American Military University

Bachelor of Science in Information Systems Security

STUDENT DATA:
NAME: ROADMAP'S DEGREE **SSN:** 000-00-0000

	Credit Required	Potential Credit
Foundations of Online Learning (RQ 295)	**3.00**	

This course is designed to assist students in preparing a set of integrated academic and career plans, assess their writing and research skills, develop effective and efficient success habits, and develop interactive electronic classroom skills necessary for success in APUS's distance learning environment. This course serves as a transition from prior educational experiences to the distance-learning model in use at APUS. Coupling the development of the student's degree completion plan with individualized counseling and academic development activities, this course permits the student to plan his/her academic program, ensures that the program supports articulated career goals, and develops those specialized skills needed to maximize overall success in the APUS program and after graduation.

Proficiency in Writing (EN101) **3.00**

(This course provides instruction in the writing process with a focus on self-expressive and expository essays, and will include practice in the conventions of standard written English, responding to readings, and incorporating sources into essays with appropriate documentation.)

Effectiveness in Writing (EN102) or Composition and Literature (EN202) **3.00**

(This course provides instruction in the writing process with a focus on persuasive and argumentative essays, and will include practice in developing a distinctive style, the methods of effective reasoning, library and on-line research. A formal research project is required. (Prerequisite: EN101).

This course is designed to focus on critical reading and writing skills. It emphasizes reading and writing by enabling students to experience literature as one of many forms of language and offers effective ways of highlighting reading strategies in a number of different contexts. (Prerequisite: EN101 or EN102).

Social Science Electives **6.00**

(Select from the following courses:

SS111 - Introduction to Geography
SS133 - Introduction to Sociology
SS134 - Introduction to Psychology

SS190 - Introduction to Anthropology
SS210 - Human Sexuality
SO220 - American Popular Culture

College credit by examination may apply. Visit the AMU website for a description of these courses.)

Science Electives **8.00**

(Select from the following courses. A lab is required.

SC100 - Introduction to Biology
SC198 - Introduction to Biology Lab
SC101 - Introduction to Chemistry
SC199 - Introduction to Chemistry Lab
SC102 - Introduction to Human Anatomy & Physiology
SC122 - Introduction to Human Anatomy & Physiology Lab
SC103 - Introduction to Physics
SC123 - Introduction to Physics Lab
SC104 - Introduction to Astronomy
SC124 - Introduction to Astronomy Lab
SC105 - Introduction to Forestry
SC125 - Introduction to Forestry Lab
SC106 - Introduction to Oceanography
SC126 - Introduction to Oceanography Lab
SC107 - Introduction to Meteorology
SC127 - Introduction to Meteorology Lab
SC108 - Introduction to Physical Geology
SC128 - Introduction to Physical Geology Lab
SC110 - Introduction to Human Ecology
SC120 - Introduction to Human Ecology Lab

College credit by examination may apply. Visit the AMU website for a description of these courses.)

Mathematics Electives **3.00**

(Select one of the following:

MA112 - College Algebra
MA113- College Trigonometry
MA125 - Math for Liberal Arts majors
MA225 - Calculus

(College credit by examination may apply. Visit the AMU website for a description of these courses.)

History Electives **6.00**

(Select from the following courses:

HS101 - American History to 1877
HS102 - American History since 1877
HS111 - World Civilization I
HS112 - World Civilization II
HS121 - Western Civilization Before The Thirty Years War

HS122 - Western Civilization Since Thirty Years War
HS215 - History of the American Indian
HS217 - African-American History before 1877
HS218 - African-American History since 1877

College credit by examination may apply. Visit the AMU website for a description of these courses.)

Humanities Electives **3.00**

(Select from the following courses:

HM101 - Spanish I
HM102 - Spanish II [Prerequisite: HM101]
HM103 - French I
HM104 - French II [Prerequisite: HM103]
HM105 - Arabic I
HM106 - Arabic II [Prerequisite: HM105]
HM107 - Russian I
HM108 - Russian II [Prerequisite: HM107]
HM109 - Chinese I (Mandarin)
HM110 - Chinese II (Mandarin) [Prerequisite: HM109]
HM111 - German I
HM112 - German II [Prerequisite: HM111]
HM200 - Music Appreciation
HM230 - Introduction to World Religions
HM240 - Art Appreciation
HM277 - Introduction to Ethics
PH101 - Introduction to Philosophy
GM200 - Public Speaking

College credit by examination may apply. Visit the AMU website for a description of these courses.)

Literature Electives **3.00**

(All literature courses require successful completion of EN101 / ENGL101 - Proficiency in Writing or EN102 / ENGL102 - Effectiveness in Writing

Select from the following courses:

HM201 - American Literature before the Civil War
HM202 - American Literature from Civil War to Present
HM221 - English Literature: Beowulf to 18th Century
HM222 - English Literature: 18th Century to Present
HM211 - World Lit through the Renaissance
HM212 - World Lit since the Renaissance

College credit by examination may apply. Visit the AMU website for a description of these courses.)

Political Science Electives **3.00**

(Select from the below courses:

SS121- American Government I

SS131 - International Relations

College credit by examination may apply. Visit the AMU website for a description of these courses.)

Information Assurance (CS 304) **3.00**

(This course is a study of the discipline of Information Assurance that focuses on protecting information assets by ensuring availability, confidentiality, integrity, authenticity, and non-repudiation. This course delves into the deliberate engineering, planning and implementation of the five major areas in any enterprise: hardware, software, networks, people, and policies.)

IT Security: Attack and Defense (CS 305) **3.00**

(This course examines the techniques and technologies for penetration of networks, detection of attacks, and prevention of attacks. This course addresses the techniques, the technologies, and the methodologies used by cyber intruders (hackers) to select a target and launch an attack. An understanding into the mind and psyche of the hacker is essential to anticipating the moves of the hacker and to design effective countermeasures. This course focuses on techniques and technologies to detect such attacks even while the attack is in progress; early detection enables the administrator to track the movements of the hacker and to discover the intent and goals of the hacker. This course assesses the various countermeasures to keep the system out of the “sights” of the hacker and to keep the hacker out of the perimeter of the target network. This course also explores the laws and the legal considerations in prosecuting computer crime.)

IT Security: Countermeasures (CS 402) **3.00**

(This course is a study of Network Security attacks and countermeasures. This course examines various security technologies, such as: intrusion detection, authentication, session hijacking, sniffing, spoofing, denial of service, buffer overflow attack, port scanning, encryption, IPSec, DES encryption, triple DES encryption, message digest 5 algorithm, point-to-point tunneling protocol (PPTP), layer 2 tunneling protocol (L2TP), Kerberos, RSA Pretty Good Privacy(PGP), Secure Shell (SSH), Secure Sockets Layer (SSL), Stateful Packet Inspection (SPI), Network Address Translation (NAT), proxies, content filters, public/private keys, Public Key Infrastructure (PKI), Virtual Private Networks (VPN), security policies, security tokens, digital certificates, viruses, worms, Trojan horses, virus scanners, virus protection, vulnerability assessment, and vulnerability scanners.)

Cyberlaw and Privacy in a Digital Age (GM 316) **3.00**

(This course examines how laws have had to change to account for the expanded realm of crimes in the digital age. Identity theft has become far too commonplace; it takes victims of identity theft hundreds of hours over a four to six month period. In October of 1998, Congress enacted the necessary legal countermeasures to battle the growing problem of identity theft. Sexual harassment complaints can now be triggered simply by an employee forwarding questionable email to fellow employees. Some regard intellectual property rights violations to be innocent flattery, while

others consider them to be violations that must be stamped out by force of law. Plagiarism by students who pull content from the Internet is a growing problem. Stalkers can log into their victims lives and gain access to highly confidential medical and financial information, and even sabotage their victim's reputations. This course examines current literature on such topics.)

Information Security (IS 306) **3.00**

(This course allows students to examine a broad range of computer security issues and provides the student with technical knowledge not normally addressed in traditional training. It explores the protection of proprietary information and security planning with an emphasis on networked computer vulnerabilities. It also focuses on detection (e.g. viruses, hackers, types of computer crime, computer forensic examination, etc.), as well as disaster recovery and technology law. A primary focus is put on security of systems and computer crime prevention. Also addressed is the maturing criminal population with increased computer literacy, whose tendency is to move from violent actions to more profitable computer crime. Finally, issues of privacy and freedom of information are examined.)

Local Area Network Technologies (MC 463) **3.00**

(This course introduces the student to local area networking concepts in an easy to understand way. In today’s competitive business world, one needs to have a basic understanding of the networking technology that runs it. Whether they choose to delve full bore into the technical side of networking or use what they learn to make an informed decision regarding the design, implementation, and maintenance of their local area network, this course will give the student a good foundation to build upon.)

Computer and Network Security (MC 466) **3.00**

(This course will discuss both computer and network security, from the wetware (human), software, and hardware perspectives. Security will be examined as both a means to secure organizational assets, and as a way to reduce administrative cost and loss. Cost and loss will be viewed in terms of the measurable (e.g. lost man hours, stolen intellectual and physical organizational assets, unnecessary administrative time spent cleaning up messes) and the intangible (e.g. missed opportunities, loss of good-will among clients, organizational reputation). The "wetware" component will deal with identification of potential risk situations, establishing policies for avoidance, recovery, and prosecution, and proactive measures to reduce causal factors for security breeches in an organization. The "software" perspective will examine types of inappropriate software activity, as well as asset protection issues (recognizing software assets). This component will also address software tools available to assist in reducing administrative costs due to both malicious and accidental loss. The "hardware" component will address hardware approaches to protecting assets, as well as hardware techniques used to compromise assets. Finally, contingency, recovery, and containment strategies and policies that respond to organizational requirements will be examined, such as, but not limited to: employee law, legal recourse, and back-up strategies.)

IT Security: Risk Management (CS 306) **3.00**

(This course explores Networking Security from the perspective of risk management and confirms that assessment of IP based Network systems is critical to developing strategies to mitigate and manage risks. This course focuses on effective assessment strategies that ultimately help the student to implement effective and proactive risk mitigation measures and risk management practices. It exposes the vulnerabilities of TCP/IP; and appraises risk assessment, risk analysis, risk mitigation, risk management, networking components and Virtual Private Networks (VPN). This course examines the tools and techniques used to attack, test and assure the security of the remote information, maintenance, FTP, database, email, UNIX RPC, and IP VPN services. The student will apply this knowledge to develop an assessment methodology that identifies, attacks, and penetrates IP based network systems.)

Operating Systems: Hardening and Securing (CS 309) **3.00**

(This course is a study of the principles and concepts of Network Security from the perspective of the Operating System (OS). It places emphasis on discovering the vulnerabilities of the standard Operating Systems (OS) to attacks and focuses on the methodologies and measures necessary to take a proactive and preventive stance to address security vulnerabilities. Students will examine the principles, practices, and policies related to hardening and securing Operating Systems so they are impervious to security threats. It focuses on the vulnerabilities and the related countermeasures of various Windows 2000 and Windows NT components (Domain structures, domain trusts, security account manager, policies, profiles, file system, IP services (DHCP, DNS, IIS, TCP/IP printing, RPC, RIP for internet protocol, SNMP), DCOM, Registry, Active Directory, Encrypting File System (EFS), IPSec, and public key certificate services). This course also discusses vulnerabilities and countermeasures related to UNIX (file system, access control, UID, GID, root password, console password, password shadowing, UNIX kernel, IP services, inetd, TCP wrapper, variants (AIX, IRIX, Solaris, Linux), “r” services, finger services, Telnet, FTP, Gopher, HTTP, and SSL).

IT Security: Auditing (CS 406) **3.00**

(Security is one of the most important concerns in the world of Information Technology. This course examines the technical issues and the administrative practices to implement and manage security; in particular, this course focuses on the principles of security auditing. This course explores the various technologies and tools to assist with discovery and auditing in the world of security management. This course also assesses the audit practices, audit processes, audit plans, discovery process, discovery software, penetration strategies, identification of potential attacks, log analysis, user baseline analysis, activity analysis, risk assessment, roles and responsibilities, and the roles and responsibilities of security auditing professionals.)

IT Security: Planning and Policy (CS 407) **3.00**

(This course examines the principles of security planning and policy. It focuses on a variety of security guidelines, policies and plans (security requirements, internal users, external users, operational costs, geography,

capacity plan, growth plan, business organization, business scenarios, business factors, business processes, business functions, business products, product lifecycle, technical factors, roles and responsibilities, and organizational authority). This course addresses physical security, authentication, network security, encryption, software development, email, internet, acceptable use, acceptable speech, and viruses/worms. It also covers the need for actionable and maintainable policies and the need for periodic audits of policies and configurations.)

IT Security: Business Continuity (CS 480) **3.00**

(This course discusses both business continuity and disaster recovery planning. Business continuity investigates Risk Assessment & Management, Business Impact Analysis, and Continuity Strategy Development. The strategy component focuses on incorporating preventive measures, sustaining critical functions, planning for emergency response operations, and implementing recovery plans. This course analyzes employee training & development, chain-of-command, communications, policies & procedures, and fire-drills.)

Information Systems Security Electives **12.00**

Choose 12 Hours from the following courses:

CS121 - Web Development Fundamentals
CS104 - Image Enhancement using Adobe Photoshop
CS107 - Web Page & Web Site Design
CS108 - Graphics Design and Print Media
CS161 - Relational Databases with MS Access: Introduction
CS203 - Illustration & Design Using Adobe Illustrator
CS204 - Motion Graphics Using Macromedia Flash
CS207 - Relational Database Concepts
CS209 - Web Development Using FrontPage : Project
CS212 - Relational Databases With MS Access: Advanced
CS213 - Relational Databases with MS Access: Project
CS241 - Web Development Using JavaScript
CS242 - Web Development Using XHTML
CS302 - Enterprise Data Exchange Using XML
CS303 - Enterprise Development Using VB.NET: Introduction
CS307 - Introduction to Networking
CS308 - Object Oriented Programming and UML
CS310 - Relational Databases with MS SQL Server
CS312 - Web Site Development Using DreamWeaver
CS400 - Enterprise Development Using VB.NET: Advanced
CS403 - Enterprise Development Using ASP.NET
CS408 - Enterprise Development Using C#
CS442 - Object Oriented Programming With Java
CS481 - Enterprise Development using J2EE
GM314 - Contemporary Internet Topics
GM363 - Database Management Systems
MC302 - Management Information Systems
MC345 - Information Technology Project Management

Visit the APUS website for a description of these courses.

IT Security: Implementation Plan (Capstone) (CS 498) **3.00**

(This Capstone course is a senior level course designed to allow the student to review, analyze and integrate the work the student has completed toward a degree in Information Systems Security. Students will complete various security related plans and policies that demonstrate mastery of their program of study and results in a meaningful culmination of their learning; these plans and policies will be used to assess their level of mastery of the stated outcomes of their degree requirements. This is a capstone course to be taken after all other Information Systems Security courses have been satisfactorily completed. Students must have submitted a graduation application and have been cleared by the graduations department prior to registering for this course.)

Free Electives **30.00**

(Students must complete 36 semester hours of courses not taken to fulfill the requirements listed above. Additional general education courses may be taken to fulfill elective requirements.)

Excess or Duplicate Credit

TOTAL **122.00** **0.00**

Thank you for requesting support from the U.S. Coast Guard Institute (CGI). Whereas we serve as an activity in support of your unit Educational Services Officer (ESO), you are encouraged to seek assistance from your local ESO in your academic endeavors. The following information is provided to help you understand what is presented in this degree plan:

This document is an UNOFFICIAL Degree Plan to provide you with a preliminary assessment of how your prior learning experiences might fit into the specified degree program for this academic institution. If you choose to pursue this degree option, you must present it to a college representative, who will review it for the following:

o Accurate representation of the college's degree program requirements, including course numbers and titles, credit hours for each course, lower- and upper-level course requirements, and the total number of credits needed for the degree.

o Appropriate assignment of ACE Guide-recommended credit at the lower or upper level for military service schools and occupations, CLEP, DSST, and other tests, transfer credit for courses from other colleges and universities, certification programs, etc.

o Appropriate assignment of SOC Course Category Codes from the SOC Handbook Transferability Tables. The SOC Degree Program Handbooks can be obtained from the SOC web site at: www.soc.aascu.org should you wish to learn more about the course transfer guarantees among SOC network institutions.

IMPORTANT NOTE: When you are ready to seek admission into this degree program, please send the completed enrollment form (found on the college's web page) to the USCG Institute. The registrar will send the college or university an official USCG transcript, a copy of the degree plan (if one was developed through the USCG Institute and was identified on your transcript request), and a ready-for-signature

SOC Student Agreement (when signed by a college official, becomes a contract for degree completion).

Credit for all courses you have taken must be reflected on official transcripts sent directly to this college from the administrative offices of the colleges you previously attended. This degree plan is often used for information purposes by college counselors pending receipt of the official transcripts from the source colleges.

This degree plan is not intended to compete with your local college or university. Keep in mind, you are allowed to transfer in a significant amount of the degree requirements to this institution. As such, credit from local colleges, college level examination programs, or advanced military training may be applied to this degree. You may also complete the courses necessary from this college either in residence (on campus or possibly on a military base at a campus extension in the Education Center) or through distance delivery of the courses. If you have questions, please contact the college counselor or your advisor listed at the bottom of this Degree Plan.

DEGREE PLAN LEGEND:

SH = Semester hours
VOC = Vocational, not relative to an academic degree
LL = Lower Level, i.e. courses at the Freshman/Sophomore level
UL = Upper Level, i.e. courses at the Junior/Senior level
GL = Graduate Level (sometimes recommended by ACE for very complex courses)
[#] such as [EN024A] or [EN024B] = SOC Course Category Codes*
{#} such as {DANTES Code = 01.02.03} = DANTES Academic Codes **

* SOC Course Category Codes: Service members Opportunity Colleges (SOC) is a consortium of over 1,600 accredited colleges and universities seeking to provide degree opportunities to the military. Over 170 of these institutions participate in network degree programs developed for the Army, Navy, Marine Corps, and Coast Guard. A SOC course category number beside a course from one of these institutions, such as [EN024A] or [EN024B] for English Composition, indicates that courses from other degree program institutions with the same code may be taken to satisfy the degree requirement. See the SOC Degree Programs Handbooks at http://www.soc.aascu.org/

** DANTES Academic Codes: The Defense Activity for Non-Traditional Education Support (DANTES) publishes the DANTES Independent Study Catalog (DISC) annually, which lists more than 6,000 courses from dozens of regionally accredited colleges and universities. Because this is a degree from a SOC affiliated college, the academic residency requirements are limited, thereby allowing students to transfer in a significant portion of the degree, as mentioned above. If the course you desire to take is not offered by this institution when you want to take it, consider the opportunities the courses in the DISC present. For more information, visit http://www.dantes.doded.mil/dantes_web/distancelearning/disc/front/cont.htm Keep in mind, you should always check with the counselor or academic advisor at this institution before enrolling in a course listed in the DISC to ensure it will be accepted in transfer toward this degree.

American Public University System (APUS) General Information

The American Public University System (APUS) consists of two online universities: American Public University (APU) and American Military University (AMU).

APUS' origins reach back to 1993, when Jim Etter, a Marine Corps officer who taught at Marine Corps Base Quantico, retired from active service and launched one of the first 100% online universities, American Military University. AMU was designed to meet the unique educational needs of the military - transient, working adults needing a range of program offerings from traditional courses such as criminal justice to unique courses such as counterterrorism and military intelligence, which are not readily available at most institutions.

In 2002, after ten years of growth and service to thousands of students and hundreds of graduates, AMU expanded into the American Public University System, adding the American Public University. APU is designed to extend the system's outreach to better meet the needs of those interested in public service related programs, such as criminal justice, public safety, national security and other adult learners seeking to advance their education through a robust, online curriculum.

Tuition:

Undergraduate Tuition: $250/semester hour = $750 per 3 credit course
Graduate Tuition: $275semester hour = $825 per 3 credit course

APUS is regionally accredited by the Higher Learning Commission (HLC) of the North Central Association.

For additional information regarding this degree program, please contact:

Tracy Mullen Cosker
Director of Transfer Students
American Military University
111 W. Congress Street
Charles Town, WV 25414
PH: (703)-396-6889
tcosker@apus.edu
http://www.amu.apus.edu

POLICY NOTES:

Undergraduate students who apply at the associate level may transfer up to a maximum of 45 credit hours or, at the bachelor's level, up to 90 credit hours. Your military or professional experience may also be evaluated for transfer credit.

Undergraduate Book Grant

Through the AMU Undergraduate Book Grant, all undergraduate students earning academic credit are shipped textbooks each semester directly from MBS -- at no cost to the student. All undergraduate students are awarded this grant upon admission with the expectation that students will successfully complete their course(s) each

semester. Students receiving the Book Grant who do not successfully complete courses must return the books and other course materials, to MBS at their expense..

This college is rated as one of the nation's best in U.S. News & World Report's "America's Best Colleges" issue.

Evaluation completed by: Charles Morrison On: 02 August 2010