Naveen Jindal School of Management

Master of Science in Management Science

36 semester credit hours minimum

Faculty


**Associate Professors:** Nina Baranchuk, Norris Bruce, Jianqing Chen, Zhonglan Dai, Rebecca Files, Xianjun Geng, J. Richard Harrison, Dorothée Honhon, Kyle Hyndman, Surya N. Janakiraman, Robert L. Kieschnick Jr., Ningzhong Li, Lívia Markóczy, Amit Mehra, Toyah Miller, Alp Muhammetoglu, Ramachandran (Ram) Natarajan, Valery Polkovnichenko, Orlando C. Richard, Young U. Ryu, Gil Sadka, Jane Salk, Harpreet Singh, David J. Springate, Upender Subramanian, Kelsey D. Wei, Han (Victor) Xia, Jun Xia, Yexiao Xu, Alejandro Zentner, Jieying Zhang, Yuan Zhang, Feng Zhao, Yibin Zhou

**Assistant Professors:** Mehmet Ayvaci, Emily Choi, Bernhard Ganglmair, Nathan Goldman, Atanu Lahiri, Sheen Levine, Bin Li, Jun Li, Meng Li, Xiaolin Li, Naim Bugra Ozel, Anyan Qi, Alejandro Rivera Mesias, Alessio Saretto, Serdar Simsek, Gonca P. Soysal, Shaojie Tang, Christian Von-Drathen, Shouqiang Wang, Malcolm Wardlaw, Steven Xiao, Shengqi Ye, Nir Yehuda, Zhe (James) Zhang, Xiaofei Zhao

**Clinical Professors:** John Barden, Britt Berrett, Abhijit Biswas, Pamela Foster Brady, Shawn Carraher, Larry Chasteen, Paul Convery, David Cordell, Teyfik Dalgic, Michael Deegan, Kutsal Dogan, Howard Dover, Forney Fleming III, Randall S. Guttery, Charles Hazzard, William Hefley, Robert Hicks, Gerald (Jerry) Hoag, Marilyn Kaplan, Ching-Chung Kuo, Peter Lewin, Jeffrey Manzi, John F. McCracken, Dennis McCuistion, Diane S. McNulty, Radha Mookerjee, Joseph Picken, Divakar Rajamani, Daniel Rajaratnam, Kannan Ramanathan, David Ritchey, Rajiv Shah, Jeff Weekley, Habte Woldu, Fang Wu, Laurie L. Ziegler

**Clinical Associate Professors:** Sonia Leach, David Parks, Carolyn Reichert, Avanti P. Sethi, Kelly Slaughter, James Szot, Mark Thouin, McClain Watson

**Clinical Assistant Professors:** Shawn Alborz, Athena Alimirzai, Moran Blueshtein, Judd Bradbury,
John Gamino, Ayfer Gurun, Maria Hasenhuttl, Julie Haworth, Jeffery (Jeff) Hicks, Revansiddha Khanapure, Kristen Lawson, Liping Ma, Ravi Narayan, Dawn Owens, Parneet Pahwa, Drew Peabody, Anastasia V. Shcherbakova, Jeanne Sluder, Nassim Sohaee

**Visiting Assistant Professors:** Lale Guler, Ying (Amy) Quan

**Senior Lecturers:** Arthur M. Agulnek, Semiramis Amirpour, Frank Anderson, Vivek Arora, Anindita Bardhan, Tiffany A. Bortz, Richard Bowen, Monica E. Brussolo, Juliann Chapman, George DeCourcy, Eugene (Gene) Deluke, Alexander Edsel, Amal El-Ashmawi, Carol Flannery, Mary Beth Goodrich, Thomas (Tom) Henderson, Jennifer G. Johnson, Jackie Kimzey, Chris Linsteadt, Kathryn Lookadoo, Joseph Mauriello, Victoria D. McCrady, Edward Meda, Sarah Moore, Prithi Narasimhan, Madison Pedigo, Matt Polze, James Richards, Debra Richardson, Kashif Saeed, Margaret Smallwood, Steven Solcher, David Spivey, Luell (Lou) Thompson, Amy L. Troutman, Robert Wright, Kathy Zolton, Hubert Zydorek

**Professor Emeritus:** Dale Osborne

### Degree Requirements

The Master of Science in Management Science (MS MSc) is a minimum 36 semester credit hours STEM (Science, Technology, Engineering and Mathematics) degree program that provides students with flexibility to customize and choose their own course of study by selecting a variety of graduate courses and concentrations offered by JSOM to satisfy the elective requirements.

To apply for this degree program, an undergraduate degree is required (all majors are considered). Students must maintain a 3.0 grade-point average (GPA) in both core courses and in aggregate courses to qualify for the MS in Management Science degree. Students also can obtain a dual MS MSc and MBA degree by successfully completing a minimum of 63 semester credit hours (if all prerequisites are met).

**NOTE:** The Executive Education area of the Jindal School of Management offers three additional and separate MS MSc programs, which retain the same set of core courses but have their own set of specific electives. These include (1) the MS MSc with an emphasis in project management, (2) the Executive Healthcare Leadership and Management MS MSc and (3) the MS MSc with an emphasis in organizational behavior and coaching (see Executive Education catalog for more details). All three programs are supported entirely by participant fees, and special admissions requirements apply.

### Prerequisites

Students pursuing the Master of Science in Management Science (MS MSc) degree program are required to complete one semester credit hour of **MAS 6102** Professional Development course or equivalent (except specialized Executive Education programs). In addition, knowledge of calculus is required and students who have not completed an undergraduate calculus course may satisfy the prerequisite by completing **OPRE 6303** Quantitative Foundations in Business with a grade of "B" or better. Degree credit is not earned for program prerequisites, however, the grade achieved in prerequisites will count toward the student's grade-point average (GPA). All program prerequisites
must be satisfied within the first 12 semester credit hours of graduate study as a degree-seeking student.

Course Requirements

Core Courses: 11 semester credit hours

Students must satisfactorily complete the following core courses.

- ACCT 6301 Financial Accounting
- MECO 6303 Business Economics
- MIS 6204 Information Technology for Management
- OPRE 6301 Statistics and Data Analysis

Elective Courses: 25 semester credit hour

All students (except specialized Executive Education programs) are required to complete at least 15 semester credit hours of designated courses (BUAN, ENGY, MIS, or OPRE but not more than 2 courses from a single prefix). For the remaining 10 semester credit hours, students may take any graduate courses within JSOM. We also, encourage students to take one semester credit hour of internship.

Concentrations

**Accounting:** In today's global and technology-driven environment, managers need skills to effectively analyze accounting information and make value-enhancing decisions. Students may select accounting courses to concentrate in financial analysis, consulting, corporate governance and tax management. This concentration can be further refined to the areas of assurance services, taxation and internal audit.

**Business Analytics:** A concentration in business analytics covers statistics and econometrics, predictive modeling, decision and optimization (prescriptive) modeling, and data management. Students are prepared for a position within marketing analytics, decision and operations analytics, financial analytics, healthcare analytics and IT analytics.

**Energy Management:** The energy management concentration will provide students with skills critical to managerial decision making within energy companies, focusing on supply chain, operations, finance, and risk management.

**Finance:** Students can prepare for careers in corporate finance, investment management, or the management of financial institutions. Courses in this area emphasize creative solutions to business financing problems, the development of value maximizing investment and financing strategies, and the analysis and management of fixed income and equity investments. Students may choose to concentrate in either corporate financial planning or the analysis of financial securities and
investment portfolios.

**Healthcare Management:** The healthcare concentration is cross-functional and industry focused and the primary goal is to prepare students for leadership positions in healthcare organizations. Courses include cases, projects and assignments that are centered on applying management skills to healthcare issues and organizations. Classes are taught by faculty and healthcare executives who bring special expertise and experience to the program.

**Information Technology Management:** Information technology is integral to all business operations and permeates all aspects of modern business and our courses will enable students to fully utilize information technology to solve business problems and gain strategic advantage. Advanced courses provide skills necessary for the "supply" side of information technology for IT consulting, software management and e-business.

**Innovation and Entrepreneurship:** The concentration in innovation and entrepreneurship prepares students for successful business careers in entrepreneurial new ventures, entrepreneurial finance (venture capital/private equity), or innovation-related roles in mature organizations (product planning, product marketing, product development, more). The concentration allows students to pursue electives in either the new venture focus area or the innovation within the corporation focus area.

**Internal Audit:** Today's job market for individuals in internal audit and risk management is exceptional. A concentration in this area covers internal audit from a broad perspective and addresses review of business processes, technology, governance, ethics, risk assessment and auditing standards, which allows individual to work in any industry or discipline.

**International Management:** In today's global economy, there is a need to develop skills in various international business environments. Students can take a multidisciplinary approach to study international management, with courses in finance, marketing, strategic management, and legal and cross-cultural management. These integrate concepts and theories with international policies and business practices and prepare students to succeed in developing successful international ventures.

**Leadership in Organizations:** The leadership concentration prepares students for management positions through the study of the psychological, sociological and organizational behavior disciplines. The program provides a foundation of leadership theory, building and problem solving in interpersonal work relationships, group dynamics, organizational decision-making and change and ethics.

**Marketing:** Students learn to understand customers' needs and purchase behaviors, how to satisfy those needs, and how to make a profit in competitive industries and markets. Topics include developing an effective marketing strategy, developing new products and managing different brands, and product categories. Students can also acquire expertise in pricing, advertising and promotions, market research, and retailing strategies.

**Real Estate:** The real estate concentration will provide students with both a practical and educational basis to become skilled decision-makers within the industry. This concentration includes courses in real estate finance and capital markets, covering real estate loans, syndication,
securitization, regulation, investment and analysis, combining lectures and case studies to explore the sources of real estate value, project feasibility, strategies for financing, and portfolio management while covering market analysis, government approvals, financing and risk assessment.

**Strategic Management:** This concentration focuses on corporate level strategic management, including implementation of strategic designs, top management team leadership, the strategic implications of the social, governmental, technological, and international environments, organization structuring, and strategic alliances. Students will learn how to integrate accounting, finance, economics and organization theory to create sustainable competitive advantage.

**Supply Chain Management:** Students specializing in supply chain management gain an analytical understanding of how to leverage profits by continuously improving business processes. Effective integration of customers, suppliers, factories and stores through the coordination of various functional areas (marketing, finance, procurement) is an important theme. The area emphasizes using incentives, contracts and information technologies to foster efficiency and success.

**Systems Engineering and Management:** The concentration is designed to meet the need for formalized education in design, engineering and management of complex systems involving a large number of interconnected components. It will develop a broad range of engineering and managerial skills that trains students to be managers of large projects that require expertise in both technical and managerial disciplines.