CYBR-206 – Emerging Technologies and Security Trends

Technology

Effective Term & Year: Fall 2027
Course Outline Review Date: 2032-03-01

Program Area: Information Technology

Description:

This course examines emerging technologies and trends that are shaping cybersecurity practices and organizational security strategies. Students explore the security implications of technologies such as artificial intelligence (AI), Internet of Things (IoT), cloud-native architectures, blockchain, and modern identity-centric security models.

Through analysis of current and emerging threats, industry practices, and security frameworks, students evaluate risks and identify strategies that support secure technology adoption and organizational resilience in rapidly evolving digital environments.

Program Information:

This course is required for the second year of the Cybersecurity Operations program.

Delivery Methods: Hybrid – On-campus (Face-to-Face) and Online

Credit Type: College of the Rockies Credits

Credits: 3

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	60
Seminar/Tutorials	

Laboratory/Studio	
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	60

Course Requisites:

Prior Learning and Recognition: Yes

Students are able to request formal recognition of their prior learning or experience outside the classroom. Challenge examination, portfolio-assisted assessment, work-based assessment or a combination of assessments that is appropriate to identify, assess, and recognize prior skills, competencies, and knowledge to achieve course credit. Tuition fees apply, refer to Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR) or contact an education advisor for more information.

Course Transfer Credit:

For information about receiving transfer credit for courses taken at either British Columbia or Alberta institutions, please see https://www.bctransferguide.ca/ or https://transferalberta.alberta.ca . For more transfer credit information, please visit https://www.cotr.bc.ca/Transfer

All requests for course transfer credit from institutions in British Columbia or elsewhere should go to the College of the Rockies Enrollment Service office.

Textbook Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Textbooks will be added as the course content is created.

Please see the instructor's syllabus or check COTR's online text calculator https://textbook.cotr.bc.ca/ for a complete list of the currently required textbooks.

Learning Outcomes:

Upon successful completion of this course, students will be able to:

- explain the security implications of emerging technologies, including artificial intelligence, Internet of Things (IoT), cloud-native architectures, and blockchain;
- analyze risks, vulnerabilities, and threat vectors associated with emerging technologies and modern digital infrastructures;
- evaluate the application of security frameworks, architectures, and practices used to address evolving cybersecurity threats;
- assess the role of threat intelligence, industry trends, and emerging attack techniques in supporting cybersecurity decision-making;
- examine ethical, privacy, legal, and regulatory considerations associated with emerging technologies; and
- recommend security strategies and controls that support organizational resilience in rapidly changing technology environments.

Course Topics:

- Emerging Technologies and Cybersecurity Trends
- Artificial Intelligence and Machine Learning Security
- Internet of Things (IoT) and Operational Technology (OT) Security
- Cloud-Native and Modern Infrastructure Security
- Zero Trust Architecture and Identity-Centric Security
- Blockchain and Emerging Cryptographic Technologies
- Threat Intelligence and Emerging Threats
- Privacy, Ethics, and Regulatory Considerations
- Future Trends in Cybersecurity

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

Evaluation and Assessments

Assessment Type: On-Campus (face-to-face) and Online, or Hybrid

Assessment Type	% of Total Grade
Assignments	40%
Midterm	20%
In-progress	10%
Final Project	30%
Total	100%

Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

Evaluation Notes: A grade of “D” grants credit, but may not be sufficient as a prerequisite for sequential courses.

Evaluation Notes Comments:

Please see the instructor’s syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments and use of electronic aids.

Exam Attendance:

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a “0” on the exam.

Academic Policies:

College of the Rockies policies related to courses can be found at https://cotr.bc.ca/about-us/college-policies/ and include the following:

- Policy 2.1.4 Course Audit
- Policy 2.4.1 Credential Framework
- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Rights, Responsibilities and Conduct
- Policy 2.4.8 Academic Performance
- Policy 2.4.9 Student Feedback and Concerns
- Policy 2.4.11 Storage of Academic Works
- Policy 2.5.3 Student Appeal
- Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR)

Course Changes:

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outline.