INFORMATION TECHNOLOGY (INFO1-CE)

INFO1-CE 1000 Oracle Database 12c: Introduction to SQL (4 Credits)
This course offers an extensive introduction to data server technology. The class covers the concepts of relational databases and the powerful SQL programming language. You are taught to create and maintain database objects and to store, retrieve, and manipulate data. Learn to retrieve data using advanced techniques. Also, learn to write SQL and SQL*Plus scripts using the iSQL*Plus and SQL Developer tools to generate report-like output. Demonstrations and hands-on practice reinforce the fundamental concepts.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 1001 Oracle Database 12c: Administration I (4 Credits)
Gain the key information you need to install and administer Oracle Database 12c. Discover how you can effectively install and manage an Oracle database instance. Create a container database and provision pluggable databases to support your business needs. Benefit from learning how to configure the Oracle network environment to perform database maintenance.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 1002 Oracle Database 12c: Backup and Recovery (4 Credits)
This course teaches you how to evaluate your own recovery requirements. Develop appropriate strategies for backup, restore, and recovery procedures from provided scenarios. Gain a deeper understanding of possibly the most important responsibility of a database administrator—backup and recovery. The concepts and architecture that support backup and recovery, along with the steps required to carry it out in various ways and situations, are covered in detail.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 1003 Oracle Database 12c: Managing Multitenant Architecture (4 Credits)
This course helps you to gain a conceptual understanding of multitenant architecture. Practice plugging and unplugging databases in multitenant container databases, while learning how to create common and local users and to administer database security that meets your business requirements. Explore all aspects of the multitenant architecture, providing detailed information on the components of an Oracle multitenant container database and any associated pluggable databases. Learn why and how to create and manage a multitenant container database and any associated pluggable databases with storage structures appropriate for the business applications. Provide an acceptable response time to users and manage resources effectively while monitoring performance and manage resources within the multitenant container database.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 1004 Oracle Database 12c: New Features for Administrators (4 Credits)
This course prepares you for the 1Z0-060 Upgrade to Oracle 12c exam, for which Oracle requires that students take the Oracle Database 12c: New Features for Administrators course, which corresponds to this course. Learn about the new and enhanced features of Oracle Database 12c, and gain an understanding of how these features increase security, manageability, and performance. Explore the many new features of this update, as well as Oracle Enterprise Manager Cloud Control and other tools like Oracle Enterprise Manager Database Express SQL Developer to manage, monitor, and administer your data center. Learn the new concept of multitenant architecture, along with its benefits and usage. This includes tasks such as creating, managing, monitoring, backing up, and recovering multitenant container databases and pluggable databases. Hands-on practice and available demonstrations help you to learn how to use these new or enhanced features of Oracle Database 12c.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 1005 Oracle Application Express (APEX) (5 Credits)
Oracle Application Express Release 4.2 further streamlines the development of database-centric web applications. In this online, hands-on course, learn to rapidly develop a web application and then deploy it using Oracle Application Express. This course also explains dynamic actions, plug-ins, and shared components, and it teaches you how to use and modify the available themes and templates. Also, learn about the creation and management of database objects. Explore two types of applications, database and websheet, along with the various types of page wizards.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 1006 Oracle Database 12c: Program with PL/SQL (5 Credits)
Gain an introduction to PL/SQL. Learn how to create PL/SQL blocks of application code that can be shared by multiple forms, reports, and data management applications. Enhance your development skills by learning to develop, execute, and manage PL/SQL stored program units like procedures, functions, packages, and database triggers. Understanding the basic functionality of how to debug functions and procedures using the SQL Developer Debugger gives way to refined lines of code. Utilize some of the Oracle-supplied packages, such as Dynamic SQL, that help you to understand design considerations when coding using PL/SQL. Use Oracle SQL Developer to develop these program units.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 5000 Advanced Cybersecurity - ThriveDX (12 Credits)
In the Advanced phase of the boot camp, learners solidify existing skills and begin building new ones in advanced security concepts like game theory, digital forensics, incident response, and ethical hacking. By the end of this phase, learners will have a more complete view of cybersecurity and will be well-prepared to enter the industry.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 5001 Cybersecurity Infrastructure - ThriveDX (10 Credits)
In the Infrastructure phase of the program, learners begin focusing exclusively on security concepts and practices. This phase allows course participants to study Python programming, network security, and Critical Infrastructure Security (CIS). Learners gain practical security skills and experience that will prepare them for the Advanced phase of the program.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 5002 Cybersecurity Fundamentals - ThriveDX (14 Credits)
In the Fundamentals Phase of the Cybersecurity boot camp, learners acquire the basics of the cybersecurity career path. It includes training on Microsoft Windows, Linux, and basic network and cloud security. This phase acts as foundational training for the more rigorous portions of the program.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 5050 Secure Coding for Coders (2 Credits)
Ideally suited to the day-to-day coder, programmer, lead engineer, or architect, this course surveys the hostile landscape of the Internet and goes step by step through the processes and methods of hackers. In class, dissect applications looking for vulnerable vectors, while learning how to defend against hackers' attacks. Begin by reviewing hacking steps and developing approaches to defend against each. Then, engage in deeper defense techniques that are focused around secure programming, including how to approach software design securely and how to manage risk and model threats. Learn the most common web application vulnerabilities through practical, hands-on learning, starting with how to exploit the vulnerabilities and how to defend with accepted methods. Finally, perform secure code reviews and test for security vectors. Leave the course equipped with a deep understanding of how code facing the Internet is vulnerable and how to write code that is defensive and secure.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 5150 Advanced SQL Programming (3 Credits)
Expand your skills in SQL, one of the most sought-after technical skills in the market today. Proficiency with SQL ranks among the top required skills on nearly every major information technology job search site. SQL also is used by business analysts for data analytics, one of the fastest-growing fields in business today. In this course, study data normalization rules and SQL subqueries. Learn how to create views; work with the database data dictionaries; and build SQL functions, stored procedures, and triggers to automate data manipulation tasks in both Oracle and MySQL, two of the most dominant database servers. Learn how to import and export data and how to perform database backups. The need for SQL developers is constantly on the rise, as are their salaries. According to Business Insider, strong knowledge in SQL could potentially earn you $125K per year.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 6000 Google IT Support Professional - 5 Course Series (3 Credits)
<p>This NYU instructor-led, Google-proven professional certificate program, delivered in five course modules, prepares you for a role as an entry-level IT Support Specialist. You’ll learn the different facets of Information Technology like computer hardware, the Internet, software, troubleshooting, and customer service. You'll gain a comprehensive understanding of computer networking, operating systems, software- and user-management, systems administration, and core IT security concepts and best practices. The five course modules that comprise the certificate are:</p>

     Technical Support Fundamentals

     The Bits and Bytes of Computer Networking

     Operating Systems and You: Becoming a Power User

     System Administration and IT Infrastructure Services

     IT Security: Defense Against the Dark Digital Arts

<p>Students will have the opportunity to participate in live, online NYU instrutor-led networking opportunities with working tech support professionals and fellow students, as well as optional live review sessions and other support. In the US alone, there are 400,000 job openings in IT. Upon completion, you'll be prepared to sit for the CompTIA A+ exams (the industry standard certification for IT) and directly apply for jobs with Google and over 150 employers.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 8000 AI Masterclass (3 Credits)
<p>The NYU AI Masterclass consists of three weeks of online instruction with action learning and unique AI assessments for participants’ companies and a three-day classroom workshop hosted at NYU, which will involve casework, Q&As, facilitated discussions, and VIP guest lecturers. Day one of the in-person

the workshop will include a panel discussion with Chief Data Officers and Digital Transformation Officers who will share their wealth of experience. Day two closes with a panel of leading AI strategists discussing aligning AI with corporate strategy and predictions about how AI will evolve in the near future. Panelists and participants are also invited to post-session networking dinners to continue the conversation and gain additional knowledge throughout the evening.</p>

<p>The overall program will provide attendees with a clear understanding of the enormous potential of AI and how to seize the exponential opportunities. At its completion, participants will gain invaluable insight into integrating AI into any company and field.</p>

<p>Registering at least three weeks prior to the course start date is highly recommended. </p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9000 Agile IT Development (2 Credits)
This course provides a comprehensive overview of the principles, processes, and practices of agile software development, emphasizing the quick realization of system value through disciplined, iterative, and incremental software development techniques and the elimination of wasteful practices. Learn techniques for initiating, planning, and executing software development projects using agile methodologies. Obtain practical knowledge of agile development frameworks, and gain the ability to distinguish between agile and traditional project management methodologies. Apply agile tools and techniques in the software development life cycle, from project ideation to deployment. Become familiar with establishing an agile team environment and applying its roles and responsibilities and communication and reporting methods. The framework for the course content is based upon the guidelines for agile project development outlined by the Project Management Institute. Assignments and projects have been designed to apply agile principles and practices in a professional, real-world context.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9008 Introduction to C/C++ Programming (3.5 Credits)
If you have little or no programming experience, then this hands-on course is designed to introduce you to the fundamentals of the C programming language, with some coverage of C++. Learn to write basic C programs using a variety of programming constructs, including loops, structures, and arrays. Gain experience creating, compiling, linking, executing, and debugging programs. Develop an understanding of how data can be stored and retrieved from memory and files, and learn how to use standard C library functions. This course lays the foundation for further study in C or C++ programming.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9010 Cyber Security: Defending Technology Assets (4 Credits)
Find out how to design and build trusted systems in this lab-based course. Learn how to prevent common attacks, understand how worms and viruses behave, and investigate how recent Internet attacks might have been thwarted. This course focuses on various solutions used to secure networks, as well as forensics reviews of security incidents. Lab topics include packet analysis with Wireshark and tcpdump, malware analysis (static and dynamic), mobile and cloud security, VPN and remote access technology, endpoint and network detection strategy, and forensics acquisition and analysis.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9011 Cyber Security: Advanced Topics (2 Credits)
In this lab-based course, write your own tools and learn about programming concepts, password cracking, port scanning, fuzzing, exploit development, advanced forensic topics, and web application scanners. Typical labs focus on advanced Metasploit, basic programming for security topics, advanced Windows exploitation, advanced web attacks and defense, password cracking, and advanced malware analysis.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9012 Cyber Security: Hacking Understood (4 Credits)
Assume the role of a hacker and use the latest tools and techniques to attack a system. Classes focus on common vulnerabilities in operating systems, architecture, and protocols. Extensive hands-on labs that use exploit distributions and Internet attack tools show you how common networks, hosts, and web sites are compromised. Typical lab topics include packet analysis with Wireshark and tcpdump, packet crafting, an introduction to cryptography, reconnaissance and discovery tools (nmap and DNS), vulnerability scanners and hacking websites, and exploiting vulnerabilities with Metasploit.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9020 CISA (Certified Information Systems Auditor) Fast Track (3.5 Credits)
IT auditing is experiencing explosive growth, as accounting firms and large corporations are expanding internal staff to comply with the control measures required by Sarbanes-Oxley and other legislation. This course prepares you for the CISA exam, whether you need to acquire certification or you are a technologist considering a career shift. Topics include IS organization, management, infrastructure, and operations; information protections; disaster recovery and business continuity; network standards, protocols, and devices; business application system and SDLCs; and project management. Sample tests are given with a review of the answers for potential exam-takers.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9022 Information Systems Analysis and Design (3.5 Credits)
The demand is ever present for astute information systems analysts who can implement efficient, user-friendly, and both established and evolving methodologies for the analysis, design, and development of information systems that both support the strategic objectives of a business and meet end-users’ requirements. This course provides the necessary level of information technology education relative to understanding the uses and roles of information systems in business organizations and their effective application to solving business problems. Learn the major issues in managing information technology in the contemporary business environment, and gain a better understanding of the relationship between organizational structures and IT. Emphasis is placed on system characteristics, project management, prototyping, CASE/OOM tools, and systems development life-cycle phases. Team approaches are utilized along with practical projects and case studies. Upon completion, you will be able to analyze an information systems problem and design an appropriate solution using a combination of IT tools and techniques.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9023 Clinical Systems Analysis (2.5 Credits)
This course introduces the techniques used to analyze clinical needs of healthcare operations. Then, learn how to translate those needs into technical requirements for a healthcare informatics system. Understand how to dissect a healthcare operation into clear, distinct processes using flow charts, leveling diagrams, pseudo-code, and other tools that facilitate the depiction of complex systems into understandable modules. Learn fundamental clinical system analysis concepts through real-world group assignments, problem solving, and projects. In addition, gain an understanding of how to analyze information required by the healthcare process, to describe stakeholders’ interactions during the process, to define calculations and error detection requirements, and to design screens and reports to be used by healthcare professionals.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9025 jQuery and jQuery Mobile (2.5 Credits)
jQuery is the most popular and most widely used JavaScript library and framework. It facilitates JavaScript web development and simplifies web design, effects, and animations. jQuery cuts JavaScript development time in half by providing predefined functions for most common tasks, such as hover menus, element animation, and AJAX processing. jQuery Mobile is a framework for developing web applications specific to the mobile platform. Learn the fundamentals of both jQuery and jQuery Mobile, and become proficient at designing and developing web applications for the desktop and mobile devices, such as smartphones and tablets.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9028 Data Communication Networks (4 Credits)
Business productivity depends not only on computers, but also on complex networks of computers. This course, designed for nontechnical managers and those entering careers in network administration, teaches the essentials of data communication. Gain an understanding of how information is transmitted on local area networks, wide area networks, wireless networks, and the Internet. Learn about common network protocols; the seven-layer network model; network hardware, such as hubs, routers, and switches; network management; and network security and its maintenance.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9029 Securing Web Applications: Hacking Understood (3.5 Credits)
This introduction to securing web applications is ideal for web developers and security and systems professionals. Analyze, build, and test more secure web applications by learning common attack vectors. Understand the vulnerabilities of web applications, from operating systems to protocols, databases, frameworks, and design. Learn to inject SQL into back-end databases and to utilize cross-site scripting to attack target infrastructure. Gain a better understanding of all the various attacks using the latest tools. Explore various authentication and authorization schemes, the role of crypto on the web, and the implementation of Layer 7 firewalls.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9030 Clinical Communications and Group Dynamics (2.5 Credits)
This course introduces interpersonal management techniques for interfacing with various stakeholders when designing, developing, and implementing a project plan in a healthcare facility. Acquire the fundamentals for managing a diverse group that is working to implement a project, with a focus on virtual project teams, shared values, relationship capital, team-driven planning, real-time planning, rapid planning, and leadership. Additional topics covered include group dynamics; conflict avoidance, mediation, and resolution; positive and disruptive roles; effective communication and its barriers; communication plans; techniques such as stakeholder assessments and SBAR; stages of adoption; and effective listening.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9031 Clinical Database Systems (2.5 Credits)
Database systems are the heart and soul of healthcare technology. A sound healthcare informatics strategy is built upon a strong working knowledge of database systems and interaction with healthcare databases. This course focuses on the fundamentals of technology database systems for healthcare facilities. Topics include clinical database applications, data modeling, DBMS, database analysis, normalization, database design, referential integrity, entities, and structured query language (SQL). Learn to design and implement a healthcare database and to interact with vendor databases using SQL.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9032 Data Security and Disaster Recovery (2.5 Credits)
Data is the lifeblood of any organization. Knowing how to secure and protect data from theft, unauthorized disclosure, and data corruption is essential. Topics covered include user authentication, access control, database security, secure communication infrastructure, and assessment of security vulnerabilities in hardware and software. In addition, learn how to develop policies, procedures, and processes to recovery from a natural or human-induced disaster. Discuss implementing preventive, detective, and corrective measures; setting the recovery point objective (RPO) and recovery time objective (RTO); and conducting a business impact analysis (BIA). Also, learn about developing a disaster recovery/continuity plan, identifying its scope and boundaries, selling it to top management, and conducting regular tests of it.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9033 Clinical Networks (2.5 Credits)
<p>Gain a thorough overview of healthcare network systems, including how they transmit healthcare information within a healthcare facility and to locations outside. Through a combination of lectures, presentations, case studies, and real-world examples, explore and analyze network technology commonly used in the healthcare industry. Such technology includes the OSI model, network protocols, network packets, local area networks, wide area networks, bridges, routers, switchers, packet switching, subnet, SMTP, IMAP, Wi-Fi, Bluetooth, and MTSO.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9040 Web Front-End II: Intermediate (5 Credits)
Advance your web development skills by learning contemporary front-end development strategies that employ ES6, React, Express.js, Node.js, and MongoDB to craft great user experiences that adhere to best practices. This course goes beyond the basics to cover advanced topics in ES6 and techniques for building lightweight single-page applications with enhanced user interfaces. This bootcamp-style class is appropriate for those with some knowledge of HTML, CSS, and JavaScript, as well as for self-taught beginners willing to put in additional effort. At the conclusion of this course, you’ll be prepared to advance to Web Front-End III: Master Class in full-stack development with JavaScript.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9053 Web Front-End III: Master Class (Full Stack Web Development) (5 Credits)
Why does the MEAN web development stack stand apart from all others? Because it leverages the popularity of JavaScript across ALL application layers. The MEAN web development stack comprises four components: MongoDB, a NoSQL database that utilizes JSON syntax for storing documents and collections; Express, an elegant web framework that functions as middleware in a Node.js application; AngularJS, a client side MVC framework in which separation of concerns makes for a robust, maintainable code base; and Node.js, a highly scalable server-side framework that allows developers to write applications in JavaScript. If you already have knowledge of HTML, CSS, and JavaScript, then this course can help you to become a full stack web developer using the MEAN stack.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9083 Microsoft Office for Business Professionals (2 Credits)
Microsoft Office is essential software for creating business documents, spreadsheets, presentations, and databases. In this hands-on course, learn to use each of the major components of the Office Suite, integrate them to produce complex reports with tables and graphics, and organize and back up files. Gain the requisite skills to maximize the use of personal computers in a business environment.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9090 The Art and Science of Innovation (1 Credit)
Innovation is necessary to support competitive excellence. Skillfully combining innovation science with standard project management methods in many cases doubles the success rates of new products, services, and business models. This course creates a foundation based on the Art of Innovation workshop (sources, structures, and culture), introduces the science of innovation, and then illustrates it use in three basic innovation sciences (structured brainstorming, outcome-driven innovation, and mind genomics) to enable you to reduce innovation risk.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9094 ASP.NET with MS Visual Studio .NET (3.5 Credits)
ASP.NET is one of the more powerful tools available for building web applications. Learn to use Microsoft Visual Studio 2010 to build database-driven ASP.NET web applications. Explore the fundamentals of Visual Studio 2010, the various server side controls, the page life cycle, and databinding in ASP.NET. Design a three-tiered application, complete with a presentation layer, business layer, and data access layer. Use ADO.NET to select, insert, update, and delete data. Design user controls for component-based applications. Optimize a web application with caching. Choose to work in either C# or VB.NET.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9095 Building ASP.NET Web Applications (3.5 Credits)
ASP.NET is one of the most powerful technologies available for building scalable web applications. Build elegant, web-based, front-end ASP.NET web applications using Microsoft Visual Studio 2010 with the C# programming language. Gain a thorough understanding of object-oriented programming (OOP), HTML, and CSS.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9096 Building ASP.NET MVC AJAX Enabled Web Applications (3.5 Credits)
Model-View-Controller (MVC) has become the framework of choice for building enterprise web applications, giving developers the ability to easily separate front-end presentation from application logic and data. Learn how to build n-tier MVC web applications using Visual Studio 2010 and the C# programming language. The framework fits perfectly into writing unit tests, and implementing test-driven development and MVC applications allows developers to easily integrate AJAX functionality into their web applications. Use jQuery for your front-end presentation. This library has become the standard for facilitating the writing of JavaScript code. Also, explore how to leverage the jQuery API in order to give users a better experience by adding AJAX functionality to web applications.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9097 Building ASP.NET MVC Web Applications Using SQL Server and Entity Framework (3.5 Credits)
The Model-View-Controller (MVC) framework has become a popular platform for building database-driven web applications. By utilizing the ADO.NET Entity Framework as an object-relational mapping (ORM) framework with an SQL Server, eliminate the mismatch between databases and application code. Examine how to use SQL Server and Entity Framework in the development of MVC applications, and learn how to write unit tests in order to “bulletproof” future changes. Now, unit testing is considered an essential component of web application development and it is much easier to modify or add to a code base without introducing defects.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9098 Advanced ASP.NET Web Development (3.5 Credits)
This follow-up to <I>ASP.NET with MS Visual Studio.NET</I> focuses on the following areas of ASP.NET: the .NET provider model, LINQ, and the Model-View-Controller (MVC) framework. Explore the provider model and build powerful, maintainable web applications. Examine the provider model's use for authentication, authorization, and personalization. Employ provider model concepts to build N-tiered database-driven applications. Using the new LINQ classes in the .NET framework, work with collections and databases. Build applications with the new MVC framework. Use a combination of the MVC framework, web services, and the jQuery library to build AJAX enabled web applications. Work in either C# or VB.NET.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9131 Develop Your Own Website in a Few Easy Sessions (1 Credit)
Publishing a website does not have to be complicated or expensive. Whether your goal is to promote a small business or to document family history, this course demonstrates how to build a site tailored to your specific needs. Create simple webpages and structure content using the correct HTML tags. Choose and secure a web address or domain name. Publish the site using a free or low-cost web host, and expand the site by adding graphic elements using CSS.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9162 Ruby on Rails Boot Camp (24 Credits)
<p>If you are an inexperienced programmer, learn to develop web applications using Ruby on Rails through a series of immersive, intensive, hands-on sessions over 12 weeks. Gain expertise in Ruby and Ruby on Rails, HTML, JavaScript (including frameworks such as JQuery), CSS, and database systems. Develop an understanding of software engineering practices, including object-oriented development, application architecture, application security, the application development life cycle, development methodology, software design, coding, functional and usability testing, release management, application scalability and performance, and business and interpersonal communication skills.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9224 Introduction to PHP Programming, Part I (3.5 Credits)
<p style="font-family: Arial; ">PHP is an increasingly popular open-source scripting language that can be used to rapidly program dynamic, database-driven websites. This fast-paced introduction covers installation and setup of a development environment, language basics, user input validation and processing, dynamic output generation, and more. Study the syntax and conventions of PHP, learn to make websites interact with databases, understand production of content management systems, and gain experience with file handling and graphics. Learn to integrate PHP and SQL with markup languages such as HTML and XML, and complete a programming project that uses these techniques. Topics include a review of HTML, Javascript, general computing, and programming; an introduction to PHP and how it relates to HTML and webpages and development environments (MAMP, XAMPP, WAMP, and IDEs); variables, functions, and program analysis; looping; arrays; string functions; files; and databases.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9226 Java Programming Summer Intensive (0 Credits)
If you have no programming experience, then build solid skills in Java during this two-week intensive. Begin by mastering the fundamentals of object-oriented programming and the Java programming language, and advance to object-oriented design and standard Java application programming interface (API) packages. Develop applications that run on servers, as well as cross-platform applications that run on PCs, PDAs, and other devices. Gain an understanding of data structures, functionality, and Java’s user-friendly design tools. Complete the intensive fully prepared to develop Java applications. Receive a rapid introduction to Java programming and technologies and extensive experience with Java’s inheritance model. Develop proficiency in exportable Java libraries using Java packages, application build file standards using Ant, the capabilities of Java collections and generics, the Java I/O structure, and exception and event handling code. Further topics include multithreaded clients and servers using Java’s thread library; database connection and manipulation code; graphical user interfaces with Swing, Java’s GUI toolkit; and auxiliary technologies important to Java, such as UML and XML.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9227 Java Programming in Five Days (4 Credits)
Build solid skills in Java during this five-day intensive course. Develop applications that run on servers as well as other cross-platform devices. Gain an understanding of data structures, Collection classes, and functionality. Create multithreaded applications and sophisticated user interfaces using both Swing/AWT and Applet classes. Learn to create network communication programs using both TCP/IP and UDP transmission protocols. Expand your knowledge in XML, and learn how to manipulate XML documents and data streams using the Document Object Model. Work with both Oracle and MySQL to create a database-driven Java application. Learn JSP and Java Servlets to create more sophisticated web-based applications. Then, combine all of this knowledge and complete the course by learning how to build and deploy production-ready applications using ANT. Leave the class prepared to write professional application programs with Java.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9236 Intermediate iOS App Development (3.5 Credits)
Create native applications for Apple multitouch devices such as the iPhone, iPad, and iPod Touch using Xcode 6. Build upon your development knowledge by learning about object-oriented programming using the Objective-C and Swift languages, which illustrates how to use Cocoa for the iOS framework of classes, protocols, functions, and objects. Acquire the essentials for becoming a solid iOS developer, and explore the concepts of creating an appealing user interface. Learn to create applications that use maps; location services; media, such as images, audio, and video; data storage and retrieval; integrated hardware, such as the camera and compass; and more. In this hands-on course, gain experience writing a variety of mobile applications.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9238 Introduction to Java Programming (4 Credits)
Learn the fundamental concepts of object-oriented programming and the Java programming language. Understand Java’s write-once, run-anywhere philosophy and the Java Virtual Machine, which allows any Java program to run on any platform. Gain a solid understanding of the Java language syntax and semantics, including Java program structure, data types, program control flow, defining classes and instantiating objects, information hiding and encapsulations, inheritance, method overloading and overriding, exception handling, input/output data streams, memory management, and Applets and Swing UI window components. Reinforce these new concepts with hands-on exercises and a complete Java programming project.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9243 .NET Fundamentals (3.5 Credits)
Learn to create managed applications using Microsoft’s Visual Studio and the .NET platform. If you are a developer, then this course can provide you with a solid foundation in .NET. Explore the framework while creating a variety of projects such as command-line applications, Windows desktop applications, ASP.NET websites, reusable libraries, and more. Receive hands-on experience developing a multi-project solution using C#, the Visual Studio IDE, and the ADO.NET framework for accessing and storing data.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9250 Windows Network Design, Security, and Administration with Active Directory (4 Credits)
<p>Master the features of Windows networking with active directory domains. The course combines hands-on lab work with lectures in a lab setting. Topics include installation and setup; active directory account administration; security configuration for authentication and authorization; file system features; member servers; client OS; group policies; performance monitoring; and infrastructure components, including DNS, DHCP, Hyper-V, and IIS servers. Further guidance is provided to students seeking to work toward Microsoft certifications or to learn how to install and configure SQL server on member servers on Windows domain networks.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9263 Java Environment Prep (0 Credits)
Bring a laptop to this hands-on workshop, and set up a work environment for developing Java applications. If you plan on taking Java programming courses, you must first install a Java development environment on your computer. All NYU School of Professional Studies Java courses use the free Eclipse development environment, which provides an array of utilities such as editors, wizards, and code-merging tools. If you do not own a laptop, you may practice downloading and installing Eclipse on a desktop PC in the lab and then repeat the process on a home computer.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9264 Intermediate C++ Programming (4 Credits)
This hands-on course provides a thorough review of data types, type conversion, flow control, pointers, references, arrays, functions, dynamic memory allocation, and expression evaluation. It also introduces object-oriented programming with an emphasis on modeling the problem domain and code reuse. Step by step, learn the C++ class construct and its key features, providing full implementation of abstract data types. This course covers function and operator overloading, the use of references, and the scope and access control mechanisms of C++. Extensive programming examples and exercises are provided. The course is designed so that the programming can be used in any environment supporting an ANSI C++ compiler.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9265 Advanced C++ Programming (4 Credits)
Build on the skills learned in Intermediate C++ Programming with three applications of operator overloading: formatted and file I/O; dynamic memory allocation; and standard containers, such as vector, list, and string. Then, concentrate on building classes using the different varieties of inheritance: single and multiple, virtual and non-virtual, public and private, and inheritance from an abstract base class with pure virtual functions. See how object-oriented design results in maintainable, extensible architectures. Explore the implementations of, and alternatives to, inheritance. Report and recover from runtime errors by throwing and catching exceptions.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9266 C++ Programming Part III (3.5 Credits)
This course begins with a review of templates and then examines the interaction among templates, inheritance, and other forms of code reuse. It explores and extends the C++ Standard Template Library (STL), consisting of container classes for holding data, iterators for looping through them, and algorithms for processing their data. STL topics covered include iterator categories, predicates, function objects, and adaptors. A web-based server illustrates how templates can be used to achieve a loosely coupled architecture. Participate in extensive programming exercises.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9267 Object-Oriented Analysis and Design (4 Credits)
Examine the fundamental concepts of object-oriented analysis, design, and programming. Gain an understanding of how object-oriented languages differ from procedural languages. Learn to apply good design techniques; save time; reduce costs; and increase maintainability, reusability, and productivity. Become familiar with the concepts of class structure, relationships, interactions, objects, inheritance, encapsulation, modularity, hierarchy, and polymorphism. Discuss the benefits of modeling languages, such as UML. Practical examples reinforce course concepts.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9269 Intermediate Java Programming (4 Credits)
If you know programming in any language, then advance your knowledge with object-oriented programming in Java. Topics covered include abstraction, encapsulation, inheritance, polymorphism, interfaces, packages, garbage collection, exception handling, input/output, multithreaded programming, networking, utility classes, AWT, Swing, Applet, Java architecture, security, JDBC, and other features. Develop your aptitude and confidence when working with the basics of Java and object-oriented principles, and gain a heightened comprehension of the more complex Java libraries for advanced programming.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9271 Advanced Java Programming (4 Credits)
Expand your understanding of the Java programming language and standard Java APIs by developing Java solutions for distributed computing, the web, and database connectivity. Learn about Java’s advanced core technologies and features, including reflection; network programming with unicast and multicast sockets; advanced multithreaded programming; unicast and activatable RMI client/server programming; parsing, validating, and transforming XML documents; advanced Swing GUI programming; and basic servlet and JSP programming. Hands-on exercises reinforce concepts covered in lectures.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9272 SQL Programming Language (2 Credits)
Structured Query Language (SQL) is the language used to manipulate data in relational databases. Learn to use SQL to select, update, insert, and delete data from database tables, and acquire hands-on experience with both Oracle and MySQL. Learn how to select data from multiple tables using both inner and outer joins and unions, understand how to create subqueries to develop more complex retrieval capabilities, and use DDL to create your own database and to populate tables. In addition, learn about database design, primary keys, foreign keys, indexes, table relationships, referential integrity, and normalization/denormalization techniques. This course prepares you to work with any relational database, such as Oracle, DB2, SQL Server, Sybase, or MySQL.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9276 Java Express for Programmers Transitioning to Java (0 Credits)
Start studying Java with this course for students who have experience programming with C, C++, or a non-object-oriented programming language. Gain an understanding of object-oriented programming concepts––Java's write-once, run-anywhere philosophy and the Java Virtual Machine, which allows Java programs to run on multiple platforms. Learn several of the Java APIs that enhance programmer productivity. Complete your first Java programming project using the Eclipse development environment.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9279 Java Programming Intensive (0 Credits)
Master the fundamentals of Java, including core Java language, classes and objects, abstraction, encapsulation, inheritance, polymorphism, interfaces, packages, garbage collection, exception handling, input/output, threads, networking, and utility classes. Learn the concepts of object-oriented programming; GUI creation with AWT, Swing, and Java applets; Java Archive (JAR) files; security; and database programming with JDBC. The course covers advanced server-side topics, such as JavaServer Pages (JSP), Java Servlets, and XML. Java Enterprise topics, such as EJB and Web Services, also are introduced.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9285 Web Server Programming in Java (0 Credits)
Java 2 Platform Enterprise Edition (J2EE) simplifies Java application development in a thin-client, multi-tiered environment. Study J2EE architecture and learn major Java APIs used in server-side application development, including servlets; Java Database Connectivity (JDBC); Java Server Pages (JSP); XML parsing (JAXP, SAX, and DOM); and XML Stylesheet Language for Transformation (XSLT). Learn how to maintain state by using cookies and session-tracking. Use advanced JDBC to retrieve data, manipulate it using Web pages, and save it back to the database in disconnected fashion. Understand JSP classes and interfaces, including tag libraries and custom tags.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9294 Visual Basic .NET Programming (3.5 Credits)
Programmers use Visual Basic.NET (VB.NET) for rapid development of browser-based Windows applications. If you have experience with Windows programming, then learn the basics of VB.NET by taking this course. Understand the .NET framework, which implements Microsoft’s support for web services; the common language runtime, which allows programs to be run in any Windows environment; VB.NET syntax; object-oriented programming in VB.NET; error handling; and database access in VB.NET. Upon completion of the course, be able to build database-driven VB.NET applications that use web services.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9295 Intermediate C# Programming (3.5 Credits)
Microsoft’s multiparadigm programming language, C#, allows programmers to rapidly build web-based and platform-independent applications for the Microsoft .NET platform. C# encompasses imperative, declarative, functional, generic, object-oriented, and component-oriented programming disciplines. Using a mixture of presentations and hands-on labs, this course starts with the fundamentals, introduces best practices for object-oriented programming in C#, and covers some intermediate and advanced features including generics, collections, interfaces, delegates, lambda expressions, and LINQ.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9299 Advanced .NET Programming: Advanced Tools and Techniques (0 Credits)
If you have C# or VB.NET programming experience, then delve into the advanced capabilities of the .NET Framework in this course. Examine multithreading, reflection, Component Object Model (COM) objects, unmanaged code, and remoting. Learn to solve complex, real-world business problems using C# or VB and the .NET Framework. Upon completion of the course, be prepared to build applications in C# or VB.NET that utilize the advanced features of the .NET Framework.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9315 Database Design and Development (4 Credits)
Business databases store information on products, clients, and transactions in a structured format. By applying techniques taught in class and creating a real business database system in the computer lab, learn how to analyze business processes to determine what data an application requires. Use entity-relationship modeling to define data entities, such as clients, their attributes, and their relationships to other entities. Understand how to define keys, join tables, normalize databases, design screens and reports, and construct queries using Structured Query Language (SQL). A business case study is presented along with computer lab exercises to combine theory and practice.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9326 Internetworking Fundamentals (4 Credits)
Gain a thorough understanding of internetworking principles, such as connecting and managing an integrated network system from LAN to WAN. Learn how basic networking components work and how they are put together to implement a system by following simple design guidelines—including Cisco’s campus architectures, which are used throughout the industry. Examine the fundamentals of the Open System Interconnection model, and master the basics of computer networking, including contemporary network services, transmission media, protocols, IP addressing schemes, basic switching and routing algorithms, client-server interaction, emerging networking trends and technologies, and security and privacy topics.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9327 Internetworking Intensive: CCNA Prep (0 Credits)
Earn Cisco certification as a CCNA (Cisco Certified Network Associate), CCNP (Cisco Certified Network Professional), or CCIE (Cisco Certified Internetwork Expert). The course focuses on the Routing and Switching Specialty of these certifications. Complete a comprehensive technical review of the standard networking protocol TCP/IP and the technologies used to transport it. Hands-on exercises provide the real-world experience of interconnecting networks. Become familiar with network infrastructure, and learn to design and implement multi-protocol networks. Attain command of routing and switching hardware. Gain experience configuring hosts and clients for the various network protocols using such operating systems as Windows NT, Linux (UNIX), DOS, and NetWare.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9336 Network Security Essentials (3.5 Credits)
Tailored to network security professionals just starting out in the industry, this course teaches the fundamental concepts of information security and security architecture. Become familiar with the TCP/IP protocol and the tools used to read and interpret its traffic. Study common cryptographic techniques, such as symmetric and asymmetric cryptography and hashing algorithms, and use hacking case studies to unravel methods of attack and to discover defensive security countermeasures. Learn how to identify, update, and implement a security policy in your organization.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9339 Oracle Database 11g: Administration II (4 Credits)
Learn how to configure an Oracle database for multilingual applications. Designed as preparation for the exam to become an Oracle Database 11g Administrator Certified Associate, this course provides practice in various methods for recovering a database using RMAN, SQL, and Flashback Technology. This course also covers tools to monitor database performance and steps to take to improve that performance. Learn how to use various database technologies, such as Resource Manager, Scheduler, and Automatic Storage Management (ASM). Hands-on practice and a workshop reinforce lesson topics.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9341 Intrusion Detection and Analysis: Hacking Understood (3.5 Credits)
Acquire hands-on experience foiling hackers by learning intrusion detection techniques. Assume the role of hacker and use the latest tools and techniques to attack a system. Then, take the role of security officer and employ the latest intrusion detection and analysis tools to discover the hack, implement countermeasures, and prevent further intrusion. Gain an understanding of the vulnerabilities of major network systems, from operating systems to architecture and protocols. Learn to analyze network traffic and log files in order to detect intrusion signatures. Upon completion of the course, have the ability to evaluate operating systems and networks for security flaws and to protect networks against attacks.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9342 Firewalls I (3.5 Credits)
Acquire a clear understanding of how to design and implement secure networks and hosts. In this lecture/lab course, find out how to evaluate design principles behind firewalls and trusted systems. Practice building networks using technologies such as network address translation (NAT). Through case-study analysis and review, learn how to prevent common network attacks, how worms and viruses behave, and how the Internet works. Additional topics covered include the fundamentals of IP networking, the design and implementation of secure networks, and preventive security measures.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9358 Oracle Database 11g: Program with PL/SQL (0 Credits)
Learn to create procedures, functions, packages, and database triggers using PL/SQL, and to develop application code that can be shared across forms, reports, and data management applications. Manage PL/SQL program units and database triggers and dependencies, manipulate large objects, and use some Oracle supplied packages. This course—the second in the official Oracle training curriculum for those completing the Oracle Database Application Development track—may be taken as stand-alone training or as preparation for the #1Z0-147 Program with PL/SQL Exam, the second of two required exams to become an Oracle PL/SQL Developer Certified Associate.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9359 Computer and Cyber Forensics (3.5 Credits)
This course teaches advanced topics and reviews recent developments and applications in various areas of computer forensics. Study different aspects of computer and cybercrime, and learn how to uncover, protect, exploit, and document digital evidence. Gain exposure to different types of tools (both software and hardware), techniques, and complex forensic investigation procedures. This hands-on course features a series of lab exercises culminating in a comprehensive team-based project. Exercises and projects will be a blend of both basic and applied training in such areas as intrusion analysis, network forensics, memory forensics, and mobile device security. The heavily collaborative and action-based curriculum emphasizes developing and practicing incident handling and computer crime investigation techniques, leading to the construction of an effective forensic model of a system attack. Learn about breakthrough developments in specific areas of computer forensics, and develop your own tools for “special need” computer forensics situations. This course is ideally suited to intermediate and advanced security and systems professionals.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9363 Microsoft SQL Server Administration (0 Credits)
Microsoft SQL Server is a leading relational database management system for the Windows platform and an increasingly important competitor in the overall database market. This skill-based course teaches you how to design and administer SQL Server databases. Learn how to install and configure SQL Servers; to create, modify, and populate databases; to back up and restore data; to administer database security; and to monitor performance and availability. By the end of the course, be able to take responsibility for assuring that system users have ready access to all data they are authorized to view or change.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9367 Web Development with Python and MySQL (2.5 Credits)
<p>Learn the fundamentals of two of today’s most popular tools in the web development space. MySQL is the world’s most popular open-source database management system. Because it is readily available, low cost, and easy to install and use, many Internet service providers use MySQL and offer access to MySQL database services to potential clients. Python is another open-source general purpose programming language that has gained tremendous popularity lately. Learn both MySQL and Python, and use this powerful combination to design user-friendly, form-based HTML front ends that communicate with MySQL database servers to create dynamic websites.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9380 Cores and Concepts of Information Systems Security (3.5 Credits)
This course provides IT professionals with an introduction to the core concepts of information systems security: access control; administration; auditing and monitoring; and risk, response, and recovery. Learn how policies, standards, procedures, and guidelines are established to ensure confidentiality, integrity, and availability. Become familiar with security measures applied to networking, transmission methods, and the operation of private and public networks. Understand countermeasures and prevention techniques for dealing with malicious code, and learn how security is implemented in multiple technology environments, including client/server, web, mainframe, wireless, and RFID.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9381 Advanced Information Systems Security (3.5 Credits)
This course covers advanced concepts within network and application security, and it focuses on solutions as they relate to IT security and risk analysis within compliance requirements such as HIPAA and PCI. Explore strategies and specific approaches for the enforcement of security controls that address compliance requirements facing organizations today. Most sessions have demonstrations or hands-on labs of vendor and open-source solutions that address either compliance requirements or security best practices.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9415 Microsoft SQL Server Integration Services Fundamentals (2.5 Credits)
This course combines hands-on labs with lectures to teach MS Integration Services so you are able to develop and automate extraction, transformation, and loading processes with some of the available and frequently used tasks and variables. Also introduced are Integration Services package development, control and data flow tasks and their ability to be performed sequentially or in parallel, use of precedence constraints, and the interplay of these in data warehouse design. In a hands-on lab environment, learn about deployment, configuration, and scheduling of developed SSIS packages to automate the processes in a secure environment.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9416 Android App Development Intensive (9.5 Credits)
Android is an open-source platform for smartphones, tablets, and the increasingly popular Internet-enabled devices (wearables, TV, etc.). With the open development environment and the support of major manufacturers, the platform is fast becoming the leader in the worldwide mobile and device markets. Take part in in-class exercises and hands-on assignments that help you to acquire the skills needed to develop your own native Android applications. This course reviews Java basics for Android development and Kotlin as Google’s official programming language for Android development, and it provides an overview and the latest Android Studio integrated development environment (IDE). Practice with the Android software development kit (SDK) as you learn how to build apps step by step. The course covers the platform architecture and basic mobile building blocks, and the instructor will provide interaction and guidance as you create a simple Android app on your own. Learn how to implement the user interfaces and use the optional APIs and Google libraries to enrich the application. The course includes recommended best practices in app development and in the publishing process, as well as the programming considerations for tablets and other device types on the Android platform.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9417 Advanced Android App Development (3 Credits)
Building upon the material covered in Intermediate Android App Development, this course focuses on more advanced topics of the Google Android platform. In class, concentrate on working with Android hardware, including GPS, the camera, and various sensors, as well as with advanced OS topics, such as background tasks and asynchronous operations. Other topics include the basics of several Google APIs, including Google Maps; the Android file system to save/retrieve data; Media Services (audio/video); styles, themes, and customization of the Android user interface; transfer of data using the Internet; Structured Query Language and SQLite database applications; and SMS and phone integration.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9418 Emerging Technologies for the Internet and Cloud Computing (4 Credits)
New technologies have transformed the Internet and changed cloud computing models. Virtual machines on multicore processors make cloud computing possible along with parallel programming to utilize the multiprocessors. As the amount of main memory in servers has dramatically increased, Internet and cloud databases also are evolving to incorporate in-memory database techniques. Information stored on the web is finally becoming organized as a massively distributed linked database—the semantic web. Businesses are using online data capture and machine learning to analyze data accumulated from web activity and augmented reality to advertise and market products. While we wait to embrace the advantages of the newer IPv6, the specifications for an interplanetary Internet have already been defined. Discuss these and other emerging technologies relevant to the Internet and to cloud computing in this exciting course.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9420 Advanced MySQL with PHP (2.5 Credits)
Advance your web development career. Learn how to code object-oriented PHP, and combine your knowledge of PHP and MySQL to deliver professional websites. Learn how to install an XAMPP server on your local device; discover advanced SQL coding techniques, such as the CASE expression and subqueries; and create database objects, views, and stored procedures. Become familiar with proper database design techniques and normalization/denormalization and with the MySQL data dictionary. Learn how to create and administer database instances, users, hosts, and security to allow your clients to create and manage their own environments. Acquire advanced PHP techniques, including managing file systems and directories, parsing XML, recursive processing, uploading files, building shopping carts, emailing, and processing images. Create web services to deliver XML and JSON data streams to a web client. Learn the fundamentals of HTTP, and gain the knowledge to perform server-side page requests. Create client sessions using both cookies and PHP sessions. Complete the course by delivering a web project that includes all of these advanced techniques.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9518 Linux (3.5 Credits)
Gain a basic understanding of Linux system administration and hands-on experience working in Red Hat Enterprise Linux 6. Learn to install and administer Linux. Strengthen your knowledge of networking, scripting, services, security, hardware and software setup, and maintenance. This course prepares you for the Red Hat Certified Technician certification and is intended for IT professionals with some command-line experience in Linux or UNIX who wish to enhance their skills by learning system administration.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9523 Introduction to Windows Administration (0 Credits)
Gain a comprehensive understanding of Windows Local Area Network (LAN) administration. Learn how to administer user accounts, New Technology File System (NTFS) directories, and shares, along with setting up printers in both workgroup and active directory-based domain networks. Topics include Windows operating systems for clients and servers, backing up and restoring data, and understanding event logs.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9543 Perl I (0 Credits)
Programmers learn the fundamentals of Perl programming in this intensive lab. Gain hands-on experience with Perl, including pattern matching, file manipulations, and process handling. Then quickly move ahead to exciting new aspects of Perl and its different applications. From using the basic data structures of the Perl language to creating a module and using custom-made and standard Perl modules, this lab covers a wide range of programming skills.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9545 Introduction to UNIX and Linux (4 Credits)
Acquire the skills to do networking, programming, or system administration in the UNIX world. Create files and directories; copy, move, rename, search, archive, compress, and remove them; read- and write-protect them; and connect them with hard and symbolic links. Run programs and join them to files and other programs with I/O redirection. Compose UNIX command files (shellscripts) using command-line arguments, pipelines, loops, conditional statements, file descriptors, and exit status. Learn to personalize your UNIX account and to control a running process with the Korn shell. Use regular expressions to search, edit, and transform data with the utilities grep, sed, awk, and the vi text editor.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9556 Fast Track to CISSP. Security Certification for IT Professionals (3.5 Credits)
The Certified Information Systems Security Professional (CISSP) certification is highly sought after within the information security profession. This course shows prospective CISSP candidates the Common Body of Knowledge (CBK) covered in the CISSP examination. Lectures and case studies cover the core CBK subject areas, including access control systems; applications and systems development; business continuity planning; cryptography; law, investigation, and ethics; operations security; physical security; security architecture; security management practices; and telecommunications, network, and Internet security.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9562 Java Web Services (3.5 Credits)
Service-oriented architectures, which make it possible to turn business data and applications into "services" available over the Web, are fundamentally changing the way applications are built. In this advanced course, experienced Java programmers understand how enterprises use Web services to integrate business units and for business-to-business integration and learn how to develop enterprise Web services and Web service clients. Become familiar with service-oriented architectures and supporting technologies, such as SOAP, WSDL, and UDDI. Gain in-depth knowledge of APIs, including SAAJ, JAXM, JAXB, JAX-RPC, and JAX-WS. Learn Web services tools, such as Apache SOAP, Apache AXIS, JWSDP, Systinet Server, and WebLogic.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9580 Cores and Principles of IT Auditing (3.5 Credits)
In this course designed for technologists, financial auditors, and those interested in becoming IT auditors, learn the basics of IT auditing—from planning an audit to auditing controls. Gain an introduction to general controls and application controls as well as an overview of IT auditing technology. Auditing standards—including the COSO and COBIT frameworks—are outlined, and the approach to performing a SOX audit for the IT infrastructure that supports key financial applications is explained.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9581 Advanced IT Auditing (3.5 Credits)
Learn the process of planning IT audits using risk-based technologies, and understand in detail the COSO, COBIT, ITIL, and ISO-17799 frameworks. Review IT auditing and compliance with SOX, Gramm-Leach-Bliley, and HIPAA. This course provides an overview of CAATS that are used for IT auditing, and it presents business continuity planning and disaster recovery using case studies and risk analysis. This course is designed for IT auditors, security professionals, compliance professionals, and technologists with a background in IT auditing.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9582 Sarbanes-Oxley Compliance and Testing for IT Auditors (0 Credits)
The Sarbanes-Oxley Act of 2002 was designed to guarantee the integrity of an organization's financial statements. IT auditors are responsible for testing the integrity of the underlying financial systems. This course covers SOX 302, 404, and 409; PCAOB 404; COSO internal audit standards; techniques and strategies for continuous auditing for SOX; and methods for addressing outsourced operations. Review key requirements of SOX and PCAOB standards as they apply to internal control and security assessments, and learn to identify high-risk elements of IT control frameworks and the controls necessary for compliance.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9583 Auditing Complex Technology Implementations (1.5 Credits)
As new advances in enterprise technology are implemented, the role of auditing for controls becomes increasingly complex. In order to understand these implementations at the high level that is required for IT auditors, this course reviews a wide range of technologies—including legacy mainframe, client server, web, middleware, and ETL—and their integration from a controls perspective. Also, study newer architectures, such as RFID, GPS, and wireless.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9584 IT Auditing for Mergers and Acquisitions (1 Credit)
<p>Increasing compliance and regulatory requirements, the growth of Private Equity investments, and the growing number of divestitures and acquisitions of publicly traded companies have made a major impact on the process and depth of analyzing companies in transaction proceedings. This introductory course gives consultants, IT Auditors, and other professionals an assessment framework and methodology for all stages of transaction, including strategic planning, deal-structuring and negotiation, due diligence, and planning and execution reporting as presented to investment bankers, lawyers, and executives during the transaction full-life cycle. You will also examine best practice recommendations and action plans within the scope of IT Audit, IT governance, IT infrastructure, applications, and systems and data management.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9585 Security Auditing (1 Credit)
Security is under immense scrutiny and auditors are regularly tasked with reviewing security controls. In this course, gain the background information and techniques you need as an auditor to plan and execute a wide range of security audits. Case studies provide examples of security auditing and a broad spectrum of security controls.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9586 Certified Information Security Manager (CISM) Certification Exam Prep (0 Credits)
Earning your Certified Information Security Manager (CISM) credential allows you to stand apart from the competition in today's competitive job market. Prepare to sit for the CISM certification exam by reviewing the materials required for test preparation and taking sample tests. Learn the key concepts for each of the five domains, focusing on the information that the Information Systems Audit and Control Association (ISACA) has deemed appropriate for CISM certification. Visit the ISACA website for detailed information about the CISM certification application requirements.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9614 Introduction to Android App Development (1 Credit)
Acquire the skills to write simple Android apps in Java and XML, using the free application Android Studio on macOS, Windows, or Linux. An Android app consists of intercommunicating objects—learn just enough Java to create them, to destroy them, and to make them talk to each other. See what happens when an app is launched and when the user touches the screen. Be able to create apps that incorporate text and graphics, perform simple animations, feature display controls such as buttons and sliders, respond to a touch or keystroke, recognize a swipe or pinch, and download information from a server.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9616 Oracle Database 11g: Administration I (4 Credits)
Gain a firm foundation in basic database administration, learn how to successfully install and maintain an Oracle database, and acquire a conceptual understanding of the Oracle database architecture and its components' functions and interactions with one another. Explore how to create an operational database and to properly manage the various structures in an effective and efficient manner, including performance monitoring, database security, user management, and backup/recovery techniques. Structured hands-on practice reinforces lesson topics. This course prepares you for the exam to become an Oracle Database 11g Administrator Certified Associate (#1Z0-052 exam required).
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9617 Oracle Database 11g: Administer a Data Warehouse (3 Credits)
<p>Gain an understanding of the basic concepts of administering a data warehouse. Learn to use various Oracle Database features to improve performance and manageability in a data warehouse. Topics covered include implementing partitioning; using parallel operations to reduce response time for data-intensive operations; extracting, transforming, and loading data; creating materialized views to improve data warehouse performance; applying query rewrite to quickly answer business queries; and using SQL Access Advisor and PL/SQL procedures to tune materialized views for fast refresh and query rewrite. Also, become familiar with the benefits of partitioning and star schema design.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9622 Oracle Forms Developer 11g: Fusion Middleware (0 Credits)
Leverage your investment by taking advantage of web technologies to construct sophisticated database forms and business logic with minimal effort. Learn to use Oracle Forms Developer 11g (10.1.2.0.2) to rapidly build scalable, high-performance applications for the Internet. Build, test, debug, and deploy interactive Internet applications. Working in a graphical user interface (GUI) environment, develop an order entry application from the ground up. This course provides a productive development environment for building enterprise-class, scalable database applications for the Internet. This course counts toward the hands-on course requirement for the #1Z0-141 exam to become an Oracle Forms Developer Certified Professional.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9623 Windows Server Administration: MCSA Part II (4 Credits)
This course combines lectures with hands-on content relating to existing and new features of the Windows Server 2012 Operating System and networking technologies. Learn Windows Server 2012 modular architecture, file system features, security enhancements, TCP/IP V4 and V6, group policy, DHCP, DNS, AD forests, trees, domains, and more. Active Directory configuration is covered in-depth with infrastructure configuration for enterprise networks.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9629 Oracle Database 11g: Introduction to SQL (0 Credits)
Gain an introduction to Oracle Database 11g technology, relational database concepts, and the powerful SQL programming language. Build essential SQL skills to query the database and metadata and to create database objects. Delve into advanced querying and reporting techniques, data warehousing concepts, and manipulation of large data sets in different time zones. This is the first course in the official Oracle training curriculum for those completing the Oracle Database Application Development track, and it may be taken as stand-alone training or as preparation for the #1Z0-047 Oracle Database SQL Expert Exam, the first of two required to become an Oracle PL/SQL Developer Certified Associate.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9704 Advanced iOS App Development (3.5 Credits)
Learn to create games with Sprite Kit (a framework to create high-performance, battery-efficient 2D games) and Scene Kit (a high-level 3D graphics framework to create 3D animated scenes and effects). Work with photos and videos from the camera using PhotoKit and Camera API, and read and write SQLite databases. Write app extensions that extend custom functionality and content beyond your app, and make them available to users while they're using other apps. Learn all about Text Kit and auto layout. Build apps with the new Cloud Kit framework, and store and retrieve your app data easily, securely, and efficiently.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9705 Intermediate Android App Development (3.5 Credits)
Learn to develop applications that run on Android OS, and then make them available to the world using the Google Play store. Learn to build effective Android user interfaces with the latest design guidelines. Develop familiarity with the many objects and libraries that make up Android and know how and when to use them. Learn how to localize applications for distribution in other countries and how to package and deploy your Android apps to the Google Play store. This hands-on course provides a review of the more complex Java used in the Android ecosystem, but you should already have an understanding of Java basics, such as variables, loops, functions, and conditionals.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9706 The Business Side of App Development (1.5 Credits)
With millions of users, the iPhone, iPad, and the many Android devices, have created an insatiable demand for new apps—currently with more than 350,000 available in the highly competitive App Store. Achieving consumer awareness and sales longevity for your app requires organizational and strategic planning that stands out in the crowded marketplace. This course, designed for independent developers working on a shoestring budget, presents a step-by-step approach to cost-effective marketing techniques that incorporate business know-how into every aspect of the design and development process and that give your app the best possible chance of succeeding.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9707 iPhone and iPad Developer Summer Intensive (5 Credits)
Learn to create applications for the Apple iPhone, iPad, and iPod Touch. Begin with the Objective-C language, a combination of C and Smalltalk. Write apps with the Xcode development environment on a Mac, using the Cocoa Touch framework. Build the visual interface of the app with touch-sensitive windows and views. Display buttons, sliders, tables, and slot machines. Distinguish between taps and swipes, and respond to them with animations. Learn about the roles objects play as delegates, targets, controllers, and data sources, tied together with the Model-View-Controller design pattern. Explore more advanced concepts in developing iPhone and iPad applications, such as rendering 3D objects with OpenGL ES, creating games with Cocos2d, writing threaded apps that do multiple jobs simultaneously, and more.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9708 Cloud Basics (0 Credits)
<p>Some experts say that the cloud is bigger than the Industrial Revolution. Learn all about cloud computing and how the cloud will impact and change your life over the next few decades. Cloud is the way all software computing and technology will be built, used, and delivered in the future. It will mean a lot of jobs lost for those who are still working in enterprise IT or other programming jobs, as less traditional programming will be needed. At the same time, a huge opportunity exists for anyone who learns about the cloud as an entrepreneur, engineer, or investor. The course teaches you the fundamentals of what the cloud is and what it is not, and how to make the most of it in this rapidly growing industry. The program is structured into three one-week segments. Students may enroll in any one week, two consecutive weeks, or all three weeks.

Week One, July 9-13
Cloud Basics covering evolution of software, hardware, and computing.
Significance of the cloud for firms in the business of software, hardware and system integration, and for businesses at large and individuals.
Understanding the cloud layers of IAAS, PAAS, and SAAS.
Week Two, July 16-20
Defining the cloud: what it is, what it is not, and busting the cloud myths.
What does cloud mean to me and how I can benefit from it alongside perspectives for and from the CEOs, CFOs, CIOs, app developers, and laypeople.
Cloud investments, investors, valuation models for cloud businesses, and pricing models for cloud services.
Week Three, July 23-27
Understanding cloud market and technology trends, cloud layer bundling, and cloud layer elasticity.
Cloud technologies including virtualization, non-SQL databases, streaming engines, auto-provisioning, and more, including a hands-on Cloud Building Workshop.
Cloud security standards, tools, services, integration, testing and hands-on Ethical Hacking Workshop.
</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9709 Cloud Start-Up Fundamentals (0 Credits)
<p>Walk through the steps of creating a cloud start-up from its inception to a Series B venture capital deal. Explore every aspect of the process, from understanding the basics of what cloud is, to an overview of various cloud providers and technologies. Examine cloud investors and their investment principles and participate in a hands-on workshop that teaches you how to build your own cloud platform from scratch using simple Open Source tools and CARMA (Cloud Architecture Reference Model for Applications). The program is ideal for anyone who wants to build a technology start-up and who wants to benefit from the rapidly growing use of cloud by enterprise and retail customers. Students may enroll in any individual week, two weeks, or all three weeks. For the first week, no specific skills are required. To get the full value from the second- and third-week courses, students should have some prior programming experience. Engineering students are welcome.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9710 Cloud Start-up Fundamentals (0 Credits)
Create a cloud start-up, from its inception to a Series B venture capital deal. Explore every aspect of the process, from understanding the basics of what cloud is to an overview of various cloud providers and technologies. Examine cloud investors and their investment principles and participate in a hands-on workshop that teaches you how to build your own cloud platform from scratch using simple Open Source tools and CARMA (Cloud Architecture Reference Model for Applications). The program is ideal for anyone who wants to build a technology start-up and benefit from the rapidly growing use of cloud by enterprise and retail customers. Students may enroll in any individual week, two weeks, or all three. For the first week, no specific skills are required. To get the full value from the second- and third-week courses, students should have some prior programming experience. Engineering students are welcome.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9711 Cloud Start-up Fundamentals - Week Two (0 Credits)
Walk through the steps of creating a cloud start-up from its bootstrapped inception to a Series B venture capital deal. Explore every aspect of the process, from understanding the basics of what cloud is to an overview of various cloud providers and technologies. Examine cloud investors and their investment principles, and participate in a hands-on workshop that teaches you how to build your own cloud platform from scratch using simple Open Source tools and CARMA (Cloud Architecture Reference Model for Applications). The program is ideal for anyone who wants to build a technology start-up and benefit from the rapidly growing use of cloud by enterprise and retail customers. Students may enroll in any individual week, two weeks, or all three. For the first week, no specific skills are required. To get the full value from the second- and third-week courses, students should have some prior programming experience. Engineering students are welcome.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9712 Cloud Start-up Fundamentals - Week Three (0 Credits)
Walk through the steps of creating a cloud start-up from its bootstrapped inception to a Series B venture capital deal. Explore every aspect of the process, from understanding the basics of what cloud is to an overview of various cloud providers and technologies. Examine cloud investors and their investment principles, and participate in a hands-on workshop that teaches you how to build your own cloud platform from scratch using simple Open Source tools and CARMA (Cloud Architecture Reference Model for Applications). The program is ideal for anyone who wants to build a technology start-up and benefit from the rapidly growing use of cloud by enterprise and retail customers. Students may enroll in any individual week, two weeks, or all three. For the first week, no specific skills are required. To get the full value from the second- and third-week courses, students should have some prior programming experience. Engineering students are welcome.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9713 Cloud Start-up Fundamentals - Week One and Two (0 Credits)
Walk through the steps of creating a cloud start-up from its bootstrapped inception to a Series B venture capital deal. Explore every aspect of the process, from understanding the basics of what cloud is to an overview of various cloud providers and technologies. Examine cloud investors and their investment principles, and participate in a hands-on workshop that teaches you how to build your own cloud platform from scratch using simple Open Source tools and CARMA (Cloud Architecture Reference Model for Applications). The program is ideal for anyone who wants to build a technology start-up and benefit from the rapidly growing use of cloud by enterprise and retail customers. Students may enroll in any individual week, two weeks, or all three. For the first week, no specific skills are required. To get the full value from the second- and third-week courses, students should have some prior programming experience. Engineering students are welcome.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9714 Cloud Start-up Fundamentals - Week Two and Three (0 Credits)
Walk through the steps of creating a cloud start-up from its bootstrapped inception to a Series B venture capital deal. Explore every aspect of the process, from understanding the basics of what cloud is to an overview of various cloud providers and technologies. Examine cloud investors and their investment principles, and participate in a hands-on workshop that teaches you how to build your own cloud platform from scratch using simple Open Source tools and CARMA (Cloud Architecture Reference Model for Applications). The program is ideal for anyone who wants to build a technology start-up and benefit from the rapidly growing use of cloud by enterprise and retail customers. Students may enroll in any individual week, two weeks, or all three. For the first week, no specific skills are required. To get the full value from the second- and third-week courses, students should have some prior programming experience. Engineering students are welcome.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9715 Cloud Basics (2 Credits)
Learn the "business of cloud" from experts as they explore the impact of the cloud and how to maximize its technological capabilities. Topics include the significance of the cloud for firms in the businesses of software, hardware, and system integration; understanding the cloud layers of IAAS, PAAS, and SAAS; defining the cloud—what it is, and what it is not—and dispelling cloud myths; cloud investments, investors, and valuation models for cloud businesses; and pricing models for cloud services.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9716 Cloud Basics--Week Two (0 Credits)
Some experts say that the cloud is bigger than the Industrial Revolution. Learn all about cloud computing and how the cloud will impact and change your life over the next few decades. Cloud is the way all software computing and technology will be built, used, and delivered in the future. It will mean a lot of jobs lost for those who are still working in enterprise IT or other programming jobs, as less traditional programming will be needed. At the same time, a huge opportunity exists for anyone who learns about the cloud as an entrepreneur, engineer, or investor. The course teaches you the fundamentals of what the cloud is and what it is not, and how to make the most of it in this rapidly growing industry. The program is structured into three one-week segments. Students may enroll in any one week, two consecutive weeks, or all three weeks.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9717 Cloud Basics - Week Three (3.5 Credits)
Some experts say that the cloud is bigger than the Industrial Revolution. Learn all about cloud computing and how the cloud will impact and change your life over the next few decades. Cloud is the way all software computing and technology will be built, used, and delivered in the future. It will mean a lot of jobs lost for those who are still working in enterprise IT or other programming jobs, as less traditional programming will be needed. At the same time, a huge opportunity exists for anyone who learns about the cloud as an entrepreneur, engineer, or investor. The course teaches you the fundamentals of what the cloud is and what it is not, and how to make the most of it in this rapidly growing industry. The program is structured into three one-week segments. Students may enroll in any one week, two consecutive weeks, or all three weeks.

AREAS COVERED
Week One, July 9-13
-Cloud Basics covering Evolution of Software, Hardware and Computing
-Significance of the Cloud for firms in the business of Software, Hardware and System Integration, Significance for businesses at Large and Individuals
-Understanding the Cloud Layers of IAAS, PAAS and SAAS
Week Two, July 16- 20
-Defining the Cloud what it is and what it is not, Busting the Cloud Myths
-What does Cloud mean to me and how I can benefit from it, perspectives for and from the CEOs, CFOs, CIOs, App Developers and the lay persons
-Cloud Investments, Investors, Valuation Models for Cloud Businesses and Pricing Models for Cloud Services
Week Three, July 23-27
-Understanding Cloud Market and Technology Trends, Cloud Layer Bundling and Cloud Layer Elasticity
-Cloud Technologies including Virtualization, Non-SQL Databases, Streaming Engines, Auto Provisioning and more including a Hands on Cloud Building Workshop
-Cloud Security Standards, Tools, Services, Integration, Testing and hands on Ethical Hacking Workshop
WHO SHOULD ENROLL
This course is meant for anyone who wants to grow their career or business by catching the Cloud Industry's rapid growth wave. Do not miss this course if you are an Entrepreneur, Investor, Analyst, Architect, CEO, CFO, CIO or a Sales and Business Development Executive in a Technology firm or an MBA or Engineering Student
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9718 Cloud Basics - Week One and Two (0 Credits)
Some experts say that the cloud is bigger than the Industrial Revolution. Learn all about cloud computing and how the cloud will impact and change your life over the next few decades. Cloud is the way all software computing and technology will be built, used, and delivered in the future. It will mean a lot of jobs lost for those who are still working in enterprise IT or other programming jobs, as less traditional programming will be needed. At the same time, a huge opportunity exists for anyone who learns about the cloud as an entrepreneur, engineer, or investor. The course teaches you the fundamentals of what the cloud is and what it is not, and how to make the most of it in this rapidly growing industry. The program is structured into three one-week segments. Students may enroll in any one week, two consecutive weeks, or all three weeks.

AREAS COVERED
Week One, July 9-13
-Cloud Basics covering Evolution of Software, Hardware and Computing
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-Defining the Cloud what it is and what it is not, Busting the Cloud Myths
-What does Cloud mean to me and how I can benefit from it, perspectives for and from the CEOs, CFOs, CIOs, App Developers and the lay persons
-Cloud Investments, Investors, Valuation Models for Cloud Businesses and Pricing Models for Cloud Services
Week Three, July 23-27
-Understanding Cloud Market and Technology Trends, Cloud Layer Bundling and Cloud Layer Elasticity
-Cloud Technologies including Virtualization, Non-SQL Databases, Streaming Engines, Auto Provisioning and more including a Hands on Cloud Building Workshop
-Cloud Security Standards, Tools, Services, Integration, Testing and hands on Ethical Hacking Workshop
WHO SHOULD ENROLL
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Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9719 Cloud Basics - Week Two and Three (0 Credits)
Some experts say that the cloud is bigger than the Industrial Revolution. Learn all about cloud computing and how the cloud will impact and change your life over the next few decades. Cloud is the way all software computing and technology will be built, used, and delivered in the future. It will mean a lot of jobs lost for those who are still working in enterprise IT or other programming jobs, as less traditional programming will be needed. At the same time, a huge opportunity exists for anyone who learns about the cloud as an entrepreneur, engineer, or investor. The course teaches you the fundamentals of what the cloud is and what it is not, and how to make the most of it in this rapidly growing industry. The program is structured into three one-week segments. Students may enroll in any one week, two consecutive weeks, or all three weeks.

AREAS COVERED
Week One, July 9-13
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Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9721 Working Smarter with MS Office Summer Intensive (2 Credits)
<p>Do you think you know Excel, Word, and Outlook, but find yourself thinking, “There has to be an easier way”? Do you want to be more proficient in MS Office and save time in your day-to-day work? Developed by industry experts, this hands-on, intermediate-level, lab-based course delves deeply into the necessary MS Office skill sets required to be effective, efficient, and successful in today’s marketplace. Each session focuses on one of the three most frequently used MS Office applications––Excel, Word, and Outlook. Gain hands-on practice with actual examples that illustrate how to use what you know more effectively and how to develop new techniques that will help you to work smarter.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9722 Content Management System (CMS) Essentials Featuring Drupal (1.5 Credits)
Acquire hands-on expertise in building, developing, and administering content management systems (CMS) for websites. This course offers an overview and best practices for CMS systems, such as Drupal, ZenCart, and WordPress, and focuses on building a complete data-driven Drupal CMS website. Learn how to install and administer Drupal and how to work with modules, themes, MySQL database integration, performance, search engine optimization (SEO), and many other aspects of content and asset management. By the end of the course, build a complete Drupal site.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9723 C++ for Financial Engineering (3.5 Credits)
Gain an overview of how to apply the object-oriented and generic features of the C++ programming language to create robust and flexible applications in the financial arena. This advanced course teaches the C++ programming tools needed to model and create financial instruments including plain vanilla options; to calculate option sensitivities such as delta, gamma, and theta; to model finite difference methods for one-factor Black-Scholes models; to create C++ classes for numerical analysis applications in finance; and to design Monte Carlo simulations and binomial tree models that numerically compute the prices of options.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9724 Website Strategy and Planning (1 Credit)
<p>Gain a comprehensive overview of planning and implementing web development strategies that effectively satisfy business requirements and meet the needs of web users in a highly functional manner. Learn to build web business strategies and to develop key metrics; to select technologies for the appropriate architecture components, including the content management system (CMS) and enterprise software; and to organize the web project and life-cycle development. Learn the essentials of information architecture; content creation and management; wire framing, design, and coding; graphic and UI best practices; QA and user acceptance testing; and search engine optimization and return on investment strategies.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9726 Microsoft SQL Server Reporting Services (3 Credits)
Through hands-on training and lectures, learn to implement a Reporting Services solution in an organization. Using Reporting Services development tools, develop, deploy, and maintain reports with reporting services infrastructure within an SQL server. Hands-on lab work involves developing, extending, subscribing, scheduling, and securing SSRS Reports. The focus is on Report Designer; ad hoc reporting tool; data sources; modeling; and interactive reports with parameters, charts, crosstabs, expressions, and advanced formatting.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9727 Microsoft SQL Server Analysis Services Solutions (3 Credits)
Learn how to implement an Analysis Services solution in an organization. Use Analysis Services development tools to develop, deploy, maintain, and interact with multidimensional cubes. Analysis Services management and administrative tools are introduced for the management of Analysis Services solutions.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9731 AJAX and Web Services (2.5 Credits)
Widely used applications, such as Google Maps, Google Suggest, Amazon, and Gmail, are all built using AJAX (asynchronous JavaScript and XML). Learn the concepts necessary to build AJAX applications, and discover how AJAX can help developers create dynamic web application experiences while eliminating deployment problems and lackluster user experiences. Using AJAX, developers facilitate asynchronous requests to the web server while the client continues to interact with the webpage. Become familiar with the HTTP request and response paradigm, and learn how to manipulate and take advantage of HTTP headers such as caching, redirects, and virtual hosting. Work with different techniques for parsing JSON and XML data streams using DOM (document object model) navigation. Study JSONP, and learn how to use JavaScript script tags to bypass AJAX restrictions on “same-domain policy.” Create web services and deliver them to clients for webpage interactive processing.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9740 Webpage Development with HTML5 (4 Credits)
With Hypertext Markup Language (HTML), even nonprogrammers can create webpages quickly and easily. In this lab-based course, create webpages using HTML, link them together into a website, and publish them on the web. Learn how to properly structure and lay out your pages using CSS, and then make the pages visually appealing by using color and inserting graphics. Gain an introduction to making you website interactive by using JavaScript and jQuery. Upon completion, be equipped with the necessary tools to design and build attractive webpages for business or personal use.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9742 Web Development Intensive (11.5 Credits)
In this course, acquire a complete set of skills to plan, build, and publish a website from scratch. Gain a thorough understanding of HTML, CSS, JavaScript, MySQL, and PHP to create data-driven, dynamic sites that can be used as portfolio pieces. This fast-paced course takes a best-practices approach to creating websites that work flawlessly across all platforms on the web. While keeping a watchful eye toward future trends, study the latest hands-on techniques in use today to build the commercial sites you see online. Complete a final project of your own choosing.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9755 JavaScript (Full Stack Web Development) (4 Credits)
JavaScript is a scripting language embedded in webpages to create dynamic, interactive web content. In this hands-on course, learn the fundamentals of employing JavaScript for web applications. Learn JavaScript expressions, functions, arrays, and built-in objects. Use JavaScript to display timers, slide shows, and dynamic image galleries. Learn how to create reusable components such as form validators. Work with—and set—cookies to create personalized webpages. Learn about HTML5 web storage. Acquire a deep understanding of the document object model (DOM), and learn how to use it with JavaScript and CSS to create DHTML components, such as hover menus, flyouts, and mouse-over effects. Dynamically control HTML elements placements and visibilities. Complete the course by learning about the latest web techniques, such as AJAX and object-oriented JavaScript.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9760 Web Development Summer Intensive (0 Credits)
<p>Develop your web expertise by learning to create and publish data-driven websites that look good on all platforms. Immerse yourself in the latest techniques to deliver flexible, easy-to-maintain websites that are engaging as well as reliable. Explore client-side technologies using the most recent developments in HTML, CSS, and JavaScript. Add dynamic features to your sites by creating flexible user interfaces that respond intuitively to user interactions. Learn MySQL, the most popular open-source database engine, and link it to your sites using PHP, a server-side language that applies business logic to your creations. Incorporate all of these skills to construct a professional website to add to your portfolio and to present in a showcase format to prospective employers.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9764 Web Front-End: Foundations (Full Stack Web Development) (3.5 Credits)
This hands-on introduction to web development will teach you to leverage semantic HTML, the latest CSS, mobile-first design, and modern JavaScript to create stunning websites that work well in all environments—desktop and mobile. You’ll employ Git and Github for versioning and collaboration; unlock Visual Studio Code’s full potential; and use Node, AJAX, and static site generators. Finally, you’ll deploy code using continuous integration workflows to edge servers for the best possible performance. This class is suitable for newcomers to web development, as well as current practitioners looking to formalize or update their knowledge. At the conclusion, you will be ready to advance to Web Front-End II: Intermediate.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9765 Adobe FLEX 4.0: Building Rich Internet Applications (1.5 Credits)
Web users demand as rich an experience with browser-based (thin-client) applications as with native (thick-client) applications. Rich Internet Applications (RIA) make it possible for developers to meet these demands, throwing off the traditional limitations of HTML/HTTP. In this hands-on course, learn to choose from the available tools and platforms (including AJAX and Adobe Flash Builder/Flex/Flash) and gain an understanding of building leading-edge, platform-independent, browser-based Rich Internet Applications.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9766 Advanced JavaScript (1.5 Credits)
Learn best practices in JavaScript in this intensive, five-session course that balances theory and practice. Topics include data encapsulation, closures, binding, inheritance, and name spacing. The course also covers some of the HTML5 APIs that modern browsers support and many of the popular JavaScript libraries and frameworks.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9784 Enhance Your Website in Two Easy Sessions (0 Credits)
Learn to integrate Extensible HyperText Markup Language (XHTML)—a cleaner version of HTML—and Cascading Style Sheets (CSS)—a style sheet language used to describe the presentation semantics of a document written in a markup language—to configure text, color, and webpage layout. Explore web design best practices, accessibility, usability, and standards, and learn how to apply them to enhance a new or existing website.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9786 Creating Websites for Mobile Devices (1.5 Credits)
This course provides the ideal starting point for catching up with the mobile web—an exciting area of continuing growth and innovation. Use standard web technologies, notably HTML5 and CSS3, to create websites optimized for viewing on today's mobile web browsers. Design user interfaces appropriate for touchscreen devices. Understand how different mobile strategies can increase mobile device access to your website, and learn how to make your webpage more responsive to different device dimensions.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9794 Web Architecture and Infrastructure (3.5 Credits)
If you have a basic understanding of web technology, then take this course to expand upon that knowledge and learn how professional, large-scale websites are put together. Many elements are combined to create today's web systems: web server software, operating systems, application servers, databases, networks, telecom, firewalls/security, content management systems, LDAP, DNS, and more. Industry terms, such as "scalability," "clustering," "server farms," and "high availability," are covered in detail. Gain a firm grasp of what each term means in relation to web systems. Also, learn how application development is affected by specific demands of web architecture.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9799 ASP.NET Intensive: Building ASP.NET and MVC Web Applications (0 Credits)
ASP.NET Web Forms and MVC applications currently account for a significant portion of enterprise-level web applications. This accelerated, hands-on course prepares those with no previous web programming background to build database-driven ASP.NET web applications. Start out with HTML and CSS. Then, learn how to use C# and Visual Studio to create ASP.NET Web Form applications. From there, learn how to build MVC web applications that incorporate AJAX functionality by using the jQuery library. Following this, SQL Server, the Entity Framework, XML, and Unit Testing applications are covered. A big focus of this course is on building maintainable, n-tier-based web applications.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9800 Advanced Client Web Development (1.5 Credits)
Advances in web and browser technologies have driven the demand for web developers who know the latest multi-browser client technologies. In this two-session course, learn about key topics related to client web development. Complete a series of short assignments and a final project, working with HTML5, CSS3, JavaScript, and jQuery. Advanced discussion topics include information architecture, client/server, and n-tier methodologies.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9803 Advanced Web Development Intensive (9 Credits)
Advancements in web technologies have driven demand for programmers trained in the latest tools of the trade. Learn how to create a dynamic, data-driven website using client- and server-side programming tools, such as DTHML, CSS, JavaScript, PHP, MySQL, XML, and AJAX. Register customers, create login sessions, build shopping carts, and install and configure a web server. Study database design techniques and e-commerce capabilities.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9805 Apache Web Server (1.5 Credits)
Knowledge of Apache is essential for any web developer or systems administrator. This course provides a comprehensive overview of Apache, the most widely used web server. Learn to manage the httpd.conf configuration file, to set up virtual hosts for multiple websites, and to use the .htaccess file. Master URL mapping, directory indexing, performance tuning, handlers, filters, running scripts, and proxy servers and firewalls. Topics covered include an introduction to and the history of Apache, installation and configuration, and security. Also, discuss delivering dynamic web content; serving multiple sites with virtual hosts, redirection, and indexing; monitoring the Apache web server; and improving performance.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9807 Web Programming with PHP (3.5 Credits)
This fast-paced, intermediate-level PHP course provides the knowledge and skills necessary to design and build dynamic, database-driven web applications using PHP version 5. Learn how to install and set up a development environment and how to process and validate HTML forms. Become familiar with session state management, HTTP protocol, and MySQL database integration. Other topics include XML processing, template engines, file handling, and configuring PHP with the Apache web server. Through comprehensive assignments, build a simulated e-commerce web application using the techniques and processes learned in the classroom.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9811 Understanding Smartphones, Netbooks, Tablets, and Other New Technologies in One Easy Session (0 Credits)
Explore the ins-and-outs of the latest crop of portable devices and discover the best way to use technology to stay connected, wherever you are. Make sense of smart phones, netbooks, tablets, and more in one easy session that provides a comprehensive analysis of these portable and mobile technologies and their applications, benefits, and limitations.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9812 Advanced Web Development with HTML5 (3.5 Credits)
Gain an in-depth understanding of the most recent version of HTML/XHTML language in this course designed for professionals with at least one year of hands-on experience in web development. HTML5 is rapidly becoming an important technology for multimedia interactivity on modern websites. HTML5 solves issues found in previous iterations, and it addresses the needs of web applications in areas that previously were not adequately covered. Browsers such as Safari, Mozilla, Opera, and Chrome already support many of its features, and browsers for smartphones are even farther ahead. Some elements are replacements for common uses of generic block and inline elements. Others provide new functionality through a standardized interface, such as the audio and video elements. HTML5 aims to reduce the need for proprietary plug-in-based rich Internet application (RIA) technologies.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9813 ActionScript Programming (1.5 Credits)
Programming with ActionScript allows you to create highly interactive and entertaining applications that can be infinitely modified. If you enjoy creating website animation in Flash and scripting basic interactive actions, enhance your knowledge and skills by learning ActionScript programming. Build fully featured interactive games and other dynamic Flash applications that put your users in the driver's seat.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9814 Introduction to C# Programming (3 Credits)
Designed for first-time programmers, this course presents a comprehensive introduction to programming using the C# language. Learn to use Microsoft Visual Studio, and focus on the development of correct, efficient programs that are easy to maintain. Topics include basic concepts of C# programming, problem solving, programming logic, and design techniques of an object-oriented language. This hands-on course also explores the Microsoft .NET Framework, aspects of the .NET object hierarchy, and ways to use C# in a .NET application environment, laying the foundation for further study in programming.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9817 Functional Programming with F# (3 Credits)
Become proficient in F#, Microsoft’s exciting new functional programming language. Functional programming languages excel at expressing complex ideas in a succinct, declarative, and efficient way. This multi-paradigm language offers an enormous productivity boost through functional programming, and it allows for application development using object-oriented and imperative-style programming. Through a mixture of presentations and hands-on labs, learn to use F#’s powerful immutable data structures, to build complex solutions by composing simple and elegant building blocks, and to utilize F# as a scripting language for both asynchronous and parallel programming.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9818 Introduction to Software Tools and Frameworks (1.5 Credits)
Examine the plethora of software products, tools, and frameworks common in today’s software development environment. Modern applications delivered over the web are increasingly dependent upon a complex, interconnected set of software and frameworks to achieve the desired results. Some of these tools have similar names but, in reality, are very different from each other in terms of function and use. Learn the role of each tool and discover how together they can be harnessed to develop modern software applications. Explore SQL, PL/SQL, SQL Server, MySQL, HTML, HTML5, XHTML, XML, CSS, Flash, Flex, Java, JavaScript, Objective-C, C, C++, C#, F#, PHP, JSP, ASP, AJAX, EJB, and .NET.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9819 Introduction to Healthcare and Medicine (1 Credit)
If you lack the foundational understanding of how technology intersects with the healthcare and medical industries, this course provides a comprehensive overview. Learn the inner workings of the health industry, including healthcare facility operations, clinical patient care, financial reimbursements, and the roles and responsibility of the healthcare team.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9901 Cyber Security and Privacy: Emerging Law, Regulation, and Policy (2 Credits)
What are the key legal and regulatory frameworks that imp<!--?xml:namespace prefix = st1 ns = "urn:schemas-microsoft-com:office:smarttags" /--><!--?xml:namespace prefix = st1 /--><?xml:namespace prefix = st1 /><st1:personname w:st="on">ac</st1:personname>t today’s technology, information management, and data security professionals? Examine the interrelationship of priv<st1:personname w:st="on">ac</st1:personname>y and information security and look at evolving legal and regulatory issues associated with new trends in data usage such as mobile platforms, social networks, and CLOUD technologies. Review pending data security/priv<st1:personname w:st="on">ac</st1:personname>y legislation, evolving trends in legal liability, fundamental legal requirements in cyber forensics, e-Discovery, contr<st1:personname w:st="on">ac</st1:personname>ts, and various appro<st1:personname w:st="on">ac</st1:personname>hes to information risk transfer. Topics include SOX, the Federal Trade Commission Unfair and Deceptive Trade Pr<st1:personname w:st="on">ac</st1:personname>tices Act, Gramm Le<st1:personname w:st="on">ac</st1:personname>h Bliley, HIPPA/<st1:place w:st="on"><st1:city w:st="on">HTECH</st1:city>, <st1:country-region w:st="on">U.S.</st1:country-region></st1:place> State Data Bre<st1:personname w:st="on">ac</st1:personname>h Laws, European Union Data Protection Directive, and APEC Guidelines. Additional areas of study includes best pr<st1:personname w:st="on">ac</st1:personname>tices and compliant appro<st1:personname w:st="on">ac</st1:personname>hes to data retention and information management.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9902 Excel: Advanced Tools and Techniques (0 Credits)
Become an Excel power user and increase your efficiency and expertise in this key business application. Discover how to consolidate data across workbooks, control the type of data to be entered in a specific cell or range of cells, and create drop-down lists. Increase your knowledge by understanding how to use the advanced functions with emphasis on the most useful for all types of fields. Get familiar with Excel’s powerful pivot table tool to analyze, summarize, and present data in reports and pivot charts, while using slicers as the dashboard for the displayed data. Learn to apply conditional formatting to your data so that you can instantly understand the trends in it. Save time by recording and running macros to automate tasks that you perform repetitively. Learn how to protect data in a worksheet, and much more.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9903 Microsoft Access: Designing and Developing a Database (1.5 Credits)
Build a Microsoft Access database, suitable for personal or small-business use, to store customer or product information or to hold contacts and marketing data. In class, review the keys to normalization and learn how to import Excel spreadsheets, use queries to access data, and create and format reports. This course then leads you from designing and building the database to adding and retrieving data. Gain the skills to create tables and to build a user interface and forms that allow users to quickly add, change, or retrieve data. Also, learn to use VBA to enhance the power of Access.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9904 PowerPoint: Winning Presentations' Comprehensive Techniques (0 Credits)
A business presentation that conveys your ideas effectively can help you close the deal. Learn to create winning presentations in this Microsoft PowerPoint complete hands-on course that is designed for both new and self-taught PowerPoint users who want to learn the basic tools using precision and time saving features, such as creating a presentation automatically from a Word Outline, using shortcuts keys, and learning the important guidelines that are necessary to create successful business styles and design presentations. In order to support your ideas, you learn how to insert tables, charts, organization charts, WordArt, ClipArt, and pictures and use the techniques to manipulate them in the slides. You will be able to dress up your presentation with preset Themes, or easily create your own designs. As you move on to the advanced features of PowerPoint, you will be creating dynamic presentations using the time saving feature the Master Slide and will learn to use slide transitions and custom animations, and then create and present your PowerPoint slides as a Slide Show or as a Windows Media Video.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9905 Word: Advanced Dynamic Tools (1 Credit)
This course focuses on the advanced, timesaving, and automated features of Microsoft Word that help with processing long documents. Learn to use macros for repetitive tasks and Mail Merge for massive mailings and label creations. When collaborating with others to create a document, you will find the Track Changes feature very useful, as it allows you to easily view and automatically accept or reject the many ideas and changes from your colleagues. Increase your efficiency by using tools such as the automatic tables of contents, bookmarks, indexes, and captions. Save time when creating your project or research paper by entering your sources in the Source Manager and selecting the built-in academic style you desire, and Word will automatically input citations and create a bibliography.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9906 Excel: Essential Basics (0 Credits)
Gain a solid understanding of Excel’s foundation, basic calculations, five most commonly used functions, and the order of operations. Other topics also covered in class include finding and replacing text; formatting numbers; copying formulas with relative and absolute cell reference; defining a name for a cell or for a range of cells; inserting rows, columns, and sheets; copying and moving worksheets; and hiding and un-hiding rows and columns. Learn to use the unique, time-saving Excel autofill feature—the fill handle—to copy data, formulas, formats, and fill series. Various formatting techniques are introduced. By the end of this hands-on course, you will be able to create basic professional workbooks.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9907 Excel: Beyond the Basics (0 Credits)
If you want to go beyond Excel basics, then take this hands-on course so you can do more with this powerful application. Learn to create and format column and pie charts, to calculate across worksheets, to manage and track contents, and to manipulate flat file databases. Forecast with what-if analysis tools and use sparklines, automatic subtotals, and outlines. By the end of the course, you’ll be able to create time-saving templates with confidence and ease.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9908 PowerPoint: Create Winning Presentations (0 Credits)
A business presentation that conveys your ideas effectively can help you to make your pitch and to close the deal. Learn to create winning presentations in Microsoft PowerPoint by embedding audio and video files into your presentation and editing them. Explore how to reflect your organization’s brand in the look and feel of your presentation, and maximize time-saving features like master slides and custom themes. Create dynamic presentations using custom animations; superior picture, text, shapes, and background enhancement tools; action settings; and custom shows. Create a video of your presentation to broadcast to an audience in other locations that automatically makes all of your animation, narration, and timings available to them.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9912 Designing Crystal Reports (2.5 Credits)
<p>This two-part course explores the introductory and advanced concepts of SAP Crystal Reports. Through lectures and hands-on training, learn how to design basic Crystal Reports; to create groups, sections, and charts; and to use formulas, text objects, and simple parameters. Basic formatting techniques are emphasized to produce professional-quality reports with the desired layout. Selection formulas are introduced to produce reports with choice data. Be able to set up ODBC connections and to use different data sources. The course includes detailed coverage of advanced formulas; conditional formulas; Top-N Reports; and conditional formatting of text objects, headers, and sections. Special techniques used to produce summary reports with advanced selection formulas, grouping options, charting, crosstabs, and subreports are introduced.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9913 iOS App Development Intensive: From Concept to App Store (9.5 Credits)
This is the most comprehensive iOS app Apple course offered, covering the full development life cycle from the cultivation of initial concept all the way through to submission to the App store. Apple is continuously improving iOS in order to provide an amazing experience to customers. As a result, Apple routinely updates its iOS SDK and development tools. In this intensive course, learn iOS development using the latest iOS SDK and development tools—iOS, Swift, and Xcode—and experience hands-on programming based on real-world app development. Gain familiarity with iOS by developing native and adaptive iOS apps in Swift. Learn all the fundamentals of object-oriented programming with Swift, such as classes, properties, functions, collection types, and optionals, as well as important design patterns and best practices for developing mobile applications. Also, gain hands-on experience with advanced development techniques, including debugging and optimization, by building your own iOS application. This course then covers more complex user interfaces as you experience working with web services, including authentication and storage models. It also addresses new and evolving specialized APIs. Gain an overall understanding of the new opportunities and the reach of app content and functionality through the various kits now available, all leading to an original app ready for App Store submission.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9960 Regular Expressions (1 Credit)
Regular expressions are used for data validation and searching in languages and programming environments, including Unix, Java, JavaScript, Perl, Ruby, Python, and PHP. This course covers the full regular expression notation, including anchors, wildcards, alternation and repetition, and tagged regular expressions. Students write patterns to recognize domain names, e-mail addresses, Web URLs, and more--and apply these patterns to user input, database records, and lines of text read from input files.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9970 Ruby on Rails (3.5 Credits)
<p class="MsoNormal" style="font-size: 10pt; margin-top: 0px; margin-right: 0px; margin-bottom: 0px; margin-left: 0px; color: rgb(34, 34, 34); font-family: arial, sans-serif; ">Become acquainted with the Ruby language and its application framework, Ruby on Rails. Topics include objects and inheritance, exception handling, and reflection and introspection. Discover why everyone, from start-ups to huge e-commerce operations, is excited about object-oriented scripting in Ruby. Build web applications using Ruby on Rails, a classic Model-View-Controller (MVC) framework. By the end of the course, learn how to construct sophisticated, real-world, interactive, data-driven applications as front ends for PostgreSQL and MySQL databases.</p>

Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9980 Intermediate Python Programming (3.5 Credits)
For programmers with a solid grounding in any language, as well as those who have taken Introduction to Python Programming, this course explores how to get the most out of this powerful, flexible language. Use the most widely accepted algorithms, coding techniques, and libraries to solve common problems in the field. Perform statistical analysis and visualization using pandas, NumPy, SciPy, and matplotlib. Write online applications using up-to-date web technologies, such as Flask, JQuery, and database access. Use industry standard tools and techniques for working within a development team, such as GitPython for versioning and code review, Pydoc, Pylint, and more. Benchmark, profile, optimize, and test your code; code for memory efficiency; and learn about Python’s C implementation. The emphasis of this course is on preparing for a position as a junior developer, as well as acquiring a thorough familiarity with the Python standard library.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9982 iOS App Development (1 Credit)
The iPhone and iPad run on iOS, Apple’s operating system for mobile devices. This introductory course offers a hands-on approach to the basic skills required to create simple iOS native applications. The course includes introductory topics on the Swift programming language for iOS app development. Though prior knowledge of Swift is not required to take this course, some programming experience is desired. Learn to build simple iOS applications via a series of guided exercises. The course will demonstrate how to use the iOS software development kit (SDK) to develop iPhone and iPad applications and will discuss Xcode, Cocoa Touch Frameworks, and the Swift programming language. Learn key features of the Swift programming language, including how to read and write Swift code and how to customize iOS user interfaces using Xcode Libraries and Inspectors as you build scenes within storyboard using Interface Builder, integrate iOS frameworks, and understand the MVC architecture. The App Store submission process, guidelines, and practices also will be discussed. By the end of the course, have the skills necessary to develop simple native applications. The course offers short programming projects but does not cover all device features.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9983 Data Science with R: Data Analysis (7.5 Credits)
<p>This two-week intensive is designed to provide a comprehensive introduction to the open-source software package R while quickly getting you up to speed in programming and analyzing data. Why use R? When it comes to power and flexibility for generating statistical models and visualizations, no tool is more advanced than R. Whether you’re trying to scale up your data analysis with more cutting-edge techniques, or you have a simpler modeling challenge but the size and complexity of data structures have you hitting a wall, R is one tool that will continue to pay dividends in meeting these challenges. This course also demonstrates how you can get work done easily with the RStudio IDE.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9984 SQL Server Tabular Modeling and Power Pivot (3.5 Credits)
Tabular models are in-memory databases that develop models using imported data from underlying data sources, while designing objects that organize, enhance, and secure the data. Learn to use compression algorithms and multithreaded query processing to deliver fast access to tabular model objects and data through reporting client applications in Microsoft Excel. This course combines lectures with hands-on training in a lab setting, where every participant has a dedicated computer with its own hard drive. Build upon what you learn week to week in lab exercises, beginning with the basics of tabular modeling, then connecting to various data sources, and finally progressing to Power Pivot for Excel. After creating a tabular BI semantic model, move on to advanced features, such as parent-child relationships, partitions, perspectives, and DAX functions, ending with self-service BI modeling.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9985 Cyber Security: Essentials (2.5 Credits)
This lab-based course introduces the core concepts of cybersecurity: risk, governance, access control, incident response, auditing and monitoring, and recovery. Learn how policies, standards, procedures, and guidelines are established to ensure confidentiality, integrity, and availability. Gain an understanding of countermeasures and prevention techniques for managing malicious threats. Also, discover in depth how security is implemented within multiple technology environments, such as client/server, network devices, virtualization, and the Internet. Typical lab topics include the OSI model and TCP/IP suite; mobile and cloud security; malware analysis; basics of the Internet, protocols, routing, and applications; basic packet analysis; and vulnerabilities, threats, and risk concepts.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9986 Advanced Python Programming (3.5 Credits)
This course—for students who have successfully completed Introduction to Python Programming/INFO1-CE9990 or the equivalent, and for programmers with a solid command of another programming language—is designed to prepare you for a position as a junior developer. After a whirlwind review of language fundamentals, delve deeply into Python’s powerful advanced features, such as user-defined classes, object-oriented design, decorators, and generators. Learn to employ the most widely used algorithms and libraries to solve common problems in the field. Gain a working familiarity with statistical analysis and visualization using Pandas, NumPy, and matplotlib. Query and parse HTML, XML, and JSON data using urllib2 and Beautiful Soup, and perform advanced text processing using regular expressions. Learn to apply industry-standard tools and techniques for working within a development team, such as Git for versioning, code review, pydoc, pylint, and more. Benchmark, profile, optimize, and test your programs, and code for memory efficiency. The course concludes with a discussion of common interview questions and pathways for gaining experience and eventually securing a position in the field.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9988 Ruby on Rails Full Stack I (3.5 Credits)
<p>With the advent of capable open-source technologies such as Ruby on Rails, application development has changed significantly in recent years. These tools have been embraced, especially by start-ups, and are finding increasing support in corporate IT groups. As a result, there is rising demand for programmers who use such tools, with Ruby on Rails at the forefront. Gain an introduction to web development using Ruby on Rails, including Ruby (language) and Rails (framework); HTML, JavaScript, and CSS; database systems, such as SQL/relational databases; software engineering practices, such as object-oriented development; and the application development life cycle and associated tools. To solidify and demonstrate the acquired knowledge, you build your own Ruby on Rails applications during the course.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9989 Ruby on Rails Full Stack II (3.5 Credits)
<p>As a programmer, deepen your knowledge of Ruby on Rails and become more effective at developing Ruby on Rails applications. Application development has changed significantly in recent years with the advent of capable open-source technologies. These tools have been embraced, especially by start-ups, and are finding increasing support in corporate IT groups. There is rising demand for programmers who use such tools, with Ruby on Rails at the forefront. With the increased demand come increased expectations of developers’ capabilities. Acquire the knowledge and tools to develop a professional Ruby on Rails application, from concept through deployment. Gain expertise in Ruby (language) and Rails (framework); application deployment and hosting; application performance and scalability; and advanced HTML, JavaScript, and CSS. Learn how to utilize database systems, to install and incorporate third-party tools, and to create gems. To solidify and demonstrate the acquired knowledge, you build your own Ruby on Rails applications.</p>
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

INFO1-CE 9990 Introduction to Python Programming (3.5 Credits)
Master the foundations of software development with one of the
fastest growing and most in-demand programming languages in the
world—Python. Write powerful applications that solve the most
common programming tasks that are encountered by engineers in
the field. Learn fundamentals that can be applied to further study in
any language. This course covers objects and object types, functions
and methods, looping and conditionals, text processing, sorting, and
multidimensional structures. Gain the know-how to set up a development
environment and to debug and troubleshoot your programs. No prior
knowledge is assumed—this course is designed specifically for
beginners who are aiming to get started in software development.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes

**INFO1-CE 9999 Information Security (InfoSec) Essentials Intensive (6
Credits)**
This intensive course provides invaluable tools and essential guidelines
for dealing with information security. Learn how to prevent attacks and
to detect adversaries with actionable techniques that you can apply
directly back at the office. The instructors—a team of in-the-field
IT security experts—help you to develop a system of effective
and meaningful measures that empowers you to win the battle against
the wide range of cyber adversaries seeking to harm your environment,
whether desktop, server, infrastructure, mobile, cloud, or IoT. This ultimate
hands-on, how-to course for security professionals is packed with helpful
hacking tools, the most up-to-date open-source and commercial security
solutions, and demonstrations of the latest Internet exploits. Learn how
to specify, develop, use, and maintain information security measures and
systems while analyzing and assessing the risks to private and corporate
IT infrastructure.
Grading: SPS Non-Credit Graded
Repeatable for additional credit: Yes