Computer Science (CSCI)

Courses

CSCI 101. Introduction to Computers. 3 Credits.
An overview of the fundamental concepts and applications of computer science. Topics include data storage, hardware, operating systems, and programming principles. F,S,SS.

CSCI 110. Introduction to Computer Science. 3 Credits.
This is an introductory course for prospective computer science majors as well as offering an introduction to computing for non-computer science majors. Students will receive a broad introduction to the discipline of computer science without the immersion into a programming language. Students will learn to write interactive Web-based programs. No previous computing or programming experience is assumed. F,S,SS.

CSCI 130. Introduction to Scientific Programming. 4 Credits.
An introduction to scientific computing, with problem solving, algorithm development, and structured programming in a high-level language with an engineering and mathematical focus. Emphasis on learning how to design, code, debug, and document programs, using techniques of good programming style. Includes laboratory. F,S,SS.

CSCI 160. Computer Science I. 4 Credits.
An introduction to computer science, with problem solving, algorithm development, and structured programming in a high-level language. Emphasis on learning how to design, code, debug, and document programs, using techniques of good programming style. Includes laboratory. F,S,SS.

CSCI 161. Computer Science II. 4 Credits.
A broadening of foundations for computer science with advanced concepts in computer programming. Includes an introduction to data structures, analysis of algorithms, and the theory of computation. Includes laboratory. Prerequisite: CSCI 160 with a grade of C or better, and MATH 103 or MATH 107; concurrent enrollment in MATH 208 is recommended. F,S.

CSCI 166. Tools and Techniques of Computing Practice. 3 Credits.
An introduction to commonly-used tools for creating, debugging, testing, and running computer programs. The course provides an overview of a variety of tools for scripting, file management, user and group management, compilers, interpreters, package and library management, version control, and collaborative tools including cloud-based document sharing. Virtual Machines (VM) will also be introduced and students will practice creating VM images and running server and development systems within them. S.

CSCI 199. Topics in Computing. 1-3 Credits.
Selected introductory-level topics in computing for students of all majors. Course may be repeated to 6 credits with different topics. Repeatable to 6.00 credits. On demand.

CSCI 242. Algorithms and Data Structures. 3 Credits.
This course introduces fundamental concepts in data structures and algorithms, and their roles in efficient problem solving in computer science. Topics include basic data structures such as priority queue, heap, hash table, search trees, and graphs; introduction to classic algorithms such as searching, sorting, and selection; theoretical modeling techniques including time and space complexity analysis, classification, upper bounds, lower bounds, exact bounds, and divide-and-conquer approaches. Prerequisite: CSCI 161 with a C or better and MATH 208. F,S.

CSCI 250. Assembly Language. 3 Credits.
Introduction to machine language and assembly language programming. Concepts of assembly language and the machine representation of instructions and data of a modern digital computer are presented. Requires students to practice assembly language programming techniques on ARM and Intel x86 architectures. Prerequisite: CSCI 160. F.

CSCI 260. Advanced Programming Languages. 3 Credits.
Programming in a specific high-level language for students who are already proficient at programming in another high-level language. Course may be repeated for different languages. A student may not receive credit for both CSCI 260 and a 100-level programming course in the same language. Prerequisite: CSCI 161 or consent of instructor. Repeatable. F.

CSCI 265. Introduction to Programming Languages. 3 Credits.
This course will provide an overview of the differences and similarities between several common programming languages. A brief introduction to the history and design goals of each language will be presented. Basic programming concepts, such as data types and expressions, input and output, branching, iteration, and functional decomposition will be addressed concurrently in several programming languages, emphasizing the different approaches used to implement basic programming concepts. The course will compare and contrast interpreted and compiled languages. Prerequisite: CSCI 161 with a grade of C or better. F.

CSCI 270. Programming for Data Science. 3 Credits.
The Programming for Data Science course provides students with an introduction to the main tools and ideas in the data scientist's toolbox. The course gives an overview of the data, questions, techniques and tools that data analysts and data scientists work with. This course provides a conceptual introduction to the ideas behind turning data into actionable knowledge and tools that will be used to analyze this data. The course will cover collecting, cleaning and sharing data. Additionally, this course will cover how to communicate results through visualizations. Prerequisite: CSCI 161 with a grade of C or better. S.

CSCI 280. Object Oriented Programming. 3 Credits.
An introduction to the concept and execution of Object-Oriented programming, using an appropriate language. Includes an introduction to object creations, classes, inheritance, interfaces, exceptions, overloading, and more. Prerequisite: CSCI 265 with a grade of C or better. S.

CSCI 289. Social Implications of Computer Technology. 3 Credits.
An introduction to the effects of computer technology on society and individuals and to ethical problems faced by computer professionals. Topics covered include privacy, the nature of work, centralization versus decentralization and the need for human factors analysis in the development of a new computer system. F.

CSCI 290. Cyber-Security and Information Assurance. 3 Credits.
An introduction covering the breadth of essential Cyber-Security and Information Assurance topics. Students will hone skills in observation, deduction, analysis, logical reasoning and critical thinking as they gain experience with non-technical and lightly technical aspects of Cyber-Security and Information Assurance through practical and real-world examples. S.

CSCI 297. Experiential Learning. 1-3 Credits.
A practical experience in which students offer their proficiency in computing as a resource or service for others. The experience may involve software development, software consulting and assistance, system administration, or instruction. Prerequisite: CSCI 161. Repeatable to 6.00 credits. S/U grading. F.

CSCI 299. Topics in Computer Science. 1-3 Credits.
Selected intermediate-level topics in computer science for students with some experience or previous courework in computing. Course may be repeated up to 6 credits with different topics. Repeatable to 6.00 credits. On demand.

CSCI 327. Data Communications. 3 Credits.
This course introduces the fundamentals of data communication networks, their architecture, principles of operations, performance, and an overview of network security. This course aims to help students to establish an integrated picture of the modern data communication networks. Topics on network architecture include the traditional 7-layer OSI reference model and the Internet Protocol Suite (TCP/IP) in modern Internet. Topics on layer-wise operations cover the technologies and protocols deployed at: the physical layer; the link layer; the network layer; the transport layer; and the application layer. Topics on network security make an overview on the security issues and the protections in networks. Prerequisite: CSCI 161 with a grade of C or better or EE 314 with a grade of C or better, MATH 166 and MATH 208. F.

CSCI 330. Systems Programming. 3 Credits.
Focus on low level programming. Topics covered include pointers, memory management, dynamic memory, code optimization, compiling and linking, and library development. Prerequisite: CSCI 242 with a grade of C or better. F.

CSCI 346. Introduction to Data Visualization. 3 Credits.
This course covers the principles and application of data visualization techniques. The course topics include the appropriate design of visual representations of data sources, graphic design, image models, layout, and pattern illumination. The course will also cover methods of obtaining data from measurement, simulation, and public sources. Prerequisite: CSCI 363 and CSCI 270, each with a grade of C or above, and MATH 421. S.

CSCI 363. User Interface Design. 3 Credits.
A study of the design and implementation of user interfaces for software applications. Students will apply principles of interface design to build applications using a toolkit of graphical interface components. Required coursework includes a team project. Prerequisite: CSCI 265 with a grade of C or better. F.

CSCI 364. Concurrent and Distributed Programming. 3 Credits.
This course focuses on concurrent object oriented programming and modern distributed/parallel programming models (such as OpenMP, CUDA, OpenCL and Actors). Students will utilize various high performance distributed computing technology. Topics covered will include shared and distributed memory systems, sockets, threads, and message passing. Prerequisite: CSCI 330 with a grade of C or better. S.

CSCI 365. Organization of Programming Languages. 3 Credits.
Compile and run time requirements of programming languages, parameter passing and value binding techniques. Vector and stack processing. Prerequisite: CSCI 242 and CSCI 265, each with a grade of C or better. F.

CSCI 370. Computer Architecture. 4 Credits.
Computer structure, machine presentation of numbers and characters, instruction codes and assembly systems. Introduction to hardware methodologies and software extensions to hardware in computers. Some topics on hardware and software selection will be discussed. Prerequisite: CSCI 265 with a grade of C or better, EE 201, and EE 201L. S.

CSCI 371. Exploit Analysis and Development. 3 Credits.
Provides fundamental knowledge of Malware analysis. Topics include an introduction to both static and dynamic techniques for analyzing suspect binaries. Students will be exposed to advanced malware concepts including malware detection as well as the utilization of industry standard tools to analyze, debug, and reverse engineer suspect binaries. Prerequisite: CSCI 161 and CSCI 250. F.

CSCI 372. Introduction to Secure Software Engineering. 3 Credits.
This course provides fundamental knowledge of secure software development methodologies and applied security topics related to compiled programs. In-depth coverage of source code auditing, fuzzing, introduction to reverse engineering, and exploitation will be emphasized. Prerequisite: CSCI 161. S.

CSCI 384. Artificial Intelligence. 3 Credits.
A study of algorithms and application of AI. The topics include agent theory, problem-solving with the search, constraint satisfaction problem, game, knowledge-based system, reasoning and machine learning which are widely applicable to design of an intelligent system, data science and mining, information retrieval, pathfinding and classification, etc. Prerequisite: CSCI 242. F.

CSCI 389. Computer and Network Security. 3 Credits.
This course introduces techniques for achieving security in multi-user standalone computer systems and distributed computer systems. Coverage includes host-based security topics (cryptography, intrusion detection, secure operating systems), network-based security topics (authentication and identification schemes, denial-of-service attacks, worms, firewalls), risk assessment and security policies. Prerequisite: CSCI 161. S.

CSCI 399. Topics in Computer Science. 1-3 Credits.
Selected topics in Computer Science which allow students to study specialized subjects. Repeatable to 12 credits. Prerequisite: Consent of instructor. Repeatable to 12.00 credits. On demand.

CSCI 427. Cloud Computing. 3 Credits.
This is the undergraduate-level course on cloud computing models, techniques, and architectures. Cloud computing is an important computing model which enables information, software, and other shared resources to be provisioned over the network as services in an on-demand manner. This course introduces the current practices in cloud computing. Topics may include distributed computing models and technologies, Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS), Software-as-a-Service (SaaS), virtualization, performance and systems issues, capacity planning, disaster recovery, Cloud OS, federated clouds, challenges in implementing clouds, data centers, hypervisor CPU and memory management, and cloud hosted applications. S, even years.

CSCI 435. Formal Languages and Automata. 3 Credits.
A study of automata, grammars, and Turing machines as specifications for formal languages. Computation is defined in terms of deciding properties of formal languages, and the fundamental results of computability and decidability are derived. Prerequisite: CSCI 365 with a grade of C or better. F.

CSCI 443. Introduction to Machine Learning. 3 Credits.
An introduction to the theory and implementation of fundamental machine learning algorithms. Topics include representation, generalization, model selection, linear/additive models, support vector machines, learning problems, over-fitting, clustering, classification, neural networks, and regression. Prerequisite: CSCI 384 with a grade of C or above. F.

CSCI 445. Mathematical Modeling and Simulation. 3 Credits.
A study of various mathematical applications for digital computers, including the modeling, simulation and interpretation of the solution of complex systems. Prerequisite: CSCI 242, MATH 165, and MATH 321. F, even years.

CSCI 446. Computer Graphics I. 3 Credits.
Introduction to computer graphics. Topics include raster scan graphics, 2D and 3D representations, affine transformations, light and color, texture mapping, image processing, ray-tracing, and computer animation. Team-based weekly homework develops a 4 minute computer animation. Prerequisite: CSCI 242, CSCI 363, and MATH 166. F, odd years.

CSCI 448. Computer Graphics II. 3 Credits.
A continuation of CSCI 446, topics covered include: history of games, game taxonomies, game design theory, computer game development, physics engines and AI engines. Prerequisite: CSCI 446. S, even years.

CSCI 451. Operating Systems I. 3 Credits.
Introduction to operating system theory and fundamentals. Topics include: CPU scheduling, memory management, file systems, interprocess communication facilities, security. Weekly homework assignments focus on process synchronization using fork/exe, threads, mutexes, pipes, semaphores, and shared memory. Prerequisite: CSCI 330 with a grade of C or better; recommended prerequisites CSCI 370 and CSCI 455. F.

CSCI 452. Operating Systems II. 3 Credits.
A study of the implementation of operating systems and parts of operating systems, and development of system software. Prerequisite: CSCI 451. On demand.

CSCI 455. Database Management Systems. 3 Credits.
Database concepts, database design (ER, UML), database programming languages (SQL), NoSQL Database, Database Concurrency and recovery techniques, and Database security. Prerequisite: CSCI 242 with a grade of C or better. S, even years.

CSCI 456. Introduction to Data Mining. 3 Credits.
Data Mining is the collection of methods used to identify patterns in data. This course is comprised of a mix of theoretical underpinnings and practical applications based on the concepts of: data pre-processing, data attributes, classification, clustering, association, anomaly detection, dimensionality reduction, and mining of networks. Prerequisite: CSCI 384 with a grade of C or above and MATH 422. F.

CSCI 457. Electronic Commerce Systems. 3 Credits.
A study of the system architecture, content design and implementation, and data analysis, management, and processing of electronic commerce. Topics include Internet basics, business issues, data management and processing, static and dynamic web programming, e-commerce content design and construction, and databases and host languages with embedded SQL. Prerequisite: CSCI 260 with course topic of Dot Net. S, odd years.

CSCI 463. Software Engineering. 3 Credits.
This course teaches software engineering principles and techniques used in the specification, design, implementation, verification and maintenance of large-scale software systems. Major software development methodologies are reviewed. As development team members, students participate in a group project involving the production or revision of a complex software product. Prerequisite: CSCI 242 and CSCI 363. S.

CSCI 465. Principles of Translation. 3 Credits.
Techniques for automatic translation of high-level languages to executable code. Prerequisite: CSCI 365 and CSCI 370. F, odd years.

CSCI 471. Fundamentals of Penetration Testing. 3 Credits.
Provides theoretical and practical aspects of Network Penetration Testing. The course includes in-depth details and hands on labs for each of the five distinct phases of an ethical hack including reconnaissance, scanning and vulnerability assessment, gaining access and exploitation, maintaining access, and covering tracks. An applied approach with a focus on current tools and methodologies will be stressed. Prerequisite: CSCI 371 and CSCI 389. F.

CSCI 475. Cyber Physical Systems & Component Security. 3 Credits.
This course provides an introduction to security issues relating to various cyber-physical systems including industrial control systems and those considered critical infrastructure systems. Topics include: Industrial cyber security history and threats, hacking industrial control systems, securing industrial control systems, advanced cyber-physical systems security concepts, and privacy in cyber-physical systems and hardware components. Prerequisite: CSCI 389. S.

CSCI 482. Senior Project for Data Science I. 3 Credits.
The first course in a two-semester sequence in which data science majors undertake a culminating project. The course requires written documents, oral presentations, and peer review for the initial phases of the project, including a project proposal, a review of previous work, and a complete design or research plan. Prerequisite: CSCI 384, CSCI 445, and CSCI 455, each with a grade of C or above, and completion of two semesters in an approved application area. F.

CSCI 483. Senior Project for Data Science II. 3 Credits.
The second course in a two-semester sequence in which data science majors undertake a culminating project. The course requires written documents, oral presentations/demonstrations for both a preliminary and a final review of the completed project. Prerequisite: CSCI 482. S.

CSCI 491. Seminars in Computer Science. 1 Credit.
A course for advanced students. Repeatable to 3 credits. Prerequisite: Consent of instructor. Repeatable to 3.00 credits. S/U grading. F,S.

CSCI 492. Senior Project I. 3 Credits.
The first course in a two-semester sequence in which computer science majors undertake a culminating research or software development project. The course requires written documents, oral presentations, and peer review for the initial phases of the project, including a project proposal, a review of previous work, and a complete software design or research plan. Prerequisite: CSCI 370, CSCI 455, and CSCI 463, each with a grade of C or better. F.

CSCI 493. Senior Project II. 3 Credits.
The second course in a two-semester sequence in which computer science majors undertake a culminating research or software development project. The course requires written documents and oral presentations/demonstrations for both a preliminary and a final review of the completed project. Prerequisite: CSCI 492. S.

CSCI 494. Special Projects in Computer Science. 1-3 Credits.
A course for advanced students. 1-3 credits varying with the choice of project. May be repeated (6 credits maximum). Prerequisite: Consent of instructor. Repeatable to 6.00 credits. F,S.

CSCI 513. Advanced Database Systems. 3 Credits.
An advanced study of database system architecture, implementation, and applications, with emphasis on the object-oriented, object-relational, and embedded data models, and new database advancements including research and practical issues in database systems and data science. Prerequisite: CSCI 455.

CSCI 515. Data Engineering and Management. 3 Credits.
This course studies theoretical and applied research issues related to data engineering, management, and science. Topics will reflect state-of-the-art and state-of-the-practice activities in the field. The course focuses on well-defined theoretical results and empirical studies that have potential impact on data acquisition, analysis, indexing, management, mining, retrieval, and storage. Prerequisite: CSCI 513. S, even years.

CSCI 522. Theoretical Foundations of Computer Science. 3 Credits.
A selection of topics from theoretical computer science, possibly including formal languages, automata, other models of computation, and the theory of computability, decidability, and complexity. Prerequisite: CSCI 492.

CSCI 532. High Performance Computing and Paradigms. 3 Credits.
A study of current topics in threads, inter-process communication and synchronization, master-slave and peer designs for concurrency, client-server architectures, cluster/grid computing and massively parallel computer architectures. A considerable amount of programming will be done in one or more of these environments. F, odd years.

CSCI 537. Graduate Cooperative Education. 1-2 Credits.
A practical work experience in advanced computing, approved by the student's advisor. Requirements include a written report and an oral presentation upon completion of the work experience. Prerequisite: A minimum of 9 graduate credits in computer science and consent of the Department. S/U grading. On demand.

CSCI 543. Machine Learning. 3 Credits.
An introductory course in machine learning for data science. Topics include the learning algorithms of a Bayesian network, neural network, parametric/non-parametric methods, kernel machine, support-vector machine, etc. for regression, classification, clustering, dimensionality reduction, etc. Prerequisite: CSCI 365 or CSCI 384. F, odd years.

CSCI 544. Soft Computing: Computational Intelligence I. 3 Credits.
A study of the computational intelligence with the Soft Computing paradigm. The topics include the theory and computational methods of Fuzzy Logic and system, Neural Network, Evolutionary Algorithm and other topics, whose paradigms and hybrid techniques are widely applied to data science and mining, pattern classification and clustering, information retrieval, control engineering, decision making, and optimization problem, etc. S, even years.

CSCI 545. Discrete Dynamical Systems Modeling and Simulation. 3 Credits.
A study of various modeling methods applicable to large scale distributed and parallel systems. Topics include cellular automata, grid models, and chaos theory. Prerequisite: CSCI 445.

CSCI 546. Advanced Computer Graphics. 3 Credits.
An introduction to advanced topics in computer graphics. Included are light and color theory, image processing and compression, spatial-frequency transformations, raytracing, sampling theory, and topics of current interest. Prerequisite: CSCI 466 and MATH 265. S, even years.

CSCI 547. Scientific Visualization. 3 Credits.
A study of visualization techniques useful in the analysis of engineering and scientific data. Topics include the study of physical models; methods of computational science; two ¬and three-dimensional data types; visual representation schemes for scalar, vector, and sensor data; isosurface and volume visualization methods. The course will also cover image processing and pattern recognition, with topics, including Fourier transforms, fractal geometry, and neural networks. Prerequisite: CSCI 466. F, even years.

CSCI 551. Security for Cloud Computing. 3 Credits.
Cloud computing scheme aims to provide users with a shared computing infrastructure. The privacy and security concerns in cloud computing are different from the security concerns present in a dedicated data center. This course focuses on these security concerns and countermeasures for a cloud environment. This course provides an overview of cloud computing and virtualization, the critical technology underpinning cloud computing, and the major threats to the operations of cloud computing. Topics may include access control, identity management, denial of service, account and service hijacking, secure APIs, malware, forensics, regulatory compliance, trustworthy computing, and secure computing. Prerequisite: CSCI 370, CSCI 451; and one of the following: CSCI 327, CSCI 427 or CSCI 555. S, odd years.

CSCI 554. Applications in AI/Computational Intelligence. 3 Credits.
A continuous study of the computational paradigms of Soft Computing in the field of Computational Intelligence. The topics include the applications of the various soft computing techniques in Computational Intelligence as well as more evolutionary algorithms in Swarm Intelligence. Prerequisite: CSCI 544. F, even years.

CSCI 555. Computer Networks. 3 Credits.
A study of new and developing network architectures and communication protocols. Broadband technologies will be considered including BISDN, ATM networks, and other high-speed networks. Prerequisite: CSCI 327.

CSCI 557. Computer Forensics. 3 Credits.
An overview of the techniques to detect and assess the level of penetration of a security breach. Topics include forensic science in the cyber domain, laws and ethics of forensic activities, digital evidence, methods of forensic investigation, and forensic procedures in a variety of operating systems and network configurations. Prerequisite: EE 602, or approval of the department, and admission to the MS program in Cyber Security. S.

CSCI 562. Formal Specification Methods. 3 Credits.
A foundational course that introduces several formal specification techniques for construction and analysis of software artifacts. Included are rigorous program development, abstract specifications of modules, and modeling of concurrent and distributed software. Prerequisite: CSCI 435 and CSCI 463.

CSCI 565. Advanced Software Engineering. 3 Credits.
A study of current topics related to the design and implementation of large software systems. Course content may vary with instructor and student interest. Potential topics include: software testing and validation, programming environments, program metrics and complexity, design methodologies, software reliability and fault tolerance. Prerequisite: CSCI 463.

CSCI 567. Secure Software Engineering. 3 Credits.
This course covers software engineering principles and techniques used in the development life-cycle of cyber secure systems. Topics covered include, the characteristics of secure software, the role of security in the development life-cycle, designing secure software, and best-practices in secure programming and testing. Study includes review of industrial standards for secure software system engineering. Prerequisite: EE 601, EE 602, and admission to the MS Cyber Security Program. SS.

CSCI 573. Advanced Penetration Testing. 3 Credits.
Provides an advanced theoretical presentation of Network Penetration Testing, mobile application testing, container security testing, scripting and automation, password cracking, web-application attacks, and advanced exploit development. F.

CSCI 575. Analysis of Algorithms. 3 Credits.
The time and space complexity of classical computer algorithms is analyzed. NP hard and NP complete problems are characterized and illustrated. Prerequisite: CSCI 435.

CSCI 582. Software Architecture. 3 Credits.
Software architecture is a fairly young sub-discipline within software engineering; it is aimed at shifting the designer's focus from algorithmic control structure to interactive interrelations among components. This course, among other things, will expose students to the concepts of design, design of design, principles and state-of-the-art methods and techniques in software architectures, which include the discussion of architectural patterns (or styles), domain specific architectural design, formal architectural description languages (ADLs), software connectors (simple and composite), architectural analysis, and middleware and component-based software development. Prerequisite: CSCI 463 and CSCI 435.

CSCI 585. Vulnerability Assessment. 3 Credits.
The ability to assess potential threats is a critical prerequisite to creating a secure system. This course will cover the following topics: cyber threats, security requirements, data collection and analysis, and dissemination of results. Prerequisite: EE 602, or permission of the department, and admission to the MS program in Cyber Security. S.

CSCI 587. Ethical Hacking. 3 Credits.
Introduction to hacking techniques with an ethical framework. Topics include planning and scoping of penetration tests, rules of engagement, reconnaissance, port scanning, OS finger printing and version scanning, vulnerability scans, exploitation, post-exploitation strategies and pivoting, and password attacks. Legal and ethical frameworks will be introduced and guidance on appropriate application of hacking techniques will be emphasized. Prerequisite: EE 602 or permission of the department, and admission to the MS program in Cyber Security. S.

CSCI 588. Data Structure, Algorithms, and Software Design in C++. 3 Credits.
This course is intended for the Scientific Computing Ph.D students. The course attempts to introduce C++ via laboratory sessions. More specifically, this course tries to incorporate Data Structures and Algorithms in C++ as well as Software Design in C++. During these sessions the students are introduced to C++ concepts using a series of examples. Having examined the examples given in the session and having understood the concepts covered, the student should be able to complete open-ended problems. This course assumes no prior knowledge of C++.

CSCI 589. Application Layer Security. 3 Credits.
The ability to assess potential threats is a critical prerequisite to creating a secure system. This course will cover the following topics: cyber threats, security requirements, data collection and analysis, and dissemination of results. Prerequisite: EE 601 and EE 602 or approval of department, and admission to the MS program in Cyber Security. SS.

CSCI 599. Research. 1-6 Credits.
This course is intended for Ph.D students to obtain credit for their research efforts. Repeatable to 21 credits. Repeatable to 21.00 credits. S/U grading.

CSCI 998. Thesis. 1-9 Credits.
Thesis. Repeatable to 9.00 credits.

CSCI 999. Dissertation Research. 1-12 Credits.
This course is intended for doctoral students to obtain credit for all research that leads to the dissertation. Repeatable. F,S,SS.