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# SUPPLY CHAIN AND BUSINESS TECHNOLOGY MANAGEMENT

Section 61.50

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## Faculty

*Professor and Interim Chair of the Department*  
RUSTAM VAHIDOV, PhD *Georgia State University*

### *Professors*

MERAL BÜYÜKKURT, PhD *Indiana University*  
SATYAVEER CHAUHAN, PhD *University of Metz*  
ANNE-MARIE CROTEAU, PhD *Université Laval*  
DALE DOREEN, PhD *University of Alabama*  
DENNIS KIRA, PhD *University of British Columbia*  
TAK KWAN MAK, PhD *University of Western Ontario*  
DANIELLE MORIN, PhD *McGill University*  
FASSIL NEBEBE, PhD *Queen's University*  
RAAFAT SAADE, PhD *Concordia University*  
AHMET SATIR, PhD *University of Manchester Institute of Science and Technology*  
MAHESH SHARMA, MEng MBA *McGill University; Provost's Distinction*

### *Associate Professors*

ANNE BEAUDRY, PhD *HEC Montréal*  
XIAO HUANG, PhD *Marshall School of Business, University of Southern California*  
NAVNEET VIDYARTHI, PhD *University of Waterloo*

### *Assistant Professors*

MOHSEN FARHADLOO, PhD *University of California, Merced*  
SALIM LAHMIRI, PhD *Université du Québec à Montréal*  
MAHDI MIRHOSEINI, PhD *HEC Montréal*  
ARMAN SADREDDIN, PhD *Queen's University*  
ANTON SHEVCHENKO, PhD *University of Nevada, Reno*  
AHUJA SUCHIT, PhD *Queen's University*  
PAN XIAODAN, PhD *University of Maryland*

### *Senior Lecturer*

RAUL VALVERDE, PhD *University of Southern Queensland*

### *Lecturer*

JOE ABOU JAOUDE, PhD *Concordia University*

*For the complete list of faculty members, please consult the Department website.*

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## Location

*Sir George Williams Campus*  
MB Building, Room: 012-115  
514-848-2424, ext. 2982

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## Department Objectives

The Department of Supply Chain and Business Technology Management prepares students with an integrated set of decision-making skills to meet the organizational and managerial needs of the business world.

The Major in Business Technology Management aims to equip students with knowledge and skills in information and communication technology, business process analysis, and project management. It prepares graduates for careers in various business technology areas such as information systems analysis and design, database administration, as well as management of information technology.

The Major in Supply Chain Operations Management aims to provide the knowledge and skills needed for planning and execution of end-to-end supply chains. It provides students with sufficient academic, technical and professional foundations that will enable them to pursue a challenging and rewarding career that covers planning, procurement, manufacturing, services, transportation, logistics and distribution, among others.

The Minor in Data Intelligence provides a knowledge base to complement the student's program at the John Molson School of Business. With training in data modelling, forecasting and data mining, students learn to build models for analyzing business problems that help organizations avoid risk and exploit opportunities.

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## Programs

### **24 Major in Supply Chain Operations Management**

21 SCOM 361, 363, 372, 374, 492, 498; BSTA 450  
3 Chosen from BTM 382, 430, 480; SCOM 491

### **12 Minor in Supply Chain Operations Management**

12 SCOM 361, 363, 372, 374

### **24 Major in Business Technology Management**

18 BTM 380, 382, 480, 481, 495, 496  
6 Chosen from BTM 387, 395, 430, 440

### **12 Minor in Business Technology Management**

9 BTM 382, 481, 496  
3 Chosen from BTM 387, 480

### **12 Minor in Data Intelligence**

12 BSTA 445, 450, 477, 478

### **12 Minor in Information Systems Audit and Risk Management**

12 Chosen from ACCO 350, 360, 455; BTM 382, 430, 440

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## Business Technology Management/Supply Chain Operations Management Co-operative Programs

### *Director*

RAUL VALVERDE, *Senior Lecturer*  
514-848-2424, ext. 2968

The Department of Supply Chain and Business Technology Management offers two co-operative programs for students who are enrolled in the BComm program: Business Technology Management – BTM (for students majoring in BTM), and Supply Chain Operations Management – SCOM (for students majoring in SCOM).

The academic content of each co-op program is identical to that of the regular program, but three work terms are interspersed with six study terms.

Students are supervised individually and must meet the requirements specified by the John Molson School of Business and the Institute for Co-operative Education in order to continue their studies in the co-op format.

Liaison between the student, the employers, and the Institute for Co-operative Education is provided by the co-op academic director and the co-op committee.

Please refer to §24 of this Calendar for a full description of the co-operative format of the program.

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## Courses

### **BUSINESS STATISTICS**

#### **BSTA 445 *Statistical Software for Data Management and Analysis* (3 credits)**

Prerequisite: COMM 215 or equivalent. This course presents the principles and techniques of widely used statistical software systems, such as SAS, for data management (information storage and retrieval), data modification, file handling, and statistical analysis and reporting. The course covers special features such as graphics, macro languages, software and/or library interfacing and the basics of data mining. Classes are to be held in computer labs and half of the time is devoted to lab work.

*NOTE: Students who have received credit for DESC 445 may not take this course for credit.*

#### **BSTA 450 *Statistical Models for Data Analysis* (3 credits)**

Prerequisite: COMM 215. This course introduces and examines the role of contemporary statistical methods in improving business and industrial processes. The methodologies selected for discussion represent those that are most extensively used in contemporary business studies and analyses. The topics covered include modern statistical thinking, linear regression analysis, logistic regression, and experimental methods in product and process designs. The course involves mostly analyses of real-life data using statistical software packages. The understanding of the rationale of the methodologies introduced is also emphasized.

*NOTE: Students who have received credit for DESC 376, 378, or BSTA 378 may not take this course for credit.*

**BSTA 477    *Managerial Forecasting*** (3 credits)

Prerequisite: COMM 215 or equivalent. Reliable managerial forecasts of business variables must often be obtained against a background of structural changes in markets. This course focuses on the theory and applications of the most widely used methods of forecasting including decomposition methods, exponential smoothing, and the Box-Jenkins (ARIMA Building) techniques for non-seasonal and seasonal modelling. Recent approaches in forecasting such as artificial neural networks are also introduced. Business and economic databases are analyzed using statistical software packages in both class and project assignments.  
*NOTE: Students who have received credit for DESC 477 may not take this course for credit.*

**BSTA 478    *Data Mining Techniques*** (3 credits)

Prerequisite: COMM 215. The course covers essential ideas and techniques for extracting information from large amounts of data. It discusses both supervised and unsupervised methods, and covers topics such as dimension reduction, multiple regression, logistic regression, discriminant analysis, classification and regression trees, neural networks, association rules, cluster analysis and multi-dimensional scaling. Illustrations of the concepts and methods are given, and students gain practical experience in data mining with the use of popular data mining software.  
*NOTE: Students who have received credit for DESC 478 may not take this course for credit.*

**BSTA 490    *Special Topics in Business Statistics*** (3 credits)

Prerequisite: Permission of the Department. This course allows for more intensive examination of one or more topics in business statistics.

**BUSINESS TECHNOLOGY MANAGEMENT****BTM 200    *Fundamentals of Information Technology*** (3 credits)

This course covers topics in information and communications technologies, including software, hardware, the Internet, and office productivity applications. Students learn about the technologies and their use, as well as acquire hands-on experience in key software applications.

*NOTE: Students who have received credit or exemption for DESC 200, INTE 290, or for this topic under a COMM 499 number or equivalent, may not take this course for credit.*

*NOTE: Students enrolled in Mathematics and Statistics programs may not take this course for credit.*

**BTM 380    *Introduction to Business Application Development*** (3 credits)

Prerequisite: COMM 226, 301. This course introduces students to the fundamentals of developing computer applications. Students gain knowledge and learn techniques necessary for building business applications, based on the modern object-oriented development paradigm. Students learn the principles of object-oriented programming using a contemporary language and integrated development environment. Topics include control structures, objects, classes, inheritance, class hierarchies, and polymorphism. Using appropriate business examples, this course enables students to solve business problems using the fundamentals of object-oriented programming.

*NOTE: Students who have received credit for DESC 381 or 391 may not take this course for credit.*

**BTM 382    *Database Management*** (3 credits)

Prerequisite: COMM 226 or 301. This course provides a comprehensive foundation for designing, building, and working with databases, enabling students to understand and use commercially available database products effectively. The course examines different models of representing data with emphasis on the relational model. Topics include data modelling, database design, queries, transaction management, implementation issues, and an overview of distributed database management systems, data warehouses, databases in electronic commerce, and database administration. Examples are drawn from various functional and operational areas including enterprise and supply chain operations, management, and planning.

*NOTE: Students who have received credit for DESC 382 may not take this course for credit.*

**BTM 387    *E-Business*** (3 credits)

Prerequisite: COMM 226 or 301. This course covers the essentials of how e-business is conducted and managed. Its major opportunities, limitations, risks, and issues for individuals, organizations, and society are discussed. Topics covered include e-business architectures, models, technologies, and privacy and security issues. Applications such as e-learning, e-government, and telemedicine are also discussed.

*NOTE: Students who have received credit for DESC 387 may not take this course for credit.*

**BTM 395    *Internet Programming*** (3 credits)

Prerequisite: BTM 380. This course covers the concepts and tools used in programming of business systems that require Internet connectivity. Methods and technologies used to build web-based systems including e-business, e-learning, and online meeting places are discussed. The course gives students the opportunity to learn about and use such technologies as scripting, interactive charting, and database connectivity.

*NOTE: Students who have received credit for DESC 395 may not take this course for credit.*

**BTM 430    *Enterprise Resource Planning and Information Technology Integration*** (3 credits)

Prerequisite: COMM 225, 226 or 301. This course responds to the demand for the integration of technological and business resources by providing the student with opportunities to understand and analyze practical business problems and processes via the use of enterprise resource planning (ERP) applications. Topics include analysis and design for information technology

integration, implementation strategies, and use of ERP for process integration. Technological solutions examined include ERP software, middleware applications, and the use of web services.

*NOTE: Students who have received credit for DESC 389, 420 or 430 may not take this course for credit.*

**BTM 440 Business Information Systems' Risks, Security and Audit** (3 credits)

Prerequisite: COMM 226 or 301. This course provides a comprehensive foundation of information systems' governance, auditing and security. The first part of the course covers information systems' risks, risk management, information technology (IT) controls, information systems' governance standards and the processes to audit information systems. The second part focuses on key points of managing information security including business continuity planning, incident management, backups, restoration procedures and security policies. The course uses a combination of theory and applied learning through intensive cases and the completion of a hands-on IT auditing and security management project with the help of a computer-assisted auditing tool.

**BTM 480 Project Management** (3 credits)

Prerequisite: COMM 225 or 226 or 301. This course covers the theory, tools, and techniques associated with the management of projects including the use of project management software. Cases from various business contexts are used to illustrate essential steps in setting up project plans, scheduling work, monitoring progress, and exercising control to achieve desired results. The course integrates the Project Management Body of Knowledge with the Project Management Institute's certification requirements. *NOTE: Students who have received credit for DESC 483 or for this topic under a DESC 490 number may not take this course for credit.*

**BTM 481 Information Systems Analysis** (3 credits)

Prerequisite: BTM 382 previously or concurrently. This course covers the first phase of the systems development life cycle, which culminates in the systems proposal. Topics include the preliminary survey, analysis of existing systems and identification of deficiencies, the development of functional specifications, feasibility and cost/benefit analysis and development of a recommended course of action. In addition, various diagramming techniques are examined.

*NOTE: Students who have received credit for DESC 481 may not take this course for credit.*

**BTM 490 Special Topics in Business Technology Management** (3 credits)

Prerequisite: Permission of the Department. This course allows for more intensive examination of one or more topics in business technology management.

**BTM 495 Information Systems Design and Implementation** (3 credits)

Prerequisite: BTM 380 or DESC 381 or DESC 391; BTM 382 or DESC 382; BTM 481 or DESC 481. The main objective of this course is to expose students to the concepts, tools, and techniques they need to transform the information system requirements, resulting from the system analysis phase, into system design specifications, and to transform the information system design specifications, resulting from the system design phase, into a system prototype. The course introduces the concepts, techniques, and methodologies of the object-oriented approach to information system design. The unified modelling language is used to develop design specifications for the systems. Topics include design of use case models, classes and class diagrams, interaction diagrams, and state chart diagrams.

*NOTE: Students who have received credit for DESC 495 may not take this course for credit.*

**BTM 496 Information Technology Strategy, Management, and Sourcing** (3 credits)

Prerequisite: BTM 481 or DESC 481. This course addresses issues involved in administering the activities related to information technology (IT) resources in an organization. Topics covered include IT strategy, governance, sourcing, architecture, risk management, security policies, resource allocation, and change management. The course also covers areas related to the external environment of an organization such as the IT industry evolution, scanning, and its emerging solutions.

## SUPPLY CHAIN OPERATIONS MANAGEMENT

**SCOM 361 Management Science Models for Operations Management** (3 credits)

Prerequisite: COMM 225. This course deals with application of management science models to operations management problems in allocation of scarce human, physical, and financial resources. Among the topics covered are transportation, assignment and trans-shipment problems, integer linear programming, network models, multi-criteria decision problems, and waiting line models. The emphasis is on modelling issues and interpretation of solution through the use of optimization software packages.

*NOTE: Students who have received credit for DESC 361 may not take this course for credit.*

**SCOM 363 Product Design and Business Process Re-Engineering** (3 credits)

Prerequisite: COMM 225 previously or concurrently. This course combines the product/service design issues and the continuous improvement efforts required throughout the life cycle of products and services. The topics covered in this context include essentials of creativity, organizational and operational issues in product/service design, mass customization, business process re-engineering, layout, and quality management. Cases and enterprise resource planning applications are studied to provide a unifying theme in terms of organizational change, supply chain re-engineering and integration aspects.

*NOTE: Students who have received credit for DESC 363 may not take this course for credit.*

**SCOM 372 Supply Chain Planning and Control** (3 credits)

Prerequisite: SCOM 361 or DESC 361. Production/service planning and control issues in managing supply chains are covered in this course. Mathematical modelling is emphasized in dealing with facility location, capacity planning, demand and supply

management, aggregate planning, scheduling, and inventory management decisions. Supplier evaluation/development practices and outsourcing are studied. Relevant enterprise resource planning modules with advanced planning and scheduling functionalities are introduced to illustrate the integration and coordination issues in supply chain planning and control.

*NOTE: Students who have received credit for DESC 372 may not take this course for credit.*

**SCOM 374 Supply Chain Logistics** (3 credits)

Prerequisite: COMM 225. This course covers the tools and techniques associated with movement of materials throughout the supply chain. The topics covered include fundamentals of customer relationship management, distribution channels, purchasing, warehousing, transportation management, third part logistics, reverse logistics and issues in global logistics. Relevant enterprise resource planning modules are introduced and logistics games are played to illustrate the integration and coordination issues in supply chain logistics.

*NOTE: Students who have received credit for DESC 374 may not take this course for credit.*

**SCOM 490 Special Topics in Supply Chain Operations Management** (3 credits)

Prerequisite: Permission of the Department. This course allows for more intensive examination of one or more topics in supply chain operations management.

**SCOM 491 Supply Chain Risk Management** (3 credits)

Prerequisite: COMM 225. This course covers fundamental quantitative and qualitative tools of risk management used to mitigate against supply chain risks in the context of supply and demand management strategies. Globalization initiatives in trade and money markets and increased worldwide security concerns have exposed supply chains to ever-increasing risks. Consequently, risk management along the supply chain has become an important function in order to decrease the level of vulnerability for the stakeholders. Topics include review of supply chain fundamentals and principles, risk identification and management, trade-offs in risk management, supply chain strategies for robustness, and scenario planning. Various case studies are used to highlight design and implementation issues.

*NOTE: Students who have received credit for DESC 491 may not take this course for credit.*

**SCOM 492 Supply Chain Simulation** (3 credits)

Prerequisite: BSTA 450; SCOM 372 or DESC 372 or SCOM 374 or DESC 374 previously or concurrently. This course focuses on simulating various supply chain scenarios using supply chain simulation package(s). Modelling issues in simulation are covered. Experimental design and analysis techniques are used in designing scenarios and analyzing the outcomes, which are also studied from a wider strategic business perspective.

*NOTE: Students who have received credit for DESC 492 may not take this course for credit.*

**SCOM 498 Supply Chain Project** (3 credits)

Prerequisite: SCOM 372 and at least six credits from SCOM 363, SCOM 374, BSTA 450. This course involves a project carried out in a real-life setting. Guest speakers from industry are invited to present supply chain issues in practice. Various tools and techniques of supply chain operations management are used in identifying and analyzing supply chain problems. Improvements and solutions are designed along with appropriate performance metrics.

*NOTE: Students who have received credit for DESC 498 may not take this course for credit.*