CYBR-201 – Ethical Hacking and Security Testing

Technology

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

Program Area: Information Technology

Description:

This course introduces the principles, methodologies, and tools used in ethical hacking and security testing. Students examine the phases of security assessments, including reconnaissance, vulnerability identification, system testing, and reporting. Emphasis is placed on conducting security assessments in a legal and ethical manner, evaluating security weaknesses, validating vulnerabilities, and recommending mitigation strategies. Students develop practical skills in vulnerability assessment, security testing, analysis, and professional reporting within enterprise environments.

Program Information:

This course is required for the Second Year of the Cybersecurity Operations program.

Delivery Methods: On-campus (Face-to-Face)

Credit Type: College of the Rockies Credits

Credits: 3

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	30
Seminar/Tutorials	
Laboratory/Studio	30

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:

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 principles, methodologies, legal considerations, and ethical responsibilities associated with security testing and ethical hacking;

- conduct reconnaissance, information gathering, and vulnerability assessments using industry-standard security testing tools and techniques;
- analyze security weaknesses and vulnerabilities in systems, applications, and network environments;
- evaluate the effectiveness of security controls through structured security testing activities;
- document and communicate security assessment findings, risks, and recommendations using professional reporting practices; and
- recommend mitigation strategies that improve the security posture of organizational systems and networks.

Course Topics:

- Ethical Hacking Principles and Methodologies
- Legal, Ethical, and Regulatory Considerations
- Reconnaissance and Information Gathering
- Vulnerability Assessment and Analysis
- Network Security Testing
- Web Application Security Testing
- Authentication and Access Control Testing
- Security Testing Tools and Frameworks
- Risk Analysis and Vulnerability Prioritization
- Security Reporting and Remediation Recommendations

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

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Evaluation and Assessments

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

Assessment Type	% of Total Grade
Assignments (x2)	40%
Midterm	20%
In-progress	10%
Final Exam	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.