INFORMATION SYSTEMS (IS)

IS 510 Computer and Information Systems (3 credits)
This course provides an intensive introduction to the fundamental concepts of computers and information systems for students with minimal computing background. Topics include: introduction to computers and their uses; elements of an information system; the systems development process: analysis, design, implementation, maintenance; computer hardware, microcomputers, mainframes, data communication concepts; computer software problem solving, solution development, programming languages, application software, systems software; management of data files, database management concepts; PC applications spreadsheets, data management, graphics; program development; and structured design and programming. Emphasis is on reading and understanding computer-based solutions rather than coding proficiency. Students will be required to interact with and create computer-based applications and problem solutions both in the classroom and in homework assignments.

IS 520 Information Systems Concepts (3 credits)
This course provides an introduction to the fundamental concepts of information systems and information technology for students with minimal background in the field. Topics include: organizational issues; overview of information systems components: software, hardware, people, data; telecommunications applications; contemporary approaches to information systems development including CASE tool support for process modeling, data modeling and prototyping; ethical and societal issues of information systems. The course will employ extensive use of case studies.

IS 522 Advanced Spreadsheet Skills (3 credits)
This is an online course that introduces students to the features of Microsoft Excel and prepares them for the Microsoft Office Specialist (MOS) Excel 2016 Certification exam. This is a hands-on course that covers the fundamentals of good spreadsheet design and management. Topics include: Creating and saving an Excel workbook; learning concepts, terms and jargon; brushing up on math skills; entering labels, formulas, and functions; printing worksheets and workbooks; creating and using charts; creating and using Excel tables; creating and using PivotTables and macros; and using the decision making strength of Excel.
Course Rotation: NYC & PLV: Fall and Spring

IS 600 Graduate Independent Study in Information Systems (1-9 credits)
Independent study projects in special areas of Information Systems can be pursued by advanced students who upon the submission of a detailed proposal, obtain permission of the instructor. No more than 6 credits of Independent Study may be taken.

IS 600A Independent Study in Info Systems (Graduate) (A) (1-9 credits)

IS 600B Independent Study in Info Systems (Graduate) (B) (1-9 credits)

IS 600C Independent Study in Information Systems (Graduate) (C) (1-9 credits)

IS 611 Computer Methodology (3 credits)
Covers structured programming methodology and program modularity, procedures, function, subprograms, data editing techniques. Provides an introduction to computer systems-operating systems, program applications from business and management science, including non-numeric information processing and numeric computation using COBOL programming.
Prerequisites: Programming In A Higher Level Language.

IS 612 Introduction to Coding (3 credits)
This course provides an introduction to programming with Python, and shows how to use Python to retrieve and visualize data. No prior programming experience is assumed. Topics include data structures in Python, control flow statements such as if-then-else and for loops, functions, accessing data from the web and from databases, and visualizing data.
Course Rotation: NYC & PLV: Fall and Spring

IS 613 Database Management Systems (3 credits)
This course focuses on the theoretical and practical aspects of file and database management systems. Topics include data models hierarchical, network, relational; data structures, storage structures, storage devices and their relation to data access; importance of data as an organizational resource; data management, sharing availability, security, integrity and consistency; data independence and conceptual data models. Examples of database applications and software packages are selected.

IS 614 Applied Artificial Intelligence (3 credits)
Survey of the types of artificial intelligence that exist. Algorithmic versus heuristic programming; search trees, search algorithms, information retrieval, robotics and expert systems. State-of-the-art and future trends of these and other forms of artificial intelligence will be explored.

IS 617 Information Systems Principles (3 credits)
This course examines managerial information requirements for operation, control, organization and planning, and the ways in which information systems are used to achieve these organizational objectives. Topics include general systems concepts and the systems approach to organization; role of computer technology in information systems design; economics of information; importance of data as a major organizational resource; information resource management; overview of information systems components: software, hardware, people, data flows and functional subsystems and their relation to the whole system. Examples are selected from such major subsystems as corporate planning, marketing, manufacturing, accounting, finance and personnel.

IS 620 Information Systems and Organizational Strategy (3 credits)
This course brings to life the latest business research on critical business challenges in which information systems plays a part. Insight on innovation, IS management and new market entries are introduced through case studies. IS in Organizational Strategy takes the perspective of the IS manager at the product line, business unit, and corporate levels. The course not only examines each of these levels in some detail, but also addresses the interaction between the different levels of IS management- for example, the fit between product strategy and business unit strategy in the context of information systems, and the link between business and corporate level strategy from a technological viewpoint.
Course Rotation: TBA

IS 621 Structured Systems Analysis (3 credits)
The underlying concept is the building of a logical model of a system using structured techniques that enable users, analysts and designers to get a clear and common picture of the system. Topics include: system life cycles, systems development process, data flow diagrams, building and using the data dictionary, analyzing response and immediate access requirements, process specification, structured English and decision trees, management advantages of structured development.

IS 622 Structured Systems Design (3 credits)
Structured design is concerned with the architecture of programs and systems, that is, they way in which a system should be broken in modules, which modules, relationships between modules, information passed between modules and the packaging of these modules into executable programs leading to minimum cost systems. Topics include module coupling and cohesion, transform centered systems, transaction centered systems, span of control / scope of effect, packaging and optimization considerations of design, structure and program quality, software reliability, management advantages of structured design methodology.

IS 623 Information Systems Design and Development (3 credits)
This course provides an introduction to Systems Analysis and Design. Topics include analyzing the business case, requirements modeling, data and process modeling, and development strategies, with a focus on project management. Students also learn about output and user interface design, data storage design, systems architecture, implementation, and systems operation, support, and security.
Course Rotation: NYC & PLV: Fall & Spring.

IS 625 Decision Support Systems (3 credits)
A thorough treatment of Decision Support Systems (DSS) and their uses by management. Discussions of individual components in a DSS and how they are integrated to form a total management tool.

IS 626 Cases in Information and Communication Technology Innovation (3 credits)
Innovation and technological change have been interlinked and are globally acknowledged as primary drives affecting the growth of national economies, social developments, corporate competitiveness, and the individual. Because innovation is an elusive notion to conceptualize and measure in a consistent, systematic way, a framework is needed to examine its interaction with information and communication technologies. This course takes a case study approach to analyze the interaction between innovation and ICT in order to establish a framework that provides students with a basis to examine the linkage between information and communication technologies (ICT) & innovation in their own industries. Using this framework, students will be better prepared to work effectively in industries for which technology-based innovation has become a reality and future certainty.
Course Rotation: NY:Spring

IS 627 Visual Design for Technology (3 credits)
This course is designed to give students an understanding the principles and theory of graphic design as it applies to technology. When completed, students will be able to brand and flavor websites and applications. Students will explore the meaning of graphic design, how to identify its application, develop their own creative process, how to be a practioner of design including having the appropriate vocabulary, to articulate ideas and comcepts in a critique setting, analyze/critique graphic design using sound principles and iterate upon original work to bring it professional standards
Course Rotation: Fall and Spring/NYC and PLV

IS 628 Research Methods for User Experience (3 credits)
In User Experience, the foundation is research and is a required skill. Without understanding the user's behavior, patterns and pain points, authentic User Experiences cannot be created. Students can expect a comprehensive guide to performing the core research methods; Surveys, Interviews and Usability testing. This course will help prepare students for a future career in User Experience by giving the student a basic knowledge of the "Discovery" phase of any research that is associated with any user, application or product.
Course Rotation: NYC and PLV: Fall and Spring

IS 629 Programming User Interfaces (3 credits)
This course provides students with the ability to implement a user interface including the development of a design kit and a component kit. Students will learn how to write an interactive application using frameworks. Students will also learn how to implement responsive design and design for accessibility, by applying current trend in user interface design and development.
Course Rotation: NYC & PLV: Fall, Spring, & Summer 1

IS 630 Prototyping and User Experience (3 credits)
This course explores the role of prototyping in the development lifecycle of software systems. It enables students to develop and communicate interactive design prototypes. It introduces a variety of prototyping methodologies such as paper, wireframing, and wizard-of-oz. Students will learn which techniques are the most appropriate to use in the various stages of development and when communicating with the varied audiences involved in the development process.
Course Rotation: NYC & PLV: Fall, Spring, & Summer.

IS 631 Operating Systems Principles (3 credits)
Introduction to the structure of multiprogrammed and time-shared computer operating systems. Topics include memory management techniques, program relocation, paging, virtual memory, segmented address space, reentrant program organization, process and job scheduling, and device management.

IS 632 Business Data Communications (3 credits)
The study of all forms of electronic communication in organizations today. Course topics include data communications hardware and media, protocols and standards, local area and wide area networking, network management, telecommunications software and application design.

IS 633 Computer Organization (3 credits)
Introduction to computer organization, comparison of maxi-mini and microcomputers. Topics include: components of a computer system and their functional characteristics, instruction sets, addressing techniques, input-output processing, interrupts, hardware-software tradeoffs, and machine and assembly language programming considerations.

IS 635 Distributed Information Systems (3 credits)
Presentation of distributed information systems with an emphasis on client/server computer hardware, software and applications. Topics include graphical user interfaces, client/server system tools, client/server systems development methodology, managing, staffing and funding client/server systems, and future technological trends.

IS 636 Introduction to Multimedia Theory and Application (3 credits)
Students will be exposed to the various elements that comprise multimedia, in terms of concepts as well as design. Human information processing, learning theory and communication theoretical underpinnings of multimedia will be explored and these will be directly to the design of web-based and stand-alone applications using various multimedia tools.
Course Rotation: NY: Spring, even years.

IS 637 Information Systems Project and Change Management (3 credits)
This course combines project management methods and structured systems development techniques and applies them to the complex world of information systems development. Change management is a complicated and crucial aspect of information systems implementation, and will also be addressed by this course. The central project management functions-planning, organizing and controlling-are presented in the context of the systems development process. Topics include project planning, estimating, testing, implementation, documentation, management of change, utilization of services consultants, software houses, turn-key systems and proprietary software packages.

IS 638 Introduction to User Experience Design (3 credits)
This course introduces students to User Experience, the practice of designing apps and websites while applying user centric methods. This course touches on the entire process from analyzing user needs, iterating the design, presenting and selling a comprehensive solution to creating wireframes that become the blueprint for developers to follow when coding. Who could benefit from this course: If a student is an Information Systems Major, they will be thinking / designing system requirements and will be helping design the systems. If a student is a Computer Science Major then they will be on the receiving end of the design process and being asked to code what has been designed. It's important for students to have the ability to understand, assess, design and convey good design. Students will explore basic concepts and methods to design an application while taking into consideration the needs of the user.
Course Rotation: NY; Fall and Spring

IS 639 Information Systems Planning and Policy (3 credits)
This course focuses on the relationship of the information systems plans and strategies to those of the organization. Topics include: IS perspectives, planning and control, application development and maintenance, systems management and control, IS strategy, computer center administration, social and legal considerations, telecommunications directions, and the information center.

IS 641 Information Security and Controls (3 credits)
Overview of security and privacy issues associated with information systems, security management goals, prevention, recovery, avoidance, security policy, data integrity, operational controls, risk management, and risk avoidance. Identification and authorization techniques, passwords, authorization matrix, access controls, encryption, key systems, Data Encryption Standards (DES), key management, public keys, statistical databases and computer crime.

IS 642 Information Security Planning and Policy: NIST Standards (3 credits)
The United States government requires all federal systems to have a customized security plan. In addition, the National Training Standard for Information Systems Security (INFOSEC) Professionals requires programs that meet his standard to produce students capable of developing a security plan; this course provides an introduction to security planning as recommended by NIST guidelines on developing security plans. The student is required to conduct a case study where a security plan is developed for a fictitious or real small size organization. The purpose of this course is to provide an overview of the security requirements on existing computing environment and describe the controls in place or planned for meeting those requirements. The security plan presents all managerial, operational, and technical controls and organization will need in the next three years. The purpose, scope, and content of a security plan are covered in the first week of lecture. Several outlines for a security plan are shown from the following sources: OMB Circular A-130 (2), NIST Special Publication 800-18 (1), and Director of Central Intelligence (DCID) 6/3.
Course Rotation: Fall:Spring;NY

IS 643 Information Security Auditing and Risk Management:ISO Standards (3 credits)
This course provides an introduction to security auditing based on the ISO 27000 family of standards. In addition to risk management, the course also resents both nominal security audit based on ISO 27002 and technical security audit based on ISO 27001. Each student is required to conduct a case study where he/she performs security audit for a fictitious or real small-size organization. Security Audit program contains about a dozen security areas of audit focus that are performed but either an external auditor or internal auditor who aims at validating the compliance of the Information Technology and the enterprise to the ISO 27000 Series, Sarbanes-Oxley, HIPAA, and PCI-DSS. Here are the main security audit objectives found in most security audit projects: Corporate Security Management, Systems Development and Maintenance, Information Access Control Management, Compliance Management, Human Resource Security Management, Information Security Incident Management, Communications and Operations Management, Organizational Asset Management, Physical and Environmental Security Management, Security Policy Management and Disaster Recovery Plan and Business Continuity.
Course Rotation: Fall:Spring;NY:PLV

IS 644 Business Continuity & Disaster (3 credits)
Recent events in this world have increased the need for organizations to develop strategies for mitigating, preparing for, responding to, and recovering from small and large scale emergencies. In the context of a highly integrated global economy, nearly every business is likely to feel the effects of emergencies around the world, and in the face of intense competition, it is crucial that all businesses have a plan for continuing operations before, during, and after emergencies of all types. This course presents an introduction to business continuity and disaster recovery planning. It includes a comprehensive advanced business continuity planning and management workshop which is designed to teach practical methods to develop, test, and maintain a business continuity plan. In addition to the BS 25999 business continuity standard, this course is based on industry best practices and guidelines for business continuity, disaster recovery, and emergency management.
Course Rotation: NY:PLV;Fall:Spring

IS 645 Information Security Management Project:The CISMO Role (3 credits)
This course recaps the requirements defining the roles on an information security management executive officer. This course reviews and presents all security managements activities and discusses and defines the different roles played by an executive cyber security management officer. The student develops a write up/handbook where he/she defines all roles is expected to play at every security management activity. The security management officer roles are written in terms of risk management, security planning, and security policy enforcement and auditing activities. The course also presents security guidelines, regulations, and standards that apply in information security management. This course should be considered as a final project that recaps all security management roles that the successful executive cyber security management officer should play.
Course Rotation: NY:PLV;Fall

IS 647 Legal Issues in Information Systems (3 credits)
This course will introduce the student to the legal environment of business with primary focus on legal issues affecting information systems. Among the topics to be covered are: an introduction to the American legal system; jurisdiction; constitutional law; the law of crimes such as pertaining to destruction of data and unlawful appropriation; computer torts including defamation and invasion of privacy; securities, antitrust and taxation issues and intellectual property issues relating to computer and Internet technology.
Course Rotation: NY and PL: Fall, Spring, and Summer.

IS 648 Cyber and Professional Ethics (3 credits)
The pervasiveness of computers, technology, and the Web have made it imperative that we be aware of and understand the ethical and legal implications of these forces on our personal and professional lives. Through readings, discussions and case studies, this course examines the ethical and legal issues involved in computing by investigating such questions as free speech, privacy, and intellectual property on the Internet, cyber-crimes, employer/employee issues, and professional codes of ethics.
Course Rotation: Summer.

IS 650 Telecommunications Management (3 credits)
Principles of managerial accounting, financial analysis and project management are introduced and applied to the planning, implementation and operation of telecommunications systems.

IS 652 Telecommunications Policy and Environment (3 credits)
The principles of organizational policy are introduced along with a review of the history and trends of the regulatory environment, technology and structure of the telecommunications industry. These are applied to the formulation of strategy in the planning of major telecommunications systems.

IS 654 Cases in Telecommunication Systems (3 credits)
s: A capstone course in which knowledge of the technologies of telecommunications, software tools for analysis and design of networks and management principles are brought together. This integration is accomplished through the use of student analysis and presentations concerning a number of detailed cases in planning and implementation of telecommunications systems to meet the operational and strategic goals of the organization.

IS 656 Networks: Routing & Switching (0-3 credits)
This course develops foundational understanding of networking fundamentals and advanced concepts with hands-on practice and simulations to develop student's skills with real-world application of modern telecommunication problems plaguing today's corporations. The Introduction to Networks component of this course provides a comprehensive overview of networking; from fundamentals to advanced applications and services. This course emphasizes theoretical concepts and practical application, while providing opportunities for students to gain the skills and hands-on experience needed to design, install, operate, and maintain networks in small-to-medium businesses, as well as enterprise and service provider environments. The Routing and Switching component of the course describes the architecture, components, and operations of routers and switches in simple networks. Students learn how to configure and troubleshoot routers and switches for basic functionality.
Course Rotation: NY: Spring.

IS 658 Web Services (3 credits)
Web Services are emerging as a new paradigm for distributed computing over the web. After introducing the basics of XML, this course presents the concepts of Web Services with some of the most popular development platforms. The course will also look at the commercial trend of Web Services deployment. Topics include XML, SOAP, and WSDL. Student will develop XML based projects using the Web Services.
Course Rotation: NY and PL: Fall, Spring, and Summer.

IS 660 Special Topics in Information Systems (3 credits)
This course expands the business dimensions of Analytical, Collaborative and Operational Customer Relationship Management (CRM) with in-depth exposure to marketing, sales and service software. Technologies of PeopleSoft Inc. are demonstrated throughout the course. A student may register for this course more than once with permission of the Chair. .
Prerequisites: IS 520 or IS 617 and permission of Instructor.

IS 660A Comparative e-Government Systems (3 credits)
This course provides an overview on the growing development of e-government and comparatively explores the approaches used by regional and federal governments both domestically and internationally. The various essentials of e-government will be presented and discussed in light of prevailing practice and the tools foe assessing e-governance performance are also explored. Selective aspects such as integrating operations between the public and private sectors as well as outsourcing the e-government function will be highlighted.

IS 660E Corporate It - Survival Guide for Technologists (3 credits)

IS 660F Topic: Enterprise Architecture (3 credits)

IS 660I Topic: Design, Development, & Implementatn Meth E-commerce (3 credits)

IS 660J Data Warehousing and the Organization (3 credits)
This course covers one of the most debated current issues facing IT in the corporate environment aligning with the business units for maximizing profitability. The course covers the changing organizational role of IT departments and the new dynamics between the business managers, the CIO and the CFO. The various financial methodologies for understanding the management of IT investments, such as Return on Investment (ROI) and Total Cost of Ownership (TOC) will also be discussed.

IS 660N Topic: Managing Innovation and Technology in the Global Marketplace (3 credits)
This course introduces students to innovation and technology in the international global marketplace. Firms in America continue to network with firms in foreign countries. The focus of the course is on the management of risk factors in innovation and technology in the global marketplace: competency, culture, economy, education, geography, government, law, security, technology, and volatility. Half of innovation projects in foreign countries are considered destined to fall short of benefits, such as cost savings, unless firms comprehend the full spectrum of issues in information technology. The course concludes with the importance of balanced country portfolios and of future global process networks in international strategies.
Course Rotation: : TBA

IS 660O Topic: Technologies and Tools of Customer Relationship Management (CRM) (3 credits)
This course expands the business dimensions of Analytical, Collaborative and Operational Customer Relationship Management (CRM) with in-depth exposure to marketing, sales and service software. Technologies of PeopleSoft Inc. are demonstrated throughout the course. A student may register for this course more than once with permission of the Chair.
Prerequisites: IS 520 or IS 617 or permission of Instructor.

IS 660P Topic: Advanced Concepts in Project and Program Management (3 credits)
This course introduces graduate students to project management of global service-oriented information systems. The focus of the course is on a program management methodology that consists of frameworks for managing global projects, critical business, procedural and technical factors for enabling the projects, and responsibilities and roles of internal corporate, business, governance and technical staff and external multinational provider staff. The methodology complements established project management methodologies with flexible non-agile and agile techniques tailored to the requirements of international service-oriented systems. The methodology consists of project portfolio management, key performance factors, and scorecard techniques. The course concludes with best practices of global program management of information systems and technologies of leading edge firms in industry.

IS 660Q Design and Developing Object-Oriented Systems: Uml & C ++ (3 credits)

IS 660R Topic: Internet Development and Electronic Commerce (3 credits)

IS 660S Topic: Interface Design for Web Applications (3 credits)
This course introduces students to the theories of Human-Computer Interaction and Usability and presents methodologies for analyzing and designing user-centered interactive interfaces. Through readings, case studies, and hands-on analysis, students will experience the iterative interface design process and complete a prototype interactive interface design.

IS 660V Topic: Technology Change Management (3 credits)

IS 660W Travel to the United Kingdom (3 credits)
The importance of network security in today's world is increasingly becoming a global concern. It is imperative to have an understanding of how the international community addresses network security to insure the reliability of our own data communications infrastructure. The online portion of this course will provide an introduction to the issues of globalization and the technology of telecommunications and networking. Topics will include techniques and policies for securing networks, and an overview of cyber crime and its prevention. Abroad, in addition to corporate seminars, students will visit Bletchley Park, Greenwich Observatory, and the Mundaneum Museuem (Mons, Belgium). There is ample time for sight-seeing and exploring different aspects of European culture.

IS 660Y Topic: Java Programming (3 credits)
This is a special topics course in Java programming. The course will cover the following topics: What is Java? Object oriented programming, getting started with Java - IDE, data types, arithmetic operators, branching, loops, arrays, classes, and objects, more on methods, inheritance.
Prerequisites: Course prerequisite or some programming knowledge. Course description is available in the Deans office.

IS 660Z Topic: Programming Games Using Visual Basic (3 credits)

IS 661 Business Applications in C/C++ (3 credits)
An introduction to the C/C++ programming languages and their application to business. Programming topics include: fundamental data types, flow of control statements, functions, the preprocessor, arrays, pointers, strings, structures and unions, dynamic memory allocation and files. Typical applications discussed include an automated cash register simulation, payroll calculations, scheduling manufacturing production, table sorting, string manipulation, data compression, a menu processor, stacks and queues, sequential and random file processing.
Prerequisites: Knowledge of a programming language.

IS 662 Issues in Information Systems (3 credits)
Rapid innovation in technology provides new opportunities and challenges in our world of constant organizational, social economic, environmental change. Information Systems and people are essential for the resource management and monitoring needed by every public and private organization. Information systems and technologies have positive and negative impacts on the environment, health, equality, education and sustainable global development. Each term this course focuses on a set of these information technologies and systems and how these relate tone or more of the critical issues facing IS professionals today.
Course Rotation: NY: TBA. Westchester: TBA.

IS 663 Database Design for Web Applications (3 credits)
This course applies theoretical and applied aspects of database design to web-based applications. This course will review the basics of database technology, cover different development platforms, and develop projects that connect client-side interfaces to server-side databases.
Course Rotation: NY:PLV;Spring

IS 664 Database Programming (3 credits)
This course is an introduction to database programming. Concepts and techniques of data definition and data manipulation using SQL will be stressed. Students will design and implement a database in a relational database environment. Topics covered include creating database structure, populating the database, maintaining data, retrieving data, administering the database and optimizing queries.

IS 665 Introduction to Data Mining and Visualization (3 credits)
This course provides a foundation for learning the basic concepts of data mining and visualization. The course focuses on distinctly "real -world" orientation that emphasizes application of data analysis over algorithm design and development in most topic areas. The course pre-requisites are understanding database concepts and familiarity with information or business decision systems.
Course Rotation: NYC & PLV: Fall & Spring

IS 667 Database Design and Development of Web Applications (3 credits)
This course applies theoretical and applied aspects of database design to web-based applications. This course will review the basics of database technology, cover different development platforms, and develop projects that connect client-side interfaces to server-side databases.
Course Rotation: NYC:PLV;Spring

IS 668 Foundation of Geographic Information Systems (3 credits)
This course provides an introduction to the analysis and design of geographic information systems. These are systems for which the data and solutions are location based. GIS systems are used in a variety of disciplines and applications including geoscience, environmental science, government, land management, non-profits, and business. Students will learn how to create comprehensive GIS systems in a range of application areas. Solutions to problems will be done in ESRI's ArcGIS Desktop Software.
Course Rotation: NYC & PLV: Fall, Spring, and Summer.

IS 669 Big Data and Information Systems (3 credits)
Data and analytics are changing the world and the way we are making decisions, thanks to the enormous and increasing amount of data available to us. Behind this vast amount of data lies the greatest potential to understand reality and predict future events. As this potential is being realized, more organizations are investing substantial amount of money in this discipline that is collectively known as Big Data. Yet, we are facing several challenges, both technological and organizational. From a technology perspective, we see an increasing need of collecting more data from sources both internal and external. This is widening the analytical gap within the organization due to the inability to properly address the volume, variety and velocity of the data. Moreover, organizations are struggling to streamline their advanced analytical capabilities and unable to efficiently respond to the needs of the business of making better decisions faster by converting data into insight. This course will explore the multifaceted reality of Big Data and students will not only learn the underlying principles of data analytics, but also the organizational challenges that Big Data poses to an Enterprise. The objective of this course is to introduce students to Data Science approaches to mine large amounts of information, the necessary tools, and learn from real use cases what is necessary for a company to create Big Data Centers of Excellence in order to successfully turn data analysis into competitive advantage. Additionally, students will also learn about using Hadoop, MapReduce to process and analyze large datasets, and data mining algorithms used for classification, estimation, and prediction purposes.
Course Rotation: NY and PLV; Fall and Spring

IS 671 Strategies for e-Commerce Technologies (3 credits)
Strategies for e-Commerce Technologies introduces students to e-Commerce technologies in a business context. Technologies and studies include business-to-consumer (B2C), customer-to-business (C2B) and business-to-business (B2B) marketplaces, and also business-to-employee (B2E), as these designs effect e-Commerce in large, small, and medium sized enterprises. The course concludes with successful performance metrics and strategies that are furnishing an edge to business innovative in their management of e-Commerce technologies.

IS 672 Healthcare Innovation and Technology: Industry Trends, Challenges and Opportunities (3 credits)
This introductory course offers a multidisciplinary overview of innovation and technology in healthcare delivery and industry. Students will develop foundational knowledge of how different stakeholders and industries are operating and engaging with one another in this rapidly growing sector, as well as learning to identify and capitalize on diverse and growing business and career opportunities. This fusion of business, technology, and healthcare gives rise to new concepts, products, services and care delivery models. Students will explore these innovations, including but not limited to: telemedicine; telehealth; consumer electronics centered on self-managed care and wellness; electronic health records; and medical devices. Pioneering and key industry players will also feature in this analysis, with a focus on the telecommunications industry's expansion into health technology and care delivery sectors. In addition to examination of these business, technical and strategic developments and issues, this course will assess related legal, regulatory, and public policy concerns. In particular, students will be introduced to patient data privacy and security issues and the relevant regulatory authorities that shape these considerations. To ensure successful application and understanding of the course concepts, students will engage in hands-on group projects on innovative development and deployment of health IT and care delivery models or products. This will enable students to have a grounding of the healthcare innovation process, from end to end, and to identify and overcome the myriad of operational, technical and legal issues surrounding this process.
Course Rotation: NY; Fall and Spring

IS 673 Managerial Issues in Information Systems (3 credits)
This course will cover various business-oriented topics related to information systems (IS) that are important to IS managers and that are not covered elsewhere in the curriculum. Topics include: information technology, organizational impacts of IT on organizations and markets, strategic use of IT, inter-organizational information systems (IOS), value-adding partnerships, electronic commerce, and knowledge management systems.
Prerequisites: 6 courses at the 600-level. Updated

IS 674 Digital Health Technologies (3 credits)
This introductory course offers a multidisciplinary overview of the emerging technologies used in Digital Health Industry. Digital Health is the provision of health information and services via Smart phones and tablets. Innovations in this area promise broader access to affordable and effective health care by enabling consumers to take charge of their health and well being. Undergraduate Juniors/Seniors and Graduate students with IT, Business, Health Sciences or Public Admiration background may be interested in this course. Minimum level of computer technology knowledge is a prerequisite. Students will develop foundational knowledge of how different stakeholders and industries are operating and engaging with one another in this rapidly growing healthcare technology sector, as well as learning to identify and capitalize on diverse and growing business and career opportunities.
Course Rotation: PLV; Fall

IS 675 Customer Relationship Management: Process and Technologies (3 credits)
This course introduces students to the technologies that enable customer relationship management processes in 21st century leading edge firms. Technologies include operational sales, customer service and marketing analytic systems, collaborative knowledge management, Web and wireless tools, and analytical data warehousing and intelligent mining personalization and privacy systems. Course concludes with surveys of best-of-class customer relationship management technology firms and technologies.
Course Rotation: NYC: Summer.

IS 676 Foundations of Social and Mobile Technologies (3 credits)
This course will explore the technical foundations of social and mobile technologies, and consider their impact on digital marketing, as well as other business contexts. The potential for social and mobile technology to serve as a new profit center for firms will be explored. Student assignments will involve the hands on use and application of social and mobile technologies. Students will also learn how to create a simple mobile application for the iPhone, Android, or other relevant platforms. The final group project will consist of a social/mobile application to support a business or organizational objective.

IS 677 Applied Object-Oriented Analysis and Design (3 credits)
This course provides an introduction to Applied Object-Oriented Analysis and Design concepts, methodologies and tools. It presents Object-Oriented Development Life Cycle methodology and its project phases. It examines Object-Oriented Concepts and how they are applied to current systems development. The course provides an in-depth study of how Unified Modeling Language (UML) diagrams are used to perform Object-Oriented Analysis and Design. The course includes a comparison of Object-Oriented Analysis and Design concepts to traditional Analysis and Design tools and methodologies.

IS 678 Location Analytics and Web GIS (3 credits)
Geographic information systems are have become a necessary tool in decision making, visualization, and spatial analytics across a variety of disciplines and application domains. This course explores emerging cloud based GIS technology, location analytics, and web-based GIS solutions. Through hands on projects, students will used web-based data, build web GIS applications, use cloud-based services for location analytics, mobile applications and field collection applications.
Course Rotation: NYC & PLV: Spring

IS 679 Cognitive Science and Technology (3 credits)
The purpose of this course is to present major research and theories in the cognitive sciences and emerging technologies across diverse domains. Emphasis is placed on the interrelationships of cognition and technology and the role of cognition in the design and use of technology in real world settings. We address questions of importance for our increasingly technological society: How does technology augment human cognition? How our minds shape technology? The course is designed to (a) familiarize students with different cognitive science theories, (b) enable students to apply cognitive sciences theories in the design of technology, and (c) equip students with the knowledge to conduct research in this interdisciplinary domain.
Course Rotation: NYC & PLV: Fall, Spring, & Summer 1

IS 680 Data Science I: Introduction to Data Science and Visualization (3 credits)
This course provides a foundation for computational approaches to basic concepts of data science. This course aims to introduce students to data science by focusing on a distinctly "real-world" orientation that emphasizes the application of computational analysis and visualization. Topics cover understanding how to approach data analysis tasks, the underlying statistical theories, and how to work with readily available toolsets for specific needs.
Course Rotation: NYC: Fall & Spring

IS 682 Data Science II: Data Mining Algorithms and Applications (3 credits)
This course provides an understanding of the current application of data mining practices. The course distinctly focuses on the "real -world" orientation and emphasizes algorithm selection, implementation, and evaluation in various contexts. Topics will cover the theoretical foundations of machine learning algorithms and how to implement them by modifying readily available libraries for specific needs and how to craft their own scripts
Course Rotation: NYC & PLV: Spring

IS 684 Web Mining (3 credits)
Web mining aims to retrieve useful Information and gather knowledge from various sources such as web hyperlink structure, page contents, and user logs. Those information and knowledges i.e. behavior patterns, leads to business decision making in e-commerce, business analytics, and other web services with mass participations. The course will cover application of data mining techniques in analyzing web usage data which Is usually either unstructured, partially structured, textual data residing In central or distributed repositories. Topics covered include web structure, indexing and ranking, crawling, and filtering algorithms. We will also cover association rule, clustering, tracking and monitoring of web usage pattern.
Course Rotation: NYC and PLV: Fall

IS 687 Social and Collaborative Computing (3 credits)
This course provides an introduction to how systems support social interaction and collaboration, and how social behaviors are shaped by technologies. The course is interdisciplinary, drawing from the fields of computer science, information systems, psychology, cognitive science, and sociology. It covers a variety of social and collaborative computing environments and platforms such as collaboration tools, crowdwork platforms, social media, and various online communities. Students will have a chance to get experience with social data analyses and focus on design and evaluation of a social computing system as their final project for the course.
Course Rotation: NYC & PLV: Fall, Spring, & Summer 1

IS 688 Location Analytics and GIS Research (3 credits)
This course is designed to provide graduate students with a comprehensive understanding of location analytics and GIS tools and techniques for research applications. The course will review the fundamentals of GIS and spatial analysis, as well as advanced techniques for location-based data analysis, including data visualization, and spatial modeling. Through a combination of lectures and readings students will develop the skills necessary to apply GIS and location analytics to a wide range of research questions. The course capstone will be a paper suitable for publication or presentation at a conference.
Course Rotation: NYC & PLV: Fall, Spring, & Summer 1

IS 690A Mobile Computing Technology (3 credits)
This course will introduce students to the different technologies employed to develop and manage mobile applications. Students will build a working development environment with existing tools (e.g. Eclipse, Java, XML, and the Google Android Software Development Kit). Working in teams, students will create their own applications. Students will report on the component technologies: XML, Open GL ES (2 & 3D graphics), SQLite (database), sensor support (GPS and accelerometer), Multimedia (voice, sound, and video support). Students will explore: different commercial offerings, management issues in providing mobile services, mobile security, the uses of the Mobile Web and its global social effects (including gaming, and app entrepreneurship).

IS 690B Health Information Technology for Older Adults (3 credits)
This course provides students in the accelerated nursing program with experience in adapting technology to enhance the care of our aging population. The focus of the service-learning experience is on using technology to meet the needs of the community, thus bridging the "grey digital divide". Assessment of cognitive, affective and psychomotor function will be discussed, demonstrated, and practiced. The use of technology to foster healthy aging, disease prevention, illness management, safety independence, and developmental issues are discussed. The student will work with a multidisciplinary team to design evidence-based developmentally and culturally competent gerontechnological nursing interventions. Critical thinking will be emphasized as student teams use information technology in non-profit agencies. Assignments will focus on technological developments in the management of geriatric syndromes, medication issues, transitions between care environments, and palliative/end-of-life care.
Course Rotation: NY;PLV:Fall

IS 690C Topic: Entrepreneurial Health Informatics (3 credits)
Entrepreneurial Health Informatics is an interdisciplinary course that provides an overview of computer based clinical record systems as well as decision support systems for medical application. The course will mainly focus on experiential entrepreneurship through innovation, evolution, and imitation as well as algorithmic solutions for health decision support; data acquisition, processing, and analysis; and delivery systems and services. The main topics covered include heath information technology systems' standards and terminologies, risks and uncertainty, data and workflow modeling, data mining, data visualization, and medical decision making. Teamwork and entrepreneurship will be infused throughout the course in the form of creative critical thinking and problem-solving and calculated risk-taking in the design and development of the algorithms supported by a quality business plan for a health related information technology company. Entrepreneurs will be recruited for the roles of team mentors, project selection and scaling, and guest speakers.

IS 690D Special Topic: Cyber Defense and Operations (3 credits)
Organizations are obligated by various regulations to provide secure access to confidential information. Securing network routers and servers is one of the most important topics in order to secure corporate information. This course will provide students with advanced knowledge and skills in router and server administration, host hardening and penetration testing. Through hands-on laboratory exercise, the course will lead the students to learn about topics from the perspectives of both cyber defenders and cyber attackers. Students will be introduced and encouraged to participate in cyber-security competitions to enhance their understanding in a virtual network defense environment.
Course Rotation: Fall; PLV

IS 690E Topic: Information Architecture (3 credits)
In the digital age, information is an every growing factor, understanding how to organize it based on user mental models and behavior is more imperative than ever. This course will help prepare students for a future career by giving the student a basic knowledge of Information Architecture. The course explores: The definition of Information Architecture Information needs and seeking behavior Organizational models and structure of information Navigation defined, as well as its anatomy Research (Card Sorting) When and how to use search Students will explore basic concerns and methods to design an appropriate information structure/navigation while taking into consideration the needs of the user.
Course Rotation: Fall and Spring

IS 690F Topic: Financial Computing and Entrepreneurship (3 credits)
This interdisciplinary course integrates computing (computer science, information systems, and information technology), finance, and applied entrepreneurship to provide the student analytical, quantitative, application, and entrepreneurial skills needed for sound and strategic financial decision making and information technology based product creation. The course will emphasize creative problem solving of and development innovative algorithms for financial problems relating to such topics as financial analysis and time value of money, derivative products, portfolio management, hedging strategies, arbitrage, risks, Black-Scholes model, interest rate models, and fixed income analysis. Within a collaborative team environment, the student will develop innovative algorithmic solutions for financial problems as well as analyze, evaluate model financial time series with neural networks; the algorithms will be implemented in a high-level computer language (e.g. Java, C/C++, or Matlab) into prototypes for potentially marketable financial software products. An entrepreneurial perspective will permeate the course in the form of creative thinking and calculated risk-taking in the design and the development of the algorithms and prototypes, and the development of a high-quality business plan for an information technology company to market the likely software products. There will be a reliance on entrepreneurs for team mentors, project selection and scaling, and guest speakers.

IS 690G Tpc: Modeling of Financial Processes and Systems through Service-Oriented Architecture Methodology (3 credits)
This course introduces students to models of financial processes through service-oriented architecture (SOA) methods and cloud computing. The focus of the course is on a program management methodology for projects enabling for efficiency and flexibility in process through Web services and SOA. The course concludes with students presenting models of financial processes and systems that contribute a competitive edge to financial firms through innovative technologies of leading SOA technology firms that market to Wall Street and other financial districts.

IS 690H Topic: Data Visualization Technologies (3 credits)
This course examines how to transform data into visual representations so that decision makers can effectively use interactive visualization for analytical reasoning. It is an introduction to key design principles and techniques for interactively visualizing data. The major goals of this course are to understand how visual representations can help in the analysis and understanding of complex data, how to design effective visualizations, and how to create your own interactive visualizations using modern web-based frameworks.
Course Rotation: Fall and Spring

IS 690J Topics: Virtual and Immersive Experience Design (3 credits)
This is a graduate-level course that delves into the rapidly evolving world of Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR). By blending theoretical understanding with hands-on projects, students will explore the core principles, challenges, and opportunities of designing immersive experiences for various industries. Covering topics such as interaction design, immersive storytelling, accessibility, and prototyping, this course equips students with the essential skills and knowledge to create innovative AR/VR/MR applications and shape the future of this cutting-edge field.
Course Rotation: NYC & PLV: Fall, Spring, and Summer

IS 690K Topic: Technology Entrepreneurship (4 credits)
This is an interdisciplinary course designed to provide students with an entrepreneurial mindset in information and computational technologies and algorithms as well as to equip students with the tool appropriate to identifying real business opportunities worthy of pursuit. Technology industries and applications will be emphasized along with computing opportunities. The main concepts covered are creativity and innovation analysis; customer-driven identification and development; technology-based business creation, and management; competitive business plans; and niche marketing. Two key components of this course will be a project to develop a business plan for an information technology venture around a specific product, system, or service wherein entrepreneurs will serve as mentors to students and teams, and a business plan competition where other industry experts and entrepreneurs will serve as judges. The course will be supplemented with up to three guest lecturers as well as the review and analysis of technology entrepreneur case studies.
Course Rotation: Fall;NY:PLV

IS 690L Topics: Living with COVID (2 credits)
Living with COVID-19 Pandemic through Application Technologies highlights the current aspects of domestic and international initiatives in applied research that are attempting to address the COVID-19 virus through application remedial technologies. Several of the COVID-19 application technologies from researchers will be highlighted as to the opportunities and to the risks that confront practitioners and researchers in the promotion of the tools, especially of tools that might be engaging to disadvantaged people. The course will be beneficial to students as to the potential and to the reality of COVID-19 application solution technologies in current development with researchers.
Course Rotation: NYC: Summer 2

IS 690M Topics: Enterprise Risk Management and IT Related Risks (3 credits)
This course is designed to give students a fuller understanding and perspective of how ERM frameworks and governance might integrate critical IT related risks, including Cyber. It will also help more technically oriented students to understand the overall place of IT in the organization and increase their business acumen.
Course Rotation: NYC: Fall and Spring

IS 690S Mobile Health Technology (3 credits)
This introductory course offers a multidisciplinary overview of the emerging technologies used in Mobile Health (mHealth) Industry. (mHealth) is the provision of health information and services via mobile phones and tablets. Innovations in this area promise solutions to the need for the broader access to affordable and effective health care by enabling consumers and their care givers to take charge of their health and wellbeing. Students will develop foundational knowledge of how different stakeholders and industries are operating and engaging with one another in this rapidly growing sector, as well as learning to identify and capitalize on diverse and growing business and career opportunities..
Course Rotation: Spring

IS 690T Topic: From Telemedicine to Telehealth: Opportunities for IT and Collaboration (3 credits)
As the use of telemedicine has grown, it is now time to explore broader opportunities for IT and collaboration best practices to impact the broader healthcare and life sciences ecosystem, towards a broader notion of telehealth. This seminar-style course will include lectures from industry guest speakers and cover new business opportunities, supporting technologies which are required to meet those opportunities, and the changes in organizational and regulatory frameworks which will support implementation of these technologies. Sample aspects of the life sciences ecosystem which will be covered include clinical trials of new prescription drugs, global communication of drug efficacy and quality through regulatory systems, and remote management of the medical device manufacturing process. In each of these areas, we will discuss the prospect of telehealth to include more remote participants in the process and have a better impact in patient lives. The course will also include a final project a developing a product plan for technology to address a key telehealth challenge.
Course Rotation: Spring; NY;PLV

IS 690X Topics: Entrepreneurial Health Informatics (3 credits)
Entrepreneurial Health Informatics is an interdisciplinary course that provides an overview of computer based clinical record systems as well as decision support systems for medical application. The course will mainly focus on experiential entrepreneurship through innovation, evolution, and imitation as well as algorithmic solutions for health decision support; data acquisition, processing, and analysis; and delivery systems and services. The main topics covered health information technology systems' standards and terminologies, risks and uncertainty, data and workflow modeling, data mining, data visualization, and medical decision making. Teamwork and entrepreneurship will be infused throughout the course in the form of creative critical thinking and problem-solving and calculated risk-taking in the design and development of the algorithms supported by a quality business plan for a health related information technology company. Entrepreneurs will be recruited for the roles of team mentors, project selection and scaling, and guest speakers. Coure Rotation: NY: Spring.

IS 690Y Topics: International Technology Services in the Knowledge Economy (3 credits)
The course attempts to tie four important aspects together: Knowledge Economy; International Management of Services; Entrepreneurship and Innovation; and 24-Hour Knowledge Factory. The objective of the course is to look at several innovative and entrepreneurial aspects of the emerging Knowledge Economy, with special emphasis on how teams of individuals can work together in a seamless manner across national boundaries to render professional services of diverse types and varying sophistication. Graduate-level requirements include an additional 10-15 mid-term paper.

IS 690Z Topics: Introduction to Innovation Law and Policy (3 credits)
The need for innovation has never been more pronounced than in the current social, political, and economic landscape. The call is out for a new generation of scientists, technologists, and artists to become our great innovators. But the path to innovation is not without law. Legal and policy issues abound, from intellectual property law to privacy and security concerns to our constitutional guarantee of freedom of speech. Understanding the framework that governs our system of innovation is critical to ensuring that our future innovators are in the best position to create and that society is in the best position to benefit from their creations. This survey course will cover a number of topics relevant to students considering a wide variety of careers, including those in silence, engineering, and the arts. Topics include an introduction to the access to knowledge movement, the legal and policy considerations of fair use and remix culture, patents, trademarks, and open source software and licensing. The class will meet once a week for 2 hours.

IS 692 Research Project Seminar (3 credits)
This course confronts the student with major contemporary debates and key issues of information systems and information technology, and provides a framework within which to develop a research project effort. This seminar discusses current methods used in information systems research, including quantitative, qualitative and conceptual approaches. The student will learn how to define a research issue, how to select an appropriate research method, and how to design a research plan. Each student will select a project area, and search the literature (formal and informal) for relevant material. These materials will be shared with the seminar class, and interactive peer discussion and critiques will assist each student in the development of a project report. Each student will prepare a research paper with a literature review, appropriate bibliography, definition of a research question, a research design and an analysis of expected results. Students will be evaluated and graded based upon class presentations, interim project work and the delivery of a final written project report and oral presentation to the seminar.
Prerequisites: 24 credits of 600 level Information Systems courses. This course replaces IS 695Q.

IS 694 Managing Information Technology Outsourcing (3 credits)
This course explores the important area of Information Technology Outsourcing. Outsourcing is more than the headline grabbing news about jobs lost abroad; it is about corporate strategy to reduce costs by performing common business processes. In the proposed travel course, we will focus on IT outsourcing, particularly on India and examine the strategies, benefits and pitfalls of offshore outsourcing. This course will investigate how the culture and politics of the receiving countries play a role in the success of the outsourcing business model. Additional topics will cover the effect outsourcing has on the US economy, job market, and politics. The semester comes to an end with a 2-week visit to India. During travel to India, we plan to visit American companies with a presence in India, Indian companies performing outsourced work, and universities which train the workforce.
Course Rotation: NY and PL: Fall and Summer.

IS 695Q Research Project I (3 credits)
Requires successful completion of an acceptable research paper on a topic approves by the instructor. Students meet individually with the instructore.
Prerequisites: 24 Credits of 600-Level Courses. Meets First NIght Only.

IS 696Q Research Project II (3 credits)

IS 699 Field Study (1-4 credits)
A paid or unpaid field study experience in a working environment intended to provide the student with a practical extension and enhancement of knowledge gained in class. A research study or project done under the direction of a faculty advisor is required. No more than 3 credits of Field Study may be taken.

IS 711 Information Systems (3 credits)

IS 740 Information Technology for Managers (1.5 credits)

IS 760 Seminar in Information Systems (1.5 credits)