

**BPS 7301** Advanced Strategic Management Seminar II (3 semester credit hours) This is the second of the two-part series of PhD seminars in strategic management. Together the two seminars (1) expose students to various theories and topics in strategic management research, and (2) train students to become informed researchers who will be able to contribute to this literature. Seminar II focuses more on the empirical research in major topics such as strategic alliances, networks, competitive dynamics and knowledge management. Students learn to use the different theories introduced in the previous seminar as tools for
analyzing strategic business phenomena. Prerequisite: **BPS 7300.** (3-0) Y

**BPS 7302 Research Methodology** (3 semester credit hours) The aim of this course is to lay the foundations for good empirical research in the social sciences and to introduce students to the assumptions and logic underlying social research. Students become acquainted with a variety of approaches to research design, and are helped to develop their own research projects and to evaluate the products of empirical research. (3-0) Y

**BPS 7303 Doctoral Teaching and Writing Seminar** (3 semester credit hours) Provides the tools necessary for beginning academics to think critically about teaching and writing to enable them to be successful researchers and effective teachers. Students will not only be exposed to research on effective writing and teaching, but will also work actively with classmates both within and across areas to improve their ability to write clearly and teach well. The course will require students to assess both their own writing and the writing of others. Students will practice putting together a syllabus, creating assignments for students, and presenting explanations of difficult concepts. (3-0) Y

### Business Analytics

**BUAN 6009 Business Analytics Internship** (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: (**MAS 6102** or MBA major) and department consent required. (0-0) S

**BUAN 6311 (FTEC 6311) Robotics and Financial Technology** (3 semester credit hours) This course focuses on different robotic technologies used in finance. (3-0) Y

**BUAN 6312 (MECO 6312) Applied Econometrics and Time Series Analysis** (3 semester credit hours) A survey of techniques used in analyzing cross-sectional, time series and panel data with special emphasis on time series methods. Credit cannot be received for more than one of the following: **BUAN 6312** or **FIN 6318** or **MECO 6312**. Prerequisite or Corequisite: **OPRE 6301** or **OPRE 6359** or **BUAN 6359** or **FIN 6306** or **FIN 6307** or **SYSM 6303**. (3-0) T

**BUAN 6320** Database Foundations for Business Analytics (3 semester credit hours) This course covers Structured Query Language (SQL) and NoSQL databases and focuses on understanding the differences, and to learn how to effectively query SQL and NoSQL databases. Topics include ER models, SQL, PL/SQL, query optimization, NoSQL database types, and NoSQL querying. Credit cannot be received for more than one of the following: **BUAN 6320** or **MIS 6326** or **ACCT 6320** or **ACCT 6321** or **MIS 6320** or **OPRE 6393**. (3-0) Y

**BUAN 6324 (MIS 6324 and OPRE 6399) Business Analytics With SAS** (3 semester credit hours) This course covers theories and applications of business analytics. The focus is on extracting business intelligence from firms' business data for various applications, including (but not limited to) customer segmentation, customer relationship management (CRM), personalization, online recommendation systems, web mining, and product assortment. The emphasis is placed on the 'know-how' -- knowing how to extract and apply business analytics to improve business decision-making. Students will also acquire hands-on experience with business analytics software in the form of SAS Enterprise Miner. Credit cannot be received for more
than one of the following: BUAN 6324 or BUAN 6356 or MIS 6324 or OPRE 6399. Prerequisite or Corequisite: OPRE 6301 or OPRE 6359 or BUAN 6359. (3-0) Y

BUAN 6335 (SYSM 6335) Organizing for Business Analytics Platforms (3 semester credit hours) The course develops conceptual understanding of platforms for business analytics and key business drivers that lead to business initiatives. The course examines how decision-makers in key functional areas of an enterprise rely on business analytics, how teams identify and develop analytical techniques to solve business problems, and how analytics platforms are adopted successfully. The course also emphasizes the development of business cases for strategic analytics initiatives and discusses best practices for descriptive, predictive, and prescriptive analytics. (3-0) T

BUAN 6337 (MKT 6337) Predictive Analytics Using SAS (3 semester credit hours) This course is designed to provide students with in-depth knowledge of the analytical techniques frequently used in marketing analytics. Students analyze data from real world datasets to make useful marketing decisions. These econometric methods are commonly employed in online marketing, the retail sector, and financial services. Students will acquire knowledge about the methods and software that are used to understand issues such as who the profitable segments/customers are, how to acquire them, and how to retain them. The tools can also be used to manage brand prices and promotions using grocery scanner data. Prerequisite: OPRE 6301 or BUAN 6359 or OPRE 6359. (3-0) Y

BUAN 6340 Programming for Data Science (3 semester credit hours) This course covers many aspects of programming for data science and analytics, including syntax, handling data, data visualization, and implementation of statistical analysis models. The course will be taught using Python language and may use a different programming language as applicable. Prerequisite: BUAN 6356 or MIS 6323 or MIS 6334 or MIS 6356 or MIS 6382. (3-0) Y

BUAN 6341 (MIS 6341 and OPRE 6343) Applied Machine Learning (3 semester credit hours) This course covers machine learning models for business data including text mining, natural language processing, non-linear regression models, resampling methods and advanced neural networks and artificial intelligence-based models for data-driven analytics. The course will be taught using either R or Python language. Prerequisites: (BUAN 6356 or BUAN 6324 or MIS 6324 or OPRE 6399) and (OPRE 6359 or BUAN 6359). (3-0) Y

BUAN 6342 Applied Natural Language Processing (3 semester credit hours) This is an advanced course focusing on natural language processing and the utility of textual data to gain meaningful quantitative and actionable insights about the language (mainly English) using rule-based and statistical methods and to extract the information for real-world applications. Our goal will be to create machine-learning programs that analyze and interpret human language using classical text, social media and business text/unstructured data. Prerequisite: BUAN 6341. (3-0) Y

BUAN 6344 (MIS 6344) Web Analytics (3 semester credit hours) The course examines the technologies, tools, and techniques to maximize return from web sites. The course includes topics related to web site design issues, web data collection tools and techniques, measurement and analysis of web traffic, visitor tracking, search engine optimization, visitor acquisition, conversion and retention, key performance indicators for web sites, and measurement of online marketing campaigns. The use of web analytics tools such as Google Analytics will be an integral part of the course. (3-0) Y

BUAN 6345 (MIS 6345) SAP Analytics (3 semester credit hours) This course provides students with in-depth knowledge of In-memory Business Intelligence tools and In-memory databases using SAP. The course features the SAP Analytics portfolio of solutions that provides a comprehensive set of modern business intelligence, augmented analytics (including predictive analytics), and enterprise planning capabilities that
work together to analyze, predict, plan, and report on data wherever it resides. Students learn about different options available to speed up the queries and why In-memory tools are important. The course covers both the semantic layer modeling and front-end visualization aspects of the In-memory BI tool used. The course also covers the DML, DDL, and modeling techniques used for the In-memory database used. Students learn such concepts using hands-on exercises and practical assignments. The course requires a solid understanding of ER and dimensional modeling. (3-0) Y

**BUAN 6346 (MIS 6346)** Big Data (3 semester credit hours) This course covers topics including (1) understanding of big data concepts, (2) manipulation of big data with popular tools, and (3) distributed analytics programming. It is a project-oriented course; thus, students will be required to establish a big data environment, perform various analytics, and report findings in their projects. Though concepts and theoretical aspects are addressed, more emphasis will be on actual operations of a big data system. Students will not only manipulate the basic big data software/system, but also use various dedicated big-data tools and perform distributed analytics programming with popular computer languages. Prerequisite: **BUAN 6320** or **MIS 6320** or **MIS 6326**. (3-0) Y

**BUAN 6347** Advanced Big Data Analytics (3 semester credit hours) The course covers Spark using Scala in a Hadoop environment. The topics include Scala syntax, Spark streaming, GraphX, MLLib, and other features of Spark. This advanced course requires students to have prior skills and working knowledge of big data environment and Python functional programming. Prerequisite: **BUAN 6346**. (3-0) Y

**BUAN 6356 (MIS 6356) and OPRE 6305** Business Analytics With R (3 semester credit hours) This course covers theories and applications of business analytics. The focus is on extracting business intelligence from firms' business data for various applications, including (but not limited to) customer segmentation, customer relationship management (CRM), personalization, online recommendation systems, web mining, and product assortment. The emphasis is placed on the 'know-how' -- knowing how to extract and apply business analytics to improve business decision-making. Students will also acquire hands-on experience with business analytics software in the form of R. Credit cannot be received for both courses, **BUAN 6324** and **BUAN 6356**. Prerequisite or Corequisite: **BUAN 6359** or **OPRE 6359**. (3-0) Y

**BUAN 6357 (MIS 6357)** Advanced Business Analytics with R (3 semester credit hours) This course is based on the open-source R software. Topics include data manipulation, imputation, variable selection, as well as advanced analytic methods. Students will also learn various advanced business intelligence topics including business data analytics, modeling, customer analytics, web intelligence analytics, business performance analytics, and decision-making analytics. Tools to be used include R. Credit cannot be received for both courses, **MIS 6334** or **OPRE 6334** and **BUAN 6357** or **MIS 6357**. Prerequisites: **BUAN 6356** or **MIS 6356** or **OPRE 6305** and **OPRE 6359** or **BUAN 6359**. (3-0) Y

**BUAN 6358 (MIS 6347)** AWS Cloud Analytics (3 semester credit hours) This course aims to help students learn how to use cloud services to build an enterprise platform for data analytics and machine learning. The course will help students develop skills with AWS services that are critical for conducting an analysis of big data problems. Through a series of hands-on labs, students will learn how to use AWS services and build a data pipeline to source data from other systems as well as streaming data, ingest, store, process, and visualize data. Additionally, students will be able to select and apply machine learning services to resolve business problems. They will also be able to label, build, train, and deploy a custom machine learning model through a guided, hands-on approach. Finally, the course will help students prepare for AWS certifications in Data Analytics and Machine Learning. Corequisite or Prerequisite: **MIS 6363**. (3-0) Y

**BUAN 6359 (OPRE 6359)** Advanced Statistics for Data Science (3 semester credit hours) This course uses
statistical methods to analyze data from observational studies and experimental designs to communicate results to a business audience. The course mandates prior knowledge of fundamental statistical concepts such as measures of central location, standard deviations, histograms, the normal and t-distributions (knowledge of calculus is not required). The course also emphasizes interpretation and inference, as well as computation using a statistical software package such as R or STATA. Credit cannot be received for both: OPRE 6301 and (OPRE 6359 or BUAN 6359). (3-0) S

**BUAN 6382** Applied Deep Learning (3 semester credit hours) This is a basic course focusing on the fundamentals of Deep Learning applied to business data. Students will learn to apply various neural network architectures like Feedforward Artificial Neural Networks, Convolutional Neural Networks, Recurrent Neural Networks, Transfer learning for computer vision, and Generative Adversarial Networks in a variety of business scenarios. Prerequisite: BUAN 6341 or MIS 6341 or OPRE 6343. (3-0) Y

**BUAN 6385** (MIS 6385) Robotic Process Automation (3 semester credit hours) This course is intended to provide students with practical literacy on robotic process automation through real-world, relevant data preparation use cases. It will help identify potential uses and the benefits and considerations for robotic process automation. The students will learn the elements of a business process and the basics of developing a BPM application, implementing triggers to automate processes, defining and measuring KPIs. Students will use elements of artificial intelligence (AI) and machine learning capabilities to handle high-volume, repeatable tasks that previously required humans to perform. These tasks can include queries, calculations, and maintenance of records and transactions. Students will be able to use apply analytics to the generated data for a systematic computational analysis of data for the discovery, interpretation, and communication of meaningful patterns in data that will be used towards effective decision making. (3-0) S

**BUAN 6386** (MIS 6371) SAP Cloud Analytics (3 semester credit hours) The course allows students to learn about the capabilities of SAP Analytics Cloud that combines business intelligence, planning, predictive, and augmented analytics capabilities into one cloud environment to support business processes. Students also learn about SAP AI technologies and an in-memory database, which are part of the SAP Analytics Cloud. Students will also learn about Augmented Analytics which helps users ask questions in a conversational manner and get instant results explained in natural language, detect drivers of a KPI and take the best action using automated machine learning that discovers unknown relationships in data and predict outcomes, generate forecasts and automate predictive planning. Students also learn about the modeling environment to create planning models and import data, as well as the standard planning features available in the story. Advanced planning capabilities like value-driver trees, data actions, advanced formulas, and allocations, combined with Smart Predict, an environment to create and train predictive models. (3-0) S

**BUAN 6390** Analytics Practicum (3 semester credit hours) Student gains experience and improves analytics skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. Student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation or a written paper reflecting on the work experience. Prerequisites: (MAS 6102 or MBA major) and department consent required. (3-0) S

**BUAN 6392** (MIS 6392) Causal Analytics and A/B Testing (3 semester credit hours) This course focuses on the distinction between correlation and causation in data. This distinction is critical for managers to understand the effect of proposed managerial interventions. For example, an advertiser may want to know whether referral marketing interventions will be effective for its customers, and, if so, what types of messages may be used to implement a referral marketing program with a high degree of success. Similarly,
a music service like Spotify may want to know what kinds of promotions will help increase the number of subscribers in the most effective way. The course will focus on the design and analysis of A/B tests to tease out the difference between correlation and causation. It will also focus on statistical techniques that can be used with observational data to achieve reliable causal inferences in the absence of experimental data. The course employs a combination of lectures, cases, and in-class exercises to introduce the course material. It takes a hands-on approach, exposing students to simulated and real-world datasets, and equipping them with tools they can leverage immediately on the job. Prerequisite: **OPRE 6301 or OPRE 6359 or BUAN 6359.** (3-0) Y

**BUAN 6398 (OPRE 6398)** Prescriptive Analytics (3 semester credit hours) Introduction to decision analysis and optimization techniques. Topics include linear programming, decision analysis, integer programming, and other optimization models. Applications of these models to business problems will be emphasized. Prerequisite: **OPRE 6301 or OPRE 6359 or BUAN 6359.** (3-0) S

**BUAN 6V98** Business Analytics Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). Prerequisites: **MAS 6102 or MBA major** and department consent required. (1-3-0) S

**BUAN 6V99** Special Topics in Business Analytics (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

**Energy Management**

**ENGY 6009** Energy Management Internship (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: **MAS 6102 or MBA major** and department consent required. (0-0) S

**ENGY 6330** Energy Law and Contracts (3 semester credit hours) This course provides an introductory overview of U.S. and international energy laws that govern oil, natural gas, coal, nuclear, renewable energy, and electric generation. The course covers the history of energy regulation and explores current laws governing the use, production, and transmission of energy sources, as well as environmental regulations. (3-0) S

**ENGY 6331** Capstone Project in Energy (3 semester credit hours) Capstone projects are experiential learnings sponsored by local industries and provide the students an opportunity to apply the skills and knowledge gained in core courses to solve real world challenging problems or simulated projects in the area of energy management. Students work in a team environment, interact with industry leaders and gain some industry specific knowledge. Prerequisites: **FIN 6335 and FIN 6336 and MECO 6318 and OPRE 6389 and (MAS 6102 or MBA major).** (3-0) Y
**ENGY 6332** Energy and Sustainability (3 semester credit hours) The energy industry and energy consumers are undergoing a transition with more consumers and businesses seeking ways to reduce their carbon footprint and establish a "green" brand. In other words, they are seeking more sustainable ways of meeting their energy needs. The course discusses major shifts in the global energy industry and the impact shifts in public perception are having on international and domestic energy policies, the environment, and corporate and government sustainability initiatives. Students will be asked to evaluate existing challenges to increased sustainability initiatives worldwide and to identify opportunities for increased sustainability in relation to economic growth. The course addresses so-called sustained development, that is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. (3-0) Y

**ENGY 6335** Power Industry: Finance, Economics and Markets (3 semester credit hours) Providing reasonably priced electric power to residences and industries is a priority for every nation. This course introduces the power industry, beginning from the power plants and moving along the entire value chain all the way to distribution. The course covers public/private utilities, costs, revenues, guarantees on returns as well as government granted service area monopolies, franchised utilities, and independent power producers. Financing of power projects via equity and/or debt and tax subsidies are discussed. Electric grid and power marketing schemes are studied, both domestically and internationally. Federal and local regulations and their effects on rate-making are presented. (3-0) Y

**ENGY 6336** (FIN 6336) Energy Joint Interest Accounting (3 semester credit hours) This course explores and discusses the special accounting rules for the energy industries and their special tax treatment. Prerequisite: ACCT 6301 or ACCT 6305. (3-0) R

**ENGY 6362** (IMS 6362 and OPRE 6362 and SYSM 6311) Project Management in Engineering and Operations (3 semester credit hours) Project management is the discipline of planning, organizing and managing resources to bring about the successful completion of specific project goals and objectives. The course will cover various aspects of managing projects in engineering and operations environments including the critical path methods for planning and controlling projects, time and cost tradeoffs, resource utilization, organizational design, conflict resolution and stochastic considerations. (3-0) S

**ENGY 6V98** Energy Management Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit (3 semester credit hours maximum). Prerequisites: (MAS 6102 or MBA major) and department consent required. ((1-3)-0) S

**ENGY 6V99** Special Topics in Energy Management (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ((1-6)-0) S

**Innovation and Entrepreneurship**

**ENTP 6102** Professional Development (1 semester credit hour) This course is designed to enhance the student's experience such as building networking skills, verbal and written communication skills, business etiquette, and learning how to increase their human capital. Students will learn how to build a personal
career portfolio (an approved resume, a LinkedIn profile, etc.), how to market themselves, how to prepare for internship and job placement interviews, and how to utilize professional networking. The goal is to make students more marketable and valuable professionals to the global economy. Pass/Fail only. Credit cannot be received for more than one of the following: BUAN 6102, ENGY 6102, ENTP 6102, FIN 6102, HMG 6102, IMS 6102, MAS 6102, MIS 6102, MKT 6102, OPRE 6102, or SYSM 6102. (1-0) R

**ENTP 6304 (IMS 6304)** International Business Management (3 semester credit hours) The course analyzes global business environments, discusses the international business operating in various markets of the world, and examines various theories that explain how international trade and direct investment practice evolve. The course utilizes various cases to help students gain knowledge and learn the necessary skills to evaluate and manage the challenges and opportunities businesses face in diverse global markets. Credit cannot be received for more than one of the following: ENTP 6304 or IMS 6204 or IMS 6304. (3-0) S

**ENTP 6310 (BPS 6310)** Strategic Management (3 semester credit hours) Strategic management consists of the analysis, decisions, and actions that organizations take to create sustainable competitive advantages. The course examines a variety of issues including environmental, competitor, and stakeholder analysis; strategy formulation; and strategy implementation and control. The central role of ethics and corporate governance as well as global issues will be addressed. Credit cannot be received for both BPS 6310 and ENTP 6310. Prerequisites: (ACCT 6301 and ACCT 6202) or (ACCT 6305 and FIN 6301 and MKT 6301 and OB 6301). (3-0) S

**ENTP 6315 (FIN 6315)** Entrepreneurial Finance (3 semester credit hours) The objective of this course is to build skills and knowledge in the financing of entrepreneurial ventures. Entrepreneurial Finance concerns not only the process of financing and investing in start-up companies, but also the changes to the initial financing mix that may be required as start-up companies mature and grow. Topics include: valuation, capital structure, forecasting, the markets for venture capital and private equity, the decision to go public or remain private, alternative financing arrangements, and the differential marketability and liquidity of the securities used to finance non-public firms. Credit cannot be received for both courses, ENTP 6315 and FIN 6315. Prerequisite: FIN 6301. (3-0) Y

**ENTP 6316 (FIN 6316)** Private Equity Finance (3 semester credit hours) This course will cover the investment of capital in the equity of private companies to fund growth or in public companies to take them private. This course includes the study of a broad spectrum of private equity investments, investing in established private firms, buyouts, financial restructuring of distressed firms, and private equity financing by public firms. Prerequisite: FIN 6301. (3-0) Y

**ENTP 6317** Entrepreneurial Finance for Nonbusiness (3 semester credit hours) The objective of this course is to build skills and knowledge in the financing of entrepreneurial ventures for students enrolled in engineering and other technical disciplines. Topics include how engineering and technical decisions impact cash flows, an introduction to financial statements and cash flow management, valuation basics, forecasting techniques, sources of capital (crowdfunding, angel investment, venture capital investment, etc.), term sheet terms, exit planning, stock option vesting, and licensing and negotiation. This course cannot be used by students enrolled in JSOM to satisfy business degree requirements. Prerequisite: Non JSOM students. (3-0) Y

**ENTP 6321 (FIN 6321 and REAL 6321)** Introduction to Real Estate (3 semester credit hours) Overview of various aspects of real estate markets, including marketing, finance, taxation, development, law, appraisal, investment, valuation and real estate participants. (3-0) S

**ENTP 6343 (OB 6343)** Strategy and Management in the Craft Brewing Industry (3 semester credit hours) This
course focuses on the actual business of craft brewing and examines the competition, strategy, operations, production, financing, sales and marketing, supply, distribution, and regulation. The course provides a comprehensive perspective on the dynamics of an emerging industry, with detailed information on managing the business aspects of craft brewing, with insight into potential jobs and careers in this industry, and challenges of starting and operating a small business. (3-0) S

**ENTP 6352** International Business Plan (3 semester credit hours) Executive Education Course. This course is a capstone that requires the development of a comprehensive business plan for market entry into a foreign country or region. The construct builds upon the core business and international coursework including the successful completion of key courses in accounting, finance, marketing and strategy, as well as, the international entrepreneurship and innovation. The course consists of lectures, research, and faculty coaching and guidance. This course is offered in an online format only. Prerequisites: IMS 6354 and OPRE 6302 and instructor consent required. Prerequisite or Corequisite: OPRE 6250. (3-0) Y

**ENTP 6355 (FIN 6352)** Financial Modeling For Valuation (3 semester credit hours) This course focuses on the financial modeling of companies for valuation, merger and acquisition analysis, and leverage buyout analysis using spreadsheets. Credit cannot be received for more than one of the following: FIN 6352 or ENTP 6355. Prerequisite: FIN 6301. (3-0) S

**ENTP 6360** Startup Launch I (3 semester credit hours) This course is designed to refine and validate a specific business concept based upon a student's new venture idea (either for a technical or nontechnical business). The course utilizes a structured customer discovery/validation methodology that requires early customer engagement and the development and validation of a comprehensive business model. Key assumptions will be validated utilizing primary and secondary market research, interviews with prospective customers and other industry participants, and field testing of Minimum Viable Products. Students or student teams will be selected and enrolled on the basis of a business concept proposal approved by the faculty. Multiple projects will proceed through the course as a cohort, guided by faculty and mentored by experienced entrepreneurs. Cubicle space in the Venture Development Center may be applied for. Instructor consent required. (3-0) R

**ENTP 6361** Startup Launch II (3 semester credit hours) Faculty mentored development of a business concept initiated in ENTP 6360. Instructor consent required. (3-0) R

**ENTP 6362** Startup Launch III-IV (3 semester credit hours) Faculty mentored development of a business concept initiated in ENTP 6360. May be repeated for credit as topics vary (6 semester credit hours maximum for students in the Startup Launch track). Prerequisites: ENTP 6361 and instructor consent required. (3-0) R

**ENTP 6365** Technology Commercialization and Concept Validation (3 semester credit hours) The course covers background on intellectual property, feasibility analysis, market assessment techniques, and how to evaluate the commercial potential of a range of technologies. Students work in teams to apply the concepts learned to assess the commercial potential of different patents. The analysis includes market research on potential applications for the technology, validation of the value proposition and business model, and recommendations on the best approach for bringing the technology to market, such as licensing or creating a new business. Prerequisite: ENTP 6370 or instructor consent required. (3-0) R

**ENTP 6370** Innovation and Entrepreneurship (3 semester credit hours) This course provides an introduction to entrepreneurship, with an emphasis on identifying, evaluating and developing new venture opportunities. Topics include opportunity identification and evaluation, startup strategies, business valuation, business plan development, attracting stakeholders, financing the venture, managing the growing business and exit strategies. Case studies and guest lectures by entrepreneurs and venture capital partners
provide a real-world perspective. The major deliverable of this course is an early stage feasibility analysis of a technical or nontechnical venture of the student's choosing. (3-0) S

**ENTP 6375 (MIS 6375 and OPRE 6394 and SYSM 6332) Technology and New Product Development (3 semester credit hours)** This course addresses the strategic and organizational issues confronted by firms in technology-intensive environments. The course reflects six broad themes: (1) managing firms in technology-intensive industries; (2) forecasting key industry and technology trends; (3) linking technology and business strategies; (4) using technology as a source of competitive advantage; (5) organizing firms to achieve these goals; and (6) implementing new technologies in organizations. Students analyze actual situations in organizations and summarize their findings and recommendations in an in-depth term paper. The course also introduces concepts related to agile engineering. Case studies and class participation are stressed. (3-0) Y

**ENTP 6378 Managing the Emerging Enterprise (3 semester credit hours)** The course focuses on the challenges of growing a small company from early startup to a professionally managed business, as the entrepreneur struggles to maintain the entrepreneurial spirit of the firm while introducing the professional management disciplines essential to sustained and profitable growth. Topics include shaping and communicating the entrepreneur's vision, developing a viable business model, positioning products and services in a broader market, implementing business strategies, building an organization and infrastructure, molding the culture, developing and managing critical relationships with banks, suppliers and customers, and managing growth with limited resources. The course makes extensive use of case studies and visiting lectures by entrepreneurs. Prerequisite or Corequisite: **ENTP 6370**. (3-0) Y

**ENTP 6380 (MKT 6380) Market Entry Strategies (3 semester credit hours)** This course addresses the marketing challenges facing the entrepreneurial firm, with specific emphasis on the choice and implementation of an initial market entry strategy. This choice typically involves multiple decisions, each based on critical assumptions about customers, markets and competitors. Early validation of these key assumptions is an essential element of the strategic decision process. Topics include understanding the context and the customer, developing and validating the business concept, defining the product/service offering and customer value proposition, positioning, creating awareness, and developing and implementing the market entry strategy. Credit cannot be received for both courses, **ENTP 6380** and **MKT 6380**. Prerequisite or Corequisite: **ENTP 6370** or **MKT 6301**. (3-0) Y

**ENTP 6382 (MKT 6382) Professional Selling I (3 semester credit hours)** Examines the theory and practical application of the principles and art of professional selling. The course places special emphasis on mapping the sales process for new companies and new products. The course includes case studies and learning by doing live case instruction. This course also includes advanced concepts in sales such as major account acquisition, government markets, global markets, request for information, request for proposal, product line sales, adaptive product and service solutions, team selling, long sales cycles, prospecting and networking strategies, implementation and analysis of prospecting strategies, and sales management strategies for the early stage of the product lifecycle. (3-0) Y

**ENTP 6388 (SYSM 6316) Managing Innovation within the Corporation (3 semester credit hours)** Innovators and entrepreneurs within established corporations combine innovation, creativity and leadership to develop and launch new products, new product lines and new business units that grow revenues and profits from within. The course seeks to equip students with the skills and perspectives required to initiate new ventures and create viable businesses in dynamic and uncertain environments in the face of organizational inertia and other sources of resistance to innovation. Course topics include the elements of strategic analysis and positioning for competitive advantage in dynamic markets, and the structuring,
utilization and mobilization of the internal resources of existing firms in the pursuit of growth and new market opportunities. (3-0) Y

**ENTP 6390 Business Model Innovation** (3 semester credit hours) Business model innovation is a logical and internally consistent approach to the design and operations of a new venture, capturing the essence of how the business will be focused and providing a concise representation of how an interrelated set of decision variables will be addressed to create sustainable competitive advantage. This course will explore the range and diversity of existing business models and the analytical tools essential to their understanding, define a logical and internally consistent approach to the choice or development of an appropriate business model for a new enterprise, and demonstrate the application of these tools and techniques through case studies and exercises. Prerequisite or Corequisite: **ENTP 6370**. (3-0) S

**ENTP 6392 Entrepreneurship in the Social Sector** (3 semester credit hours) This course explores domestic and international social entrepreneurship, including the role and importance of the non-profit sector and the unique place it occupies in twenty-first century life. The course develops theoretical and conceptual frameworks to enable students to understand how non-profit ventures operate. This project based course provides opportunities for students to get hands-on experience. Student projects involve helping local non-profit entities with mission definition, improving service delivery or business practices, fund-raising, and/or governance. (3-0) Y

**ENTP 6393 Strategic Product Management** (3 semester credit hours) Executive Education Course. This course uses a combination of instruction-based, team-based case analysis and Socratic Method of case discussions. The intent is to analyze and understand technology and new product development and the associated strategic and organizational issues facing modern organizations in today's dynamic global business environment. The course also addresses issues related to product and technology lifecycles, new technology forecasting, linkages between technology development and business strategies as well as issues important to product line management (PLM) and business unit (BU) management functions. (3-0) Y

**ENTP 6394 Innovation, Entrepreneurship and Intrapreneurship** (3 semester credit hours) Executive Education Course. This course covers entrepreneurship and intrapreneurship, with an emphasis on identifying, evaluating and developing new venture opportunities both independently and within a corporate setting. Course topics include opportunity identification and evaluation, startup strategies, business plan development, financing the venture, positioning a new product line for competitive advantage, and the utilization and mobilization of the internal resources of existing firms in the pursuit of growth and new market opportunities. (3-0) Y

**ENTP 6398 (SYSM 6315) The Entrepreneurial Experience** (3 semester credit hours) This course is designed to provide student teams with practical experience in the investigation, evaluation and recommendation of technology and/or market entry strategies for a significant new business opportunity. Projects will be defined by the faculty and will generally focus on emerging market opportunities defined by new technologies of interest to a sponsoring corporate partner. Teams will be comprised of management and engineering graduate students, mentored by faculty and representatives of the partnering company. Evaluation will be based on papers, presentations and other deliverables defined on a case-by-case basis. (3-0) R

**ENTP 6V97 Innovation and Entrepreneurship Internship** (1-3 semester credit hours) Student will gain experience and improve skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or
observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). JSOM Internship Coordinator consent required. ([1-3]-0) S

**ENTP 6V99** Special Topics in Entrepreneurship (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) R

**ENTP 7300** Foundations of Entrepreneurship (3 semester credit hours) The seminar will uncover theoretical and empirical views of entrepreneurship. Students concentrate on the issues in the field and assess them using different methodologies. Students also examine future research questions and draft a research paper aimed at submission to a top journal. Entrepreneurship is inherently interdisciplinary and students should expect to see influences from the fields of sociology, strategy, economics, and organizational behavior. Prerequisites: International Management Studies PhD majors only and instructor consent required. (3-0) T

**ENTP 7301** Technology, Innovation and Entrepreneurship (3 semester credit hours) This seminar introduces and examines contemporary research topics in technology, innovation, and entrepreneurship. Students will be exposed to a broad survey of theoretical foundation from disciplinary fields such as economics, sociology, and contemporary works to conduct research in technology, innovation, and entrepreneurship. Prerequisites: International Management Studies PhD majors only and instructor consent required. (3-0) T

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**Finance**

**FIN 6252** Creating Value through Mergers, Acquisitions and Private Equity (2 semester credit hours) Executive Education Course. Explores strategic financial management of the firm. Considers creation of value using mergers and acquisitions. Prerequisites: **FIN 6301** and instructor consent required. (2-0) Y

**FIN 6253** Valuation, Investment and Financing (2 semester credit hours) Executive Education Course. This course provides students with the opportunity to master corporate valuation concepts, gain required skills in corporate investment analyses and understand relevant issues related to corporate financing. The course is designed as a continuation of financial management and is built heavily around case studies. Prerequisite: **FIN 6301**. (2-0) Y

**FIN 6300** Personal Finance (3 semester credit hours) Examination of personal financial management issues and planning techniques. Provides a consumer-side view of credit management, budgeting, personal financial statement analysis, insurance planning, retirement planning, investment planning, asset accumulation and distribution planning, tax planning, estate planning and employee benefits planning. May not be used to fulfill requirements for Master of Science in Finance degree. (3-0) Y

**FIN 6301 (SYSM 6312)** Financial Management (3 semester credit hours) Develops the basic concepts of finance with particular attention to their application to the financial management of companies. Prerequisites or Corequisites: (**ACCT 6301** or **ACCT 6305** or **HMGT 6311**) and (**BUAN 6359** or **OPRE 6301**). (3-0) S

**FIN 6307** Mathematical Methods for Finance (3 semester credit hours) This course develops students' ability to use mathematical and quantitative methods in analyzing financial markets and financial decision-making. Prerequisites or Corequisites: **FIN 6301** and (**OPRE 6303** or equivalent). (3-0) S

**FIN 6308** Regulation of Business and Financial Markets (3 semester credit hours) The objective of this course is to develop a student's understanding of the laws and regulations which govern businesses and

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financial markets. In addition, this course considers the ethical issues that financial analysts and financial planners face. Prerequisite or Corequisite: **FIN 6301**. (3-0) Y

**FIN 6310** Investment Theory and Practice (3 semester credit hours) The course is intended to provide an understanding of the role of modern financial theory in portfolio management and to present a framework for addressing current issues in the management of financial assets. Topics include trading, valuation, active portfolio management, asset allocation, global diversification, performance measurement, financial derivatives and fixed income securities. Prerequisite: **FIN 6301**. (3-0) S

**FIN 6314** Fixed Income Securities (3 semester credit hours) Examines fixed income securities, their derivatives, and the management of fixed income portfolios. Prerequisite: **FIN 6307**. (3-0) Y

**FIN 6315 (ENTP 6315)** Entrepreneurial Finance (3 semester credit hours) The objective of this course is to build skills and knowledge in the financing of entrepreneurial ventures. Entrepreneurial Finance concerns not only the process of financing and investing in start-up companies, but also the changes to the initial financing mix that may be required as start-up companies mature and grow. Topics include: valuation, capital structure, forecasting, the markets for venture capital and private equity, the decision to go public or remain private, alternative financing arrangements, and the differential marketability and liquidity of the securities used to finance non-public firms. Credit cannot be received for both courses, **ENTP 6315** and **FIN 6315**. Prerequisite: **FIN 6301**. (3-0) Y

**FIN 6316 (ENTP 6316)** Private Equity Finance (3 semester credit hours) This course will cover the investment of capital in the equity of private companies to fund growth or in public companies to take them private. This course includes the study of a broad spectrum of private equity investments, investing in established private firms, buyouts, financial restructuring of distressed firms, and private equity financing by public firms. Prerequisite: **FIN 6301**. (3-0) Y

**FIN 6318** Analytics of Finance (3 semester credit hours) This course focuses on statistical and econometric methods used to analyze financial data in developing investment strategies, risk models, and valuation. Both theoretical development and empirical application of the methodologies will be explored. Credit cannot be received for more than one of the following: **BUAN 6312** or **FIN 6318** or **MECO 6312**. Prerequisite: **FIN 6307**. (3-0) S

**FIN 6321 (ENTP 6321 and REAL 6321)** Introduction to Real Estate (3 semester credit hours) Overview of various aspects of real estate markets, including marketing, finance, taxation, development, law, appraisal, investment, valuation and real estate participants. (3-0) S

**FIN 6322 (REAL 6322)** Real Estate Finance and Investment (3 semester credit hours) This course covers commercial real estate investment analysis and instruments used in its finance. Topics include: real estate valuation, loan structures, syndication, securitization, and developments in capital markets affecting real estate developments. Prerequisite: **FIN 6301**. (3-0) S

**FIN 6323 (REAL 6323)** Real Estate Market Analysis and Investment (3 semester credit hours) This course provides insight into market analysis and research including local and economic base analysis with case studies on specific commercial investment property types. This course also applies modern technologies to assist in performing these analyses. Prerequisite or Corequisite: **FIN 6321** or **REAL 6321** or **FIN 6322** or **REAL 6322**. (3-0) Y

**FIN 6325** Macroeconomics and Financial Markets (3 semester credit hours) This course examines the relationship between macroeconomics and financial markets, and how they influence one another. Prerequisite or Corequisite: **FIN 6301** or **MECO 6303**. (3-0) Y
FIN 6326 (REAL 6326) Real Estate Law and Contracts (3 semester credit hours) Study of the legal principles governing real estate transactions, with an emphasis on promulgated contracts. Topics include contract law, tax law, leases, estates in land, types of ownership, deeds, mortgages, title insurance, agency and homestead. Prerequisite or Corequisite: FIN 6321 or REAL 6321 or FIN 6322 or REAL 6322. (3-0) Y

FIN 6330 Behavioral Finance (3 semester credit hours) This course describes how individuals and firms make financial decisions, how those decisions might deviate from those predicted by traditional financial or economic theory and the consequences of these deviations for financial markets. The course examines how the insights of behavioral finance complement the traditional finance paradigm. Students will gain an understanding of how individuals actually make financial decisions (descriptive) and guidance on how to improve financial decision-making (prescriptive) in themselves and others. Prerequisite: FIN 6301. (3-0) R

FIN 6335 Energy Finance (3 semester credit hours) This course focuses on the issues associated with investing in and financing energy projects as well as managing energy risks. Case studies are drawn from the oil, natural gas, electricity and renewables sectors. Prerequisite or Corequisite: FIN 6301. (3-0) R

FIN 6336 (ENGY 6336) Energy Joint Interest Accounting (3 semester credit hours) This course explores and discusses the special accounting rules for the energy industries and their special tax treatment. Prerequisite: ACCT 6301 or ACCT 6305. (3-0) R

FIN 6350 Advanced Corporate Finance (3 semester credit hours) Advanced analysis of topics in financial management including capital structure, dividend policy, incentives, and risk management. Prerequisite: FIN 6301. (3-0) S

FIN 6352 (ENTP 6355) Financial Modeling For Valuation (3 semester credit hours) This course focuses on the financial modeling of companies for valuation, merger and acquisition analysis, and leverage buyout analysis using spreadsheets. Credit cannot be received for more than one of the following: FIN 6352 or ENTP 6355. Prerequisite: FIN 6301. (3-0) S

FIN 6353 Financial Modeling for Investment Analysis (3 semester credit hours) This course focuses on financial modeling of investments (stock, bonds, options, etc.) and portfolios using computer software including spreadsheets. Prerequisite: FIN 6301. (3-0) Y

FIN 6355 Corporate Finance and Policy (3 semester credit hours) This course analyzes financial situations encountered by managers that require the application of financial management skills. Prerequisite or Corequisite: FIN 6350 or FIN 6352. (3-0) R

FIN 6356 Mergers and Acquisitions (3 semester credit hours) Examines mergers and acquisitions paying particular attention to how they are structured, valued, and financed. Prerequisite or Corequisite: FIN 6352. (3-0) R

FIN 6357 Digital Transformation and Restructuring (3 semester credit hours) This course examines the issues and strategies associated with restructuring a corporation to turn it around when faced with a rapidly changing business environment. Prerequisite: FIN 6301. (3-0) R

FIN 6360 Derivatives Markets (3 semester credit hours) Examines the valuation of derivative securities such as options and futures contracts, as well as the use of these instruments in managing business and financial risks. The topics to be covered include pricing of futures contracts, swaps, and options, the use of derivative instruments in hedging, portfolio insurance, exotic options, and the valuation of options on debt instruments. Prerequisite: FIN 6307. (3-0) S

FIN 6362 Quantitative Financial Management (3 semester credit hours) This course develops techniques for
evaluating and managing the risks of various types of business. Prerequisite: **FIN 6307.** (3-0) R

**FIN 6364** Portfolio Analysis and Management (3 semester credit hours) This course builds on the basic ideas underlying portfolio optimization covered in **FIN 6301** and **FIN 6310.** It emphasizes the application of modern portfolio theory using quantitative methods. At the completion of this course, students will be able to analyze market data using the latest investment management tools, to formulate theoretical models, and to implement appropriate investment strategies. Prerequisite: **FIN 6310.** (3-0) T

**FIN 6366** International Financial Management (3 semester credit hours) Study of world financial markets and institutions, foreign exchange exposure and management, foreign direct investment, and a variety of issues involved in the financial management of multinational firms. Credit cannot be received for both courses, **FIN 6366** and **IMS 6320.** Prerequisite: **FIN 6301.** (3-0) R

**FIN 6368** Financial Information and Analysis (3 semester credit hours) This course examines the different sources of financial data, their management and their use in investment analysis, trading and in solving financial problems. Prerequisite: **FIN 6307.** (3-0) T

**FIN 6370** Advanced Theory of Finance and Its Applications (3 semester credit hours) A survey of financial theories and their application to various financial decisions and issues. Topics will include the theory of portfolio choices, asset pricing, derivative pricing, asymmetric information theories, and firm financing issues. Department consent required. (3-0) Y

**FIN 6380** Global Fund Management (3 semester credit hours) This course involves the practice of managing a fund of global investments. May be repeated for credit (6 semester credit hours maximum). Prerequisite: **FIN 6310.** (3-0) Y

**FIN 6381** Introductory Mathematical Finance (3 semester credit hours) Introduction to the mathematical methods of continuous time finance (Ito calculus, stochastic dynamic optimization, etc.). Prerequisite: **OPRE 7310** or department consent required. (3-0) T

**FIN 6382** Numerical and Statistical Methods in Finance (3 semester credit hours) This course explains the use of numerical and statistical methods in various financial applications. Prerequisite: **FIN 6307.** (3-0) R

**FIN 6392** Financial Technology and Blockchain (3 semester credit hours) This course focuses on recent developments in financial technology and their application to valuation and investing. Prerequisite or Corequisite: **BUAN 6359** or **FIN 6307.** (3-0) R

**FIN 6V98** Finance Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an assignment reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). Prerequisites: **(MAS 6102 or MBA major)** and department consent required. ([1-3]-0) S

**FIN 6V99** Special Topics in Finance (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

**FIN 7330** Topics in Theoretical Asset Pricing (3 semester credit hours) Advanced studies in the theory of asset pricing. Provides a foundation for advanced research in financial theory and empirical tests of asset pricing models. Topics include utility theory, mean-variance portfolio analysis, state preference models, continuous time portfolio selection, and the term structure of interest rates. May be repeated for credit as
topics vary (6 semester credit hours maximum). Prerequisites or Corequisites: MECO 6345 and department consent required. (3-0) T

FIN 7335 Topics in Empirical Asset Pricing (3 semester credit hours) Study of the methods used to empirically test asset pricing theories and/or models. May be repeated for credit as topics vary (6 semester credit hours maximum). Prerequisites or Corequisites: FIN 7340 or department consent required. (3-0) T

FIN 7340 Topics in Theoretical Corporate Finance (3 semester credit hours) Empirical and theoretical analysis of corporate financial decision-making. Topics include the theory of the firm, initial public offerings, ownership and control, managerial incentives, risk management, and financing and investment decisions. May be repeated for credit as topics vary (6 semester credit hours maximum). Prerequisites or Corequisites: MECO 6345 and department consent required. (3-0) T

FIN 7345 Topics in Empirical Corporate Finance (3 semester credit hours) Study of the methods used to empirically test corporate finance theories and/or models. May be repeated for credit as topics vary (6 semester credit hours maximum). Prerequisite or Corequisite: FIN 7340 or department consent required. (3-0) T

Financial Technology and Analytics

FTEC 6002 Financial Analytics Training and Internship (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Department consent required. (0-0) S

FTEC 6301 Financial Accounting Information and Analysis (3 semester credit hours) This course discusses the fundamental concepts of accounting and financial reporting as presented from the perspective of the outside investor, and so focuses on the construction, analysis, and projection of financial information. (3-0) Y

FTEC 6302 Financial Markets and Institutions (3 semester credit hours) This course develops the fundamental concepts of finance by examining financial assets and their markets, their participants and their operation with emphasis on the valuation and management of different financial assets. (3-0) R

FTEC 6303 Asset Pricing and Management (3 semester credit hours) The objective of this course is to examine and evaluate approaches to asset pricing and management. (3-0) R

FTEC 6304 Corporate Finance and Risk Management (3 semester credit hours) This course focuses on corporate finance and corporate risk management. (3-0) Y

FTEC 6305 Mathematics in Finance (3 semester credit hours) The objective of this course is to introduce the essentials of mathematical finance and its applications. (3-0) R

FTEC 6306 Advanced Mathematics in Finance (3 semester credit hours) This course focuses on numerical methods used in finance. Prerequisite: FTEC 6303 or FTEC 6305. (3-0) R

FTEC 6310 Financial Information and Analytics (3 semester credit hours) This course develops the use of
different software tools to collect, manage, and analyze data from different sources in order to solve financial problems. (3-0) Y

**FTEC 6311 (BUAN 6311)** Robotics and Financial Technology (3 semester credit hours) This course focuses on different robotic technologies used in finance. (3-0) Y

**FTEC 6312** Financial Applications of Blockchain Technology (3 semester credit hours) This course focuses on the financial applications of blockchain technologies and smart contracts. (3-0) Y

**FTEC 6313** Cloud Computing and Cyber Security (3 semester credit hours) This course covers core issues in cloud computing and cyber security. (3-0) Y

**FTEC 6319** Mathematics for Financial Analytics (3 semester credit hours) This course develops the basic mathematical concepts used in machine learning for financial applications. (3-0) Y

**FTEC 6320** Statistical Methods for Financial Analytics (3 semester credit hours) This course develops the fundamental statistical concepts and tools used in the analysis of financial data. (3-0) Y

**FTEC 6321** Advanced Statistical Methods for Financial Analytics (3 semester credit hours) This course develops and applies more advanced statistical concepts and tools to the analysis of financial data. Prerequisite: **FTEC 6320**. (3-0) Y

**FTEC 6324** Financial Applications of Natural Language Processing (3 semester credit hours) This course focuses on the use of computer-assisted language analysis in financial applications. Prerequisite: **FTEC 6320**. (3-0) Y

**FTEC 6325** Algorithmic Trading and Robo-Advising (3 semester credit hours) This course focuses on the use of algorithmic trading, with attention to its use in algorithmic portfolio management and robo-advising. Prerequisite: **FTEC 6320**. (3-0) Y

**FTEC 6331** Risk Evaluation and Management (3 semester credit hours) This course develops essential techniques for evaluating and managing the risks of various types of businesses. Prerequisite: **FTEC 6319**. (3-0) R

**FTEC 6334** Financial Applications of Machine Learning (3 semester credit hours) This course examines the use of machine learning techniques in finance. Prerequisite: **FTEC 6319**. (3-0) R

**FTEC 6V98** Financial Technology and Analytics Internship (1-9 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate work on significant projects. At semester end, student prepares an assignment reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (9 semester credit hours maximum). ([1-9]-0) R

**FTEC 6V99** Special Topics in Financial Technology and Analytics (1-9 semester credit hours) May be lecture, readings, or individualized study. May be repeated for credit as topics vary (9 semester credit hours maximum). Instructor consent required. ([1-9]-0) R

**Healthcare Administration**

**HMG 6009** Healthcare Internship (0 semester credit hours) Student gains experience and improves skills
through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: (MAS 6102 or MBA major) and department consent required. (0-0) S

**HMGT 6311** Healthcare Financial and Operations Accounting (3 semester credit hours) This course helps students critically evaluate financial decisions that reduce risk and create economic value. Using hospital and physician group practice data, participants learn how to analyze and interpret healthcare financial statements, evaluate investment decisions that create economic value, financially evaluate a proposed healthcare acquisition, partnership or joint venture, ascertain the worth of a medical practice or healthcare organization, and review internal controls. (3-0) Y

**HMGT 6320** The American Healthcare System (3 semester credit hours) Examines the structure, financing and operation of the US healthcare industry. It analyzes how priorities are established, how services are organized and delivered, factors that influence the cost, quality and availability of healthcare, and opposing positions on the future of healthcare reform. (3-0) T

**HMGT 6321** Strategic Leadership of Healthcare Organizations (3 semester credit hours) Explores how healthcare organizations can create sustainable competitive advantage in a volatile, reimbursement driven industry. Topics include external and internal environmental analysis, strategy formulation, organizational design and control, and the impact of mergers and alliances on industry performance. Healthcare case studies are used to illustrate key concepts. Prerequisite: HMGT 6320 or program director consent required. (3-0) S

**HMGT 6322** Healthcare Cost Management and Control (3 semester credit hours) Examines how healthcare organizations allocate and report costs and use that information for managerial decision-making. Additional topics include how activity based costing can be used to more accurately determine the true cost of medical services and the use of the balanced scorecard to manage the conflicting imperatives of controlling costs and improving care. (3-0) T

**HMGT 6323 (MIS 6317)** Healthcare Informatics (3 semester credit hours) Examines the unique challenges of clinical and patient care delivery in the healthcare industry, including the role of data management, emerging data standards and information technology in improving the quality and cost associated with healthcare. The focus of the course will be on healthcare IT including issues related to governance, data integration, and selection and management of healthcare IT. Credit cannot be received for both courses, HMGT 6323 and MIS 6317. (3-0) T

**HMGT 6324 (MECO 6352 and OB 6332 and SYSM 6313)** Healthcare Negotiation and Dispute Resolution (3 semester credit hours) This course explores the theories, processes, and practical techniques of negotiation so that students can successfully negotiate and resolve disputes in a variety of situations including interpersonal, group, and international settings. Emphasis is placed on understanding influence and conflict resolution strategies; identifying interests, issues, and positions of the parties involved; analyzing co-negotiators, their negotiation styles, and the negotiation situations; and managing the dynamics associated with most negotiations. Practical skills are developed through the use of simulations and exercises. (3-0) Y

**HMGT 6325 (OPRE 6325)** Healthcare Operations Management (3 semester credit hours) This course explores the Healthcare Supply Chain, in terms of its strategic management, operations, challenges, and overall
costs. Topics include importance of delivery of care, Healthcare supply chain management processes, sourcing relationships, inventory, delivery, and cost management. Relevant case studies will be used throughout the course providing additional insights. (3-0) Y

**HMG 6327 (MIS 6381)** Electronic Health Records Applications (3 semester credit hours) An interactive, experiential course in which students will utilize hands-on, practice-oriented opportunities to learn the core components of clinical information systems used by major healthcare systems in the United States. The course will include a lab-based component in which students will follow guided exercises and assignments using a leading EMR software as well as case analyses. Prerequisite or Corequisite: **HMG 6323.** (3-0) T

**HMG 6329** Seminar in Healthcare Management (3 semester credit hours) This course features guest lecturers from the healthcare community giving students insight into many diverse career fields. Speakers will offer advice about career preparation, job interviewing, and important skills needed for success. Interaction with the speakers offers a valuable networking experience and an opportunity for mentoring advice. Employment opportunities discussed have included hospital administration, home health agencies, medical group practice, dental practices, governmental agencies, and consulting firms. Prerequisite: **HMG 6 320.** (3-0) Y

**HMG 6330** Healthcare Law, Policy and Regulation (3 semester credit hours) This course examines how healthcare laws and regulations are enacted, and their impact on providers, payers, and patients. Topics include: Stark prohibitions on provider self-referral, federal regulation of fraud and abuse, the Emergency Treatment and Active Labor Act (EMTALA), and the Health Insurance Portability and Accountability Act (HIPPA). It also examines the process by which Congressional legislation is transformed into day-to-day industry regulation. Prerequisite: **HMG 6320** or program director consent required. (3-0) Y

**HMG 6331** Healthcare Economics (3 semester credit hours) This course applies the tools of economic analysis to the challenges and opportunities faced by managers and policy makers in the health sector. Topics covered include: measuring the benefits of healthcare, the role of insurance in spreading risk and altering incentives, the production of healthcare, price and non-price competition among providers, international comparisons of healthcare systems, and proposed policies that are intended to expand access and contain cost. (3-0) Y

**HMG 6332 (OPRE 6354)** Quality Improvement in Healthcare: Six Sigma and Beyond (3 semester credit hours) The course will explore applications of quality improvement measures to the healthcare environment. Applications including the Demming method, QI, and CQI will be studied. Application of other industrial quality improvement methodology including Six Sigma and Toyota Lean will be covered. (3-0) Y

**HMG 6333** Ethics in Healthcare Management (3 semester credit hours) This course explores ethical issues specific to the healthcare industry including: fraud and abuse, rationing, uninsured treatment, the role of government, and end of life decisions. (3-0) Y

**HMG 6334 (MIS 6305)** Healthcare Analytics (3 semester credit hours) The healthcare industry is yet to find ways to make the best use of existing data to improve care, reduce costs, and provide more accessible care. This course introduces the use of business intelligence and decision sciences in the healthcare industry. Students will develop a conceptual understanding of data mining techniques and decision analysis and hands-on experience with several analytics software which may include coding in R, Rattle, and WEKA (as needed and depending on availability). Prerequisite or Corequisite: **OPRE 6301** or **SYSM 6303** or **BUAN 6359** or **OPRE 6359.** (3-0) Y
HMGT 6335 (OPRE 6332) Spreadsheet Modeling and Analytics (3 semester credit hours) This course explains the concepts of effective spreadsheet design and model building utilizing the electronic spreadsheet as the principal device. The course helps students to take an analytic view and acquire knowledge about specific decision making techniques for business, such as optimization and simulation, building spreadsheet models to identify choices, formalize trade-offs, specify constraints, perform sensitivity analyses, and analyze the impact of uncertainty. The course also examines the applications in finance, economics, marketing, and operations. (3-0) S

HMGT 6336 (ACCT 6336 and MIS 6337) Information Technology Audit and Risk Management (3 semester credit hours) Management's role in designing and controlling information technology used to process data is studied. Topics include the role of internal and external auditors in systems development, information security, business continuity, information technology, internet, change management, and operations. Focus is placed on the assurance of controls over information technology risks and covers topics directly related to the Certified Information Systems Auditor (CISA) exam. (3-0) Y

HMGT 6340 Principles of Hospital Administration (3 semester credit hours) This course explores the organization and management of modern US hospitals, hospital systems, and integrated healthcare systems. Case studies of leading healthcare organizations will be employed and students will address managerial challenges of future healthcare reform. Prerequisite: HMGT 6320. (3-0) S

HMGT 6355 Capstone in Healthcare Organization Leadership (3 semester credit hours) Executive Education Course. The capstone course is the culmination of the program. Students are required through research to integrate the major theories and principles of the entire curriculum. Students further develop their knowledge and application of healthcare leadership and qualitative and quantitative management concepts and methodologies through application of field experiences. The projects for this course will be specific to the sponsoring organization. Department consent required. (3-0) S

HMGT 6374 (MIS 6374) Internet of Things (3 semester credit hours) The Internet of Things (IoT) is the key to digital transformation. By 2025, more than 25 billion devices in homes, factories, oil wells, hospitals, cities, and cars will be connected to the Internet. Companies are looking for students who are skilled in developing IoT solutions that connect devices, collect, store, and analyze device data. This course provides students with knowledge of IoT components and management of IoT ecosystems. First, students will gain an understanding of digital transformation and Industry 4.0. Next, students will learn about the components of IoT (Sensors, Communication Technology, Networks, Security, Cloud, and Data Analytics). Students will also be exposed to how companies implement solutions on an IoT platform (such as AWS, Azure, or Google). Finally, students will learn about the management of IoT ecosystems in the context of a few use cases (e.g., predictive maintenance, smart transportation, healthcare, or other). (3-0) Y

HMGT 6380 (ACCT 6380) Internal Audit (3 semester credit hours) The course covers internal audit from a broad perspective that includes information technology, business processes, and accounting systems. Topics include internal auditing standards, risk assessment, governance, ethics, audit techniques, consulting and emerging internal audit issues. This is the first course leading to Internal Auditing Education Partnership (IAEP) Certificate and prepares students for the Certified Internal Auditor Exam. Students work on internal audits as part of class along with learning the latest internal audit techniques. (3-0) Y

HMGT 6393 (ACCT 6392) Advanced Auditing (3 semester credit hours) This course provides an in-depth study of issues related to auditing including audits of financial statements, internal audits, internal controls, operations, reporting, and compliance. The course covers current and emerging issues such as enterprise risk management, regulatory compliance, advanced communication techniques, audit management, best
practices, sourcing, and quality assessment. Case studies, class discussion, and engagement with audit practitioners supplement class instruction. Prerequisite: **ACCT 6334**, or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area, or **ACCT 6380** or **HMG T 6380**. (3-0) S

**HMGT 6401** Negotiation and Conflict Management in Healthcare (4 semester credit hours) Executive Education Course. Develops the critical negotiating skills needed to increase personal influence and effectiveness. Topics include recognizing and leveraging sources of power in a negotiation, identifying the opposing party's interests as distinct from their position, and negotiating effectively against a stronger opponent. (4-0) T

**HMGT 6402** Financial Management of Healthcare Organizations (4 semester credit hours) Executive Education Course. Develops the critical ability to make financial decisions that reduce risk and create economic value. Topics include how to analyze and interpret healthcare financial statements, using discounted cash flow analysis to financially evaluate major spending and investment decisions, and how to financially evaluate a proposed healthcare acquisition, partnership or joint venture. (4-0) T

**HMGT 6403** Medical Cost and Performance Management (4 semester credit hours) Executive Education Course. Develops powerful tools to measure and control healthcare costs and improve operating performance. Topics include identifying and controlling key cost drivers in a medical practice, determining the true cost of individual medical services, and using flexible budgeting and cost variance analysis to effectively control spending. (4-0) T

**HMGT 6404** Quality and Performance Improvement in Healthcare (4 semester credit hours) Executive Education Course. Develops the knowledge and skills needed to improve the quality of both clinical and patient service processes. Topics include how to increase patient safety and create a patient-centric service culture, evaluate the efficiency and effectiveness of existing clinical processes, and identify and eliminate redundancy, bottlenecks and non-value added activities in key service processes. (4-0) T

**HMGT 6405** Healthcare Information Management and Technology (4 semester credit hours) Executive Education Course. Analyzes how clinical and administrative data is collected, organized, distributed, and used in medical decision-making. Topics include big data and the future of health analytics, the major obstacles to effectively using clinical data to create value, and the physician's role in healthcare data design and governance. (4-0) T

**HMGT 6406** Strategic Management of Healthcare Organizations (4 semester credit hours) Executive Education Course. Develops the strategic thinking skills needed to create a sustainable competitive advantage. Topics include how to critically assess a healthcare organization's competitive environment and internal strengths and weaknesses, using value chain analysis to strategically position a medical practice, and identifying a set of medical services that offers a unique patient value. (4-0) T

**HMGT 6407** Healthcare Policy and Regulation (4 semester credit hours) Executive Education Course. This class meets in Washington, D.C., where physicians meet with key legislators, lobbyists, and administrators to study the complex process by which healthcare legislation makes its way through Congress, explore the role of lobbyists and the media in shaping Congressional and public opinion on health policy issues, and learn how the administrative bureaucracy transforms legislation into statutory law. (4-0) T

**HMGT 6408** Competencies of Effective Leaders (4 semester credit hours) Executive Education Course. Discusses the key skills and competencies that healthcare leaders, including physicians, need to develop to be successful in their leadership role. Topics include how emotional intelligence and motivational needs
influence leadership success, making effective use of the levers of power and personal influence, and communicating a vision and motivating people. (4-0) T

**HMGT 6410** Leading in Complex Organizations (4 semester credit hours) Executive Education Course. Analyzes the structural design, decision hierarchy, and organizational culture of complex contemporary healthcare organizations. Topics include re-designing organizational structure to improve physician performance, leading change through the use of adaptive leadership practices, and building coalitions and managing internal conflict. (4-0) T

**HMGT 6V10** Special Topics in Healthcare Management (1-3 semester credit hours) Issues in current Healthcare Management. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-3]-0) Y

**HMGT 6V15** Self-Directed Field Study (1-4 semester credit hours) Executive Education Course. A self-directed, faculty supervised field study of the participant's practice or medical organization using the knowledge and skills acquired in the residential program. This course is non-residential. May be repeated for credit as topics vary (4 semester credit hours maximum). Department consent required. ([1-4]-0) S

**HMGT 6V98** Healthcare Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). Prerequisites: ([MAS 6102](https://catalog.utdallas.edu/2021/graduate/courses/school/jsom) or MBA major) and department consent required. ([1-3]-0) S

**HMGT 6V99** Special Topics in Healthcare Management (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

## International Management Studies

**IMS 6009** International Management Internship (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: ([MAS 6102](https://catalog.utdallas.edu/2021/graduate/courses/school/jsom) or MBA major) and department consent required. (0-0) S

**IMS 6091** Regional Area Studies: Latin America (0 semester credit hours) History of economic development and overview of current participation of firms in Latin America and their place in the world economy. Department consent required. May be repeated (2 times maximum). (3-0) Y

**IMS 6092** Regional Area Studies: Western Europe (0 semester credit hours) History of economic development and overview of current participation of firms in Western Europe and their place in the world economy. May be repeated (2 times maximum). Department consent required. (3-0) Y

**IMS 6093** Regional Area Studies: Asia (0 semester credit hours) History of economic development and
overview of current participation of firms in Asia and their place in the world economy. May be repeated (2 times maximum). Department consent required. (3-0) Y

IMS 6094 Regional Area Studies: Africa (0 semester credit hours) History of economic development and overview of current participation of firms in Africa and their place in the world economy. Department consent required. May be repeated (2 times maximum). (3-0) Y

IMS 6095 Regional Area Studies: North America (0 semester credit hours) History of economic development and overview of current participation of firms in North America and their place in the world economy. May be repeated (2 times maximum). Department consent required. (3-0) Y

IMS 6096 Regional Area Studies: Eastern Europe (0 semester credit hours) History of economic development and overview of current participation of firms in Eastern Europe and their place in the world economy. May be repeated (2 times maximum). Department consent required. (3-0) Y

IMS 6097 Regional Area Studies (0 semester credit hours) Regional history of economic development, culture, and overview of firms conducting businesses globally and their place in the world economy. Pass/ Fail only. May be repeated as topics vary (2 times maximum). Instructor consent required. (3-0) Y

IMS 6151 Global Business Ethics (1 semester credit hour) This course examines practical issues in global business ethics, including compliance requirements and their application, effective reactions to global ethical dilemmas and best practices in global and multicultural environments. (1-0) Y

IMS 6204 Global Business (2 semester credit hours) Provides an introduction to the fundamental concepts of international business, covering macro-level environmental factors that affect international business today. Topics include globalization, country environments, culture, international trade and investment, regional economic integration, and the global monetary system. Credit cannot be received for both courses, IMS 6204 and IMS 6304. May not be used to fulfill degree requirements in MS International Management Studies. (2-0) S

IMS 6212 Global Communication and Negotiations (2 semester credit hours) Executive Education Course. This course focuses on understanding national culture and cultural issues in international business. It emphasizes the importance of managing cultural differences to enhance communication, negotiation, leadership, and group dynamics in an international work environment. (2-0) Y

IMS 6213 Global Politics in Business (2 semester credit hours) Politics is a common challenge for multinational companies. This course will provide a comprehensive study of global business and politics. It examines regulatory compliance, ideology, government policies, ethical conflicts, environmental and resource issues at a global level. (2-0) Y

IMS 6214 Global Mergers and Acquisitions (2 semester credit hours) This course will examine mergers and acquisitions in the global scale, including identifying targets; valuing the targets; negotiating the deals, and structuring the post-deal integration. It will also cover the legal, organizational and strategic issues that impact the acquisition process. (2-0) Y

IMS 6252 International Business Management (2 semester credit hours) Executive Education Course. Considers the role of general managers (CEO and country/regional managers) in multi-national companies and the working relationship of subsidiary and home offices in such companies. Topics include business strategies, control/cooperative systems, the dynamics of addressing local and global concerns, and knowledge transfer. Changes brought about by modern information technology are also considered. (2-0) Y

IMS 6253 Cross-Cultural Management (2 semester credit hours) Executive Education. This course focuses on
understanding national culture and cultural issues in international business. It emphasizes the importance of managing regional cultural differences to enhance communication, negotiation, leadership, and group dynamics in an international or global work environment. Prerequisite: OB 6301. (2-0) Y

**IMS 6254** Executive International Study Trip - EMBA (2 semester credit hours) Executive Education Course. This course consists of a ten day international trip. The destinations are chosen to relate to an international emphasis and its themes of managing for change, the strategic perspective, and leadership effectiveness. While abroad, participants visit and hear presentations from local business executives. Participants are also expected to identify important cultural variables that impact business decision making and management in the countries visited. Instructor consent required. (2-0) Y

**IMS 6302** Legal Aspects of International Business Transactions (3 semester credit hours) The legal environment and framework of international business, legal aspects and implications of international trade and the establishment and operation of business abroad, moving goods across national borders, immigration, joint ventures, licensing, setting up and financing operations abroad, negotiating an international deal, resolving disputes, international corruption, bribery and crime. Prerequisite: IMS 6304 or IMS 6204. (3-0) T

**IMS 6304 (ENTP 6304)** International Business Management (3 semester credit hours) The course analyzes global business environments, discusses the international business operating in various markets of the world, and examines various theories that explain how international trade and direct investment practice evolve. The course utilizes various cases to help students gain knowledge and learn the necessary skills to evaluate and manage the challenges and opportunities businesses face in diverse global markets. Credit cannot be received for more than one of the following: ENTP 6304 or IMS 6204 or IMS 6304. (3-0) S

**IMS 6310** International Marketing (3 semester credit hours) This course aims at preparing students to appreciate the international marketing by understanding both theoretical and practical issues involved. This course covers the fundamentals and evolution of international marketing, the environment of international marketing, foreign entry methods, evaluation of market potential, management of international marketing mix, consumer behavior and international strategic marketing planning. Students will also learn the reasons why international marketing is important for success in international business and for finding personal career opportunities. (3-0) Y

**IMS 6314** Global E-Business Marketing (3 semester credit hours) This course aims at preparing the students for managing global e-business activities within the framework of accelerated trends for globalization. International aspects of e-business have become more important due to the variables in legal and regulatory regimes, the state of the communications infrastructure and differences in culture; including language and perception of the benefits of the Internet. Students will be prepared to understand the worldwide unevenness in the adoption and use of e-business globally and develop ability to customize and personalize the Internet experience to use at their employment in the field. Prerequisite: MKT 6301. (3-0) T

**IMS 6316** Global Politics in Business (3 semester credit hours) Executive Education Course. Managers operate in complex environments that often feature politics as a common challenge. This course provides a framework for strategic thinking about business and politics, including global and regional perspectives on international trade and production. Current topics and countries covered vary, but may include geopolitical events, taxation, lobbying, regulatory compliance and corruption, labor and automation, environmental and resource issues, and multiple types of political risks for firms. (3-0) Y

**IMS 6317** Global Mergers and Acquisitions (3 semester credit hours) Executive Education Course. The course will emphasize cross-border mergers and acquisitions transactions (including EU and Asia Pacific) including
identifying targets; valuation of targets with the use of financial models; negotiating the deals, deal structuring (public and private firms), value creation, deal closing, alliances and post-deal integration. The course will also include an in-depth study of the regulatory environment for US and European Union countries. Students will develop business and acquisition plans that could be used to convince top management of an acquiring corporation, a venture capital firm or a lender to fund their proposal. Prerequisites: **FIN 6301** and **MECO 6303** and **ACCT 6301**. (3-0) Y

**IMS 6341** International Human Resource Management (3 semester credit hours) This course will focus on the impact of globalization on managing international human resources. The central aim of this course is to identify the challenges of managing diverse manpower in an international set up and to teach students how to effectively manage diverse manpower in rapidly changing global business environments. Students will learn how to develop an effective human resource management strategy by incorporating cultural, legal and social aspects of a host country. The course also introduces comparative HR practices in the process of expatriates' selection, training and managing of cultural shocks and reverse cultural shocks. (3-0) Y

**IMS 6343** Sustainability in a Global Business Environment (3 semester credit hours) This course is expected to enhance global awareness and discovery of how local businesses and organizations can create sustainable value for people and planet. This course will cover basic concepts in business sustainability and organizational management, such as leadership, social capital, and organizational design. Students will have a better understanding of the opportunities and challenges of businesses in a diverse environment challenged by globalization pressures. The course will be offered as part of an interdisciplinary field study program. (3-0) Y

**IMS 6345** Global Leadership (3 semester credit hours) Executive Education Course. This course challenges students to address ethics issues across multiple cultures and to leverage their leadership skills to implement strategy and to lead and execute across global markets. Prerequisites: **BPS 6310** and **IMS 6253**. (3-0) Y

**IMS 6351** Executive International Study Trip - EMBA (3 semester credit hours) Executive Education Course. This course consists of a ten day international trip. The destinations are chosen to relate to an international emphasis and its themes of managing for change, the strategic perspective, and leadership effectiveness. While abroad, participants visit and hear presentations from local university faculty, local business executives, and expert panels. Participants are also expected to identify important cultural variables that impact business decision making and management in the countries visited. Instructor consent required. (3-0) Y

**IMS 6354** Global Marketing (3 semester credit hours) Executive Education Course. This course promotes an appreciation and understanding of theoretical and practical issues involved in marketing products and services in the international context. This course covers the fundamentals and evolution of international marketing, the environment of international marketing, foreign entry methods, evaluation of market potential, management of international marketing mix, consumer behavior and international strategic marketing planning. Prerequisite: **MKT 6301**. (3-0) Y

**IMS 6360** International Strategic Management (3 semester credit hours) This course examines the strategic challenges that multinational firms face. Issues such as managing across national boundaries, responding to environmental challenges, managing international joint ventures and strategic alliances, managing headquarters-subsidiary relationships, and developing global capabilities will be discussed. (3-0) Y

**IMS 6362** (**ENGY 6362** and **OPRE 6362** and **SYSM 6311**) Project Management in Engineering and Operations (3 semester credit hours) Project management is the discipline of planning, organizing and managing
resources to bring about the successful completion of specific project goals and objectives. The course will cover various aspects of managing projects in engineering and operations environments including the critical path methods for planning and controlling projects, time and cost tradeoffs, resource utilization, organizational design, conflict resolution and stochastic considerations. (3-0) S

IMS 6363  Regional Area Studies (3 semester credit hours) This course enriches students' exposure to global business environments by visiting international companies, higher education institutions, and cultural sites in a specific county/region in the world. Students will gain firsthand knowledge about how companies manage their businesses and their place in the world economy while learning and analyzing their specific challenges, opportunities, and benefits of conducting businesses globally. Students will participate in pre-trip class sessions to prepare for the international experience and also post-trip class sessions to discuss their findings and present their papers. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. (3-0) Y

IMS 6364  International Management Practicum (3 semester credit hours) Student gains experience and improves managerial skills through appropriate developmental work assignments in a real business environment. This practicum course includes projects sponsored by international companies which provide students with opportunities to apply their managerial skills and knowledge to solve challenging real-world problems. Such experiential learning allows students to work in diverse team environments, interact with industry leaders, analyze business problems, and develop appropriate solutions. At semester end, student prepares an oral or poster presentation or a written paper reflecting on the work experience. Prerequisites: (MAS 6102 or MBA major) and department consent required. (3-0) Y

IMS 6365  Cross-Culture Communication and Management (3 semester credit hours) This course focuses on understanding national culture and cultural issues in international business. It emphasizes the importance of managing cultural differences to enhance communication, negotiation, leadership, and group dynamics in an international work environment. Further, the course describes methods to develop effective selection and training programs for international assignments. (3-0) Y

IMS 6370  Seminar in International Operations Management (3 semester credit hours) One of two capstone courses designed around a study tour to an international location where students attend courses at a local university with local students, interact with managers from local companies regarding business practices, and study the culture of the country they are visiting. Prerequisites: ACCT 6301 and FIN 6301 and MKT 6301 and OPRE 6362 and department consent required. (3-0) Y

IMS 6371  Seminar in International Strategic Management (3 semester credit hours) One of two capstone courses designed around a study tour to an international location where students attend courses at a local university with local students, interact with managers from local companies regarding business practices, and study the culture of the country they are visiting. Prerequisites: ACCT 6301 and FIN 6301 and MKT 6301 and OPRE 6362 and department consent required. (3-0) Y

IMS 6V91  Regional Area Studies: Latin America (1-3 semester credit hours) History of economic development and overview of current participation of firms in Latin America and their place in the world economy. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-3]-0) T

IMS 6V92  Regional Area Studies: Western Europe (1-3 semester credit hours) History of economic development and overview of current participation of firms in Western Europe and their place in the world economy. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-3]-0) T
IMS 6V93 Regional Area Studies: Asia (1-3 semester credit hours) History of economic development and overview of current participation of firms in Asia and their place in the world economy. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-3]-0) T

IMS 6V94 Regional Area Studies: Africa (1-3 semester credit hours) History of economic development and overview of current participation of firms in Africa and their place in the world economy. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-3]-0) T

IMS 6V95 Regional Area Studies: North America (1-3 semester credit hours) History of economic development and overview of current participation of firms in North America and their place in the world economy. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-3]-0) T

IMS 6V96 Regional Area Studies: Eastern Europe (1-3 semester credit hours) History of economic development and overview of current participation of firms in Eastern Europe and their place in the world economy. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-3]-0) T

IMS 6V98 International Management Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). Prerequisites: (MAS 6102 or MBA major) and department consent required. ([1-3]-0) S

IMS 6V99 Special Topics in International Management Studies (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

IMS 7301 International Business (3 semester credit hours) Current theories in international business, and the formal and informal institutions affecting international business. (3-0) Y

IMS 8V99 Dissertation (1-9 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-9]-0) S

Management and Administrative Sciences

MAS 6000 Advanced Professional Development (0 semester credit hours) This course is designed to build upon skills learned in previous professional development courses. Students will be introduced to advanced topics that will further their career management skills, including advanced verbal and written communication and networking with influence and persuasion. The goal is to make students more marketable and valuable professionals to the global economy. Prerequisites: (Non-MBA or Non-Accounting major) AND (MAS 6102 or ACCT 6388). (0-0) S

MAS 6009 Management Internship (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester
end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: (MAS 6102 or MBA major) and department consent required. (0-0) S

**MAS 6100** Advanced Internship (1 semester credit hour) Student gains an advanced experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. JSOM Internship Coordinator consent required. (1-0) S

**MAS 6102** Professional Development (1 semester credit hour) This course is designed to enhance the student's experience such as building networking skills, verbal and written communication skills, business etiquette, and learning how to increase their human capital. Students will learn how to build a personal career portfolio (an approved resume, a LinkedIn profile, etc.), how to market themselves, how to prepare for internship and job placement interviews, and how to utilize professional networking. The goal is to make students more marketable and valuable professionals to the global economy. Pass/Fail only. Prerequisite: Non-MBA or Non-Accounting major. (1-0) S

**MAS 6103** Strategic Business Communications (1 semester credit hour) Executive Education course. This course helps students effectively and efficiently communicate at an executive level, both written and orally. Through presentations and written analysis, students will implement appropriate communication strategies and receive candid, constructive feedback to refine their executive communication skills. (1-0) Y

**MAS 6104** Corporate Governance, Risk Management and Compliance (1 semester credit hour) Executive Education Course. This course is designed to help students understand theoretical and practical aspects of corporate governance. The course primarily focuses on the systems of ethical corporate governance which balance the board of directors and management's expectations. The course will cover topics including the laws, regulations and rules of regulatory bodies, ethical standards, corporate strategy and growth, risks, and issues management. (1-0) Y

**MAS 6105** Communications for Management (1 semester credit hour) Successful managers understand that effective communications are a critical component to advancing a career. This course introduces best practices in written, oral, and networking communications so students understand how to organize and construct informative and effective business messages, how to structure and deliver effective and persuasive presentations, and how to present themselves successfully. Pass/Fail only. This course is offered in an online format only. (1-0) S

**MAS 6301** Studies in Project Management Practices (3 semester credit hours) Executive Education Course. This course explores and analyzes the application of project management methodology in practice and professional credentialing of managers of projects, programs, and portfolios. This course is offered in an online format only. May be repeated for credit as topics vary(6 semester credit hours maximum). (3-0) S

**MAS 6367** Capstone Projects in Management Science (3 semester credit hours) Capstone projects are sponsored by local industries and provide the students an opportunity to apply skills and knowledge gained to solve real world challenging problems in the area of Management Science. Students work in a team environment, interact with industry leaders, and gain some industry specific knowledge. Prerequisites: OPRE 6301 and OPRE 6332. (3-0) S
**MAS 6373** Performance Based Logistics in Defense (3 semester credit hours) Performance Based Logistics (PBL) is a product support strategy for defense systems that is outcomes based and incentivizes product support providers to reduce costs through innovations and improvements. The course discusses the current state of PBL, the elements that make up a strong PBL arrangement, the role of the Department of Defense (DoD) in PBL contracts, the role of the contractor in PBL contracts, risks and rewards shared by the DoD and contractors, risk management, performance management and baseline performance setting, and contract execution issues. The course uses real examples from the defense industry wherever possible to reinforce the topics. (3-0) R

**MAS 6374** Lean Six-Sigma in Defense (3 semester credit hours) Lean Six Sigma is a structured methodology and set of tools and techniques used extensively in the defense industry to improve quality and performance of business processes for the Department of Defense (DoD), contractors, and suppliers. The course provides the knowledge and skills to apply the Lean Six Sigma methodology through Green Belt projects at defense-related organizations, but also any type of organization. Examples from the DoD and major defense contractors will be used throughout the course to show Lean Six Sigma in action. In addition, the course prepares students for taking the Six Sigma Green Belt (SSGB) Certification exam through the American Society for Quality (ASQ) to obtain the professional certification. (3-0) R

**MAS 6375** Defense Supply Chain Risk Management (3 semester credit hours) Supply chains for defense systems can be incredibly large and complex, which creates unique challenges for managing risks. The course discusses the types of supply chain structures used for defense systems, typical management policies of prime contractors and suppliers, challenges with multi-tier supply chains, challenges with supporting fleets of systems worldwide, problems associated with readiness and aging systems, along with types of risks and typical risk mitigation or avoidance techniques. The course also uses case studies based on actual defense-related supply chain examples and supply chain simulation assist with the learning concepts. (3-0) R

**MAS 6376** Contracts Management for Defense (3 semester credit hours) This course discusses the unique acquisition and management processes for defense contracts. Topics include acquisition lifecycle, legal structures of defense contracts, source selection planning, proposal development, solicitation management, source selection evaluation, contract award, and contractor debriefings. The course also covers contract administration, transitioning to performance, quality management, subcontract management, financial management, performance monitoring, change management, and contract closeout. The course also uses real-world examples from the defense industry for case studies and practical exercises. (3-0) R

**MAS 6V00** Special Topics in Management Science (1-4 semester credit hours) May be lecture, readings, or individualized study. May be repeated for credit as topics vary. Department consent required. ([1-4]-0) S

**MAS 6V01** Special Topics in Management (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

**MAS 6V02** Special Topics in Organizational Behavior (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

**MAS 6V03** Special Topics in Business Policy and Strategy (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

**MAS 6V04** Special Topics in International Management (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S
**MAS 6V05** Special Topics in Marketing Management (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

**MAS 6V06** Special Topics in Finance (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

**MAS 6V07** Special Topics in Managerial Economics (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

**MAS 6V08** Special Topics in Operations Research (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

**MAS 6V09** Special Topics in Accounting (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

**MAS 6V10** Special Topics in Management Information Systems (1-4 semester credit hours) May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

**MAS 6V98** Management Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). Prerequisites: (MAS 6102 or MBA major) and department consent required. ([1-3]-0) S

**MAS 8113** Practicum in Management (1 semester credit hour) Course develops a student's business knowledge through appropriate developmental work experiences in a real business environment. Student is required to identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective, via involvement or observation. At semester end, student prepares an oral presentation, reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. (1-0) S

**MAS 8399** Dissertation (3 semester credit hours) Pass/Fail only. May be repeated for credit. Instructor consent required. (3-0) S

**MAS 8V00** Special Topics in Management Science (1-3 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-3]-0) S

**MAS 8V01** Management Internship (1-3 semester credit hours) Course develops a student's business knowledge through appropriate developmental work experiences in a real business environment. Student is required to identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective, via involvement or observation. At semester end, student prepares an oral presentation, reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours). Instructor consent required. ([1-3]-0) S

**MAS 8V03** Special Topics in Business Policy and Strategy (1-3 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-3]-0) S
**MAS 8V04** Special Topics in International Management (1-3 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-3]-0) S

**MAS 8V05** Special Topics in Marketing Management (1-3 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-3]-0) S

**MAS 8V06** Special Topics in Finance (1-3 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-3]-0) S

**MAS 8V07** Special Topics in Managerial Economics (1-3 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-3]-0) S

**MAS 8V08** Special Topics in Operations Research (1-3 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-3]-0) S

**MAS 8V09** Special Topics in Accounting (1-3 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-3]-0) S

**MAS 8V10** Special Topics in Management Information Systems (1-3 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-3]-0) S

**MAS 8V80** Research Series in Management Science - Operations Research (2, 3, 6 or 9 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([2, 3, 6 or 9]-0) S

**MAS 8V81** Research Series in Management Science - Management Information Systems (2, 3, 6 or 9 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([2, 3, 6 or 9]-0) S

**MAS 8V82** Research Series in Management Science - Organizational Behavior (2, 3, 6 or 9 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([2, 3, 6 or 9]-0) S

**MAS 8V83** Research Series in Management Science - Business Systems: Marketing (2, 3, 6 or 9 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([2, 3, 6 or 9]-0) S

**MAS 8V84** Research Series in Management Science - Business Systems: Financial (2, 3, 6 or 9 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([2, 3, 6 or 9]-0) S

**MAS 8V90** Research Series in Management Science - Accounting (2, 3, 6 or 9 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([2, 3, 6 or 9]-0) S

**MAS 8V91** Research Series in Management Science - Strategic Management (2, 3, 6 or 9 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([2, 3, 6 or 9]-0) S

**MAS 8V99** Dissertation (1–9 semester credit hours) Pass/Fail only. May be repeated for credit as topics vary. Instructor consent required. ([1-9]-0) S
Managerial Economics

**MECO 6303 (SYSM 6319)** Business Economics (3 semester credit hours) Foundations of the economic analysis of business problems, with special emphasis on the operation of markets and the macroeconomy. Prerequisite: **OPRE 6303** or equivalent. (3-0) S

**MECO 6312 (BUAN 6312)** Applied Econometrics and Time Series Analysis (3 semester credit hours) A survey of techniques used in analyzing cross-sectional, time series and panel data with special emphasis on time series methods. Credit cannot be received for more than one of the following: **BUAN 6312** or **FIN 6318** or **MECO 6312**. Prerequisite or Corequisite: **OPRE 6301** or **OPRE 6359** or **BUAN 6359** or **FIN 6306** or **FIN 6307** or **SYSM 6303**. (3-0) T

**MECO 6318** Energy Economics and The Cost of Regulation (3 semester credit hours) This course provides students with a comprehensive understanding of energy fundamentals through a detailed examination of the history, structure and functioning of modern energy markets. Topics include models of supply, demand, and transportation, market structure, game theoretic strategies and risk management, environmental issues, and policy and regulation. Prerequisite: **MECO 6303** or **SYSM 6319**. (3-0) R

**MECO 6320** Econometrics (3 semester credit hours) Estimation and testing of multivariate econometric models; sets of regression relationships; simultaneous equation systems; applications of methods and models in the analysis of business and economic data. (3-0) Y

**MECO 6340** Thinking Strategically (3 semester credit hours) This course examines managerial decisions that require consideration of how shareholders, competitors, customers, or employees are going to act or react. Using case studies from various business disciplines, students learn how to apply analytical frameworks from decision analysis, game theory, and psychology to make strategically savvy business decisions. Topics include reflexive thinking about a rival's response, how to make a commitment credible, inducing cooperation, and recognizing the information in others' actions. Prerequisite: **MECO 6303**. (3-0) Y

**MECO 6345** Advanced Managerial Economics (3 semester credit hours) Advanced economic analysis of consumer theory, production theory, exchange, and market interactions. Managerial topics such as comparable worth, product standardization, environmental spillover effects, and imperfect competition. Instructor consent required. (3-0) T

**MECO 6350** Game Theory (3 semester credit hours) This course introduces game theory, a set of analytical tools used to study the strategic interactions of individuals and institutions. The course covers static and dynamic games, both under complete and incomplete information. Applications include cooperation, price setting under imperfect competition, trust and reputation building, bargaining, auctions, signaling, social preferences and matching markets. (3-0) Y

**MECO 6351** Data Science Decision Making (3 semester credit hours) This course prepares students to extract knowledge from data utilizing various statistical and scientific methods. The course explains how to manipulate and analyze data and how to incorporate it into the business decision process. Topics include analyzing the decision to determine what data is needed, evaluating the accuracy of data, structuring a decision problem, and measuring risk and the overall trade-offs. Students will learn a systematic approach to analyze complex decisions and techniques for communicating decision problems and solutions to data savvy business managers. Prerequisite: **OPRE 6301**. (3-0) Y

**MECO 6352 (HMGT 6324 and OB 6332 and SYSM 6313)** Financial Negotiation and Dispute Resolution (3
This course explores the theories, processes, and practical techniques of negotiation so that students can successfully negotiate and resolve disputes in a variety of situations including interpersonal, group, and international settings. Emphasis is placed on understanding influence and conflict resolution strategies; identifying interests, issues, and positions of the parties involved; analyzing co-negotiators, their negotiation styles, and the negotiation situations; and managing the dynamics associated with most negotiations. Practical skills are developed through the use of simulations and exercises. (3-0) Y

**MECO 6355 (OPRE 6355)** Deal Making Strategies (3 semester credit hours) This course uses experiential hands-on learning to develop students' skills in effectively managing competitive and collaborative business situations. Students will learn: (1) Behavioral principles for effective bargaining, (2) The principles for designing, conducting, and participating in procurement auctions, (3) Methods for increasing cooperation and trust in competitive and collaborative settings, (4) Behavioral principles for designing trading. Each topic in the course will be centered around a set of hands-on business simulations and case studies, in which students will take on the role of market participants working through a business problem. (3-0) R

**MECO 6360** Topics in Industrial Organization (3 semester credit hours) Issues in current research on the operation of firms and markets. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. (3-0) T

**MECO 6368** Advanced Comparative Institutions of Production and Distribution (3 semester credit hours) Economic history of civilization and history of political-economic-business ideas as they impact production and distribution systems. Related examination of the ideas and canonical texts in the development of classical liberalism and its critics. Critical analysis of the principles and methods of current mainstream economics in understanding the business world. (3-0) Y

**MECO 6V99** Special Topics in Managerial Economics (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

**MECO 7311** Advanced Game Theory (3 semester credit hours) This course covers the Nash-equilibrium based solution concepts in Nash and Bayesian-Nash games, including sub-game perfection, forward and backward induction, trembling hand perfection, sequential equilibrium, and the intuitive criterion with applications to discrete and continuous action games. Prerequisites: MECO 6345 or equivalent and MECO 6350 or equivalent and instructor consent required. (3-0) Y

**MECO 7312** Advanced Statistics and Probability (3 semester credit hours) This course introduces the probability theory, including the laws of large numbers and the central limit theorem, statistical inference, the properties of empirical estimators, and various methods of hypothesis testing. The course emphasizes deep understanding and theoretical foundations of the core topics of probability theory and statistical inference. Instructor consent required. (3-0) Y

**MECO 7313** Applied Econometrics (3 semester credit hours) This course covers fundamental econometrics concepts using a software package to help students conduct data analysis while learning the various methods in applied econometrics. Instructor consent required. Prerequisite: MECO 7312. (3-0) Y

**MECO 7320** Advanced Econometrics (3 semester credit hours) Rigorous treatment of traditional econometrics methods, and introduction to both modern time-series econometrics and advanced non-linear models. Prerequisite: MECO 6320. (3-0) T
Management Information Systems

**MIS 6009** Information Systems Internship (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: (MAS 6102 or MBA major) and department consent required. (0-0) S

**MIS 6204** Information Technology for Management (2 semester credit hours) Necessary background to understand the role of information technology and Management Information Systems in today's business environment. Topics include: strategic role of information, organization of information, information decision making requirements, telecommunications and networking, managing information resources, cloud computing distributed processing, and current information systems/technology issues. (2-0) S

**MIS 6302** (ACCT 6349) Managing Digital Strategy (3 semester credit hours) This course explores the strategic management issues associated with the transformation of all businesses into digital businesses. It focuses on developing an understanding of how to develop a business models to implement strategies that are based on digital systems across different industries. This includes understanding how to develop business plans, how to align the business architecture with the digital systems architecture, and appropriately managing the digital systems to maximize business value. The course will deal with assessing and developing business strategies by harnessing contemporary phenomena in the digital world, such as the Internet of Things, Mobility strategies, and include applications of emerging techniques based on machine learning, artificial intelligence and semantic analysis to craft appropriate business strategies for firms. Credit cannot be received for both ACCT 6349 and MIS 6302. (3-0) Y

**MIS 6305** (HMGT 6334) Healthcare Analytics (3 semester credit hours) The healthcare industry is yet to find ways to make the best use of existing data to improve care, reduce costs, and provide more accessible care. This course introduces the use of business intelligence and decision sciences in the healthcare industry. Students will develop a conceptual understanding of data mining techniques and decision analysis and hands-on experience with several analytics software which may include coding in R, Rattle, and WEKA (as needed and depending on availability). Prerequisite or Corequisite: OPRE 6301 or SYSM 6303 or BUAN 6359 or OPRE 6359. (3-0) Y

**MIS 6308** (ACCT 6340) System Analysis and Project Management (3 semester credit hours) Provides the student with an in-depth knowledge of object oriented systems analysis and design procedures. Software project management techniques will be introduced. At the end of the course, the student will be able to analyze business solutions and design computer based information systems using object-oriented methodologies. Prerequisite or Corequisite: MIS 6326 or BUAN 6320 or MIS 6320. (3-0) R

**MIS 6309** (ACCT 6309) Business Data Warehousing (3 semester credit hours) This course provides the student with in depth knowledge of data warehousing principles, data warehouse techniques, and business intelligence systems. The course introduces the topics of data warehouse design, Extract-Transform-Load (ETL), data cubes, and data marts. Students will create business intelligence using data warehouses with several OLAP and analytical tools. SAP, Business Objects, Cognos, or other data warehousing tools will be used to illustrate data warehousing concepts. (3-0) Y
MIS 6313 Managing IT in the Analytics Age (3 semester credit hours) This course explores the role of information technology and systems in today's business environment. The course covers topics including strategic role of information, digital transformation, information for decision making, managing information resources, cloud computing, cybersecurity, business analytics for managerial decision making, and current information systems/technology issues. (3-0) S

MIS 6316 Data Communications (3 semester credit hours) This course covers key aspects of data communications - the fundamentals (including models and standards, throughput and capacity, signaling and transmission, media and wireless basics, encoding schemes and error detection/flow control), switching and networking (including multiplexing and switching, impact of packet size, routing, LANS and cellular concepts like CDMA), and security (including threats, security requirements, symmetric and public-key encryption schemes). (3-0) Y

MIS 6317 (HMGT 6323) Healthcare Informatics (3 semester credit hours) Examines the unique challenges of clinical and patient care delivery in the healthcare industry, including the role of data management, emerging data standards and information technology in improving the quality and cost associated with healthcare. The focus of the course will be on healthcare IT including issues related to governance, data integration, and selection and management of healthcare IT. Credit cannot be received for both courses, HM GT 6323 and MIS 6317. (3-0) T

MIS 6319 (OPRE 6390) Enterprise Resource Planning with SAP (3 semester credit hours) This course provides students with an understanding of enterprise resource planning systems and practical experience using SAP. The course covers topics including integrated business processes related to procurement, production, sales, finance, and human capital management, hands on transaction experience with SAP ERP modules on ECC6.0 and S/4/ Hana platforms, and basic analytics using SAP 4/ Hana. The course also covers ERP development methodologies and managing ERP based projects. (3-0) Y

MIS 6320 (ACCT 6320 and OPRE 6393) Database Foundations (3 semester credit hours) The course provides database knowledge for non-MIS business students to function effectively in their functional area. The course covers conceptual data modeling with the entity-relationship diagram, the fundamentals of relational data model and database queries, and the basic concepts of data warehousing. Structured Query Language will be used extensively. Applications of databases for accounting, finance, marketing, and other areas of business will be emphasized. May not be used to fulfill degree requirements in MS Information Technology and Management. Credit cannot be received for more than one of the following: ACCT 6320 or AC CT 6321 or BUAN 6320 or MIS 6320 or MIS 6326 or OPRE 6393. (3-0) Y

MIS 6323 Object Oriented Programming in Java (3 semester credit hours) This course discusses software development concepts and the development of object oriented systems. Topics covered include problem solving techniques, algorithm specifications, debugging, and testing of computer programs. Students solve small programming problems and write their solutions as high quality programs in Java. Credit cannot be received for both course, MIS 6323 and MIS 6382. (3-0) Y

MIS 6324 (BUAN 6324 and OPRE 6399) Business Analytics With SAS (3 semester credit hours) This course covers theories and applications of business analytics. The focus is on extracting business intelligence from firms' business data for various applications, including (but not limited to) customer segmentation, customer relationship management (CRM), personalization, online recommendation systems, web mining, and product assortment. The emphasis is placed on the 'know-how' -- knowing how to extract and apply business analytics to improve business decision-making. Students will also acquire hands-on experience with business analytics software in the form of SAS Enterprise Miner. Credit cannot be received for more
than one of the following: **BUAN 6324** or **BUAN 6356** or **MIS 6324** or **OPRE 6399**. Prerequisite or Corequisite: **OPRE 6301** or **OPRE 6359** or **BUAN 6359**. (3-0) Y

**MIS 6326** Data Management (3 semester credit hours) Database theory and tools used to manage accounting data and other information are introduced. Topics include relational database theories, Structured Query Language (SQL), database design and conceptual/semantic data modeling. A client/server database environment is developed with a selected SQL server and a database application development tool. **MIS 6320** and **MIS 6326** cannot both be used to satisfy degree requirements. Prerequisite: MS ITM Major. (3-0) Y

**MIS 6330** (ACCT 6313) Cybersecurity Fundamentals (3 semester credit hours) This course prepares business decision makers to recognize the threats and vulnerabilities present in current information systems and how to design and develop secure systems. This course introduces the concept of defense-in-depth and covers different layers in a typical security architecture. Topics include security risk management, cyber laws related to security and privacy, access controls, network security, host security, detective controls, cryptography, and communications security. (3-0) Y

**MIS 6332** (OPRE 6352) ERP Configurations and Implementation with SAP (3 semester credit hours) The course focuses on advanced business processes and configuring a SAP System from start up with hands-on experience with configuring Sales, Material Management, Production, Financial Accounting, and Management Accounting Modules. Several case studies are provided by which students can configure the SAP System to meet the requirements so that products can be produced, purchased, sold, and generate reports. Prerequisite or Corequisite: **MIS 6319** or **OPRE 6390**. (3-0) Y

**MIS 6333** Digital Forensics and Incident Management (3 semester credit hours) This course discusses methods and techniques for responding to security incidents and breaches and in-depth coverage of digital forensics of client devices, databases, web servers, application servers, and computer networks. The use and application of data analysis techniques in support of forensic efforts and chain of evidence are also discussed. The course provides students with opportunities to work hands-on utilizing a digital forensics lab. Prerequisite: **MIS 6330**. (3-0) Y

**MIS 6334** (OPRE 6334) Advanced Business Analytics With SAS (3 semester credit hours) This course is SAS based and is part of the 4-course curriculum for the SAS data mining certificate program. It will cover the topics as required by the SAS certificate program including data manipulation, imputation, variable selection, SAS/STA, SAS/ETS, SAS/QC (DOE), and various SAS stat modules. Students will also learn various advanced business intelligence topics including business data analytics, model analytics, customer analytics, web intelligence analytics, business performance analytics, and decision-making analytics. Tool to be used includes SAS. Credit cannot be received for more than one of the following courses: **MIS 6334** or **OPRE 6334** or **BUAN 6357** or **MIS 6357**. Prerequisites: (**OPRE 6301** or **OPRE 6359** or **BUAN 6359**) and (**BUAN 6324** or **MIS 6324**). (3-0) Y

**MIS 6337** (ACCT 6336 and HMG 6336) Information Technology Audit and Risk Management (3 semester credit hours) Management's role in designing and controlling information technology used to process data is studied. Topics include the role of internal and external auditors in systems development, information security, business continuity, information technology, internet, change management, and operations. Focus is placed on the assurance of controls over information technology risks and covers topics directly related to the Certified Information Systems Auditor (CISA) exam. (3-0) Y

**MIS 6338** (ACCT 6338) Accounting Systems Integration and Configuration (3 semester credit hours) Using SAP or similar software, this course focuses on accounting information systems as part of integrated enterprise
systems and modern systems analysis and design of integrated accounting systems and related internal control. Emphasis will be on integrated business processes and related financial transaction flows, system analysis and design methods in SAP with a focus on configuration methods. Prerequisite or Corequisite: ACC T 6202 or ACCT 6305 or ACCT 6331 or an undergraduate degree in Accounting and adequate foundation/academic performance in a corresponding area. (3-0) R

**MIS 6339 (ACCT 6384)** Analytical Reviews Using Audit Software (3 semester credit hours) This course introduces the theory and tools used to leverage automated auditing software such as ACL and IDEA. The course includes an analytical review of accounting and operational data for internal auditors and hands-on use of audit software and the development of an audit dashboard. The course also explores ways to leverage the enterprise technology and use available technology to monitor controls and detect fraud. (3-0) R

**MIS 6341 (BUAN 6341 and OPRE 6343)** Applied Machine Learning (3 semester credit hours) This course covers machine learning models for business data including text mining, natural language processing, non-linear regression models, resampling methods and advanced neural networks and artificial intelligence-based models for data-driven analytics. The course will be taught using either R or Python language. Prerequisites: (BUAN 6356 or BUAN 6324 or MIS 6324 or OPRE 6399) and (OPRE 6359 or BUAN 6359). (3-0) Y

**MIS 6343** Advanced Cybersecurity Management (3 semester credit hours) Security of IT systems and assets has become an important area of focus for organizations. While technology plays a key role in implementing IT security, managing enterprise IT security requires a cross functional set of skills and an understanding of the organization's security framework. Security is implemented as "defense in depth," and requires development of physical, technical, and administrative controls. Managers must have an in-depth knowledge of the eight security domains to plan and implement security for enterprise systems. This course provides an in-depth overview of security issues in enterprise systems. This course allows students to master cybersecurity concepts and topics including security and risk management (legal, regulatory compliance), asset security (data classification, ownership, data security and privacy), security engineering (security architecture, design, and security models), telecommunication and network security (perimeter protection, network attacks, IDS, IPS, firewalls), identity and access management (authentication, authorization, identity as a service), security assessment and testing, security operations (business continuity, disaster recovery, incident management, vulnerability and patch management), and software development security. This course is designed to prepare an individual with major concepts, topics, and their applications as preparation for the Certified Information Systems Security Professional (CISSP) exam. Prerequisite: MIS 6330. (3-0) S

**MIS 6344 (BUAN 6344)** Web Analytics (3 semester credit hours) The course examines the technologies, tools, and techniques to maximize return from web sites. The course includes topics related to web site design issues, web data collection tools and techniques, measurement and analysis of web traffic, visitor tracking, search engine optimization, visitor acquisition, conversion and retention, key performance indicators for web sites, and measurement of online marketing campaigns. The use of web analytics tools such as Google Analytics will be an integral part of the course. (3-0) Y

**MIS 6345 (BUAN 6345)** SAP Analytics (3 semester credit hours) This course provides students with in-depth knowledge of In-memory Business Intelligence tools and In-memory databases using SAP. The course features the SAP Analytics portfolio of solutions that provides a comprehensive set of modern business intelligence, augmented analytics (including predictive analytics), and enterprise planning capabilities that work together to analyze, predict, plan, and report on data wherever it resides. Students learn about different options available to speed up the queries and why In-memory tools are important. The course
covers both the semantic layer modeling and front-end visualization aspects of the In-memory BI tool used. The course also covers the DML, DDL, and modeling techniques used for the In-memory database used. Students learn such concepts using hands-on exercises and practical assignments. The course requires a solid understanding of ER and dimensional modeling. (3-0) Y

**MIS 6346 (BUAN 6346)** Big Data (3 semester credit hours) This course covers topics including (1) understanding of big data concepts, (2) manipulation of big data with popular tools, and (3) distributed analytics programming. It is a project-oriented course; thus, students will be required to establish a big data environment, perform various analytics, and report findings in their projects. Though concepts and theoretical aspects are addressed, more emphasis will be on actual operations of a big data system. Students will not only manipulate the basic big data software/system, but also use various dedicated big data tools and perform distributed analytics programming with popular computer languages. Prerequisite: **BUAN 6320** or **MIS 6320** or **MIS 6326**. (3-0) Y

**MIS 6347 (BUAN 6358)** AWS Cloud Analytics (3 semester credit hours) This course aims to help students learn how to use cloud services to build an enterprise platform for data analytics and machine learning. The course will help students develop skills with AWS services that are critical for conducting an analysis of big data problems. Through a series of hands-on labs, students will learn how to use AWS services and build a data pipeline to source data from other systems as well as streaming data, ingest, store, process, and visualize data. Additionally, students will be able to select and apply machine learning services to resolve business problems. They will also be able to label, build, train, and deploy a custom machine learning model through a guided, hands-on approach. Finally, the course will help students prepare for AWS certifications in Data Analytics and Machine Learning. Corequisite or Prerequisite: **MIS 6363**. (3-0) Y

**MIS 6348** Digital Governance, Risk, and Compliance (3 semester credit hours) This course focuses on the governance, risk and compliance aspects of digital enterprises in the context of increased use of cloud computing, software-defined data centers, big data analytics, and IoT. The course integrates materials drawn from ITIL based practices for IT services management, TOGAF/IT4IT guidelines for enterprise architecture development, and COBIT guidelines for governance, risk, and compliance management. Students will learn how to leverage process-based service models and software such as ServiceNow/SAP GRC to create policies and procedures for governance, models and controls for managing risk, and audits and reports for compliance. (3-0) Y

**MIS 6349** Digital Consulting Project (3 semester credit hours) Students in this course will learn a consulting methodology and how to apply the methodology to a digital project provided by a local firm. Topics include agile methods, working effectively in small groups, project success metrics, and customer facing communication skills. (3-0) Y

**MIS 6356 (BUAN 6356) and OPRE 6305** Business Analytics With R (3 semester credit hours) This course covers theories and applications of business analytics. The focus is on extracting business intelligence from firms' business data for various applications, including (but not limited to) customer segmentation, customer relationship management (CRM), personalization, online recommendation systems, web mining, and product assortment. The emphasis is placed on the 'know-how' -- knowing how to extract and apply business analytics to improve business decision-making. Students will also acquire hands-on experience with business analytics software in the form of R. Credit cannot be received for both courses, **MIS 6324** and **MIS 6356**. Prerequisite or Corequisite: **BUAN 6359** or **OPRE 6359**. (3-0) Y

**MIS 6357 (BUAN 6357)** Advanced Business Analytics with R (3 semester credit hours) This course is based on the open-source R software. Topics include data manipulation, imputation, variable selection, as well as
advance analytic methods. Students will also learn various advanced business intelligence topics including business data analytics, modeling, customer analytics, web intelligence analytics, business performance analytics, and decision-making analytics. Tools to be used include R. Credit cannot be received for both courses, (MIS 6334 or OPRE 6334) and (BUAN 6357 or MIS 6357). Prerequisites: (BUAN 6356 or MIS 6356 or OPRE 6305) and (OPRE 6359 or BUAN 6359). (3-0) Y

**MIS 6360** Agile Project Management (3 semester credit hours) Provides an in depth examination of project management principles and agile software development practices. The five process groups and ten knowledge areas of the Project Management Body of Knowledge (PMBOK) are examined in the context of agile systems development life cycles. (3-0) Y

**MIS 6363** Cloud Computing Fundamentals (3 semester credit hours) This course is designed as a primer for cloud computing which many believe is the third major wave of computing, after mainframe and client-server computing. The course examines this technology from a business perspective. The course is designed to deliver a holistic and balanced view of business model, technological infrastructure, and security issues of cloud computing useful for the technology student to understand the business challenges and the business student to understand the technology challenges. (3-0) R

**MIS 6369 (OPRE 6369)** Supply Chain Software with SAP (3 semester credit hours) The course introduces planning and execution of supply chains with software such as SAP’s S/4 HANA and Advanced Planning and Optimization (APO) with case discussions and lab exercises. Students also get exposure to the new GUI SAP Fiori. This software is used in lab exercises that provide students with hands-on, experiential learning. The focus is on the supply planning function of supply chain management. Topics include: fundamentals of ERP and SAP, master and transaction data, MRP, forecasting, supply and demand matching, and integration of ERP and APO modules. This course is intended for graduate students with interests in software-based supply chain management or digital supply chains. No SAP experience is required. (3-0) S

**MIS 6371 (BUAN 6386)** SAP Cloud Analytics (3 semester credit hours) The course allows students to learn about the capabilities of SAP Analytics Cloud that combines business intelligence, planning, predictive, and augmented analytics capabilities into one cloud environment to support business processes. Students also learn about SAP AI technologies and an in-memory database, which are part of the SAP Analytics Cloud. Students will also learn about Augmented Analytics which helps users ask questions in a conversational manner and get instant results explained in natural language, detect drivers of a KPI and take the best action using automated machine learning that discovers unknown relationships in data and predict outcomes, generate forecasts and automate predictive planning. Students also learn about the modeling environment to create planning models and import data, as well as the standard planning features available in the story. Advanced planning capabilities like value-driver trees, data actions, advanced formulas, and allocations, combined with Smart Predict, an environment to create and train predictive models. (3-0) S

**MIS 6373** Social Media Business (3 semester credit hours) Social Media represents most of the global Internet traffic and mobile apps. This course discusses the landscape of social media, processes and tools and how to leverage these environments through insightful uses of data and analytics to build a business strategy and get closer to customers. Major social media platforms are also examined along with an integrated entrepreneurial project and third-party tools. (3-0) R

**MIS 6374 (HMGT 6374)** Internet of Things (3 semester credit hours) The Internet of Things (IoT) is the key to digital transformation. By 2025, more than 25 billion devices in homes, factories, oil wells, hospitals, cities, and cars will be connected to the Internet. Companies are looking for students who are skilled in
This course provides students with knowledge of IoT components and management of IoT ecosystems. First, students will gain an understanding of digital transformation and Industry 4.0. Next, students will learn about the components of IoT (Sensors, Communication Technology, Networks, Security, Cloud, and Data Analytics). Students will also be exposed to how companies implement solutions on an IoT platform (such as AWS, Azure, or Google). Finally, students will learn about the management of IoT ecosystems in the context of a few use cases (e.g., predictive maintenance, smart transportation, healthcare, or other). (3-0) Y

MIS 6375 (ENTP 6375 and OPRE 6394 and SYSM 6332) Technology and New Product Development (3 semester credit hours) This course addresses the strategic and organizational issues confronted by firms in technology-intensive environments. The course reflects six broad themes: (1) managing firms in technology-intensive industries; (2) forecasting key industry and technology trends; (3) linking technology and business strategies; (4) using technology as a source of competitive advantage; (5) organizing firms to achieve these goals; and (6) implementing new technologies in organizations. Students analyze actual situations in organizations and summarize their findings and recommendations in an in-depth term paper. The course also introduces concepts related to agile engineering. Case studies and class participation are stressed. (3-0) Y

MIS 6378 Customer Relationship Management with Salesforce (3 semester credit hours) This course studies the theory and practice of Customer Relationship Management (CRM) in the modern enterprise. The course explores topics related to strategic customer management, customer analytics, data mining, campaign management, and partner channel management. The course will develop practical skills utilizing the Salesforce.com CRM application and CRM analytics and provides a deep understanding of strategic, operational, analytical, and collaborative CRM. The SAP platform will also be discussed to provide an understanding of Enterprise Systems and CRM. (3-0) R

MIS 6380 Data Visualization (3 semester credit hours) This course studies the technologies, techniques and algorithms for the creation of effective data visualization in the context of data science. The course explores topics related to data wrangling, insight modeling, cognitive science, and graphical communication. The course will develop practical skills using data visualization tools including SAP Lumira, Tableau, Excel Powerview, and D3. The primary course objective will be the creation of data visualizations for strategic communication. (3-0) R

MIS 6381 (HMGT 6327) Electronic Health Records Applications (3 semester credit hours) An interactive, experiential course in which students will utilize hands-on, practice-oriented opportunities to learn the core components of clinical information systems used by major healthcare systems in the United States. The course will include a lab-based component in which students will follow guided exercises and assignments using a leading EMR software as well as case analyses. Prerequisite or Corequisite: HMGT 6323. (3-0) T

MIS 6382 Object Oriented Programming in Python (3 semester credit hours) This course discusses software development concepts and the development of object oriented systems. Topics covered include problem solving techniques, algorithm specifications, debugging, and testing of computer programs. Students solve small programming problems and write their solutions as high quality programs in Python. Credit cannot be received for both course, MIS 6323 and MIS 6382. (3-0) Y

MIS 6383 Advanced Data Management (3 semester credit hours) This course covers non-relational data management uses and applications. Topics include document and key-value data stores, blockchain, and programmatic approaches for non-relational data access and manipulation. Students will have the
opportunity to work hands on with MongoDB, NoSQL, IBM Hyperledger, node.js or similar. Prerequisite: **BUA N 6320** or **MIS 6320** or **MIS 6326**. (3-0) Y

**MIS 6384** Preparing for Cybersecurity Threats (3 semester credit hours) Threats from cyber criminals always exist, but the level of preparation and investment in cybersecurity varies greatly between organizations. This course discusses the current threat environment and specific risk mitigation countermeasures that should be deployed. Students learn through hands-on lab and analysis of well-publicized hacks, on how to build and manage secure networks, and specific steps necessary to harden the technology environment and reduce vulnerabilities before they can be exploited. (3-0) Y

**MIS 6385 (BUAN 6385)** Robotic Process Automation (3 semester credit hours) This course is intended to provide students with practical literacy on robotic process automation through real-world, relevant data preparation use cases. It will help identify potential uses and the benefits and considerations for robotic process automation. The students will learn the elements of a business process and the basics of developing a BPM application, implementing triggers to automate processes, defining and measuring KPIs. Students will use elements of artificial intelligence (AI) and machine learning capabilities to handle high-volume, repeatable tasks that previously required humans to perform. These tasks can include queries, calculations, and maintenance of records and transactions. Students will be able to use apply analytics to the generated data for a systematic computational analysis of data for the discovery, interpretation, and communication of meaningful patterns in data that will be used towards effective decision making. (3-0) S

**MIS 6389** AWS Cloud Solution Architecture (3 semester credit hours) This course is designed as a primer for graduate students to learn the Amazon Web Services (AWS) cloud computing and security. The course focuses on the AWS Well-Architected Framework and deep dives into the five architectural pillars: operational excellence, security, reliability, performance efficiency, and cost optimization. This course builds a solid foundation for our graduate students in AWS cloud computing architecture design and helps to prepare for the AWS Solution Architecture certifications. Prerequisite: **MIS 6363** or AWS Practitioner Certification. (3-0) Y

**MIS 6392 (BUAN 6392)** Causal Analytics and A/B Testing (3 semester credit hours) This course focuses on the distinction between correlation and causation in data. This distinction is critical for managers to understand the effect of proposed managerial interventions. For example, an advertiser may want to know whether referral marketing interventions will be effective for its customers, and, if so, what types of messages may be used to implement a referral marketing program with a high degree of success. Similarly, a music service like Spotify may want to know what kinds of promotions will help increase the number of subscribers in the most effective way. The course will focus on the design and analysis of A/B tests to tease out the difference between correlation and causation. It will also focus on statistical techniques that can be used with observational data to achieve reliable causal inferences in the absence of experimental data. The course employs a combination of lectures, cases, and in-class exercises to introduce the course material. It takes a hands-on approach, exposing students to simulated and real-world datasets, and equipping them with tools they can leverage immediately on the job. Prerequisite: **OPRE 6301** or **OPRE 6359** or **BUAN 6359**. (3-0) Y

**MIS 6393** Foundations of Digital Product Management (3 semester credit hours) Agile software development methods emphasize rapid user feedback cycles and the importance of a product orientation for the success of a software system. This class covers topics associated with developing and managing software as a digital product. Topics include digital strategy, marketing, and branding of digital products, software development methods, design thinking, innovation, and data-driven decision making. Traditional consumer-based digital products will be examined along with the management of digital products for
MIS 6396 User Experience Design (3 semester credit hours) Understanding how to design effective user experiences is essential for the success of a software system. This class covers topics associated with the design and analysis of user interfaces for software systems and explores human-computer interaction. Topics include physical, cognitive, social, and emotional aspects of computing, user interface models, and usability evaluation. The design of user interfaces and user experiences for mobile, desktop, voice, and augmented reality systems will be examined in depth. (3-0) Y

MIS 6398 Blockchain Technology and Applications (3 semester credit hours) Blockchain is innovating every corner of today's business from privacy, ownership, digital rights, payment, contracts, supply chain finance, to the entire value network of businesses. Understanding the blockchain technology and the new business applications enabled by it is imperative for the upcoming Tokeneconomy and Digital Economy. This class discusses these new opportunities and challenges. Students will get hands-on experience using Blockchain tools. (3-0) S

MIS 6V98 Information Systems Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). Prerequisites: (MAS 6102 or MBA major) and department consent required. ([1-3]-0) S

MIS 6V99 Special Topics in Management Information Systems (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

MIS 7220 Colloquium in Management Information Systems (2 semester credit hours) Issues in current information systems research. May be repeated for credit as topics vary (16 semester credit hours maximum). Instructor consent required. (2-0) R

MIS 7310 Advanced Topics in Knowledge Management (3 semester credit hours) The course will discuss knowledge representations and reasoning techniques. It will focus on (1) conceptual models of knowledge in IT-based systems, (2) automated reasoning mechanisms that are enabled by such representations, and (3) automated discovery of knowledge from data. Applications in decision support systems, expert systems, and personalization and recommendation systems will be discussed. Necessary background in data models and information theory will be provided. (3-0) T

MIS 7420 Seminar in Management Information Systems (4 semester credit hours) Survey of theoretical issues and research in information systems. May be repeated for credit as topics vary (16 semester credit hours maximum). Instructor consent required. (4-0) R

Marketing Management

MKT 6009 Marketing Internship (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester
end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: (MAS 6102 or MBA major) and department consent required. (0-0) S

**MKT 6244** Digital Marketing Strategy (2 semester credit hours) Executive Education Course. The course explores three distinct areas within marketing and sales namely, digital marketing, traditional sales prospecting, and executive sales organization and strategy. The continuing convergence of the digital marketing and sales funnels has created a strategic continuum from digital lead generation to digital sales. The course identifies the current composition of this digital continuum while providing opportunities to evaluate sales and marketing digital strategies. Prerequisites: **MKT 6301** and instructor consent required. (2-0) Y

**MKT 6301 (SYSM 6318)** Marketing Management (3 semester credit hours) This course provides an overview of marketing management methods, principles, and concepts, including product, pricing, promotion, and distribution decisions. Analytical techniques and tools such as segmentation, targeting, and positioning are introduced as key components of a more rigorous management science approach to marketing. The learning objective is to have students apply these methods, principles, and concepts to develop, evaluate, and implement effective strategic and tactical decisions in marketing. (3-0) S

**MKT 6309** Marketing Data Analysis and Research (3 semester credit hours) Methods employed in market research and data analysis to understand consumer behavior, customer journeys, and markets so as to enable better decision-making. Topics include understanding different sources of data, survey design, experiments, and sampling plans. The course will cover the techniques used for market sizing estimation and forecasting. In addition, the course will cover the foundational concepts and techniques used in data visualization and “story-telling” for clients and management. Prerequisites or Corequisites: **MKT 6301** and (**B UAN 6359** or **OPRE 6359** or **OPRE 6301**). (3-0) Y

**MKT 6310** Consumer Behavior Science and Practice (3 semester credit hours) The course consists of an analytical exposition of the systematic perspectives of consumer behavior along with their practical marketing implications. This course will undertake a detailed study of the psychological, sociological, and behavioral findings, experiments, and scientific frameworks leading to insights into consumer decision-making. Topics will also include the analysis of the stages of the consumer decision-making model, individual and environmental determinants of consumer behavior, and the calibration of multi-attribute attitude models with their strategic and tactical impact on various aspects of marketing decision making. Prerequisite: **MKT 6301**. (3-0) Y

**MKT 6321** Interactive and Digital Marketing (3 semester credit hours) Introduction to the theory and practice of interactive and digital marketing. Topics covered include: online-market research, consumer behavior, conversion metrics, and segmentation considerations, eCommerce, search and display advertising, audiences, search engine marketing, email, mobile, video, social networks, usability, and the Internet of Things. (3-0) T

**MKT 6323** Database Marketing (3 semester credit hours) Techniques to analyze, interpret, and utilize marketing databases of customers to identify a firm's best customers, understanding their needs, and targeting communications and promotions to retain such customers. Topics include: handling, creating and reading datasets, LifeTime Value, RFM and response analysis. In addition, students will learn to use SAS software. Prerequisites: **MKT 6301** and **OPRE 6301**. (3-0) Y

**MKT 6329** New Product Development (3 semester credit hours) Development and introduction of new products. Topics covered include new product strategy, market definition, and entry strategies, growth and
diffusion of new products and technologies, consumer measurement, product positioning, advertising, and product testing, pretest market forecasting, and test marketing. Students will also learn to use conjoint analyses and diffusion models to measure consumer preferences and market growth. Prerequisite: MKT 6301. (3-0) Y

**MKT 6330** Brand Management (3 semester credit hours) To study the role and philosophy of brand management in the strategic marketing process and the resulting effects on strategic and marketing decisions. Topics will also include the strategic brand building process, segmentation and positioning for building brands, brand information systems, building brand equity, measuring sources and outcomes of brand equity, understanding the brand audit process and the application of brand management using marketing principles. Prerequisite: MKT 6301. (3-0) Y

**MKT 6331** Building and Managing Professional Sales Organizations (3 semester credit hours) The focus of this course is on the development and management of a professional sales organization. The course will explore the different strategies needed for different markets (consumer, business, government, and global). While the course will examine the various training programs available, there will be relatively little emphasis on sales techniques (this is not a course to learn basic selling concepts). We examine issues related to building and managing the sales effort at various stages of the company and product lifecycle, hiring and training sales personnel, compensation and incentive plans, sales forecasting, addressing multiple product lines, multiple channels and multiple geographic regions, and developing strategic alliances. (3-0) T

**MKT 6332** Advertising and Promotional Strategy (3 semester credit hours) The process of formulating promotional strategy with particular emphasis on advertising and sales promotions. Topics will also include behavioral theories of communication, budgeting, media selection and media planning, scheduling of advertisements, measurement of advertising effectiveness, creative strategy and implementation, and management of different types of sales promotions. Prerequisite or Corequisite: MKT 6301. (3-0) Y

**MKT 6334** Digital Sales Strategy (3 semester credit hours) The course explores three distinct areas within marketing and sales namely, digital marketing, traditional sales prospecting, and executive sales organization and strategy. The continuing convergence of the digital marketing and sales funnels has created a strategic continuum from digital lead generation to digital sales. The course identifies the current composition of this digital continuum while providing opportunities to evaluate sales and marketing digital strategies. The course will cover concepts including the difference between inbound and outbound digital marketing strategies, tracking CRM inquiries in the funnel, and lead scoring. Prerequisite or Corequisite: MKT 6301. (3-0) Y

**MKT 6336** Pricing Analytics (3 semester credit hours) The course covers techniques used to price goods and services based on customer analysis and software tools. Topics include value- in-use analysis and segmentation, bundling, price discrimination, product-line pricing, dynamic pricing over the product life cycle, pricing in channels, psychological and competitive pricing. Prerequisite: MKT 6301. (3-0) T

**MKT 6337 (BUAN 6337)** Predictive Analytics Using SAS (3 semester credit hours) This course is designed to provide students with in-depth knowledge of the analytical techniques frequently used in marketing analytics. Students analyze data from real world datasets to make useful marketing decisions. These econometric methods are commonly employed in online marketing, the retail sector, and financial services. Students will acquire knowledge about the methods and software that are used to understand issues such as who the profitable segments/customers are, how to acquire them, and how to retain them. The tools can also be used to manage brand prices and promotions using grocery scanner data. Prerequisite: OPRE 6301

or BUAN 6359 or OPRE 6359. (3-0) Y

**MKT 6339** Capstone Marketing Decision Making (3 semester credit hours) This course provides hands-on experience in marketing decision-making using analytical marketing methodologies and frameworks. As part of the course, students will run a comprehensive marketing simulation software where they manage a fictional firm as a team in a competitive market place. Teams make strategic and tactical decisions to compete with other firms for market share and profits. Students will be exposed to commonly encountered marketing decisions such as selecting target segments, positioning, product line extensions, pricing, promotions, advertising spending, and sales force allocation. Students will learn to integrate the latest marketing thinking with data and assumptions, to systematically evaluate tradeoffs and implement solutions, and avoid common marketing mistakes. Students will gain experience in developing and defending the business case for marketing decisions and measuring and evaluating the outcome of their choices. Prerequisite: **MKT 6301.** (3-0) Y

**MKT 6340** Marketing Projects (3 semester credit hours) Sponsored by local industries, these projects provide the students an opportunity to apply the skills and knowledge gained to solve real world marketing problems. Students work in a team environment, interact with industry leaders, and gain industry specific knowledge. May be repeated for credits as topics vary (6 semester credit hours maximum). Prerequisites: (**MKT 6301** or **MKT 6309**) and (BUAN 6359 or OPRE 6301). (0-3) T

**MKT 6341** Marketing Automation and Campaign Management (3 semester credit hours) This course provides students with both theoretical, and practical knowledge of campaign management best practices. The course has hands-on software which covers database creation, email/SMS marketing automation, forecasting, account-based management (ABM), data hygiene, optimization, testing, retargeting, attribution, customer journey mapping. Analytical, direct marketing and decision-making techniques are an overarching component of the course. Prerequisite or Corequisite: **MKT 6301.** (3-0) Y

**MKT 6342** Marketing Customer Insights Development (3 semester credit hours) This course provides managers with a foundation in analysis and presentation techniques. Students will learn how to create and use data visualization, apply estimation techniques, solve problems by applying frameworks and extract insights from data. The art and technique of preparing and delivering executive level presentations will be emphasized. A significant component of the course will consist of critical thinking, problem-solving and decision making techniques using in customer insight development. Prerequisite or Corequisite: **MKT 6301.** (3-0) Y

**MKT 6343** Social Media Marketing and Insights (3 semester credit hours) This course is designed to provide students with a theoretical foundation and working knowledge of social media strategies and tools used by marketing departments and agencies. Students learn best practices in social media marketing for brand awareness improvement, lead generation, customer relationship management, online reputation/crisis management, word-of-mouth campaign, influencer marketing, and digital IMC. The course also provides a strategic foundation for social media analytics in both B-C and B-B environments, including platform selection, content curation and development, and ROI measurement of social media interventions using various metrics. The course includes a hands-on component. Prerequisite: **MKT 6301.** (3-0) R

**MKT 6344** Digital Marketing Strategy (3 semester credit hours) Executive Education Course. The course explores the business development process and sales funnels, digital marketing, digital and social media concepts, business development analytics as well as concepts including the difference between inbound and outbound digital marketing strategies. Corequisite: **MKT 6301.** (3-0) Y

**MKT 6345** Quantitative Marketing Decision-Making (3 semester credit hours) This course teaches graduate
students how to make good marketing decisions using quantitative analysis. Students will use Excel or R for data analysis, but the focus is on making good recommendations for management. Students are expected to have a basic knowledge of statistics and PC proficiency (e.g., importing/exporting files). Topics will cover models used to make good decisions in the following areas: strategic marketing, segmentation, positioning, managing marketing mix, product management, advertising and communication, sales force management, retail location and management, and service management. Prerequisite: OPRE 6301 or BUAN 6359 or OPRE 6359. (3-0) Y

MKT 6347 Marketing Analytics Project (3 semester credit hours) Sponsored by local industries, this combination lecture and project provides students with an opportunity to apply relevant skills and knowledge needed to solve real-world marketing analytics and insights challenges. Students work in a team environment, interact with industry professionals, and gain industry-specific knowledge and software skills. Prerequisites: (OPRE 6359 or BUAN 6359 or OPRE 6301) and (BUAN 6337 or MKT 6337 or MKT 6353). (3-0) Y

MKT 6349 MarTech Ecosystem (3 semester credit hours) This course covers the essential concepts of how to build and leverage a customer-centric data ecosystem to deliver personalized and timely messages to the customers, with the goal of supporting brand awareness, brand building, up-sell and retention across multiple touch points. In addition, the course covers best practices on how to select and integrate external marketing partners to build the ideal MarTech that will allow the delivery of personalized messages through different technologies (including AI) and how to optimize the marketing spend and KPIs to evaluate success. The course will be a mix of lectures and industry expert guest speakers. Prerequisite: MKT 6301. (3-0) Y

MKT 6350 Marketing Strategy and Game Theory Framework (3 semester credit hours) Students learn how firms develop their marketing strategy to compete effectively in different situations. Using game theory principles, they will learn to analyze competitive strategies and then apply these to situations involving new emerging markets, mature markets, and on the Internet. Prerequisite: MKT 6301. (3-0) T

MKT 6352 Marketing Web Analytics and Insights (3 semester credit hours) This course covers essential and advanced techniques and best practices in web analytics such as the setup and implementation of funnels and segments, attribution, KPI's, conversion, and campaign tracking. Special emphasis is given to actionable business insights and recommendations. The course uses different web analytics platforms, some with transactional datasets. (3-0) Y

MKT 6353 Customer Analytics and Insights (3 semester credit hours) Techniques to analyze, interpret, and utilize marketing data sets for prospecting purposes and to identify and retain profitable customers. The course will focus on omnichannel data and techniques such as Life-Time Value, RFM, response analysis, and attribution. Additional emphasis on developing critical thinking skills and problem-solving techniques to find and present actionable insights to management. Prerequisite: OPRE 6301 or BUAN 6359 or OPRE 6359. (3-0) Y

MKT 6380 (ENTP 6380) Market Entry Strategies (3 semester credit hours) This course addresses the marketing challenges facing the entrepreneurial firm, with specific emphasis on the choice and implementation of an initial market entry strategy. This choice typically involves multiple decisions, each based on critical assumptions about customers, markets and competitors. Early validation of these key assumptions is an essential element of the strategic decision process. Topics include understanding the context and the customer, developing and validating the business concept, defining the product/service offering and customer value proposition, positioning, creating awareness, and developing and implementing the market entry strategy. Credit cannot be received for both courses, ENTP 6380 and MKT 6380. Prerequisite or Corequisite: ENTP 6370 or MKT 6301. (3-0) Y
**MKT 6382 (ENTP 6382)** Professional Selling I (3 semester credit hours) Examines the theory and practical application of the principles and art of professional selling. The course places special emphasis on mapping the sales process for new companies and new products. The course includes case studies and learning by doing live case instruction. This course also includes advanced concepts in sales such as major account acquisition, government markets, global markets, request for information, request for proposal, product line sales, adaptive product and service solutions, team selling, long sales cycles, prospecting and networking strategies, implementation and analysis of prospecting strategies, and sales management strategies for the early stage of the product lifecycle. (3-0) Y

**MKT 6384** Advanced Marketing Web Analytics and Insights (3 semester credit hours) This course will help students master advanced elements of web analytics and transform them into a data wizard able to make highly informed business decisions based on analytics from web platforms (.com, mobile, app), marketing platforms, and the IoT. Students will learn how to leverage web analytics to build advanced statistical models aimed at optimizing your eCommerce platform performance and digital marketing strategy. Students will also learn how to integrate a web analytics platform with a visualization tool such as Tableau to build real-time dashboards on conversion funnel, marketing channels, and customer segments. In addition, the course will cover the fundamentals of A/B testing and its importance in today's organizations, including test design, measurement plan, data collection, and analysis & insights. Prerequisite: **MKT 6352**. (3-0) Y

**MKT 6V98** Marketing Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). Prerequisites: (MAS 6102 or MBA major) and department consent required. ([1-3]-0) S

**MKT 6V99** Special Topics in Marketing (1-6 semester credit hours) Study of rapidly emerging or changing areas within marketing. The specific topic will fall under one of the following categories: advertising, branding, digital marketing, product management, sales, marketing management or marketing analytics and market research. The course may consist of participation in one or more major marketing competitions. May be repeated for credit as topics vary (6 semester credit hours maximum). Prerequisite: (MKT 6301 or MKT 6309) or instructor consent required. ([1-6]-0) Y

**MKT 7314** Marketing Models I (3 semester credit hours) Study of mathematical models used in solving marketing problems including brand switching, new product adoption, and competitive strategy models. Instructor consent required. (3-0) Y

**MKT 7315** Marketing Models II (3 semester credit hours) Advanced study of mathematical models used in solving marketing problems including brand switching, new product adoption, and competitive strategy models. Instructor consent required. (3-0) Y

**MKT 7316** Marketing Models III (3 semester credit hours) Study of mathematical and statistical models used in the analysis of markets and marketing problems including dynamic models of marketing mix, applications of econometric methods in marketing. Instructor consent required. (3-0) T

**MKT 7317** Marketing Models IV (3 semester credit hours) Advanced study of mathematical models used in the analysis of markets and marketing problems including the use of game theory and modeling
uncertainty. Instructor consent required. (3-0) T

MKT 7V12  Research Applications in Marketing (3-4 semester credit hours) Application of multivariate methods in statistics to marketing problems including discriminant analysis, logit/probit analysis, and other multivariate applications. May be repeated for credit as topics vary. Instructor consent required. ([3-4]-0) T

Organizational Behavior

OB 6152  Executive Coaching (1 semester credit hour) Executive Education Course. This is a one-on-one, developmental experience with a professional, ICF certified executive coach. The goal of the coaching experience is to develop the soft skills required for leadership positions including executive presence, strategic self-awareness, social networking, political intelligence, and social intelligence. Instructor consent required. (1-0) Y

OB 6155  Capstone in Organizational Behavior and Coaching (1 semester credit hour) Executive Education Course. The capstone course is the culmination of the program in which students further develop their knowledge of organizational behavior and executive coaching through application of field experiences. Students conduct research across different subject areas, integrate and apply the major theories and principles they have learned during the program to develop a cohesive and multifaceted output. Department consent required. (1-0) S

OB 6248  Coaching Practice Lab I (2 semester credit hours) Executive Education Course. Small group practice sessions for the purpose of applying and deepening the principles and techniques learned throughout the coaching classes. The purpose of this class is to engage in applied learning through peer-to-peer interaction with instructor feedback. This course is offered in an online format only. Corequisite: OB 6350. (2-0) S

OB 6249  Coaching Practice Lab II (2 semester credit hours) Executive Education Course. Small group practice sessions for the purpose of applying and deepening the principles and techniques learned throughout the coaching classes. The purpose of this advanced class is to engage in applied learning through peer-to-peer interaction with instructor feedback. This course is offered in an online format only. Prerequisite: OB 6248. Corequisite: OB 6351. (2-0) S

OB 6253  Coaching Practicum (2 semester credit hours) Executive Education Course. Individual sessions with a supervising coach and small-group supervised sessions. For the individual sessions, students will be required to submit recordings for review or provide for real-time attendance by the supervising coach so that an evaluation of their coaching competence can occur. Feedback and guidance will help students develop their coaching skills. A comprehensive exam will be used to evaluate coaching competency. The exam will test for their knowledge, skills, and abilities as an executive and professional coach. Instructor consent required. This course is offered in an online format only. Pass/Fail only. Corequisite: OB 6352. (2-0) T

OB 6255  Capstone in Organizational Behavior and Coaching (2 semester credit hours) Executive Education Course. The capstone course is the culmination of the program. Students are required through research to integrate the major theories and principles of the entire curriculum. Students further develop their knowledge of organizational behavior and executive coaching through application of field experiences. Department consent required. (2-0) S
**OB 6301 (SYSM 6333) Organizational Behavior (3 semester credit hours)** The study of human behavior in organizations. Emphasizes theoretical concepts and practical methods for understanding, analyzing, and predicting individual, group, and organizational behavior. Topics include work motivation, group dynamics, decision making, conflict and negotiation, leadership, power, and organizational culture. Ethical and international considerations are also addressed. (3-0) S

**OB 6303 Managing Organizations (3 semester credit hours)** Macro-management: managing internal organizational processes such as restructuring, and external network relationships such as strategic alliances. Applications to current management issues. Prerequisite: **OB 6301**. (3-0) Y

**OB 6304 Human Resource Management (3 semester credit hours)** This course covers various human resource management issues including workforce planning, talent acquisition, employment law, performance management, job/competency analysis, training/learning, leadership and career development, compensation and benefits, and labor relations. The course also examines how the human resource function contributes to execution of the company's business strategy, business performance, and competitive advantage. (3-0) Y

**OB 6307 Strategic Human Resource Management (3 semester credit hours)** Theories, concepts, and procedures involved in managing human resources. Examination of the correspondence between organizational strategies and human resources needed to carry out those strategies. Topics include job analysis, compensation and benefits, performance management, succession planning, career development issues, legal considerations, and international issues. Prerequisite: **OB 6301**. (3-0) T

**OB 6321 Principles of Leadership (3 semester credit hours)** Theories and techniques of leadership, emphasizing the complementary roles of management and leadership in organizations. The course will address emotional intelligence, leadership styles, communications and leadership processes, focusing on how leaders turn challenging opportunities into successes and get extraordinary things done in organizations. Self-assessment exercises will focus on the development of individual leadership skills. Prerequisite: **OB 6301**. (3-0) Y

**OB 6329 Current Topics in Negotiation and Mediation (3 semester credit hours)** Executive Education Course. A combination of lectures, readings, group discussions, and individualized study. This course is designed to meet the individualized interests of students within the domain of Negotiations and Mediation. Academic scholars from around the globe present their thinking on current topics in this field, and these will be discussed both in class and through written and presentation assignments. In addition to students' specific individual interests, selected readings that present current thinking, approaches, and practices will be discussed. (3-0) Y

**OB 6331 Power and Politics in Organizations (3 semester credit hours)** Political processes and the development and use of power in organizations including the role of power in decision-making, sources of power, conditions for the use of power, assessing power in organizations; political strategies and tactics; political language and symbols, and applications to budgeting, careers and organizational structure. (3-0) T

**OB 6332 (HMGT 6324 and MECO 6352 and SYSM 6313) Negotiation and Dispute Resolution (3 semester credit hours)** This course explores the theories, processes, and practical techniques of negotiation so that students can successfully negotiate and resolve disputes in a variety of situations including interpersonal, group, and international settings. Emphasis is placed on understanding influence and conflict resolution strategies; identifying interests, issues, and positions of the parties involved; analyzing co-negotiators, their negotiation styles, and the negotiation situations; and managing the dynamics associated with most negotiations. Practical skills are developed through the use of simulations and exercises. (3-0) Y
OB 6334 Foundations of Organizational Development (3 semester credit hours) Explores the foundations and role of organizational development. Topics include: emergence and development of the field and its role in twenty-first century organizations; major macro-level organizational concepts such as organizational strategy, structure, culture, innovation, and globalization; and the role of organizational development in change management, intervention strategies and group process. (3-0) R

OB 6337 Motivational Leadership in Organizations (3 semester credit hours) Analyzes the types of behaviors which lead to high performance within healthcare organizations. Topics include individual behavior and motivation, behavioral job requirements and job/person matching, the differences between leadership and managerial behavior; and how to establish and maintain a high performance work climate. (3-0) Y

OB 6338 Coaching as a Leadership Style (3 semester credit hours) Executive Education Course. Develops highly effective coaching skills for fostering positive change in both individuals and teams. Topics include developing an effective coaching relationship through intelligent listening and authentic feedback, assessing an individual's readiness for change and helping to increase colleagues' personal and professional effectiveness. (3-0) Y

OB 6339 Negotiations and Contracts (3 semester credit hours) Executive Education Course. This course addresses contracts and explores the theories, processes, and practical techniques of negotiation so that students can successfully negotiate and resolve disputes in a variety of situations including interpersonal, group, and international settings. Emphasis is placed on understanding influence and conflict resolution strategies; identifying interests, issues, and positions of the parties involved; analyzing co-negotiators, their negotiation styles, and the negotiation situations; and managing the dynamics associated with most negotiations. Practical skills are developed through the use of simulations and exercises. Instructor consent required. (3-0) Y

OB 6340 Leading Strategic Change Processes in an International Environment (3 semester credit hours) This course emphasizes practical skills required to be an effective change agent. Topics include entry in change projects, negotiating role expectations, contracting, diagnostic interviewing, motivating system change and overcoming resistance, group dynamics and large group interventions, and intercultural differences in leadership expectations. Prerequisite: OB 6301. (3-0) T

OB 6341 Organizational Change From Theory to Practice (3 semester credit hours) Executive Education Course. This course covers models of organizational change that are used to transform organizational functioning, executional capabilities, and ultimately business performance. Focus will be on bridging the gap between theory and practice. Topics include a theoretical overview of the organizational change discipline, common change models used in practice, and their strengths and weaknesses. (3-0) Y

OB 6342 Organizational Diagnosis (3 semester credit hours) Executive Education Course. This course focuses on gaining theoretical knowledge and practical skills necessary to diagnose the operating effectiveness of a firm, business unit, or business function. The course covers how to design a diagnostic approach, gather fact-based information, how to analyze the information, draw actionable conclusions, and how to create a set of actions necessary to impact organizational performance. Additionally, a case study approach will be used. (3-0) Y

OB 6343 (ENTP 6343) Strategy and Management in the Craft Brewing Industry (3 semester credit hours) This course focuses on the actual business of craft brewing and examines the competition, strategy, operations, production, financing, sales and marketing, supply, distribution, and regulation. The course provides a comprehensive perspective on the dynamics of an emerging industry, with detailed information on managing the business aspects of craft brewing, with insight into potential jobs and careers in this industry,
and challenges of starting and operating a small business. (3-0) S

**OB 6344** Organizational Development: Bridging Theory and Practice (3 semester credit hours) Executive Education Course. The discipline of applied organizational development (OD) is broadly concerned with the application of empirically supported theoretical frameworks that, when applied, improves the performance capability and effectiveness of individuals, teams, and entire organizations. This course covers a range of models and practices spanning all three domains with a focus on how they translate to and apply in practice. Topics range from improving individuals' performance, to improving the effectiveness of work teams, to large-scale system and organizational behavior diagnosis and change. The course is designed to bridge the gap between OD theory and research and actual practice. (3-0) Y

**OB 6345** The Dynamics of Interpersonal Relationships (3 semester credit hours) Executive Education Course. Applying evidence-based concepts, models, and principles, this course explores the dynamics of interpersonal relationships. Self-awareness and "other" awareness will be facilitated by examining behavioral styles and key motivational drivers that influence interpersonal interactions in varied contexts. Examination of dynamics that underscore productive and counterproductive communications will support the student to read and proactively manage communications well before they become problematic. Students learn how to apply skills for effective interpersonal influence in personal and organizational contexts. Skills learned in the course supports continuing interpersonal growth and development as the student encounters new and challenging personal and organizational circumstances. This course also emphasizes practical application of course material through individual and group assignments. (3-0) Y

**OB 6346** Leading Organizational Change (3 semester credit hours) Executive Education Course. This course explores how real change happens in organizations including setting a business strategy, using change models, and showing leadership throughout the change process. Topics include the linkage of business strategy and organizational change, driving and resisting forces to change, frameworks helpful in guiding the change process, and the types of leadership most critical at different stages of the change process. (3-0) Y

**OB 6348** Leadership Concepts and Practices (3 semester credit hours) Executive Education Course. This course explores theories and techniques of leadership and approaches from antiquity to the present time with emphasis on complementary roles of management and leadership in organizations. The course covers various aspects of developing such approaches and its critical analyses. The course also addresses emotional intelligence, leadership styles, communications practices and with specific focus on how leaders turn challenging opportunities into successes and achieve extraordinary results. Self-assessment exercises will focus on the development of individual leadership skills. (3-0) Y

**OB 6350** Executive and Professional Coaching (3 semester credit hours) Executive Education Course. The class provides students with a study of the origins and structure of coaching. Topics include the current status of coaching, the history of coaching as a profession, basic coaching principles, ethics and standards, the core competencies of coaching, and basic coaching techniques and practices. It also addresses the role of personal style in coaching and how to adjust coaching behavior to fit the coaching requirements of clients. This course is offered in an online format only. Corequisite: **OB 6248**. (3-0) T

**OB 6351** Coaching in the Business or Organizational Setting (3 semester credit hours) Executive Education Course. This course prepares coaches to work with individuals and teams in a corporate or business environment. Topics include coaching and organizational behavior theories and models that facilitate client change within an organizational setting, coaching executives with an emphasis on achieving business results, coaching methods for groups, and research practices. This course is offered in an online format.
**OB 6350** Advanced Coaching Models and Methods (3 semester credit hours) Executive Education Course. The course provides students with advanced principles and practices for coaching individuals within the corporate setting. Topics include appreciative inquiry models and techniques, a practical lab in team coaching, a survey of evidence-based coaching models, the use of language to promote change, research practices, and evidence based positive psychology. This course is offered in an online format only. Prerequisite: **OB 6351**, Corequisite: **OB 6253**. (3-0) T

**OB 6355** Capstone in Organizational Behavior and Coaching (3 semester credit hours) Executive Education Course. The capstone course is the culmination of the program. Students are required through research to integrate the major theories and principles of the entire curriculum. Students further develop their knowledge of organizational behavior and executive coaching through application of field experiences. Department consent required. (3-0) S

**OB 6356** Leadership Decision Making (3 semester credit hours) This course develops leaders in the cutting-edge science and research around decision making in an organizational setting. Students are exposed to the Normative and Behavioral models of decision making. From these models, a thorough examination of the five methods of decision making are covered, including Solo, Inform, Discuss, Recommend, and Consensus. Additionally, measuring constructs are examined that evaluate decision effectiveness quantitatively and qualitatively. These constructs include role clarity, quality, speed, yield, effort, and economic performance correlations. This course provides a broad educational foundation in decision sciences as well as developing the Leader's ability to select appropriate decision models and methods to maximize his or her overall leadership effectiveness. (3-0) S

**OB 6357** Small Group Dynamics (3 semester credit hours) Executive Education Course. This course discusses and analyzes the dynamics of group communication, interactions, and decision-making, particularly as subgroups of organizations. The course also discusses related theories to better understand the opportunities and challenges of group work to enhance organizational effectiveness. Students will be involved in a number of group activities on team-building aspects and presentation effectiveness to augment lectures and readings. (3-0) Y

**OB 6358** Leading in Complex Environments (3 semester credit hours) Executive Education Course. To succeed in a fast-paced, ever-changing environment, leaders must know how to lead using a variety of tools and styles. This course presents a framework for operating in a complex environment that is uncertain, ambiguous, and volatile. It will explore design thinking and complexity as one way to solve problems in this dynamic world. The course will explore the role of the "Learning Organization." The course will review models for turning vision into action. (3-0) Y

**OB 6367** Followership and Ethics (3 semester credit hours) Executive Education Course. This course will explore the importance of followers and why the leader must exhibit the right behaviors to influence followers. The course reviews and analyzes various ethical decision-making frameworks and barriers to effective decision-making, and how leaders can best overcome the challenges of ethical leadership. (3-0) Y

**OB 6369** Leadership Models and Decision Making (3 semester credit hours) Executive Education Course. This course will address the role of decision-making in leadership, review various decision-making models, and highlight decision-making styles and other tips. The class will explore creative and problem solving as it relates to leadership. Finally, the class will explore leadership models using a series of contemporary examples. (3-0) Y
**OB 6370** Foundations of Organizational Consulting (3 semester credit hours) Executive Education Course. This course explores the foundations of organizational consulting and the roles of internal and external consultants. Topics include the history of consulting, scoping and pricing projects, writing proposals and preparing contracts, and successfully navigating the consulting cycle from client entry to diagnosis and from development to implementation and exit. This course is offered in an online format only. (3-0) Y

**OB 6371** Theory and Practice of Organizational Consulting (3 semester credit hours) Executive Education Course. This course explores the theories, frameworks, and applications of organizational consulting interventions. Topics include organizational structure and culture, change management, workflow and job design, employee engagement, selection and on-boarding, performance management, workforce planning, leadership development, succession planning, high performance teams, and individual development and coaching. This course is offered in an online format only. (3-0) Y

**OB 6372** The Business of Consulting (3 semester credit hours) Executive Education Course. This course explores the challenges of building a successful consulting practice and being an effective organizational consultant. Topics include creating a value proposition, building a brand, setting a strategy, and implementing an operating model for a consulting practice as well as consulting competencies, ethical guidelines, and professional development strategies for consultants. This course is offered in an online format only. (3-0) Y

**OB 6373** Organizational Consulting: Theory and Practice of System-Wide Interventions (3 semester credit hours) Executive Education Course. This course explores theories, frameworks, and applications of organizational consulting interventions at the organization level for human capital consultants and general business consultants. Human capital consulting topics include organizational design, job design, process and workflow design, workforce analytics and planning, organizational culture, change management, and employee engagement. General business consulting topics include deploying agile frameworks, building technical competency models, acting with social responsibility, linking consulting solutions to business strategy, and consulting in sales, marketing, operations, risk management, non-profit and public sector organizations. Case studies will be used throughout the course to highlight effective and integrated system-wide organizational consulting practices. (3-0) Y

**OB 6374** Organizational Consulting: Theory and Practice of Individual and Team Interventions (3 semester credit hours) Executive Education Course. This course explores theories, frameworks, and applications of organizational consulting interventions at the individual and team level for human capital consultants and general business consultants. Human capital consulting topics include consulting frameworks, selection and on-boarding, performance management, high-performance teams, individual development and coaching, succession planning and career development and leadership development. General business consulting topics include operating globally and cross-culturally, working with Boards of Directors, interacting with CEOs, understanding entrepreneurs and high growth businesses, delivering work through leadership teams, communicating with stakeholders, flexing to individual personalities and setting up training and learning networks. Case studies will be used throughout the course to highlight effective individual and team consulting practices. (3-0) Y

**OB 6375** Mediation Process and Practices (3 semester credit hours) Executive Education Course. This course explores the dynamics of third-party mediation as a strategy to assist two or more parties in reaching agreement on a course of action to resolve a dispute or to address some other challenge. Building on an understanding of mediation methods that have appeared in history and in many cultures, students will review and critique modern methods, and have an opportunity to practice a generic model that can be customized to fit organizational, community, and family topics. Ethics and professional practice topics will
equip students to introduce new skills in settings where mediation skills can be used to help parties control costs and increase satisfaction in dispute situations. This course is offered in an online format only. (3-0) Y

**OB 6377** The Neuropsychology of Leadership (3 semester credit hours) Executive Education Course. Exploration of the manner in which advances in the neurosciences inform organizational interventions in the area of leadership. This course explores basic neural structures and functions and how these are activated within interactions between leaders and their teams as indicated by research. Of particular importance will be the relevance to workplace dynamics, particularly how the research can be translated into leadership practices that can augment productivity and engagement as well as research exploring which practices can derail organizations. (3-0) Y

**OB 6378** Business Models and Systems (3 semester credit hours) Executive Education Course. This course orients students to commercial value chains, business models, and viewing business as systems. This course explores value chains to understand how they deliver goods and services into the marketplace to derive both value-in-consumption and value-in-profitability for firms. The course explores both supply systems and go-to-market systems. Finally, the course provides students with the ability to read business financial statements in real case studies. Students learn to assess a firm's level of health and to derive workforce implications. (3-0) Y

**OB 6379** Culture and the Employee Value Proposition (3 semester credit hours) Executive Education Course. This course reviews the dimensions of organizational culture and the use of culture surveys in an international context. The role of leadership and HR in establishing, managing, and changing culture is explored. The concept of the employee value proposition is established along with its impact on the organization's ability to attract, develop, and retain talent in the global marketplace. A course capstone project is completed where the student defines current and future cultural elements along with an employer brand. (3-0) Y

**OB 6380** Viewing Organizations as Systems (3 semester credit hours) Executive Education Course. This course is designed to help students view and think about organizations from a systems vantage point. Systems thinking is a core skill that is developed using rich case studies. Organizational design methods are studied to ground the student in the discipline and to place the design engagement in the context of viewing the organization as a system. Case studies are used to explore global uses and differences and how they impact the business systems. (3-0) Y

**OB 6381** Strategic HR Application (3 semester credit hours) Executive Education Course. This course leverages the concepts from the entire program and facilitates the student through case applications. The processes, practices, and tools are applied to a student selected project. The student assesses a business and recommends human capital improvements to include the areas of culture, people, talent, leadership development, and organizational effectiveness. (3-0) Y

**OB 6382** Transformational Leadership (3 semester credit hours) Executive Education Course. This course explores Transformational Leadership as it relates to workforce dynamics and practices. Students will investigate the history of this theory, including the variety of approaches to Transformational Leadership as well as salient cultural, gender, and business forces influencing its development over time. Course assignments include the applicability of Transformational Leadership to challenges inherent in both present and future workplaces. Case studies in Transformational Leadership will integrate theory with practice. Academic literature will be reviewed introducing relevant issues surrounding the application of this model in a variety of settings. (3-0) Y
OB 6383 Current Topics in Organizational Behavior and Development (3 semester credit hours) Executive Education Course. This course is a combination of lecture, readings, group discussion, and individualized study. It is designed to meet the individualized interests of students within the domain of contemporary Organizational Behavior and Development. Academic scholars from around the globe present their thinking on current topics in this field, and these will be discussed both in class and through written and presentation assignments. In addition to students' specific individual interests, selected readings that present current thinking, approaches, and practices will be discussed. (3-0) S

OB 6384 Managing Conflict in Personal and Professional Settings (3 semester credit hours) Executive Education Course. This course examines the leading theories of conflict and conflict management strategies. The relationship between personality and conflict styles will also be addressed. Practical, theoretical, and critical analyses of conflict in a variety of contexts, including organizations, families, and interpersonal relationships are studied. (3-0) Y

OB 6398 Contemporary Issues in Organizational Development (3 semester credit hours) Executive Education Course. A combination of lecture, readings, group discussion, and individualized study. This course is designed to meet the individualized interests of students within the domain of contemporary Organizational Behavior and Development. Academic scholars from around the globe present their thinking on current topics in this field, and these will be discussed both in class and through written and presentation assignments. In addition to students' specific individual interests, selected readings that present current thinking, approaches, and practices will be discussed. (3-0) Y

OB 6V99 Special Topics in Organizational Behavior (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

OB 7300 Organization Theory (3 semester credit hours) Survey of major theoretical perspectives and current research in organization theory. Prerequisite: International Management Studies PhD majors only and instructor consent required. (3-0) Y

OB 7302 Organization Behavior (3 semester credit hours) This course is designed to expose students to a variety of organizational behavior/human resource management (OB/HRM) topics and data gathering techniques. Different procedures for gathering research data, usually within the context of the papers will be critiqued and a term paper is required. Instructor consent required. (3-0) Y

OB 7306 Macro-Organizational Empirical Investigation (3 semester credit hours) PhD seminar in the process of empirical research on organizations including formulation of a research question; the development and application of theory leading to the construction of models and the formulation of hypotheses; the design of a study; identification of data sources and the collection of data; computer analysis of data to test hypotheses; and the presentation of the study in a research paper. Emphasis will be given to linear models, archival data, and regression analysis, but other approaches will be discussed. Topics may vary. Prerequisite: OB 7300 or equivalent or instructor consent required. (3-0) R

OB 7310 Group and Intergroup Processes (3 semester credit hours) Current theories of group processes and group development in different social contexts. Work and non-work, intergroup relationships, group task and process issues, stages of group development, group norms, group roles, group structure, leadership, group cohesion, intergroup conflict and cooperation, intergroup interdependencies and organizational structure, boundary roles, intergroup communication, power, organizational politics and managing intergroup differences. Prerequisites: (OB 6301 or OB 6303) and OB 6322 or instructor consent required. (3-0) R
OB 7312 Social Network Theory (3 semester credit hours) Social network theory focuses on structural relations among people and organizations. As one of the fastest growing paradigms originated from anthropology and sociology, it has gained enormous popularity within the broad field of organizational management. This course provides a systematic introduction to social network theory by reviewing its basic history, philosophy, theories, and methodologies. The course also explores how social network theory can be applied to addressing various management issues such as knowledge diffusion, social capital, strategic alliance, and network dynamics. (3-0) R

OB 7313 Organizational Decision Making (3 semester credit hours) This seminar provides a systematic and up-to-date literature background for academic research in this area. This course covers normative, descriptive, and non-rational aspects of decision making at the individual, group, and organizational/strategic levels. The course also examines the impact of contextual factors such as uncertainty, ambiguity, environment, structure, process, information technology, international culture, and ethics on organizational decision making. (3-0) R

Operations Research

OPRE 6000 Professional Development (0 semester credit hours) This course is designed to enhance the students' experience such as building networking skills, verbal and written communication skills, business etiquette and learning how to increase their human capital. The goal of this course is to make students more marketable and valuable professionals to the global economy. (1-0) S

OPRE 6008 Quantitative Foundations Primer (0 semester credit hours) This online course covers college algebra, linear algebra, and the basic calculus necessary for the MBA Program. Department consent required. Prerequisite: MBA majors only. (0-0) Y

OPRE 6009 Supply Chain Management Internship (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: (MAS 6102 or MBA major) and department consent required. (0-0) S

OPRE 6250 Global Supply Chain Management (2 semester credit hours) Executive Education Course. This course addresses the design and management of global supply chain including international sourcing, integration of suppliers and distribution channels. Prerequisite: OPRE 6201 or OPRE 6302. (2-0) Y

OPRE 6271 Project Overview, Strategic and Process Management (2 semester credit hours) Executive Education Course. Introduces the project lifecycle, typical project management processes, leadership and teaming in project management, the relevance of business process analysis, strategic alignment of projects, and professional credentialing of project managers. (2-0) R

OPRE 6274 Project Execution Planning (2 semester credit hours) Executive Education Course. Concludes the introduction of project planning techniques started in OPRE 6373. Topics include negotiation, project time, resource, cost, and risk management. Prerequisite: OPRE 6373. (2-0) S

OPRE 6275 Project Execution, Control and Closeout (2 semester credit hours) Executive Education Course. Introduces project execution, control and closeout techniques. Topics include project execution and control
including earned value management, lean and six sigma methodologies, procurement management and project closeout. Prerequisite: OPRE 6274. (2-0) S

OPRE 6301 (SYSM 6303) Statistics and Data Analysis (3 semester credit hours) Introduction to statistical and probabilistic methods and theory applicable to situations faced by managers. Topics include: data presentation and summarization, regression analysis, fundamental probability theory and random variables, introductory decision analysis, estimation, confidence intervals, hypothesis testing, and One Way ANOVA. Credit cannot be received for both: OPRE 6301 and (OPRE 6359 or BUAN 6359). (Some sections of this class may require a laptop computer). (3-0) S

OPRE 6302 (SYSM 6334) Operations Management (3 semester credit hours) Operations Management integrates all of the activities and processes that are necessary to provide products and services. This course overviews methods and models that help managers make better operating decisions over time. How these methods will allow firms to operate both manufacturing and service facilities in order to compete in a global environment will also be discussed. Prerequisite or Corequisite: OPRE 6301 or BUAN 6359 or OPRE 6359. (3-0) S

OPRE 6303 Quantitative Foundations of Business (3 semester credit hours) This course discusses the applications of some basic mathematical concepts necessary for the business environment. Students are introduced to selected topics, including those in college algebra, matrix algebra, calculus, and optimization, and their usage in the context of managerial decision-making. MS Excel is used to illustrate and understand the core concepts. Department consent required. (3-0) S

OPRE 6304 Operations Analytics (3 semester credit hours) All businesses face operational and pricing challenges including: how to configure and operate their supply chain, what kind of contracts to set with suppliers, what inventory levels to carry at various points in the supply chain, how to allocate products to sales channels and outlets, and how to price their products over time to different market segments. These challenges are often addressed individually and in isolation but, in reality, all of these decisions interact with each other at a fundamental level. This course examines the operations management challenges faced by companies in various industries through business cases and analytics exercises. The course particularly emphasizes on incorporating data-driven decision making into companies' complex processes and the challenges involved in coordinating different decision areas across the firm. (3-0) Y

OPRE 6305 (BUAN 6356 and MIS 6356) Business Analytics With R (3 semester credit hours) This course covers theories and applications of business analytics. The focus is on extracting business intelligence from firms' business data for various applications, including (but not limited to) customer segmentation, customer relationship management (CRM), personalization, online recommendation systems, web mining, and product assortment. The emphasis is placed on the 'know-how' -- knowing how to extract and apply business analytics to improve business decision-making. Students will also acquire hands-on experience with business analytics software in the form of R. Credit cannot be received for both courses, BUAN 6324 and BUAN 6356. Prerequisite or Corequisite: BUAN 6359 or OPRE 6359. (3-0) Y

OPRE 6325 (HMGT 6325) Healthcare Operations Management (3 semester credit hours) This course explores the Healthcare Supply Chain, in terms of its strategic management, operations, challenges, and overall costs. Topics include importance of delivery of care, Healthcare supply chain management processes, sourcing relationships, inventory, delivery, and cost management. Relevant case studies will be used throughout the course providing additional insights. (3-0) Y

OPRE 6332 (HMGT 6335) Spreadsheet Modeling and Analytics (3 semester credit hours) This course explains the concepts of effective spreadsheet design and model building utilizing the electronic spreadsheet as the
principal device. The course helps students to take an analytic view and acquire knowledge about specific
decision making techniques for business, such as optimization and simulation, building spreadsheet
models to identify choices, formalize trade-offs, specify constraints, perform sensitivity analyses, and
analyze the impact of uncertainty. The course also examines the applications in finance, economics,
marketing, and operations. (3-0) S

**OPRE 6334 (MIS 6334)** Advanced Business Analytics With SAS (3 semester credit hours) This course is SAS
based and is part of the 4-course curriculum for the SAS data mining certificate program. It will cover the
topics as required by the SAS certificate program including data manipulation, imputation, variable
selection, SAS/STA, SAS/ETS, SAS/QC (DOE), and various SAS stat modules. Students will also learn various
advanced business intelligence topics including business data analytics, model analytics, customer
analytics, web intelligence analytics, business performance analytics, and decision-making analytics. Tool
to be used includes SAS. Credit cannot be received for more than one of the following courses: MIS 6334 or
OPRE 6334 or BUAN 6357 or MIS 6357. Prerequisites: (OPRE 6301 or OPRE 6359 or BUAN 6359) and (BUAN 632
4 or MIS 6324). (3-0) Y

**OPRE 6335 (SYSM 6304)** Risk and Decision Analysis (3 semester credit hours) This course provides an
overview of the main concepts and methods of risk assessment, risk management, and decision analysis.
The methods used in industry, such as probabilistic risk assessment, six sigma, and reliability, are
discussed. Advanced methods from economics and finance (decision optimization and portfolio analysis)
are presented. Prerequisite: OPRE 6301 or OPRE 6359 or BUAN 6359 or SYSM 6303. (3-0) T

**OPRE 6340 (MECH 6335)** Flexible Manufacturing Strategies (3 semester credit hours) The use of automation
in manufacturing is continuously increasing. This course covers the variety of types of flexible automation,
including flexible manufacturing systems, integrated circuit fabrication and assembly, and robotics.
Examples of international systems are discussed to show the wide variety of systems designs and problems.
Strategic as well as economic justification issues are covered. (3-0) R

**OPRE 6341** Retail Operations (3 semester credit hours) This course will examine retail operations and the
application of operations management principles to this industry. Topics include inventory management,
assortment planning, responsive supply chains, store execution, online retailing, omni-channel retailing,
technology and innovation, pricing and revenue management, impact on financial performance and
sustainability. (3-0) Y

**OPRE 6342** Special Topics in Product Lifecycle and Supply Chain Management (3 semester credit hours)
Executive Education Course. This course introduces selected topics in product lifecycle and supply chain
management. Students will be exposed to technology solutions, value management and business
simulations to learn the interactions and challenges in decision making in a real world supply chain
environment. Instructor consent required. (3-0) Y

**OPRE 6343 (BUAN 6341 and MIS 6341)** Applied Machine Learning (3 semester credit hours) This course covers
machine learning models for business data including text mining, natural language processing, non-linear
regression models, resampling methods and advanced neural networks and artificial intelligence-based
models for data-driven analytics. The course will be taught using either R or Python language.
Prerequisites: (BUAN 6356 or BUAN 6324 or MIS 6324 or OPRE 6399) and (OPRE 6359 or BUAN 6359). (3-0) Y

**OPRE 6352 (MIS 6332)** ERP Configurations and Implementation with SAP (3 semester credit hours) The course
focuses on advanced business processes and configuring a SAP System from start up with hands-on
experience with configuring Sales, Material Management, Production, Financial Accounting, and
Management Accounting Modules. Several case studies are provided by which students can configure the
SAP System to meet the requirements so that products can be produced, purchased, sold, and generate reports. Prerequisite or Corequisite: MIS 6319 or OPRE 6390. (3-0) Y

**OPRE 6353** Managing Strategy Execution (3 semester credit hours) Executive Education Course. The objective of this course is to introduce students to the discipline of managing strategy execution. Execution in this context is broadly defined as "Getting Things Done." The discipline will be explored from strategic, tactical, organizational, people, and other perspectives. The intent is to raise awareness on how execution is vitally applicable to every function in every organization, how improved execution management can lead to creating a competitive advantage for the organization, how to establish a culture of execution, and how to apply execution management discipline to achieve goals and objectives. (3-0) Y

**OPRE 6354 (HMGT 6332)** Quality Improvement in Healthcare: Six Sigma and Beyond (3 semester credit hours) The course will explore applications of quality improvement measures to the healthcare environment. Applications including the Demming method, QI, and CQI will be studied. Application of other industrial quality improvement methodology including Six Sigma and Toyota Lean will be covered. (3-0) Y

**OPRE 6355 (MECO 6355)** Deal Making Strategies (3 semester credit hours) This course uses experiential hands-on learning to develop students' skills in effectively managing competitive and collaborative business situations. Students will learn: (1) Behavioral principles for effective bargaining. (2) The principles for designing, conducting, and participating in procurement auctions. (3) Methods for increasing cooperation and trust in competitive and collaborative settings. (4) Behavioral principles for designing trading. Each topic in the course will be centered around a set of hands-on business simulations and case studies, in which students will take on the role of market participants working through a business problem. (3-0) R

**OPRE 6359 (BUAN 6359)** Advanced Statistics for Data Science (3 semester credit hours) This course uses statistical methods to analyze data from observational studies and experimental designs to communicate results to a business audience. The course mandates prior knowledge of fundamental statistical concepts such as measures of central location, standard deviations, histograms, the normal and t-distributions (knowledge of calculus is not required). The course also emphasizes interpretation and inference, as well as computation using a statistical software package such as R or STATA. Credit cannot be received for both: OPRE 6301 and (OPRE 6359 or BUAN 6359). (3-0) S

**OPRE 6362 (ENGY 6362 and IMS 6362 and SYSM 6311)** Project Management in Engineering and Operations (3 semester credit hours) Project management is the discipline of planning, organizing and managing resources to bring about the successful completion of specific project goals and objectives. The course will cover various aspects of managing projects in engineering and operations environments including the critical path methods for planning and controlling projects, time and cost tradeoffs, resource utilization, organizational design, conflict resolution and stochastic considerations. (3-0) S

**OPRE 6363** Inventory Control (3 semester credit hours) Analysis of deterministic and simple stochastic inventory models. Stochastic periodic reorder models with simple deterministic and simulation solutions. Lot size models and their extensions, reorder point determination, price break, Wagner-Whitin, Modigliani-Holn models. Prerequisite: OPRE 6302. (3-0) R

**OPRE 6364** Lean Six Sigma (3 semester credit hours) This course discusses the Lean and Six Sigma quality framework as it applies to manufacturing, service operations, re-engineering the design of products and processes to reduce waste and variability, use of Define-Measure-Improve-Control (DMAIC) methodology, and application of Lean for continuous improvement. (3-0) S
**OPRE 6366** Global Supply Chain Management (3 semester credit hours) Key issues associated with the design and management of industrial supply chains. The efficient integration of suppliers, factories, warehouses, and stores so that products are distributed to global customers in the right quantity and at the right time. Prerequisite: **OPRE 6302.** (3-0) S

**OPRE 6367** Capstone Projects in Supply Chain Management (3 semester credit hours) Capstone projects are sponsored by local industries and provide the students an opportunity to apply the skills and knowledge gained to solve real world challenging problems in the area of supply chain management. Students work in a team environment, interact with industry leaders, and gain some industry specific knowledge. Prerequisites: **OPRE 6366** and **OPRE 6370** and **MAS 6102** or MBA major) and instructor consent required. (3-0) Y

**OPRE 6368** Industrial Applications in Supply Chains (3 semester credit hours) Executive Education Course. The course discusses and reviews major supply chain challenges and relevant decision making tools used in the industry. The course proceeds with the analysis of real-life cases during which the students obtain industry specific knowledge. Some of the industries of interest are Telecommunications, High-tech Electronics, Semiconductors, Consumer Goods and Retail. Prerequisite: **OPRE 6366** or instructor consent required. (3-0) R

**OPRE 6369 (MIS 6369)** Supply Chain Software with SAP (3 semester credit hours) The course introduces planning and execution of supply chains with software such as SAP's S/4 HANA and Advanced Planning and Optimization (APO) with case discussions and lab exercises. Students also get exposure to the new GUI SAP Fiori. This software is used in lab exercises that provide students with hands-on, experiential learning. The focus is on the supply planning function of supply chain management. Topics include: fundamentals of ERP and SAP, master and transaction data, MRP, forecasting, supply and demand matching, and integration of ERP and APO modules. This course is intended for graduate students with interests in software-based supply chain management or digital supply chains. No SAP experience is required. (3-0) S

**OPRE 6370** Global Logistics and Transportation (3 semester credit hours) This course focuses on the design and analysis of global logistics, transportation and supply chain systems including the components such as suppliers, warehouse, packaging and material handling, customers, production, inventory, orders, transportation, and information systems. The course also discusses the interactions between these components; models and techniques for the analysis of logistics systems as well as the strategic financial outcomes influenced by the logistics decisions. Prerequisite: **OPRE 6302.** (3-0) S

**OPRE 6371** Purchasing, Sourcing and Contract Management (3 semester credit hours) Basic concepts and processes in purchasing, sourcing and contract management are introduced in this course. It teaches global sourcing techniques and the application of various management tools and quality tools in purchasing. Focus is on the proactive and planned analysis of supply markets and the selection of suppliers, with the objective of delivering solutions to meet pre-determined and agreed organizational needs. (3-0) S

**OPRE 6372** Project Initiation (3 semester credit hours) Executive Education Course. Explores project management in a global environment, bridges from strategy to project definition with discussions of project selection, creating value from project investments, determining and managing project requirements, and legal considerations in project management. Course delivery is integrated with relevant modules from **OB 6301** Organizational Behavior. (3-0) R

**OPRE 6373** Project Planning (3 semester credit hours) Executive Education Course. Continues from project initiation and covers the initial stages of planning a project, including scope management, quality planning, project team building, dealing with conflict, negotiation, and additional legal considerations. Course
delivery is integrated with relevant modules from **OB 6301** Organizational Behavior. Prerequisite: **OPRE 6372**. (3-0) R

**OPRE 6374** Project Planning and Execution (3 semester credit hours) Executive Education Course. Continues the discussion of planning techniques from **OPRE 6373** and introduces execution phase processes. Topics include scheduling, resource planning, budgeting, negotiation skills development, and risk management. Prerequisite: **OPRE 6373**. (3-0) R

**OPRE 6375** Project Execution and Closeout (3 semester credit hours) Executive Education Course. Continues the discussion of planning and execution techniques from **OPRE 6374** and discusses project closeout. Topics include project procurement management, earned value management, lean and six sigma methodologies, and project execution and control. Prerequisite: **OPRE 6374**. (3-0) R

**OPRE 6376** Advanced Project Management and Simulation (3 semester credit hours) Executive Education Course. Explores project organizational competence, maturity models, project portfolio management, program management, PM offices, alternate project management methodologies including Agile and simulates a project lifecycle. Prerequisite: **OPRE 6275**. (3-0) R

**OPRE 6377** Demand and Revenue Analytics (3 semester credit hours) This course focuses on the expense involved in managing conventional and idiosyncratic demand through the supply process. Demand for a single unit or an assembly (network) of units requires forecasting that incorporates prices and macroeconomic factors. Perishable supplies are optimally priced by considering their amount (inflated in overbooking), location, vintage, and customer classes. This approach is relevant for airlines, hotels, parks, rental cars, broadcasters, art/sport events, and retailers. (3-0) Y

**OPRE 6378** Supply Chain Strategy (3 semester credit hours) The success of a product (and a firm) in today's global marketplace depends on activities of firms in the product's supply chain. Students will learn how to develop strategies to create value through supply chain design, how to better structure a company's global operations strategy, how to develop guidelines for making strategic sourcing and make-buy decisions, how to deploy operations for successful turnarounds, and how to effectively use information technology to synchronize and manage global supply chains. Case studies will cover recent trends in supply chain strategy and key competencies required to be successful in a global marketplace. (3-0) Y

**OPRE 6379** Product Lifecycle Management (3 semester credit hours) This course provides a management approach to new product development, product lifecycle management and its impact on supply chain management. Topics include the management of product portfolio transitions, resources, schema and modeling for bills of materials, change management, and product cost management. (3-0) R

**OPRE 6382** Import and Export Trade Compliance (3 semester credit hours) This course explores the key issues associated with the application of international trade laws and regulations in the context of global supply chains through the examination of the international and national institutions, rules, and mechanisms used to govern and regulate international trade activities. The course also discusses global import/export compliance, regulations, requirements, fines and penalties, savings opportunities, audits, and tools. Students learn the important aspects of international trade regulations and how it impacts global supply chain operations. (3-0) S

**OPRE 6384** Global Project Management Functions and Performance Measurement (3 semester credit hours) Executive Education Course. This course bridges the traditional project management methods of scope, time, and cost with the next generation of project management techniques for project controls, quantitative methods, and performance measurement. This course walks through the project management framework
that is set forth by the Project Management Institute (PMI). In addition, it will also teach the advanced
techniques of project management, e.g., Quantitative Methods, Statistical Analysis, Risk Management,
Conflict Resolution, Capital Budgeting, Break-even Analysis, and the Earned Value method. Prerequisites: FI
N 6301 and OPRE 6301. (3-0) Y

**OPRE 6388** Engineering Packaged Goods Distribution (3 semester credit hours) This course covers both
warehouse and DSD models of distribution common in CPG industry, in which network engineering design,
distribution and replenishment planning and transportation planning / execution are performed. Students
will also learn about unique distribution engineering aspects of returns, recycling, variety and display
products and push/pull/hybrid delivery. In addition, this class focuses heavily on the practical operational
aspects of distribution management through discussion and case studies. (3-0) Y

**OPRE 6389** Managing Energy: Risk, Investment, Technology (MERIT) (3 semester credit hours) MERIT is
designed for students or professionals interested in the energy sector. Energy sector houses applications
from several academic disciplines: operations management, engineering and technology, risk management,
economics, and finance. Students currently involved in these and similar academic programs can take
MERIT to learn the fundamentals of the energy sector. (3-0) R

**OPRE 6390** (MIS 6319) Enterprise Resource Planning with SAP (3 semester credit hours) This course provides
students with an understanding of enterprise resource planning systems and practical experience using
SAP. The course covers topics including integrated business processes related to procurement, production,
sales, finance, and human capital management, hands on transaction experience with SAP ERP modules on
ECC6.0 and S4/ Hana platforms, and basic analytics using SAP 4/ Hana. The course also covers ERP
development methodologies and managing ERP based projects. (3-0) Y

**OPRE 6393** (ACCT 6320 and MIS 6320) Database Foundations (3 semester credit hours) The course provides
database knowledge for non-MIS business students to function effectively in their functional area. The
course covers conceptual data modeling with the entity-relationship diagram, the fundamentals of
relational data model and database queries, and the basic concepts of data warehousing. Structured Query
Language will be used extensively. Applications of databases for accounting, finance, marketing, and other
areas of business will be emphasized. May not be used to fulfill degree requirements in MS Information
Technology and Management. Credit cannot be received for more than one of the following: ACCT 6320 or
AC CT 6321 or BUAN 6320 or MIS 6320 or MIS 6326 or OPRE 6393. (3-0) Y

**OPRE 6394** (ENTP 6375 and MIS 6375 and SYSM 6332) Technology and New Product Development (3 semester
credit hours) This course addresses the strategic and organizational issues confronted by firms in
technology-intensive environments. The course reflects six broad themes: (1) managing firms in technology-
intensive industries; (2) forecasting key industry and technology trends; (3) linking technology and business
strategies; (4) using technology as a source of competitive advantage; (5) organizing firms to achieve these
goals; and (6) implementing new technologies in organizations. Students analyze actual situations in
organizations and summarize their findings and recommendations in an in-depth term paper. The course
also introduces concepts related to agile engineering. Case studies and class participation are stressed.
(3-0) Y

**OPRE 6398** (BUAN 6398) Prescriptive Analytics (3 semester credit hours) Introduction to decision analysis
and optimization techniques. Topics include linear programming, decision analysis, integer programming,
and other optimization models. Applications of these models to business problems will be emphasized.
Prerequisite: OPRE 6301 or OPRE 6359 or BUAN 6359. (3-0) S

**OPRE 6399** (BUAN 6324 and MIS 6324) Business Analytics With SAS (3 semester credit hours) This course
covers theories and applications of business analytics. The focus is on extracting business intelligence from firms' business data for various applications, including (but not limited to) customer segmentation, customer relationship management (CRM), personalization, online recommendation systems, web mining, and product assortment. The emphasis is placed on the 'know-how' -- knowing how to extract and apply business analytics to improve business decision-making. Students will also acquire hands-on experience with business analytics software in the form of SAS Enterprise Miner. Credit cannot be received for more than one of the following: BUAN 6324 or BUAN 6356 or MIS 6324 or OPRE 6399. Prerequisite or Corequisite: OPRE 6301 or OPRE 6359 or BUAN 6359. (3-0) Y

OPRE 6V08 Special Topics in Operation Research (1-4 semester credit hours) May be lecture, readings, or individualized study. May be repeated for credit as topics vary. Instructor consent required. ([1-4]-0) S

OPRE 6V98 Supply Chain Management Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). Prerequisites: (MAS 6102 or MBA major) and department consent required. ([1-3]-0) S

OPRE 6V99 Special Topics in Operations Research (1-6 semester credit hours) May be repeated for credit as topics vary (6 semester credit hours maximum). Department consent required. ([1-6]-0) S

OPRE 7051 Seminar in Operations Management (0 semester credit hours) The seminar covers topics of current research in the area of Operations Management. Research papers on a variety of topics are presented including supply chain management, inventory models, production planning and control, decision and risk analysis and behavioral operations management. Pass/Fail only. May be repeated for credit as topics may vary in coordination with OPRE 7351. (3-0) Y

OPRE 7309 Behavioral Operations Management (3 semester credit hours) This course covers various topics in behavioral operations management including introduction to using laboratory experiments in operations, individual decisions, supply chain contracts and behavioral marked design in a seminar format. The main goal of the course is to expose students to behavioral research and gain deeper understanding of the limitations of the standard operations management paradigm. The main deliverable in the course will be a proposal for a laboratory study, including hypotheses, treatments and factors. Those who wish to pursue this research further will have an opportunity to conduct their studies with human subjects. (3-0) R

OPRE 7310 Probability and Stochastic Processes (3 semester credit hours) Basic concepts and methods from probability theory that are useful in the modeling of complex systems. Topics include Poisson and renewal processes, discrete and continuous-time Markov chains, semi-Markov processes, and various concepts of stochastic ordering. Instructor consent required. (3-0) Y

OPRE 7311 Stochastic Models in Operations Research (3 semester credit hours) This course is a systematic study of important classes of stochastic models in operation research. Topics include renewal theory, Markov chains, semi-Markov processes, queuing models, stochastic ordering concepts, and Brownian motion. Instructor consent required. (3-0) R

OPRE 7318 (MATH 7318) Stochastic Dynamic Programming (3 semester credit hours) Stochastic Dynamic Programming (SDP) is a general methodology which plays an essential role in many areas of economics and
management science. The course provides students with a solid background on SDP, the core theory and its evolution and applications. The course discusses many models, particularly in finance and operations management, as well as additional concepts such as principal-agent concepts for dynamic systems. Instructor consent required. (3-0) Y

**OPRE 7320** Optimal Control Theory and Applications (3 semester credit hours) This course is an introduction to Optimal Control Theory and a survey of its selected applications in finance, production, marketing and economics. Relationships to dynamic programming and Kuhn-Tucker conditions are also pointed out. Emphasis is on modeling and not on mathematical rigor. Students should have two semesters of calculus including some knowledge of differential equations and linear algebra or instructor consent required. (3-0) Y

**OPRE 7330** Deterministic Models in Operations Research (3 semester credit hours) Topics include linear programming, sensitivity analysis and duality, assignment problems, network models, integer programming, nonlinear programming, sequencing and scheduling models. (3-0) Y

**OPRE 7343** Modern Machine Learning Methods (3 semester credit hours) The increasing availability of data provides firms substantial opportunities to leverage modern machine learning methods to inform decision making. This course provides a rigorous introduction to the most commonly used machine learning methods. Emphasis will be on understanding the mathematical and technical aspects behind the algorithms, but students will also implement some of the algorithms (in a programming language of their choice) to gain hands-on experience in applying the learnt methods on real datasets. Topics include classification and regression, clustering, ensemble learning, dimensionality reduction, and deep learning. Instructor consent required. (3-0) Y

**OPRE 7351** Seminar in Operations Management (3 semester credit hours) This seminar covers topics of current research in the area of operations management. Research papers are presented on a variety of topics including: supply chain management, inventory models, production planning and control, design and scheduling of cellular manufacturing systems, and decision and risk analysis. Pass/Fail only. May be repeated for credit as topics vary (18 semester credit hours maximum). Instructor consent required. (3-0) Y

**OPRE 7353** Optimization (3 semester credit hours) The course covers the fundamentals of optimization theory and introduces linear algebra and real analysis. Topics include existence of an optimal solution, unconstrained and constrained optima, convexity and quasi-convexity, and linear programming. Instructor consent required. (3-0) Y

## Real Estate

**REAL 6321** (ENTP 6321 and FIN 6321) Introduction to Real Estate (3 semester credit hours) Overview of various aspects of real estate markets, including marketing, finance, taxation, development, law, appraisal, investment, valuation and real estate participants. (3-0) S

**REAL 6322** (FIN 6322) Real Estate Finance and Investment (3 semester credit hours) This course covers commercial real estate investment analysis and instruments used in its finance. Topics include: real estate valuation, loan structures, syndication, securitization, and developments in capital markets affecting real estate developments. Prerequisite: **FIN 6301**. (3-0) S

**REAL 6323** (FIN 6323) Real Estate Market Analysis and Investment (3 semester credit hours) This course provides insight into market analysis and research including local and economic base analysis with case studies.
studies on specific commercial investment property types. This course also applies modern technologies to assist in performing these analyses. Prerequisite or Corequisite: FIN 6321 or REAL 6321 or FIN 6322 or REAL 6322. (3-0) Y

REAL 6326 (FIN 6326) Real Estate Law and Contracts (3 semester credit hours) Study of the legal principles governing real estate transactions, with an emphasis on promulgated contracts. Topics include contract law, tax law, leases, estates in land, types of ownership, deeds, mortgages, title insurance, agency and homestead. Prerequisite or Corequisite: FIN 6321 or REAL 6321 or FIN 6322 or REAL 6322. (3-0) Y

REAL 6V99 Special Topics in Real Estate (1-6 semester credit hours) May be lecture, readings, or individualized study. May be repeated for credit as topics vary (6 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

Systems Engineering and Management

SYSM 6009 Systems Engineering and Management Internship (0 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. Prerequisites: (MAS 6102 or MBA major) and department consent required. (0-0) S

SYSM 6301 (MECH 6337) Systems Engineering, Architecture and Design (3 semester credit hours) Architecture and design of large-scale and decentralized systems from technical and management perspectives. Systems architectures, requirements analysis, design tradeoffs, and reliability through various case studies and multiple types of mathematical techniques. International standardization bodies, including INCOSE, engineering frameworks, processes, and tool support from both theoretical and practical perspectives. (3-0) Y

SYSM 6302 (BMEN 6302 and EECS 6302 and MECH 6317) Dynamics of Complex Networks and Systems (3 semester credit hours) Design and analysis of complex interconnected networks and systems. Basic concepts in graph theory; Eulerian and Hamiltonian graphs; traveling salesman problems; random graphs; power laws; small world networks; clustering; introduction to dynamical systems; stability; chaos and fractals. (3-0) Y

SYSM 6303 (OPRE 6301) Statistics and Data Analysis (3 semester credit hours) Introduction to statistical and probabilistic methods and theory applicable to situations faced by managers. Topics include: data presentation and summarization, regression analysis, fundamental probability theory and random variables, introductory decision analysis, estimation, confidence intervals, hypothesis testing, and One Way ANOVA. Credit cannot be received for both: (OPRE 6301 or SYSM 6303) and (OPRE 6359 or BUAN 6359). (Some sections of this class may require a laptop computer). (3-0) S

SYSM 6304 (OPRE 6335) Risk and Decision Analysis (3 semester credit hours) This course provides an overview of the main concepts and methods of risk assessment, risk management, and decision analysis. The methods used in industry, such as probabilistic risk assessment, six sigma, and reliability, are discussed. Advanced methods from economics and finance (decision optimization and portfolio analysis) are presented. Prerequisite: OPRE 6301 or OPRE 6359 or BUAN 6359 or SYSM 6303. (3-0) T
**SYSM 6305** Optimization Theory and Practice (3 semester credit hours) Basics of optimization theory, numerical algorithms, and applications. The course is divided into three main parts: linear programming (simplex method, duality theory), unconstrained methods (optimality conditions, descent algorithms and convergence theorems), and constrained minimization (Lagrange multipliers, Karush-Kuhn-Tucker conditions, active set, penalty and interior point methods). Applications in engineering, operations, finance, statistics, etc. will be emphasized. Students will also use Matlab's optimization toolbox to obtain practical experience with the material. (3-0) Y

**SYSM 6306 (BMEN 6372 and MECH 6314)** Engineering Systems: Modeling and Simulation (3 semester credit hours) This course will present principles of computational modeling and simulation of systems. General topics covered include: parametric and non-parametric modeling; system simulation; parameter estimation, linear regression and least squares; model structure and model validation through simulation; and, numerical issues in systems theory. Techniques covered include methods from numerical linear algebra, nonlinear programming and Monte Carlo simulation, with applications to general engineering systems. Modeling and simulation software is utilized (MATLAB/SIMULINK). (3-0) Y

**SYSM 6307 (EECS 6331 and MECH 6300)** Linear Systems (3 semester credit hours) State space methods of analysis and design for linear dynamical systems. Coordinate transformations and tools from advanced linear algebra. Controllability and observability. Lyapunov stability analysis. Pole assignment, stabilizability, detectability. State estimation for deterministic models, observers. Introduction to the optimal linear quadratic regulator problem. Prerequisites: ENGR 2300 and EE 4310 or MECH 4310 or equivalent. (3-0) Y

**SYSM 6308 (CS 6356 and SE 6356)** Software Maintenance, Evolution, and Re-Engineering (3 semester credit hours) Principles and techniques of software maintenance. Impact of software development process on software justifiability, maintainability, evolvability, and planning of release cycles. Use of very high-level languages and dependencies for forward engineering and reverse engineering. Achievements, pitfalls, and trends in software reuse, reverse engineering, and re-engineering. Prerequisite: SE 5354. (3-0) Y

**SYSM 6309 (CS 6361 and SE 6361)** Advanced Requirements Engineering (3 semester credit hours) System and software requirements engineering. Identification, elicitation, modeling, analysis, specification, management, and evolution of functional and non-functional requirements. Strengths and weaknesses of different techniques, tools, and object-oriented methodologies. Interactions and trade-offs among hardware, software, and organization. System and sub-system integration with software and organization as components of complex, composite systems. Transition from requirements to design. Critical issues in requirements engineering. Prerequisite: SE 5354. (3-0) S

**SYSM 6310 (CS 6367 and SE 6367)** Software Testing, Validation and Verification (3 semester credit hours) Fundamental concepts of software testing. Functional testing. GUI based testing tools. Control flow based test adequacy criteria. Data flow based test adequacy criteria. White box based testing tools. Mutation testing and testing tools. Relationship between test adequacy criteria. Finite state machine based testing. Static and dynamic program slicing for testing and debugging. Software reliability. Formal verification of program correctness. Prerequisite: SE 5354. (3-0) Y

**SYSM 6311 (ENGY 6362 and IMS 6362 and OPRE 6362)** Systems Project Management in Engineering and Operations (3 semester credit hours) Project management is the discipline of planning, organizing and managing resources to bring about the successful completion of specific project goals and objectives. The course will cover various aspects of managing projects in engineering and operations environments including the critical path methods for planning and controlling projects, time and cost tradeoffs, resource utilization, organizational design, conflict resolution and stochastic considerations. (3-0) S
SYSM 6312 (FIN 6301) Systems Financial Management (3 semester credit hours) Develops the basic concepts of finance with particular attention to their application to the financial management of companies. Prerequisites or Corequisites: (ACCT 6301 or ACCT 6305 or HMG 6311) and (BUAN 6359 or OPRE 6301). (3-0) S

SYSM 6313 (HMG 6324 and MECO 6352 and OB 6332) Systems Negotiation and Dispute Resolution (3 semester credit hours) This course explores the theories, processes, and practical techniques of negotiation so that students can successfully negotiate and resolve disputes in a variety of situations including interpersonal, group, and international settings. Emphasis is placed on understanding influence and conflict resolution strategies; identifying interests, issues, and positions of the parties involved; analyzing co-negotiators, their negotiation styles, and the negotiation situations; and managing the dynamics associated with most negotiations. Practical skills are developed through the use of simulations and exercises. (3-0) Y

SYSM 6315 (ENTP 6398) The Entrepreneurial Experience (3 semester credit hours) This course is designed to provide student teams with practical experience in the investigation, evaluation and recommendation of technology and/or market entry strategies for a significant new business opportunity. Projects will be defined by the faculty and will generally focus on emerging market opportunities defined by new technologies of interest to a sponsoring corporate partner. Teams will be comprised of management and engineering graduate students, mentored by faculty and representatives of the partnering company. Evaluation will be based on papers, presentations and other deliverables defined on a case-by-case basis. (3-0) R

SYSM 6316 (ENTP 6388) Managing Innovation within the Corporation (3 semester credit hours) Innovators and entrepreneurs within established corporations combine innovation, creativity and leadership to develop and launch new products, new product lines and new business units that grow revenues and profits from within. The course seeks to equip students with the skills and perspectives required to initiate new ventures and create viable businesses in dynamic and uncertain environments in the face of organizational inertia and other sources of resistance to innovation. Course topics include the elements of strategic analysis and positioning for competitive advantage in dynamic markets, and the structuring, utilization and mobilization of the internal resources of existing firms in the pursuit of growth and new market opportunities. (3-0) Y

SYSM 6318 (MKT 6301) Marketing Management (3 semester credit hours) This course provides an overview of marketing management methods, principles, and concepts, including product, pricing, promotion, and distribution decisions. Analytical techniques and tools such as segmentation, targeting, and positioning are introduced as key components of a more rigorous management science approach to marketing. The learning objective is to have students apply these methods, principles, and concepts to develop, evaluate, and implement effective strategic and tactical decisions in marketing. (3-0) S

SYSM 6319 (MECO 6303) Business Economics (3 semester credit hours) Foundations of the economic analysis of business problems, with special emphasis on the operation of markets and the macroeconomy. Prerequisite: OPRE 6303 or equivalent. (3-0) S

SYSM 6320 (BPS 6332) Strategic Leadership (3 semester credit hours) Addresses the challenge of leading organizations in dynamic and challenging environments. Overall goal is to not only question one's assumptions about leadership, but also enhance skills and acquire new content knowledge. Topics include visionary and transformational leadership, post-heroic leadership, empowerment, leveraging and combining resources, designing organizations and ethics. (3-0) Y

SYSM 6321 Financial Engineering (3 semester credit hours) Introduction to finance and investments from an
engineering perspective. Focuses on the principles underlying financial decision making which are applicable to all forms of investment: stocks, bonds, real estate, project budgeting, corporate finance, and more. Intended for students with strong technical backgrounds who are comfortable with mathematical arguments. Primary components are deterministic finance (interest rates, bonds, and simple cash flow analysis) and single period uncertainty finance (portfolios of stocks and pricing theory). Prerequisites: Courses in engineering calculus, probability and linear algebra. (3-0) Y

**SYSM 6325** Requirements Design, Development, and Integration for Complex Systems (3 semester credit hours) Building on the premise that systems engineering is the glue that holds complex programs together, this course will teach the foundations of effective requirements design and development for complex systems. Students will learn principles and techniques used for effective creation of requirements early within a system's lifecycle; including effective system integration planning. Practical skills are developed through the use of various case studies, and a significant group project (for real, "external" customers, when possible). Prerequisite or Corequisite: **SYSM 6301.** (3-0) Y

**SYSM 6326** Systems Lifecycle Cost Analysis (3 semester credit hours) This course will provide an understanding of system lifecycle cost analysis concepts (also known as systems affordability) and the lifecycle costing process. The course will examine the importance of using these concepts when attempting to make the best possible engineering and business decisions throughout a system's lifecycle. The concepts will include special emphasis on the analysis and evaluation of alternatives by collectively weighing costs, risks and opportunities, performance, weight and other benefit/risk parameters. Topics will include total ownership cost, various estimating methods and techniques (including sensitivity and some risk analysis), cost analysis processes, system trade studies, and system cost effectiveness, to name a few. Practical skills are developed through the use of various case studies, and a significant group project, maturing from "concept" into "operations and support" throughout the semester. Prerequisite: **SYSM 6301.** (3-0) Y

**SYSM 6327** Systems Reliability (3 semester credit hours) This course will provide an advanced understanding of reliability analysis of complex systems, including many of its extended analysis focus areas like availability, maintainability, and supportability (RAMS). Course analysis variables include stress under various conditions, the use of degradation data, relationships between accelerated stresses and normal operating conditions, dependency failures, repairable and non-repairable components, preventive maintenance, replacement and inspection, and accelerated life reliability models, to name a few. The course will also address important reliability metrics, and the impact of reliability in the design, development and management of organizations. Prerequisite: **SYSM 6303** or **OPRE 6301.** (3-0) Y

**SYSM 6328** Computer and Networks Systems Security (3 semester credit hours) This course is a comprehensive study of security principles and practices for computer and network systems. Topics to be covered include fundamental concepts in computer and network security and common attacks and attacking techniques on computer systems and networks. Practical security policies, defense strategies, and mechanisms, as well as fundamentals of cryptographic tools will be discussed. Defense techniques such as secured protocols, authentication, access control, and network intrusion detection will also be covered. Hands-on computer and network security labs using virtual machines will be used to enhance students' learning. Prerequisite: An undergraduate course on operating systems (e.g. **CS 4348** or **SE 4348**) and instructor consent required. (3-0) Y

**SYSM 6332** (ENTP 6375 and MIS 6375 and OPRE 6394) Technology and New Product Development (3 semester credit hours) This course addresses the strategic and organizational issues confronted by firms in technology-intensive environments. The course reflects six broad themes: (1) managing firms in technology-intensive industries; (2) forecasting key industry and technology trends; (3) linking technology and business
strategies; (4) using technology as a source of competitive advantage; (5) organizing firms to achieve these goals; and (6) implementing new technologies in organizations. Students analyze actual situations in organizations and summarize their findings and recommendations in an in-depth term paper. The course also introduces concepts related to agile engineering. Case studies and class participation are stressed. (3-0) Y

**SYSM 6333 (OB 6301)** Systems Organizational Behavior (3 semester credit hours) The study of human behavior in organizations. Emphasizes theoretical concepts and practical methods for understanding, analyzing, and predicting individual, group, and organizational behavior. Topics include work motivation, group dynamics, decision making, conflict and negotiation, leadership, power, and organizational culture. Ethical and international considerations are also addressed. (3-0) S

**SYSM 6334 (OPRE 6302)** Systems Operations Management (3 semester credit hours) Operations Management integrates all of the activities and processes that are necessary to provide products and services. This course overviews methods and models that help managers make better operating decisions over time. How these methods will allow firms to operate both manufacturing and service facilities in order to compete in a global environment will also be discussed. Prerequisite or Corequisite: **OPRE 6301** or **BUAN 6359** or **OPRE 6359**. (3-0) S

**SYSM 6335 (BUAN 6335)** Organizing for Business Analytics Platforms (3 semester credit hours) The course develops conceptual understanding of platforms for business analytics and key business drivers that lead to business initiatives. The course examines how decision-makers in key functional areas of an enterprise rely on business analytics, how teams identify and develop analytical techniques to solve business problems, and how analytics platforms are adopted successfully. The course also emphasizes the development of business cases for strategic analytics initiatives and discusses best practices for descriptive, predictive, and prescriptive analytics. (3-0) T

**SYSM 6337 (ACCT 6305)** Accounting for Managers (3 semester credit hours) Fundamental concepts in accounting and financial reporting are presented from the perspective of business managers. May not be used to fulfill degree requirements in MS Accounting. Credit cannot be received for both courses, **(ACCT 6301 or ACCT 6202)** and **ACCT 6305**. (3-0) S

**SYSM 6V70** Research In Systems Engineering and Management (3-9 semester credit hours) Pass/Fail only. May be repeated for credit (15 semester credit hours maximum). Instructor consent required. ([3-9]-0) R

**SYSM 6V80** Special Topics in Systems Engineering and Management (1-6 semester credit hours) May be repeated as topics vary (9 semester credit hours maximum). Instructor consent required. ([1-6]-0) S

**SYSM 6V90** Thesis (3-9 semester credit hours) Pass/Fail only. May be repeated for credit (15 semester credit hours maximum). Instructor consent required. ([3-9]-0) S

**SYSM 6V98** Systems Engineering and Management Internship (1-3 semester credit hours) Student gains experience and improves skills through appropriate developmental work assignments in a real business environment. Student must identify and submit specific business learning objectives at the beginning of the semester. The student must demonstrate exposure to the managerial perspective via involvement or observation. At semester end, student prepares an oral or poster presentation, or a written paper reflecting on the work experience. Student performance is evaluated by the work supervisor. Pass/Fail only. May be repeated for credit as topics vary (3 semester credit hours maximum). SEM Program Director, the School of Engineering Internship Coordinator, and department consent required. Prerequisite: **MAS 6102** or MBA major. ([1-3]-0) S