



## COURSE OUTLINE: NASA201 - WEB PROG + SECURITY

Prepared: Dr. Michael Biocchi

Approved: Corey Meunier, Chair, Technology and Skilled Trades

<b>Course Code: Title</b>	NASA201: WEB PROGRAMMING AND SECURITY
<b>Program Number: Name</b>	2196: NETWRK ARCH & SEC AN
<b>Department:</b>	COMPUTER STUDIES
<b>Semesters/Terms:</b>	22W
<b>Course Description:</b>	This course will delve into the current scripting and computer languages used by modern web clients and servers, with a focus on the programming methodologies used to prevent exploitation of web security vulnerabilities.
<b>Total Credits:</b>	3
<b>Hours/Week:</b>	3
<b>Total Hours:</b>	45
<b>Prerequisites:</b>	There are no pre-requisites for this course.
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Essential Employability Skills (EES) addressed in this course:</b>	<p>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 4 Apply a systematic approach to solve problems.</p> <p>EES 5 Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 6 Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p> <p>EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others.</p> <p>EES 10 Manage the use of time and other resources to complete projects.</p> <p>EES 11 Take responsibility for ones own actions, decisions, and consequences.</p>
<b>Course Evaluation:</b>	<p>Passing Grade: 50%, D</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p>
<b>Other Course Evaluation &amp; Assessment Requirements:</b>	<p>The student must pass both the lab and test portions of the course.</p> <p>Attendance: Sault College is committed to student success. There is a direct correlation between academic performance and class attendance, therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies</p>

In response to public health requirements pertaining to the COVID19 pandemic, course delivery and assessment traditionally delivered in-class, may occur remotely either in whole or in part in the 2021-2022 academic year.



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arriving on time and remaining for the duration of the scheduled session.

Absences due to medical or other unavoidable circumstances should be discussed with the instructor. Students are required to be in class on time and attendance will be taken within the first five minutes of class.

Absentee reports will be discussed with each student during regular meetings with Faculty Advisors.

Grade

Definition Grade Point Equivalent

A+ 90 - 100% 4.00

A 80 - 89%

B 70 - 79% 3.00

C 60 - 69% 2.00

D 50 - 59% 1.00

F (Fail) 49% and below 0.00

CR (Credit) Credit for diploma requirements has been awarded.

S Satisfactory achievement in field /clinical placement or non-graded subject area.

U Unsatisfactory achievement in field/clinical placement or non-graded subject area.

X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.

NR Grade not reported to Registrar's office.

W Student has withdrawn from the course without academic penalty

**Course Outcomes and Learning Objectives:**

<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
Introduction to the Web	<ul style="list-style-type: none"><li>• Understand packets</li><li>• Understand https</li><li>• Understand where data is stored and how it is accessed</li></ul>
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
Web Security and Responsibility	<ul style="list-style-type: none"><li>• Understand various attacks at a high level</li><li>• Look at recent attacks and how they were done</li><li>• Understand a high level view of what organizations can do to increase security</li></ul>
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
Cryptography and encryption	<ul style="list-style-type: none"><li>• Understand encryption and hashing</li><li>• Learn about how cryptography is used in technology and outside technology</li><li>• Understand public and private key encryption</li></ul>
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
Web attacks and secure programming	<ul style="list-style-type: none"><li>• Deep look at various web attacks</li><li>• XSS attacks, SQL injection, as well as other OWASP threats</li><li>• Understand various forms of testing to help limit security flaws in coding</li></ul>
<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
Threats and Risk	<ul style="list-style-type: none"><li>• Understand risks, risk assessments, and risk analysis</li><li>• Understand how to avoid or limit risk</li></ul>

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	<ul style="list-style-type: none"> <li>Understand vulnerability assessment and penetration testing</li> </ul>
<b>Course Outcome 6</b>	<b>Learning Objectives for Course Outcome 6</b>
Business Continuity and Disaster Recovery	<ul style="list-style-type: none"> <li>Understand how to prepare for a disaster</li> <li>Understand what is needed at a hot site vs a cold site</li> <li>Understand downtime, both planned and unplanned</li> </ul>
<b>Course Outcome 7</b>	<b>Learning Objectives for Course Outcome 7</b>
Digital Signatures, Diffie Hellman, Man in the Middle	<ul style="list-style-type: none"> <li>Students will have a deep understanding of how HTTPS works including diffie hellman algorithm</li> <li>Understand how a man in the middle attack works</li> </ul>
<b>Course Outcome 8</b>	<b>Learning Objectives for Course Outcome 8</b>
Intrusion Prevention and Detection	<ul style="list-style-type: none"> <li>Understand how intrusion prevention works</li> <li>Understand how intrusion detection works</li> <li>Understand the steps in penetration testing</li> </ul>
<b>Course Outcome 9</b>	<b>Learning Objectives for Course Outcome 9</b>
Privacy and Anonymity	<ul style="list-style-type: none"> <li>Understand the difference between staying private and staying anonymous</li> <li>Understand VPNs</li> <li>Understand TOR</li> </ul>
<b>Course Outcome 10</b>	<b>Learning Objectives for Course Outcome 10</b>
Biometrics, Physical Security, and Access Control	<ul style="list-style-type: none"> <li>Understand what biometrics are and the risks</li> <li>Understand how physical security plays a roll in data security</li> <li>Understand access control</li> </ul>
<b>Course Outcome 11</b>	<b>Learning Objectives for Course Outcome 11</b>
Forensics	<ul style="list-style-type: none"> <li>Understand computer forensics</li> <li>Understand how information is stored on a computer</li> </ul>

**Evaluation Process and Grading System:**

Evaluation Type	Evaluation Weight
Assignment 1	10%
Assignment 2	10%
Assignment 3	10%
Assignment 4	10%
Test 1	20%
Test 2	20%
Test 3	20%

**Date:**

September 7, 2021

**Addendum:**

Please refer to the course outline addendum on the Learning Management System for further information.

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