Operations and Business Analytics

Michael Pangburn, Department Head
Ehrman V. Guistina Professor of Operations and Business Analytics

Advising and Student Experience
203 Peterson Hall

The curriculum in the Department of Operations and Business Analytics (OBA) prepares students with a solid foundation in operations and data-analytics principles. Understanding analytics and how to manage business operations are essential to the success of all managers in today's business environment. The OBA concentration is therefore not only appropriate for students interested in supply chain management, sourcing, and logistics, it is also well-suited for business analysts, consultants, and general managers.

Courses offered by the OBA department cover a range of operations and business analytics topics including project management, database systems, predictive modeling (in R), python data analytics, and supply chain management. The department offers a concentration in operations and business analytics for the undergraduate major in business administration; a specialization in operations and business analytics for MBA students; and a Ph.D. in operations management.

Faculty

Eren B. Çil, associate professor (game theory, queueing theory); coordinator, doctoral program. BS, 2004, Middle Eastern Technical; MS, 2006, Koç; PhD, 2010, Northwestern. (2010)

Kraig Delana, assistant professor (queueing theory, game theory, optimization). BS, 2008, Kettering; MSc, 2010, Michigan; PhD, 2019, London Business School. (2019)

Erik Ford, instructor (information technology). BS, 2013, MBA, 2015, Oregon. (2015)

Ming Jin, instructor (operations management, business analytics, supply chain management). BE, 2001, Shanghai Jiao Ton University; MS, 2005 Brigham Young; MS, 2007, Columbia; PhD, 2016, Utah. (2017)

Nagesh N. Murthy, Roger Engemann Professor in Business Administration (call center industry, health-care operations). BE, 1982, MMS, 1983, Birla Institute of Technology and Science; MS, 1988, MA, 1994, PhD, 1997, Ohio State. (2003)

Michael S. Pangburn, Ehrman V. Giustina Professor (retail operations, pricing models, product line design). BS, 1990, Virginia Polytechnic Institute and State Univ. MS, 1993, PhD, 1997, Rochester. (2002)

Pradeep Pendem, assistant professor (large-scale data-driven operational analytics, retail and productivity). BE, 2006, Andhra; MTech, 2008, Indian Statistical Institute; MS, 2015, PhD, 2018, North Carolina, Chapel Hill. (2018)

Saeed Piri, assistant professor (business and data analytics, machine learning). BS, 2008, Amirkabir University of Technology; MS, 2011, Sharif University of Technology; PhD, 2017, Oklahoma State. (2018)

Behrooz Pourghannad, assistant professor (health care and operations analytics). BS, 2008, Azad University; MA, 2003, Sabanci University (Turkey); MA, MA, 2005, Michigan; PhD, 2019, Minnesota.

Yasamin Vahdati, instructor (empirical strategy, CEO and CMO activism). BSc, 2009, Azad; MBA, 2013, Mazandaran University of Science and Technology; PhD, 2019, Oklahoma State. (2020)

Zhibin "Ben" Yang, associate professor (operations management, supply-chain risk management). BS, 1994, Southwest Jiaotong; MS, 2002, Arizona State; PhD, 2009, Michigan. (2009)

Fang Yin, senior instructor (business value of IT, electronic commerce). BA, 1992, Peking (Beijing); PhD, 2002, Texas, Austin. (2008)

Emeriti

Sergio G. Koreisha, professor emeritus. BA, 1974, ME, 1975, California; DBA, 1980. Harvard. (1980)

James E. Reinmuth, professor emeritus. BA, 1963, Washington, Seattle; MS, 1965, PhD, 1969, Oregon State. (1967)

Larry E. Richards, associate professor emeritus. BA, 1962, MBA, 1963, Washington (Seattle); PhD, 1969, California, Los Angeles. (1966)

The date in parentheses at the end of each entry is the first year on the University of Oregon faculty.

Four-Year Degree Plan

The degree plan shown is only a sample of how students may complete their degrees in four years. There are alternative ways. Students should consult their advisor to determine the best path for them.

Bachelor of Arts in Business Administration

Course	Title		Credits Milestones
First Year			
Fall			
BA 101	Introduction to Business		4
BA 199	Special Studies: [Topic]		1
MATH 111	College Algebra		4
First term of first-year second-language sequence			5
Review the holistic requirements for admission to the major and establish a plan for developing these traits			
	Credits		**14**
Winter			
EC 201	Introduction to Economic Analysis: Microeconomics	Get involved in a club	4
Second term of first-year second-language sequence		Use Career Services	5
MATH 241	Calculus for Business and Social Science I		4
WR 121	College Composition I		4
Meet with a Lundquist Academic advisor to make a long-term plan			
	Credits		**17**

Spring			
EC 202	Introduction to Economic Analysis: Macroeconomics	Access tutoring resources	4
Third term of first-year second-language sequence		Consider the job shadow program	5
MATH 242	Calculus for Business and Social Science II		4
WR 122 or WR 123	College Composition II or College Composition III	Attend the spring career fair	4
	Credits		**17**
	Total Credits		**48**

Course	Title		Credits Milestones
Second Year			
Fall			
ACTG 211	Introduction to Accounting I		4
MATH 243	Introduction to Methods of Probability and Statistics	Leadership role in club	4
First term of second-year second-language sequence		Learn Duck Connect	4-5
Social science course that also satisfies a multicultural requirement			4
Meet an advisor regarding progress toward admission			
	Credits		**16-17**
Winter			
ACTG 213	Introduction to Accounting II	Prepare major application	4
Arts and letters course that also satisfies a multicultural requirement			4
Second term of second-year second-language sequence		Complete a practice interview	4-5
General education course in science			4
See Lundquist Peer Educator about informational interviews			
	Credits		**16-17**
Spring			
BA 240	Spreadsheet Analysis and Visualization		4
General education courses in arts and letters			8
Third term of second-year second-language sequence		Conduct informational interviews	4-5
Apply for business administration major within the first week of the term you are completing business premajor requirements			
	Credits		**16-17**
	Total Credits		**48-51**

Course	Title		Credits Milestones
Third Year			
Fall			
OBA 311	Business Analytics I		4
FIN 311	Economic Foundations of Competitive Analysis	Explore concentrati	4
BA 308	Leadership and Communication		4
	Credits		**12**
Winter			
FIN 316	Financial Management	Attend career fairs	4
MGMT 311	Managing People in Organizations		4
MKTG 311	Marketing Management		4
General education course in arts and letters			4
	Credits		**16**
Spring			
OBA 335	Operations Management		4
OBA 312	Business Analytics II		4
Upper-division business elective courses			8
Meet with Lundquist advisor to revise long-term plan to meet academic goals and strategize how to strengthen weak areas for career goals			
	Credits		**16**
	Total Credits		**44**

Course	Title		Credits Milestones
Fourth Year			
Fall			
BA 325	Business Law and Ethics		4
Upper-division business elective courses			8
Elective course			4
	Credits		**16**
Winter			
BA 453	Business Strategy and Planning	Apply for graduation	4
Upper-division business elective courses			8
	Credits		**12**
Spring			
Upper-division business elective courses		Register for commence	8
Elective course			4
	Credits		**12**
	Total Credits		**40**

Bachelor of Science in Business Administration

Course	Title		Credits Milestones
First Year			
Fall			
BA 101	Introduction to Business		4
MATH 111	College Algebra		4

BA 199	Special Studies: [Topic]		1
Arts and letters course that also satisfies a multicultural requirement			4
General education course in social science			4
Review the holistic requirements for admission to the major and establish a plan for developing these traits			
	Credits		**17**
Winter			
EC 201	Introduction to Economic Analysis: Microeconomics	Use Career Services	4
MATH 241	Calculus for Business and Social Science I		4
WR 121	College Composition I		4
General education course in arts and letters			4
Meet a Lundquist Academic advisor to make a long-term plan			
	Credits		**16**
Spring			
EC 202	Introduction to Economic Analysis: Macroeconomics	Consider the job shadow program	4
MATH 242	Calculus for Business and Social Science II	Attend the spring career fair	4
WR 122 or WR 123	College Composition II or College Composition III		4
Arts and letters course that also satisfies a multicultural requirement		Access tutoring resources	4
	Credits		**16**
	Total Credits		**49**

Course	Title		Credits	Milestones
Second Year				
Fall				
ACTG 211	Introduction to Accounting I		4	
MATH 243	Introduction to Methods of Probability and Statistics	Leadership role in a club	4	
General education course in arts and letters with a global context		Learn Duck Connect	4	
Course with global context subject matter			4	
Meet an advisor regarding progress toward admission				
	Credits		**16**	
Winter				
ACTG 213	Introduction to Accounting II	Prepare major application	4	
Elective course			4	
General education courses in science		Complete a practice interview	8	
Meet Lundquist Peer Educator about informational interviews				
	Credits		**16**	
Spring				
BA 240	Spreadsheet Analysis and Visualization	Conduct informatior interviews	4	
Elective courses			8	
General education course in science			4	
Apply for business administration major within the first week of the term you are completing business premajor requirements				
Submit a Non-Business Breadth/Global Context proposal for approval				
	Credits		**16**	
	Total Credits		**48**	

Course	Title		Credits	Milestones
Third Year				
Fall				
BA 308	Leadership and Communication		4	
MGMT 311	Managing People in Organizations		4	
OBA 312	Business Analytics II		4	
	Credits		**12**	
Winter				
FIN 316	Financial Management	Attend career fairs	4	
MKTG 311	Marketing Management	Apply for internships	4	
OBA 335	Operations Management		4	
Elective course			4	
	Credits		**16**	
Spring				
FIN 311	Economic Foundations of Competitive Analysis	Utilize networking events	4	
OBA 311	Business Analytics I		4	
Upper-division business elective course			4	
Elective course			4	
	Credits		**16**	
	Total Credits		**44**	

Course	Title		Credits	Milestones
Fourth Year				
Fall				
BA 325	Business Law and Ethics		4	
Upper-division business elective courses			12	
	Credits		**16**	
Winter				
BA 453	Business Strategy and Planning	Apply for graduation	4	
Upper-division business elective course			4	

Course with global context subject matter		4
Credits		**12**
Spring		
Upper-division business elective courses	Register for commence	8
Elective course		4
Credits		**12**
Total Credits		**40**

Courses

OBA 199. Special Studies: [Topic]. 1-5 Credits.
Repeatable when the topic changes.

OBA 311. Business Analytics I. 4 Credits.
Explores standard protocols for describing and modeling business information and processes; techniques for designing management information systems; criteria for analyzing firms' implementations of information technology. Students cannot receive credit for both OBA 311 and OBA 311H. Sophomore standing required.
Prereq: C- or better in BA 101, BA 240, EC 201, MATH 241, MATH 243.

OBA 311H. Business Analytics I. 4 Credits.
Explores standard protocols for describing and modeling business information and processes; techniques for designing management information systems; criteria for analyzing firms' implementations of information technology. Students cannot receive credit for both OBA 311 and OBA 311H. Sophomore standing required.
Prereq: C- or better in BA 101, BA 240, EC 201, MATH 241, MATH 243. Open only to students in the LCB honors program.

OBA 312. Business Analytics II. 4 Credits.
Computer-aided business applications of hypothesis testing, simple linear regression. Introduction to multiple regression and nonparametric techniques. Blocked and completely randomized one- and two-factor experimental designs. Students cannot receive credit for both OBA 312 and OBA 312H. Sophomore standing required.
Prereq: C- or better in OBA 311 or equivalent.

OBA 335. Operations Management. 4 Credits.
Concepts and applications of operations management. Use of information technology in operations. Topics include forecasting, quality, supply chain management, information systems in operations management, and planning and scheduling. Students cannot receive credit for both OBA 335 and OBA 335H. Sophomore standing required.
Prereq: C- or better in BA 101, BA 240, EC 201, MATH 241, MATH 243.

OBA 335H. Operations Management. 4 Credits.
Concepts and applications of operations management. Use of information technology in operations. Topics include forecasting, quality, supply chain management, information systems in operations management, and planning and scheduling. Students cannot receive credit for both OBA 335 and OBA 335H. Sophomore standing required.
Prereq: BA 101, BA 240, EC 201, MATH 241, MATH 243. Open only to students in the LCB honors program.

OBA 401. Research: [Topic]. 1-21 Credits.
Repeatable.

OBA 403. Thesis. 1-6 Credits.
Repeatable.

OBA 405. Special Problems: [Topic]. 1-12 Credits.
Repeatable.

OBA 406. Practicum: [Topic]. 1-12 Credits.
Repeatable.

OBA 407. Seminar: [Topic]. 1-4 Credits.
Repeatable.

OBA 409. Terminal Project. 1-12 Credits.
Repeatable.

OBA 410. Experimental Course: [Topic]. 1-4 Credits.
Repeatable when the topic changes. Recent topics include Service Operations, Business Analytics, Analyzing Big Data.

OBA 444. Business Database Management Systems. 4 Credits.
Techniques for structuring and storing business data; primary focus on relational database theory, with applied skills for business users, including data warehouses, reporting, and normalization.
Prereq: OBA 340 or OBA 340H.

OBA 455. Data Driven Predictive Modeling. 4 Credits.
Introduction to basics of programming and fundamentals of predictive modeling.
Prereq: OBA 312 or MATH 345M.

OBA 466. Project and Operations Management Models. 4 Credits.
Frameworks and solutions for managing complex projects and operations; implementing optimal strategies for producing profitable new products and services in the competitive global business environment.
Prereq: OBA 335 or 335H.

OBA 477. Supply-Chain Operations and Information. 4 Credits.
Strategic and tactical issues pertaining to the distribution and delivery of products and services. Methodologies and systems for designing, tracking, and managing complex global operations.
Prereq: OBA 335 or 335H.

OBA 503. Thesis. 1-16 Credits.
Repeatable.

OBA 510. Experimental Course: [Topic]. 1-4 Credits.
Repeatable when the topic changes. Recent topics include Service Operations, Business Analytics, Analyzing Big Data.

OBA 544. Business Database Management Systems. 4 Credits.
Techniques for structuring and storing business data; primary focus on relational database theory, with applied skills for business users, including data warehouses, reporting, and normalization.
Prereq: all MBA core courses.

OBA 555. Data Driven Predictive Modeling. 4 Credits.
Introduction to basics of programming and fundamentals of predictive modeling.

OBA 566. Project and Operations Management Models. 4 Credits.
Frameworks and solutions for managing complex projects and operations; implementing optimal strategies for producing profitable new products and services in the competitive global business environment.
Prereq: all MBA core courses.

OBA 577. Supply-Chain Operations and Information. 4 Credits.
Strategic and tactical issues pertaining to the distribution and delivery of products and services. Methodologies and systems for designing, tracking, and managing complex global operations.
Prereq: all MBA core courses.

OBA 601. Research: [Topic]. 1-16 Credits.
Repeatable.

OBA 603. Dissertation. 1-16 Credits.
Repeatable.

OBA 605. Reading and Conference: [Topic]. 1-16 Credits.
Repeatable.

OBA 606. Practicum: [Topic]. 1-16 Credits.
Repeatable.

OBA 607. Seminar: [Topic]. 1-3 Credits.
Repeatable.

OBA 608. Workshop: [Topic]. 1-16 Credits.
Repeatable.

OBA 609. Terminal Project. 1-12 Credits.
Repeatable.

OBA 610. Experimental Course: [Topic]. 1-5 Credits.
Repeatable when the topic changes.

OBA 612. Quantitative Methods for Managers. 3 Credits.
Concepts and techniques of analytic decision making, sampling and statistical inference, and regression analysis.

OBA 613. Operations Management. 3 Credits.
Overview of the managerial issues associated with production and delivery of goods and services. Includes the use of quantitative modeling and several case studies in operations.