Operations Research

**OPRE 3100** Professional Development (1 semester hour) This course is required for all students majoring in Supply Chain management in the Naveen Jindal School of Management. This course is designed to enhance the student's experience in the Naveen Jindal School of Management. Students will work on networking skills, verbal and written communication skills, business etiquette training, and learn how to increase their human capital. Students will also work on projects geared towards career management and overall professional development as a business major. The goal of this class is to make the student a more marketable and valuable professional to the global economy. Students will learn and attend class using hybrid system of online training and on campus training. Only one professional development course (credit) may be applied toward your degree plan. Not repeated for credit. (1-0) S

**OPRE 3310** Operations Management (3 semester hours) Applications of operations research methods to production problems. Production processes in the business firm with emphasis on forecasting, production planning, and production control techniques. Prerequisites: (MATH 1326 or MATH 2414 or MATH 2419) and (MATH 2333 or MATH 2418 or CS 2305 or OPRE 3333) and Prerequisite or corequisite: (STAT 3360 or OPRE 3360). (3-0) S

**OPRE 3320** Supply Chain Management (3 semester hours) Introduction to the key players and challenges in a supply chain management (SCM). Type of facilities, inventory and transportation options and the role of information in running supply chain is discussed. The objectives of different players in SCs are laid out and contrasted with each other. This motivates the discussion of integration/coordination of the players, a central theme in SC management. Operations and tradeoffs in service supply chains (i.e., air/sea lines, health care, hotels, and restaurants) are examined. Prerequisites: OPRE 3310. (3-0) S

**OPRE 3330** Project Management (3 semester hours) The objective of this course is to provide students with the tools and techniques needed to initiate and manage a project effectively. The course will enhance the ability of students to respond to the challenges of large-scale projects so that they can be more effective as project managers. The course also examines the modern project management concepts, models, and techniques and reviews case studies so students can develop practical skills necessary to be successful in the field. (3-0) S

**OPRE 3333** Quantitative Business Analysis (3 semester hours) Provides students with the analytical tools necessary for making better management decisions. Students are introduced to mathematical techniques used to make different types of business decisions. Prerequisite: MATH 1325 or MATH 2413 or MATH 2417. Credit cannot be received for both courses, OPRE 3333 or MATH 2333. (3-0) S

**OPRE 3360** Managerial Methods in Decision Making Under Uncertainty (3 semester hours) Introduces the concept of probability and statistics to managerial decision making. Concepts will be developed in lecture and exercises using software packages. Topics include: summarizing and presenting data, probability theory, sampling, estimation, confidence intervals, hypothesis testing, regression, and ANOVA. Emphasis will be given to modeling and solving business problems in Finance, Marketing, Accounting, and Operations Management. Credit cannot be received for both courses, OPRE 3360 or STAT 3360. Prerequisite: (MATH 1326 or MATH 2414 or MATH 2419). (3-0) Y
**OPRE 4310** Lean and Six Sigma Processes (3 semester hours) Topics covered include concepts and theory of quality control in manufacturing and service operations, analysis of product design and process capability, and statistical process control. In this course, students will develop a broad understanding of Lean and Six Sigma principles and practice, and acquire knowledge about Lean and Six Sigma initiatives in manufacturing/service operations. Prerequisites: **OPRE 3310**. (3-0) Y

**OPRE 4320** Integrated SCM Information Systems (3 semester hours) An introduction to the concept of an integrated supply chain management system such as SAP's Enterprise Resource Planning System. Students will: 1) learn the elements of an ERP application, 2) understand the concepts of end-to-end supply chain management, 3) define the basic master data needed to create a supply chain plan, 4) forecast demand using several statistical methods, 5) plan inventories using MRP and re-order point techniques, 6) execute the supply chain plan through the production process, 7) view the completed inventories after production. Prerequisite: **MIS 3300**. (3-0) Y

**OPRE 4330** Logistics and Inventory Management (3 semester hours) This course introduces and explains the logistics concepts and systems as well as the related components and managing the inventory in supply chain systems. It also covers the planning, designing and the techniques for managing the distribution of products and services. Prerequisite: **OPRE 3310**. (3-0) Y

**OPRE 4340** Purchasing and Sourcing Management (3 semester hours) This course introduces and explains the purchasing and sourcing management concepts with focus on selecting, building and managing supplier relationships. It also covers the contract development and its management as well as building the necessary skills for effective negotiation. Prerequisites: **OPRE 3310** and (**MATH 1326** or **MATH 2414** or **MATH 2419**). (3-0) Y

**OPRE 4350** Global Outsourcing Services (3 semester hours) This course is an introduction to outsourcing of services. Students will learn how organizations initiate, engage and manage their global outsourcing of businesses or IT functions and services. The course covers topics related to the outsourcing lifecycle, selective vs. total outsourcing processes, strategies, models and related business implications. Prerequisite: **OPRE 3310**. (3-0) R

**OPRE 4360** Capstone Projects in Supply Chain Management (3 semester hours) Capstone projects are sponsored by local supply chain companies. The course provides students with a unique opportunity to work in a team environment, interact with industry leaders and gain some industry specific knowledge. Students will learn how to work on a consulting engagement, how to collect the necessary data for analysis and assessment and how to use the skills and knowledge gained to solve real world problems in the area of supply chain management. Prerequisites: **OPRE 3310** and instructor's consent required. (3-0) R

**OPRE 4v81** Individual Study in Supply Chain Management (1-3 semester hours) May be repeated for credit as topics vary (9 hours maximum). ([1-3]-0) R

**OPRE 4v90** Management Internship (1-3 semester hours) This course is designed to further develop a student's business knowledge through appropriate developmental work experiences in a real business environment. Students are required to identify and submit specific business learning objectives (goals) at the beginning of the semester. At the end of the semester students must prepare an oral presentation, reflecting on the knowledge gained in the work experience. Student performance is evaluated by the work supervisor. May be repeated for credit (6 hours maximum). Credit/No Credit. ([1-3]-0) S
OPRE 4v91 Seminar Series in Supply Chain Management (1-3 semester hours) Discussion of selected topics and theories in the decision sciences. May be repeated for credit as topics vary (9 hours maximum).

([1-3]-0) R