INFORMATION SYSTEMS (IS)

IS 0100 Introduction to Information Systems **3 Credits**
This course helps students understand the role of Information Systems in the contemporary business environment. It introduces them to the use of information systems concepts and techniques in solving a wide range of business problems. Working in small teams, students develop, analyze, and present solutions to a business problem using information technology.

IS 0135 Fundamentals of Web Design **3 Credits**
Students learn the theory and practice of front-end web design. Theoretical content will primarily focus on website design, with a heavy emphasis on developing sites that conform to standards and are responsive to the needs of practical applications and mobile devices. Hands-on work will help develop technical skills, such as HTML, CSS, XML, and other web client technologies. Students will learn to use a professional-quality toolset and to follow generally accepted best practices. The course includes weekly web-programming assignments and a semester project.

IS 0210 Fundamentals of Business Analytics **3 Credits**
Attributes: BUEL Business Elective
Prerequisite: Junior or senior standing; EC 0278 or MA 0017 or MA 0217 or PY 0201 or SO 0221.
This course introduces fundamental knowledge and essential skills in business analytics, including modeling and analyzing data using spreadsheet software, such as Excel and its add-ons, as well as tools for optimization, descriptive analytics, visualizing and exploring data, predictive modeling, regression analysis, time series analysis, portfolio decisions, risk management, and simulation. Business models relevant to finance, accounting, marketing, and operations management are set up and solved, with managerial interpretations and "what if" analyses to provide further insight into real business problems and solutions.

IS 0240 Systems Analysis and Logical Design **3 Credits**
Prerequisite: IS 0100.
This course focuses on the introduction of new systems and technology into the firm. Students learn to analyze and design information systems to meet specific business needs. Coverage includes structured and object-oriented methodologies, with an emphasis on current best practice. CASE tools employing the Unified Modeling Language are used as appropriate. As part of a semester project, students analyze requirements for an information system of moderate size and complexity, and then architect and evaluate alternative systems that meet the requirements. The semester projects are "juried" by a team of experienced professionals from the field.

IS 0260 Database Systems **3 Credits**
Prerequisite: IS 0100.
This course introduces the concepts of data modeling, as they apply in the business world, within the context of a client/server environment. Topics include relational databases, object-oriented databases, and Internet databases, along with the Structured Query Language that is used to create and manipulate databases. Students are also introduced to the architecture of Data Warehouses. Formerly IS 0340.

IS 0310 E-Business Applications **3 Credits**
Prerequisite: IS 0100.
This course examines e-business applications such as knowledge management, enterprise resource planning (ERP), customer relationship management (CRM), and mobile applications in inter-organizational, national, and global business environments. Students explore new e-business applications, the economics of e-business, value chains and value networks, related legal and ethical issues, information privacy and security, disaster planning and recovery, and the impact of emerging e-business and mobile applications. The course includes a brief introduction to technical architecture, technology, solutions, and financing required for effective e-business applications. Students investigate emerging opportunities, challenges, and trends through interactive team exercises, case studies, and individual research projects and presentations.

IS 0315 Data Mining and Applications **3 Credits**
Attributes: BUEL Business Elective
Prerequisite: IS 0210.
This course provides the students with an understanding of the practices of data mining, with a special focus on business analytics. To assure the practical relevance of this course, this course focuses on the applications of techniques and tools that help realize data mining in terms of business analytics and actionable intelligence. The pillar of this course is laid out along with the well-accepted data mining process: starting with data collection techniques, such as collecting/extracting web/text/social media data from heterogeneous resources; following with the discussions toward data preparation techniques (quality and relevance control). Applications of these techniques and tools on different subareas, such as web/text/social media analytics are covered.

IS 0320 Systems Design and Implementation **3 Credits**
Prerequisites: IS 0260, IS 0240; one programming course.
Students work in collaborating teams to design and build a networked information system. Emphasis is placed on development as an ongoing iterative and incremental process. Standard CASE tools, design patterns, and business practices are used to ensure proper communication and integration across development teams.

IS 0391 Internship **3 Credits**
Prerequisite: Junior standing.
Students may take up to two semesters of a department-approved internship. Students must have a GPA of 2.5 or higher.

IS 0392 Internship **3 Credits**
Prerequisite: Junior standing.
Students may take up to two semesters of a department-approved internship. Students must have a GPA of 2.5 or higher.

IS 0393 Internship **1 Credit**
Prerequisite: Junior standing.
Students may take up to two semesters of a department-approved internship. Students must have a GPA of 2.5 or higher.

IS 0394 Internship **1 Credit**
Prerequisite: Junior standing.
Students may take up to two semesters of a department-approved internship. Students must have a GPA of 2.5 or higher.

IS 0395 Systems Project **3 Credits**
Prerequisites: IS 0240; Senior status.
This course applies skills that have been learned in the information systems major and the business core. These skills span the areas of project management, systems analysis, systems design, business communication, organizational behavior, software development, operations management, and business processes. Students demonstrate their knowledge by engaging in a student-defined project that provides a business solution for a client. The primary deliverables for the course are a system or a set of alternatives to solve the business problem, along with all related documentation.

IS 0397 Seminar in Information Systems **3 or 6 Credits**
This special program involving independent study and research is also intended for students accepted in an approved internship. This course, administered by the Office of the Dean, requires a formal application by the student to the faculty project advisor and the department chair. The course does not count toward fulfilling the requirements for the information systems major, but does count toward meeting University credit requirements. Open only to senior Information Systems majors. Enrollment by permission only.

IS 0398 Seminar in Information Systems **3 or 6 Credits**
This special program involving independent study and research is also intended for students accepted in an approved internship. This course, administered by the Office of the Dean, requires a formal application by the student to the faculty project advisor and the department chair. The course does not count toward fulfilling the requirements for the information systems major, but does count toward meeting University credit requirements. Open only to senior Information Systems majors. Enrollment by permission only.

IS 0399 Independent Study **3 Credits**
Students pursue topics of special interest through independent study, research, and/or completion of an information systems project under the supervision of a full-time faculty member. The department chair and dean must approve the work. The student and a faculty project advisor who agrees to conduct the work according to a mutually agreeable schedule must complete an application form. Once the form is completed and submitted to the registrar, the student may register for the course, which is taught during the fall and spring semesters. If any work is expected to occur at any time other than the semester registered, students must obtain the approval of the faculty project advisor and the department chair prior to commencing of any work. Normally, students completed at least two advanced information systems courses before taking this course.

IS 0500 Information Systems and Database Management **3 Credits**
This course introduces the basic concepts and tools relevant to information systems and database management, and their enabling roles in business strategies and operations. Case studies are used to facilitate discussions of practical applications and issues involving strategic alignments of organizations, resource allocation, integration, planning, and analysis of cost, benefit and performance in light of the big data challenges. Specific emphases involve database design and implementation and emerging strategies and technologies such as business intelligence, big data management, web security, and online business analytics.

IS 0520 Project Management **3 Credits**
Prerequisite: IS 0500 or OM 0400.
This course explores the process and practice of project management. Topics to be covered include project lifecycle and organizations, teambuilding and productivity, task scheduling and resource allocation, and progress tracking and control. Cases will be used to consider the implications for change management, consulting, IT implementation, and other related disciplines. Small team projects and experiential exercises will also be used to provide an active learning environment. This course is designed to count toward professional project management certification.

IS 0550 Business Analytics and Big Data Management **3 Credits**
Prerequisites: BA 0540, BA 0545.
This course will survey state-of-the-art topics in Big Data, looking at data collection (via smartphones, sensors, the Web), data storage and processing (scalable relational databases, Hadoop, Spark, etc.), extracting structured data from unstructured databases, systems issues (exploiting multicore, security), analytics (machine learning, data compression, efficient algorithms), data visualization, and a range of applications. Each of these five modules will introduce broad concepts as well as provide the most recent developments in the area.

IS 0585 Contemporary Topics in Information Systems and Operations Management **3 Credits**
Prerequisite: IS 0500.
This course draws from current literature and practice on information systems and/or operations management. The topics change from semester to semester, depending on student and faculty interest and may include: project management, e-business, management science with spreadsheets, e-procurement, executive information systems, ethics, and other socio-economic factors in the use of information technology.

IS 0598 Independent Study in Information Systems and Operations Management **3 Credits**
This course provides an opportunity for students to complete a project or perform research under the direction of an Information Systems and Operations Management (ISOM) faculty member who has expertise in the topic being investigated. Students are expected to complete a significant project or research paper as the primary requirement of this course. Enrollment by permission of the ISOM Department Chair only.