Naveen Jindal School of Management

Master of Science in Business Analytics

36 semester credit hours minimum

Faculty


**Associate Professors:** Mehmet Ayvaci, Jianqing Chen, Surya N. Janakiraman, Atanu Lahiri, Amit Mehra, Young U. Ryu, Gil Sadka, Harpreet Singh, Upender Subramanian, Feng Zhao

**Assistant Professors:** Radha Mookerjee, Shaojie Tang, Yingjie Zhang, Zhe (James) Zhang

**Clinical Professors:** Ranavir Bose, Peter Lewin, Daniel Rajaratnam, Rajiv Shah, Mark Thouin

**Clinical Associate Professor:** Carolyn Reichert

**Clinical Assistant Professors:** Moran Blueshtein, Judd Bradbury, Sourav Chatterjee, Maria Hasenhuttl, Jeffery (Jeff) Hicks, Liping Ma, Ravi Narayan, Jason Parker, Nassim Sohaee

**Senior Lecturers:** Vivek Arora, Abu Naser Islam, Prithi Narasimhan, Gaurav Shekhar, Timothy Stephens, Luell (Lou) Thompson

Degree Requirements

The Master of Science in Business Analytics (MS BUAN) is a 36 semester credit hours STEM (Science, Technology, Engineering and Mathematics) degree program that provides students with a broad foundation in the business analytics and data science area. The program prepares students for professions in data science, big data, and analytics space. The core courses are designed to provide the foundation of tools and techniques to be used in the analytics domain whereas the electives allow for business application of the core techniques in Accounting, Finance, Cybersecurity, Healthcare, IT, Marketing, Social Media, and Operations. The program provides two options:

(1) The Flex Program allows students the flexibility to complete the program at their own pace and tailor their degree in preparation for specific career goals by selecting electives from various fields, including Accounting, Finance, Healthcare, IT, Marketing, and Operations. The purpose of the program is to equip students with the technical tools and professional communication skills needed to practice in business analytics. Multiple elective tracks are offered in the Flex Program. Admission to the program occurs in Fall, Spring, and Summer semesters.

(2) The Cohort Program is a two-year program in which students take all courses together as a cohort. It is designed for students from various backgrounds to gain knowledge to pursue opportunities in business analytics. The purpose of the program is to develop effective leaders in business analytics.
Students may complete the Accounting Analytics track or the Data Science track. The Accounting Analytics track is offered in a face-to-face Cohort Program on campus, while the Data Science track may be completed in either a face-to-face Cohort Program on campus or an Online Cohort program. Special tuition, fees, and admissions requirements apply and the program is supported entirely by participant tuition/fees. Admission to the program occurs in Fall, Spring, and Summer semesters.

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 all graduate courses taken in the degree program, excluding program prerequisites to qualify for the MS degree. Following the completion of 18 credit hours, a student must successfully complete an internship or practicum.

Prerequisites

Students pursuing the Master of Science in Business Analytics degree program are required to fulfill one semester credit hour of **MAS 6102** Professional Development course. 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 of Business. 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 semester of graduate study as a degree-seeking student.

Course Requirements

**Core Courses: 18 semester credit hours**

- **BUAN 6312** Applied Econometrics and Time Series Analysis
- **BUAN 6320** Database Foundations for Business Analytics
- **BUAN 6324** Business Analytics With SAS
  - or **BUAN 6356** Business Analytics With R
- **BUAN 6337** Predictive Analytics Using SAS
- **BUAN 6398** Prescriptive Analytics
- **BUAN 6359** Advanced Statistics for Data Science

**Elective Courses: 18 semester credit hours**

Students may choose any course with a BUAN prefix, excluding BUAN core courses, or any course from one or more tracks in the following areas to obtain in-depth knowledge in a specific industry domain. Students may also substitute up to six semester credit hours master's-level courses from any unrestricted course/prefix offered within JSOM.

- **BUAN 6009** Business Analytics Internship (Required Elective)
Accounting Analytics Track

ACCT 6301 Financial Accounting
    or ACCT 6330 Intermediate Financial Accounting I
ACCT 6336 Information Technology Audit and Risk Management
ACCT 6343 Accounting Information Systems
ACCT 6344 Financial Statement Analysis
    or ACCT 6332 Intermediate Financial Accounting II
ACCT 6384 Analytical Reviews Using Audit Software
    or ACCT 6334 Auditing
ACCT 6386 Governance, Risk Management and Compliance (GRC)

Cybersecurity Analytics Track

MIS 6316 Data Communications
MIS 6330 Cybersecurity Fundamentals
MIS 6333 Digital Forensics and Incident Management
MIS 6337 Information Technology Audit and Risk Management
MIS 6343 Advanced Cybersecurity Management
MIS 6348 Digital Governance, Risk, and Compliance
MIS 6384 Preparing for Cybersecurity Threats

Data Engineering Track

BUAN 6340 Programming for Data Science
BUAN 6345 High Performance Analytics with SAP
BUAN 6346 Big Data
BUAN 6347 Advanced Big Data Analytics
MIS 6309 Business Data Warehousing
MIS 6363 Cloud Computing
MIS 6383 Advanced Data Management

Data Science Track

BUAN 6335 Organizing for Business Analytics Platforms
BUAN 6340 Programming for Data Science
BUAN 6341 Applied Machine Learning
BUAN 6342 Applied Natural Language Processing
BUAN 6346 Big Data
BUAN 6357 Advanced Business Analytics With R
MIS 6380 Data Visualization

**Decisions and Operations Analytics Track**

MIS 6398 Blockchain Technology and Applications
OPRE 6302 Operations Management
OPRE 6304 Operations Analytics
OPRE 6332 Spreadsheet Modeling and Analytics
OPRE 6335 Risk and Decision Analysis
OPRE 6377 Demand and Revenue Analytics
OPRE 6378 Supply Chain Strategy

**Financial Analytics Track**

ACCT 6301 Financial Accounting
FIN 6301 Financial Management
FIN 6307 Mathematical Methods for Finance
FIN 6352 Financial Modeling For Valuation
FIN 6353 Financial Modeling for Investment Analysis
FIN 6360 Derivatives Markets
FIN 6368 Financial Information and Analysis
FIN 6382 Numerical and Statistical Methods in Finance
FIN 6392 Financial Technology and Blockchain
MIS 6398 Blockchain Technology and Applications

**Healthcare Analytics Track**

HMGT 6320 The American Healthcare System
HMGT 6323 Healthcare Informatics
HMGT 6325 Healthcare Operations Management
HMGT 6327 Electronic Health Records Applications
HMGT 6334 Healthcare Analytics
BUAN 6335 Organizing for Business Analytics Platforms

**Marketing Analytics Track**

MKT 6301 Marketing Management
MKT 6309 Marketing Data Analysis and Research
MKT 6336 Pricing Analytics
MKT 6338 Customer Relationship Management with Salesforce
    or MKT 6341 Marketing Automation and Campaign Management
MKT 6342 Marketing Customer Insights Development
MKT 6343 Social Media Marketing and Insights
MKT 6347 Marketing Analytics Project
MKT 6349 MarTech Ecosystem
MKT 6352 Marketing Web Analytics and Insights
MKT 6353 Customer Analytics and Insights

Social Media Analytics Track
BUAN 6335 Organizing for Business Analytics Platforms
BUAN 6340 Programming for Data Science
BUAN 6341 Applied Machine Learning
BUAN 6392 Causal Analytics and A/B Testing
MIS 6334 Advanced Business Analytics with SAS
MIS 6344 Web Analytics
MIS 6373 Social Media Business
MIS 6378 Customer Relationship Management with Salesforce
MIS 6380 Data Visualization

1. Students may use BUAN 6009 only for their first internship and any additional internship must be completed as BUAN 6V98 (3 semester credit hours maximum). Students may also substitute BUAN 6009 with BUAN 6V98 or BUAN 6390 to fulfill internship requirement.

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