

Metropolitan State University of Denver

Regular Course Syllabus

CSS - 2753 - Network Security		Fall 2016
Status	completed	
Tracking:	LAS1617-27	
Department	Mathematical and Computer Sciences, Department of	
Prefix:	CSS	
Course Number:	2753	
Course Type:	Computer Science Studies	
Course Title:	Network Security	
Transcript Course Title:	Network Security	
Equivalent/ Crosslisted?		
List all equivalent courses:		
List all crosslisted courses:		
Check All That Apply:	Elective	
Credit Hours:	3	
Schedule Type:	Lecture	
Grade Mode:	Letter	
Lecture:	45	
Lab:		
Internship:		
Practicum:		
Other:		
Additional Student Work Hours per course:	90	
Variable topics umbrella course:	No	
If yes, number of credits/ repeats allowed		
Specified repeatable course:	No	
If yes, number of credits/ repeats allowed		
Prerequisite(s):	CSS 2751 or permission of instructor	
Corequisite(s):		
Prerequisite(s) and/or Corequisite(s):		
Banner Prerequisite(s):	CSS 2751	
Banner Corequisite(s):		
Banner Prerequisite(s) and/or Corequisite(s):		
Level		
Class		
Program/Major		
Student attribute		
Catalog Course Description:	This class provides an overview of network security including threat models, web and electronic mail security, network layer security, transport layer security,	

	packet filtering, firewalls, intrusion detection and prevention, and virtual private networks. Both wired and wireless security are covered. Methods for privacy and anonymity are discussed.
Required Reading and Other Materials will be equivalent to:	John R. Vacca (2013), Computer and Information Security Handbook, Second Edition, ISBN-13: 978-0123943972
Specific, Measurable Student Behavioral Learning Objectives:	<ol style="list-style-type: none"> 1. Construct a defensible network. 2. Analyze packets gathered from an active network. 3. Plan for the use of secure communications for an organization. 4. Arrange a set of monitoring elements in a network. 5. Deploy a network intrusion detection system. 6. Create stateful and layered firewall. 7. Choose an appropriate VPN based on an organization's needs.
Detailed Outline of Course Content (Major Topics and Subtopics) or Outline of Field Experience/ Internship	<ol style="list-style-type: none"> I. Packet-switched networking. <ol style="list-style-type: none"> A. Bus. B. Token passing. II. LANs and WANs. III. Topology. <ol style="list-style-type: none"> A. Star. B. Ring. IV. Network connectivity. <ol style="list-style-type: none"> A. Hubs. B. Switches. C. Routers. V. The Internet Protocol. <ol style="list-style-type: none"> A. Addressing. <ol style="list-style-type: none"> 1. Version 4. 2. Version 6. B. Fragmentation. C. Flags. VI. Connection versus connectionless protocols. VII. Transmission Control Protocol. <ol style="list-style-type: none"> A. Ports. B. Handshaking. C. Window sizing. VIII. User Datagram Protocol. <ol style="list-style-type: none"> A. The Domain Name System. B. Streaming protocols. IX. Securing network communication. <ol style="list-style-type: none"> A. The Secure Sockets Layer. B. Transport Layer Security. C. The Secure SHell. <ol style="list-style-type: none"> 1. Port forwarding. D. Security for the Domain Name System. X. Network monitoring. <ol style="list-style-type: none"> A. Log analysis. B. The Simple Network Management Protocol. XI. Network Intrusion Detection. <ol style="list-style-type: none"> A. Signature based. B. Anomaly based. XII. Firewalls. <ol style="list-style-type: none"> A. Levels. B. Packet filtering. C. Stateful. XIII. VPNs. <ol style="list-style-type: none"> A. Site to site. B. Road warrior.
Evaluation of Student	Required: exams and papers.

Performance	Optional: quizzes. participation, classwork, homework, projects.		
Learning Objectives			
Distribution of Credit Hours	3 (3+0)		
Steps	Decision	Date	
Originator			
Steve Beaty	approve	09/12/2016 10:08AM	
Department Curriculum Committee Chair			
Clark Dollard	approve	09/12/2016 02:57PM	
Department Chair			
Lindsay Packer	approve	09/12/2016 03:35PM	
Dean's Office Tracking Assignment			
Cynthia Philbrook	approve	09/14/2016 08:40AM	
Substantive College Level			
Linda Lang-Peralta	approve	12/07/2016 04:33PM	
Mona Mocanasu	approve	12/05/2016 10:09AM	
Steve Beaty	approve	10/10/2016 09:36AM	
Faculty Senate President			
Matthew Makley	None		
Erica Buckland	force-approve	01/05/2017 10:58AM	
AVP Academic and Student Affairs			
Bernice Harris	approve	01/05/2017 11:12AM	