

Course Syllabus

[Jump to Today](#)
 [Edit](#)

NET 4740	Security Vulnerabilities and Intrusion Mitigation Spring Semester 2017
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Instructor	Matt Paulson WSU Davis Office: D2 305D SLCC Office: BB 226G Phone: 801-395-3438 Email: mattpaulson@weber.edu (mailto:mattpaulson@weber.edu) WSU Davis Office Hours: TR 10:00 - 11:15 AM SLCC Office Hours: MW 4:00 – 5:15 PM Other hours by appointment
Classroom	WSU Davis D2 315
Days	TR
Time	3:30 - 5:20 PM
Texts	Counter hack reloaded : a step-by-step guide to computer attacks and effective defenses / Ed Skoudis with Tom Liston.—2nd ed. ISBN 0-13-148104-5
Description	A treatment of security issues related to computers and computer networking. This course is designed for advanced users, system administrators and network administrators. The course covers TCP/IP security issues, security policies, packet filtering, Internet

	<p>firewall architecture and theory, detecting and monitoring unauthorized activity, password authentication, intrusion detection and prevention and other security issues involving Linux, UNIX and Microsoft Windows operating systems. A team project is included.</p>
Objectives	<ul style="list-style-type: none"> • Define security in terms of risk assessments and threat models. • Contribute meaningful discussion of ethical issues involving cybersecurity • Conduct a limited penetration test staying within the allowed bounds • Secure a system under different threat models <p>At the end of the class, the student will:</p> <ol style="list-style-type: none"> 1. possess an ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline. 2. possess an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution. 3. possess an ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs. 4. possess an ability to function effectively on teams to accomplish a common goal. 5. possess an understanding of professional, ethical, legal, security and social issues and responsibilities. 6. possess an ability to communicate effectively with a range of audiences. 7. possess an ability to analyze the local and global impact of computing on individuals, organizations, and society. 8. possess an ability to use current techniques, skills, and tools necessary for computing practice.
Class	<p>Class will consist of lectures, discussions, assignments, quizzes and exams. Questions and comments are encouraged. It is expected that students will read the material related to each week's coursework. Attendance and participation will account for 10% of your grade and will be based upon the completion of in-class</p>

	activities.										
Labs and Assignments	There will be three projects for the class based on the reading and lecture topics. The specifics of each assignment project will be posted on Monday in the Coursework folder and the assignment will be due two weeks later on Monday at 11:59 pm. At least one of the projects will be team-based. The assignments will account for 40% of your final grade.										
Readings	You will be expected to read and critique 4 current research articles related to the current class topic. For each reading critique a set of articles will be provided from which you may select one article of interest. The critique should consist of a 1-2 paragraph summary of the article followed by a paragraph discussing the strengths of the article and another paragraph discussing the weaknesses or shortcomings of the article. A final paragraph should include a discussion on how the article could be extended in the future. The reading critiques will account for 10% of your final grade.										
Projects	There will be an individual final project which will account for 15% of your final grade.										
Late Policy	Late work will be accepted with a 20% penalty per day for up to three days to provide for unforeseen circumstances.										
Accommodations for Disabilities	Any student requiring accommodations or services due to a disability must contact Services for Students with Disabilities (SSD) in room 221 of the Student Services Center at the Davis Campus. SSD can also arrange to provide course materials (including this syllabus) in alternative formats if necessary. You can also call 801-395-3524 or visit http://www.weber.edu/ssd for more details.										
Grading	<table> <tr> <td>Reading Critiques</td> <td>5%</td> </tr> <tr> <td>Assignments</td> <td>40%</td> </tr> <tr> <td>In-Class</td> <td>5%</td> </tr> <tr> <td>Quizzes</td> <td>10%</td> </tr> <tr> <td>Final Project</td> <td>10%</td> </tr> </table>	Reading Critiques	5%	Assignments	40%	In-Class	5%	Quizzes	10%	Final Project	10%
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
	<p>Exams 30%</p> <p>The final grade will be given based on points accumulated through quizzes, assignments and exams. Standard grading will apply:</p> <table border="0"> <tr> <td>94 – 100</td> <td>A</td> <td>74 – 76</td> <td>C</td> </tr> <tr> <td>90 – 93</td> <td>A-</td> <td>70 – 73</td> <td>C-</td> </tr> <tr> <td>87 – 89</td> <td>B+</td> <td>67 – 69</td> <td>D+</td> </tr> <tr> <td>84 – 87</td> <td>B</td> <td>64 – 67</td> <td>D</td> </tr> <tr> <td>80 – 83</td> <td>B-</td> <td>60 – 63</td> <td>D-</td> </tr> <tr> <td>77 – 79</td> <td>C+</td> <td>00 – 59</td> <td>E</td> </tr> </table>	94 – 100	A	74 – 76	C	90 – 93	A-	70 – 73	C-	87 – 89	B+	67 – 69	D+	84 – 87	B	64 – 67	D	80 – 83	B-	60 – 63	D-	77 – 79	C+	00 – 59	E
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Allocated Time	<p>You should anticipate spending two to three hours of study per week for each credit hour of a university course. Computer and programming classes typically require time in the upper range.</p>																								
Canvas	<p>This course will have a strong online component via the Canvas course management system. To log on to the course, go to http://canvas.weber.edu, and follow the login instructions. You will need your WSU wildcat name and password to log in. You should have already received this information from the admissions department. If you still have problems getting into the course, please email me and I will see if I can resolve the issue.</p> <p>If you are unfamiliar with Canvas, go to https://learn-wsu.uen.org/courses/8878 for a student orientation. Click on the links on the left side of the page. PDF help documents are available at http://departments.weber.edu/ce/distancelearning/CanvasFAQ.aspx</p>																								
Policies	<p>Exams can only be taken on the days given unless arrangements are made to take them ahead of time.</p>																								

Course Summary:

Date	Details	
Tue Jan 9, 2018	 Introduction, Review of Fundamental Security Concepts, Offensive Security Methodologies, Thinking Like A Hacker (https://weber.instructure.com/calendar?event_id=876864&include_contexts=course_457647)	12am
Thu Jan 11, 2018	 Introduction, Review of Fundamental Security Concepts, Offensive Security Methodologies, Thinking Like A Hacker (https://weber.instructure.com/calendar?event_id=876863&include_contexts=course_457647)	12am
Sat Jan 13, 2018	 Adversarial Thought (https://weber.instructure.com/courses/457647/assignments/3652535)	due by 11:59pm
Mon Jan 15, 2018	 WSU Holiday - NO CLASS (https://weber.instructure.com/calendar?event_id=876869&include_contexts=course_457647)	12am
Tue Jan 16, 2018	 Recon (https://weber.instructure.com/calendar?event_id=877823&include_contexts=course_457647)	12am
Thu Jan 18, 2018	 Recon (https://weber.instructure.com/calendar?event_id=877824&include_contexts=course_457647)	12am
Sat Jan 20, 2018	 Recon Assignment (https://weber.instructure.com/courses/457647/assignments/3638852)	due by 11:59pm
Tue Jan 23, 2018	 Scanning (https://weber.instructure.com/calendar?event_id=877827&include_contexts=course_457647)	12am
Thu Jan 25, 2018	 Scanning (https://weber.instructure.com/calendar?event_id=877828&include_contexts=course_457647)	12am
Sat Jan 27, 2018	 Reading Critique #1 (https://weber.instructure.com/courses/457647/assignments/3638848)	due by 11:59pm
Tue Jan 30, 2018	 Scanning (https://weber.instructure.com/calendar?event_id=877829&include_contexts=course_457647)	12am
Thu Feb 1, 2018	 Exploitation (https://weber.instructure.com/calendar?event_id=877830&include_contexts=course_457647)	12am

Date	Details	
	include_contexts=course_457647	
Sat Feb 3, 2018	 Social Engineering and Email Spoofing https://weber.instructure.com/courses/457647/assignments/3640882	due by 11:59pm
Tue Feb 6, 2018	 Exploitation (https://weber.instructure.com/calendar?event_id=877831&include_contexts=course_457647)	12am
Thu Feb 8, 2018	 Exploitation (https://weber.instructure.com/calendar?event_id=877832&include_contexts=course_457647)	12am
Sat Feb 10, 2018	 Reading Critique #2 (https://weber.instructure.com/courses/457647/assignments/3638849)	due by 11:59pm
Tue Feb 13, 2018	 Exploitation (https://weber.instructure.com/calendar?event_id=877833&include_contexts=course_457647)	12am
Thu Feb 15, 2018	 Exploitation (https://weber.instructure.com/calendar?event_id=877834&include_contexts=course_457647)	12am
Sat Feb 17, 2018	 Intrusion Detection Assignment (https://weber.instructure.com/courses/457647/assignments/3640880)	due by 11:59pm
Tue Feb 20, 2018	 Midterm Review (https://weber.instructure.com/calendar?event_id=877839&include_contexts=course_457647)	12am
Thu Feb 22, 2018	 Midterm Exam (https://weber.instructure.com/courses/457647/assignments/3638847)	due by 11:59pm
Tue Feb 27, 2018	 Exploitation (https://weber.instructure.com/calendar?event_id=877835&include_contexts=course_457647)	12am
Thu Mar 1, 2018	 Exploitation (https://weber.instructure.com/calendar?event_id=877836&include_contexts=course_457647)	12am
Tue Mar 6, 2018	 WSU Holiday - NO CLASS (https://weber.instructure.com/calendar?event_id=876872&include_contexts=course_457647)	12am
Thu Mar 8, 2018	 WSU Holiday - NO CLASS (https://weber.instructure.com/calendar?event_id=876874&include_contexts=course_457647)	12am
Tue Mar 13, 2018	 Exploitation (https://weber.instructure.com/calendar?event_id=877837&include_contexts=course_457647)	12am

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Thu Mar 15, 2018	 Exploitation (https://weber.instructure.com/calendar?event_id=877838&include_contexts=course_457647)	12am
Sat Mar 17, 2018	 Packet Crafting Assignment (https://weber.instructure.com/courses/457647/assignments/3640927)	due by 11:59pm
Tue Mar 20, 2018	 Keeping Access (https://weber.instructure.com/calendar?event_id=877841&include_contexts=course_457647)	12am
Thu Mar 22, 2018	 Keeping Access (https://weber.instructure.com/calendar?event_id=877842&include_contexts=course_457647)	12am
Sat Mar 24, 2018	 Reading Critique #3 (https://weber.instructure.com/courses/457647/assignments/3638850)	due by 11:59pm
Tue Mar 27, 2018	 Keeping Access (https://weber.instructure.com/calendar?event_id=877843&include_contexts=course_457647)	12am
Thu Mar 29, 2018	 Keeping Access (https://weber.instructure.com/calendar?event_id=877844&include_contexts=course_457647)	12am
Tue Apr 3, 2018	 Covering Tracks (https://weber.instructure.com/calendar?event_id=877845&include_contexts=course_457647)	12am
Tue Apr 3, 2018	 Final Project (https://weber.instructure.com/courses/457647/assignments/3647571)	due by 11:59pm
Thu Apr 5, 2018	 Project Presentations (https://weber.instructure.com/calendar?event_id=877852&include_contexts=course_457647)	12am
Sat Apr 7, 2018	 Reading Critique #4 (https://weber.instructure.com/courses/457647/assignments/3638851)	due by 11:59pm
Tue Apr 10, 2018	 Project Presentations (https://weber.instructure.com/calendar?event_id=877847&include_contexts=course_457647)	12am
Thu Apr 12, 2018	 Project Presentations (https://weber.instructure.com/calendar?event_id=877848&include_contexts=course_457647)	12am
Tue Apr 17, 2018	 Project Presentations (https://weber.instructure.com/calendar?event_id=877849&include_contexts=course_457647)	12am
Thu Apr 19, 2018	 Final Exam Review (https://weber.instructure.com)	12am

Date	Details
	/calendar?event_id=877846&include_contexts=course_457647
Tue Apr 24, 2018	 Final Exam (https://weber.instructure.com/courses/457647/assignments/3638846) due by 11:59pm
	 Quiz 1 (https://weber.instructure.com/courses/457647/assignments/3638845)
	 Roll Call Attendance (https://weber.instructure.com/courses/457647/assignments/3638853)