CAST U398. Special Topics (3) Emerging issues in child advocacy. May be repeated for credit when topics vary. Prerequisites: SOCY U101 OR PSYC U101 OR CRJU U101; or consent of instructor.

CAST U399. Independent Study (1-6) An individualized program of study planned in conjunction with a Child Advocacy Studies faculty member. Prerequisite: CAST U301 or consent of instructor.

CAST U401. Child Advocacy I: System Responses to Child Maltreatment (3) Child advocacy, and the response of child welfare and criminal justice professionals to child abuse and neglect. Identifying, investigating, and prosecuting child maltreatment are included. Supervised field experiences are required. Prerequisites: CAST U301; or consent of instructor.

CAST U402. Child Advocacy II: Prevention and Intervention Strategies (3) Intervention strategies, and multidisciplinary approaches to prevention, advocacy, and treatment of child maltreatment victims and survivors. Supervised field experiences are required. Prerequisites: CAST U301 or consent of instructor.

CAST U499. Child Advocacy Internship (3) Supervised work experience in a community agency working with victims and survivors of child maltreatment, and/or their families. Prerequisites: CAST U301, CAST U401, CAST U402, senior standing, and consent of instructor.

CHINESE (CHIN)

CHIN U101. Introductory Chinese I (3) Fundamentals of the Mandarin Chinese language and culture through speaking, listening, reading and writing.

CHIN U102. Introductory Chinese II (3) Fundamentals of the Mandarin Chinese language and culture through speaking, listening, reading and writing. Prerequisite: CHIN U101.

CHIN U201. Intermediate Chinese I (3) Review of the basic principles of the language with emphasis on reading, writing, and oral skills. Prerequisite: CHIN U102 or consent of instructor.

CHIN U202. Intermediate Chinese II (3) Review of the basic principles of the language with emphasis on writing, oral skills and the reading of literary and other authentic texts. Prerequisite: CHIN U201 or consent of instructor.

COMMUNICATION (COMM)

COMM U375. Communication Research Methods (3) Fundamentals of communications research methods and applications. Topics include survey research, observational and experimental studies, primary research data-gathering techniques, secondary research sources, data analysis, message, market, competitive and audience research measures. Prerequisites: JOUR U201 and SPCH U201, U201R; or consent of the instructor.

COMM U399. Internship or Independent Study in Mass Communication (1-3) Supervised professional experience of research outside of the classroom. For three internship credit hours, a student is to work 135 hours with an approved agency; for two credit hours, 90 hours, for one credit, 45 hours. For an internship or for an independent study, a contract must be signed by the student and by the instructor of record and other designated faculty and administrators. A student may repeat COMM U399 once with a difference in internship or independent study contract description for a total of no more than six hours of undergraduate credit. Prerequisites: JOUR U301, GPA 2.0 overall, 2.5 in major and consent of faculty supervisor.

COMM U490. Senior Seminar in Communications (3) Reading and research on selected topics in journalism, speech, and theatre designed to integrate knowledge, to explore ethical issues, and to gain experience in research and oral presentation. Prerequisite: COMM U375.

COMPUTER SCIENCE (CSCI)

CSCI U138. Introduction to Computer Technology (3) Introduction to graphical user interface, word processing, spreadsheet, database, Internet, cross-platform training, computer components and peripherals, input/output concepts, storage concepts, and computer buyer’s guide considerations.

CSCI U139. Visual BASIC Programming I (3) Visual user interface design, event-driven programming using controls, variables, constants, calculations, decision structures, loop control structures, arrays, creating menus. Prerequisites: CSCI U138 or MGMT U290 or consent of instructor. Not for Computer Science major credit.

CSCI U150. Introduction to Computer Science (3) Current application, security and systems software, hardware devices, social and ethical issues in computing and information technology, propositional logic, search engines, and computer programming concepts. Basic problem solving, logic, and computer programming are introduced through an active learning environment. Prerequisite or Corequisite: MATH U126 or consent of instructor.

CSCI U200. Computer Science I (3) Design, analysis and testing of algorithms and classes, including programming from an Object-Oriented perspective, simple data types, control structures, arrays, file I/O, and complexity analysis. Prerequisite: C or better in CSCIU150 or consent of instructor.

CSCI U210. Computer Organization (3) Computer organization, logic gates and expressions, circuits, CPU, memory, numbering systems, assembly language programming, instruction formats, and addressing modes. Prerequisite: C or better in CSCI U200 or consent of instructor.

CSCI U234. Visual BASIC Programming (3) Basic and advanced programming in the Visual BASIC language including visual object design, active-X objects, access to database objects, dynamic data exchange, and object linking and embedding. Prerequisite: C or better in CSCI U200 or consent of instructor.

CSCI U238. C++ Programming (3) Introduction to C++ as a second object-oriented language with concepts of OOP programming, data abstraction, polymorphism, inheritance, graphical user interface design with MFC, and memory management issues. Prerequisite: C or better in CSCI U200 or consent of instructor.
CSCI U239. Visual BASIC Programming II for Non-Majors (3) Modular programming, algorithmic design, string manipulation, array processing, sequential and random file processing in the BASIC language. Not for Computer Science major credit. Prerequisites: CSCI U139 or consent of instructor.

CSCI U300. Computer Science II (3) Advanced design, analysis and testing of algorithms and classes, including inheritance, polymorphism, UML, complexity analysis, recursion, search and sorting techniques, linked lists, stacks and queues. Prerequisite: C or better in CSCI U200 or consent of instructor. Corequisite: MATH U174 or consent of instructor.

CSCI U310. Introduction to Computer Architecture (3) Computer organization and architecture, basic processor design, hard wired and microprogrammed control, ALU, memory organization, data paths, pipelining, and interfacing and communications. Prerequisite: C or better in CSCI U210 or consent of instructor.

CSCI U311. Information Systems Hardware and Software (3) An introduction to computer and systems architecture and operating systems for system development personnel. Topics include CPU architecture, instructions sets, memory, registers, input/output, and operating system modules such as process management, memory and file management. Prerequisite: C or better in CSCI U200 or consent of instructor.

CSCI U314. Industrial Robotics (3) Fundamental concepts of industrial robotics including kinematics, 3D coordinate transformation, robot motion, robot control and sensing, robot programming, and computer vision. A review of new technologies for computer-integrated manufacturing, computer-aided design and computer-aided manufacturing, automated material handling, and flexible manufacturing systems is included. Students are required to write programs in order to demonstrate the laboratory projects. Prerequisites: C or better in CSCI U200 and MATH U127, or consent of instructor.

CSCI U315. Networking Technology (3) Basic concepts of computer networks, data telecommunication and distributed applications, including network topology, hardware, software, protocol, security, and the implications of network technologies on the deployment and implementation of networked systems. Not for CS or CIS major credit. Prerequisites: CSCI U300 or INFO U303 or consent of instructor.

CSCI U321. Computer Science III (3) Design, analysis and testing of advanced data structures, including priority queues, trees, binary search trees, tree traversals and balancing techniques, hashing, and graph theory. Prerequisites: C or better in both CSCI U300 and MATH U174 or consent of instructor.

CSCI U325. Fundamentals of Relational Database Management Systems (3) Basic architecture, structures, and query languages. Topics include design and implementation of RDBMS, relational data models, conceptual modeling, data independence, specification of data requirements, normalization, recovery and security. Not for CS or CIS major credit. Prerequisites: CSCI U300 or INFO U305 or consent of instructor.

CSCI U355. Digital Forensics (3) Methods, tools and techniques used to maximize efficiency in investigations that involve digital devices, including malicious code analysis, techniques of evaluation of the physical memory of a compromised machine, digital forensics tools, challenges of anti-forensics phenomena, and use and management of storage area network technology for evidence storage. Prerequisites: C or better in CSCI U300 and CSCI U311; or consent of instructor.

CSCI U370. Fundamentals of Bioinformatics (3) Computational methods, tools and techniques used to analyze, correlate, and extract information from biological, chemical and biomedical databases, including algorithms for sequence comparison, data mining for disease diagnosis, prediction of protein structure and function, and database management for biomedical data. Prerequisite: C or better in CSCI U321 or consent of instructor.

CSCI U399. Independent Study (1-9) As needed.

CSCI U412. Computer Networks I (3) Introduce the basic concepts needed to design, implement, and manage networks. Transmission media, topologies, local area and wide area network technologies, communication protocols, standards, network architectures, security, and network operating systems are examined. Prerequisite: C or better in CSCI U300, or consent of instructor.

CSCI U421. Design and Analysis of Algorithms (3) Concepts and fundamental strategies of algorithm design; the analysis of computing time and memory requirements; the theory of computational complexity (NP-hard and NP-complete); graph manipulation algorithms (connected components, minimum spanning trees, traveling salesman, cycles in a graph, and coloring of graphs); search algorithms (depth-first, breadth-first, best-first, and alpha-beta minimax); and computational algorithms (matrix multiplication, systems of linear equations, expression evaluation, and sorting). Prerequisite: C or better in CSCI U321 or consent of instructor.

CSCI U441. Experiential Learning in Computer Science (3) Experience in a business, educational, or non-profit computing environment. May not be used for major credit in any major in computer science. Prerequisite: approval of the instructor. Pass/fail credit.

CSCI U450. E-Business Web Application Development (3) A project-oriented course involving the complete application development of an online commercial Web site. Basic Web page design, including HTML and Style Sheets is covered, but the focus is on what happens behind the scenes of a business Web site, including client versus server-side information processing, CGI and Event-Driven programming, data transmission, storage and compression, risk analysis, and security issues. Prerequisite: C or better in CSCI U300 or consent of instructor.

CSCI U455. Computer Security (3) A survey of the fundamentals of information security, including risks and vulnerabilities, policy formation, controls and protection methods, database security, encryption, authentication technologies, host-based and network-based security issues, personnel and physical security issues, issues of law and privacy. Prerequisite: C or better in CSCI U300 or consent of instructor.

CSCI U456. Applied Cryptography (3) Symmetric-key cryptography, including Stream ciphers and Advanced Encryption Standard, password-based encryption, public-key cryptography, session-key encryption, digital signatures, hash functions, and message authentication codes. The hands-on laboratories provide extensive practice on file encryption using public-key
cryptography, password storage and authentication by message digest, utilization of key transport and key agreement to establish secure channel for socket programming and RSA encryption implementation. Prerequisite: C or better in CSCI U321 or consent of instructor.

CSCI U499. Directed Research (3) An investigation of technical papers from the instructor’s area of research. The composition and presentation of technical papers that either survey the existing literature or make an original contribution to the research area is required. Prerequisites: C or better in CSCI U300 or consent of instructor.

CSCI U509. Topics in Computer Science (3) Selected topics of special interest in computer science. May be repeated for credit. Prerequisite: consent of instructor.

CSCI U511. Operating Systems (3) Introduces the fundamentals of operating systems design and implementation, including an overview of the components of an operating system, mutual exclusion and synchronization, I/O, interrupts, implementation of processes, scheduling algorithms, memory management, and file systems. Prerequisites: C or better in CSCI U210 and CSCI U321 or consent of instructor.

CSCI U512. Computer Networks II (3) Advanced topics in telecommunications, location positioning systems and computer networking, including wireless and mobile computing, integration of wireless and wired networks, design issues, packet transmission, datagram encapsulation and fragmentation, media access control, data transmission and retransmission, routing, bridging, switching, addressing error handling, flow control, data security, and local and wide-area networks. Prerequisites: C or better in CSCI U412 or consent of instructor.

CSCI U515. Wireless Networks (3) Fundamental concepts and techniques employed in wireless and mobile networks such as cellular networks, wireless LANs, and ad-hoc networks. Topics include wireless communication basics, access technologies, medium access control, naming and addressing, routing, mobility support and management, security, and power management. Prerequisite: C or better in CSCI U412 or consent of instructor.

CSCI U516. Distributed and Network Programming (3) Design and implementation of distributed application and network communication programs, including network application development with UCP and TCP/IP protocols, introduction to distributed systems and computing, RIM, socket programming, client/server models, and communication primitives, such as datagrams, packet retransmission, routing, addressing, error handling, and flow control. Prerequisite: C or better in CSCI U321 or consent of the instructor.

CSCI U520. Database System Design (3) Database Management System (DBMS) architecture and organization, design and implementation of DBMS, data models, internal databases structures, conceptual modeling, data independence, data definition language, data manipulation language, normalization, transaction processing, recovery, and security. Prerequisite: C or better in CSCI U300 or consent of instructor.

CSCI U521. Database Implementation, Application, and Administration (3) Design and implementation of database and client/server applications, in-depth treatments of embedded queries and stored procedures, database triggers, database extended languages, architectures and design patterns of distributed application, transaction processing, performance tuning, recovery and backups, auditing, and security. Prerequisite: C or better in CSCI U520 or consent of instructor.

CSCI U525. Knowledge Discovery and Data Mining (3) Extraction and discovery of knowledge from large databases, data integration and data warehousing, data mining algorithms, models, and applications including association rule mining, information retrieval (IR) and mining of text databases, decision tree, decision rules, classification techniques, cluster analysis, and evaluation, visualization, and interpretation of patterns. Prerequisite: C or better in CSCI U300 or consent of instructor.

CSCI U526. Data Mining for Computer Security (3) Data mining algorithms and models, including association rule mining, decision trees, decision rules, classification techniques, cluster analysis, data mining tools for malware detection, active defense, inside threat detection and firewall policy analysis, data mining applications for misuse/signature detection, anomaly detection and scan detection and profiling network traffic. Prerequisite: C or better in CSCI U321 or consent of instructor.

CSCI U530. Programming Language Structures (3) Paradigms and fundamental concepts of programming languages, such as scope, binding, abstraction, encapsulation, typing, and language syntax and semantics. Functional and logic programming paradigms are also introduced through sample programming languages. Prerequisites: C or better in CSCI U210 and CSCI U321 or consent of instructor.

CSCI U540. Software Engineering (3) Methods and tools of software engineering, software life cycle, iterative development processes including the Agile Method and Unified Process, object oriented analysis and design of software, software testing, cost and effort estimation, project management, risk analysis, and documentation. A relatively large software system is developed in a team environment. Prerequisite: C or better in CSCI U321 or consent of instructor.

CSCI U555. Advanced Computer Security and Information Assurance (3) Cryptography, telecommunication and network security, applications and system development security, Business Continuity Planning (BCP), cybercrimes and countermeasures. The hands-on laboratories provide extensive practices on firewalls, Virtual Private Networks (VPN), Intrusion Detection Systems (IDS), and other computer security tools. Prerequisite: C or better in CSCI U412 and CSCI U455; or consent of instructor.

CSCI U556. Web Development Security (3) Fundamental coverage of issues and techniques in developing secure web-based applications; related topics such as network security, web server security, application-level security and web database security, etc. The hands-on laboratories provide extensive practices on securing client-database communication, securing data in the database, and securing a large online application using X509 certificate and secure socket layer. Prerequisite: C or better in CSCI U321 and C or better in CSCI U456; or consent of instructor.

CSCI U560. Numerical Analysis (3) (=MATH U560) Difference calculus, direct and interactive techniques for matrix inversion, eigenvalue problems, numerical solutions of initial value problems in ordinary differential equa-
tions, stability, error analysis, and laboratory applications. Prerequisites: MATH U245 and U344, and programming competency.

CSCI U580. Introduction to Artificial Intelligence (3) Intelligent agents, expert systems, heuristic searching, knowledge representation and reasoning, artificial neural networks, ontologies, and natural language processing. Prerequisites: C or better in CSCI U321 or consent of instructor.

CSCI U585. Introduction to Computer Vision (3) Processing and analyzing features in still digital images, camera calibration, stereopsis, object recognition, the processing of edges, regions, shading and texture, and introductory video processing techniques. Prerequisites: C or better in CSCI U321 and MATH U141 or consent of instructor.

CSCI U599. Computer Science Senior Seminar (3) Integration of knowledge at an advanced level, a review of recent developments in theoretical and applied computer science, the exploration of ethical issues, along with research and oral presentation. Prerequisites: 12 hours of 300 level or above computer science courses and consent of instructor.

CRIMINAL JUSTICE (CRJU)

CRJU U101. Introduction to Criminal Justice (3) Survey of the law enforcement, judicial, correctional, and juvenile systems; interrelationships between criminal justice agencies and the community.

CRJU U210. Policing in America (3) Police organizations; the recruitment, training, and socialization of police officers; the role of police in society; and critical issues in policing. The problem of coercive power as it relates to policing is also examined. Prerequisite: CRJU U101.

CRJU U220. The Criminal Courts (3) The administration of criminal justice in the American federal and state court systems. The nature and concept of justice, court personnel, functions, jurisdictions, policies, procedures, discretion, and current developments in court technology and organization will be reviewed. Prerequisite: CRJU U101.

CRJU U230. Introduction to Corrections (3) Penology emphasizing the history, philosophy, programs, policies, and problems associated with correctional practice. Topics include probation, prisons, jails, parole, community corrections and alternative sanctions. Prerequisite: CRJU U101.


CRJU U311. Homeland Security (3). Causes, consequences, and prevention strategies for homeland security issues. Topics include government roles in homeland security, strategies of protecting U.S. Citizens and interests, and specific threats to homeland security such as natural disasters and acts of terrorism. Prerequisite: CRJU U101.

CRJU U321. Criminal Law (3) Origin and development of criminal law in America along with basic elements of crime and defenses. Prerequisite: CRJU U101.

CRJU U325. Criminal Trial Practice (3) The criminal trial, including the rules of evidence, trial strategy, opening statements, the presentation of evidence, arguing objections, closing arguments, and a critical analysis of the entire process. Prerequisites: CRJU U101 or consent of instructor.

CRJU U330. Institutional Corrections (3) Functions, structure, procedures and philosophy of American correctional institutions; constitutional limitations and the impact of law on correctional practices. Prerequisite: CRJU U101 and U230.

CRJU U333. Community-Based Corrections (3) Development and impact of community programs, halfway houses, group homes, work-release, and educational release programs, including the role of the community and citizens in the correctional process. Prerequisite: CRJU U101 and U230.

CRJU U334. The Juvenile Justice System (3) History, philosophy, and evaluation of the juvenile court, juvenile court practices and procedures; the role of the police, correctional alternatives, prevention and intervention strategies in the juvenile justice process. Prerequisite: CRJU U101 and either CRJU U210, CRJU U220, or CRJU U230, or consent of instructor.

CRJU U345. Juvenile Delinquency (3) (=SOCY U355) Social factors in the development, identification and treatments of delinquents and juvenile delinquency in the context of juvenile justice systems. Prerequisites: SOCY U101 and CRJU U101.

CRJU U350. Victimology (3) Forms of victimization, the role of victims in crimes, their treatment by the criminal justice system, their decisions to report crimes and help prosecute offenders, victim-offender mediation, and victim compensation. The national crime survey regarding patterns and trends in victimization is introduced. Prerequisite: CRJU U101.

CRJU U361. Criminal Justice Research Methods (3) Quantitative, qualitative and comparative methods used in criminal justice research, focusing on research design, data collection and analysis, and ethical issues. Prerequisites: CRJU U101, CRJU U210, CRJU U220 and CRJU U230.

CRJU U362. Criminal Justice Statistics (3) Basic principles of descriptive and inferential statistics as applied to topics in criminal justice, including correlation, probability, measures of central tendency and variability, hypothesis testing, and estimation. For criminal justice majors only. Prerequisites: CRJU U101 and MATH U120 or higher.


CRJU U380. Special Populations and the Criminal Justice System (3) The experience of special populations including racial, ethnic and other historically marginalized groups in various roles within the criminal justice system. Prerequisites: CRJU U101 and either CRJU U210, U220 or U230.

CRJU U381. Alcohol, Drugs, and Public Policy (3) History and theories of alcohol and other drug use, types and effects of drugs, crime associated