

CPSC 475. Android Mobile Computing (3-3-0)

Prerequisite: CPSC 255 with a grade of C- or higher.

This course covers core concepts of the Android programming platform and its key components using the Android SDK and the Java programming language. Topics discussed include application lifecycle, user interface design, activities and intents, data persistence, networking, messaging, location-based applications and android services.

CPSC 480. Software Design and Development (3-3-0)

Prerequisite: CPSC 280.

Presentation and application of formal approaches to state-of-the-art techniques in software design and development.

CPSC 495. Special Topics (Credits vary 1-3)

Prerequisites: As announced.

Topics vary, determined by the special interests and needs of students and the expertise of faculty.

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CPSC 498. Capstone Project in Computer Science (3-3-0)

Prerequisites: CPSC 270 and 327 and senior standing.

Directed projects or research under the supervision of a faculty member.control, password security and database security. Additionally, topics such as buffer overflows, vulnerabilities, secure coding practices, secure configuration, auditing and logging will be covered.

The Curriculum in CybersecurityCYBR 436. Web Application Security (3-3-0)

Prerequisites: CYBR 328, CPSC 336.

This course covers detailed security assessment of web based applications including APIs, cross site scripting (XSS), vulnerability discovery and management, application architecture and configuration, etc. The topics will be covered from both offensive and defensive perspectives.

CYBR 198. First Year Cybersecurity Seminar (1-1-0)

This course provides an overview of key concepts in cybersecurity and a guided exploration that requires connecting these concepts to other disciplines, current events and cybersecurity tools. First year students and students interested in exploring cybersecurity for the first time will work closely with faculty and more experienced students to prepare for each of the topics. Additionally, participation in a community-based cybersecurity activity or event is required.

CYBR 298. Second Year Cybersecurity Seminar (1-1-0)

Prerequisite: CYBR 198 or permission of instructor.

This course provides a continued overview of key concepts in cybersecurity and open exploration that requires connecting these concepts to other disciplines, current events and cybersecurity tools. Students with prior cybersecurity experience or experience in CYBR 198 will work to guide less-experienced students in their exploration of the topics.

Additionally, participation in planning a community-based cybersecurity activity or event is required.

CYBR 328. Foundations and Principles of Cybersecurity (3-3-0)

Prerequisites: CPSC 250/250L.

This course examines the foundational concepts and basic principles necessary for the understanding and study of cybersecurity. A wide breadth of topics is explored to prepare students for future courses in the cybersecurity major.

CYBR 428. Network Security and Cryptography (3-3-0)

[Formerly CPSC 428, equivalent]

Prerequisites: CYBR 328 and CPSC 335

Study of encryption algorithms and network security practices. Security issues, threats and attacks. Symmetric ciphers (“secret-key encryption”): classical and contemporary algorithms, standards and applications. Public-key encryption: theoretical background, practical implementations, key-management, hash algorithms. Network security practices: authentication, IP security, electronic mail and web security, system security.

CYBR 429. Computer and System Security (3-3-0)

[Formerly CPSC 429, equivalent]

Prerequisite: CYBR 328 or permission of associate dean of school.

Restricted to BSIS majors, cybersecurity majors.

Study of computer and system security practices, policies and principles. Designed as a counterpart to CYBR 428, this course will focus on topics such as account and access

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CYBR 444. Policy Planning and Assurance (3-3-0)

Prerequisite: CYBR 328.

This course covers security policy, legal systems, ethical issues, physical security, disaster recovery, business continuity issues, and risk in the context of cybersecurity in information systems. Additional topics also include maintenance of essential business processes following a disaster, restoration of systems, assurance, and building systems with formal evaluation methods.

CYBR 448. Advanced Cryptography and Cybersecurity (3-3-0)

Prerequisites: CYBR 428, 429; ENGR 213.

This course provides an in-depth exploration of important cybersecurity methods and practices. The course also includes advanced exploration of the role infrastructure plays on security, including topics on operating systems, intrusion detection and prevention, advanced network security and advanced cryptography.

CYBR 498W. Cybersecurity Capstone (3-3-0)

Corequisite: CYBR 448.

