# American Public University System

*The Ultimate Advantage is an Educated Mind*

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**School of Science and Technology**
**ISSC498: IT Security:  Implementation Plan (Capstone)**
**3 Credit Hours**
**8 Week Course**
**Prerequisite(s): Senior standing and completion of all core and major courses prior to enrollment.**

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## Instructor Information

**Instructor:**   Irena Kageorgis (Bio)
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**Office Hours:** (Email 24/7) – Email first, Monday to Sunday 10:00 AM PST to 10:00 PM PST, or by appointment.

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## Course Description (Catalog)

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. Student must have SENIOR standing to register.

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## Course Scope

Develop actionable and maintainable information security plans and policies that address: physical security, authentication, network security, encryption, software development, email, internet, acceptable use, acceptable speech, and viruses/worms.

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## Course Objectives

The successful student will fulfill the following learning objectives:
1. Develop an enterprise security plan proposal
2. Develop an enterprise security policy plan
3. Prepare an enterprise technical infrastructure security plan
4. Prepare an enterprise risk assessment, audit, and Cyberlaw policy
5. Prepare an enterprise business continuity and disaster recovery plan
6. Develop an organizational policy for identity management
7. Develop an organizational plan for security awareness training
8. Develop an enterprise policy for auditing

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## Course Delivery Method

This B.A. in Information Systems Security course delivered via distance learning will enable students to complete academic work in a flexible manner, completely online. Resources and access to an online learning management system will be made available to each student. **Online assignments are due by the last day of each week** and include Forum questions (accomplished in groups through a threaded Forum), and individual assignments (submitted for review by the Faculty Member). Assigned faculty will support the students throughout this eight-week course.

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## Resources

### Required Text – e-Book available within the classroom via the Library link

Vacca, John. (2010). Managing Information Security. Syngress; 1$^{st}$ edition. ISBN: 1597495336

### Web-based Readings
Vacca, John. (2009). Computer and Information Security Handbook. Burlington, MA: Morgan Kaufman. ISBN: 0123743540

Benson, Christopher. (2000). Security Strategies. Retrieved from
http://www.microsoft.com/technet/Security/bestprac/bpent/sec1/secstrat.mspx
SANS Top-20 Internet Security Attack Targets (2006 Annual Update). Retrieved from
https://www.sans.org/top20/
Neoh, D. (2004). Corporate Wireless LAN: Know the Risks and Best Practices to Mitigate Them.
Retrieved from http://www.sans.org/rr/whitepapers/wireless/1350.php

### Software Requirements

- Microsoft Office (MS Word, MS Excel, MS PowerPoint)
- Adobe Acrobat Reader (Click here for free download)

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## Evaluation Procedures

The grading will be based on six graded assignments, seven Forums, and major implementation plan project.

1. There will be six assignments during the course that will be utilized in your final paper. The assignments will count as 27% of the final grade. The assignments are comprised of each of the major portion of the final implementation plan. Assignments should be prepared in Microsoft Word or an equivalent word processor program and uploaded into the student folder by the due date.
2. There will be seven Forum you will need to respond to (with a minimum of two responses to fellow student postings). Answers should be a paragraph with a **topic sentence** that **restates the question** and **supporting sentences** using the terms, concepts, and theories from the required readings. Each answer should be a **minimum of 300 words**. You may **attack**, **support** or **supplement** other students' answers using the terms, concepts and theories from the required readings. All responses should be a **courteous paragraph** that contains a **topic sentence** with good **supporting sentences**. You may respond multiple times with a continuous discussion with points and counter points. The key requirement is to express your idea and then **support your position** using the terms, concepts and theories from the required readings to demonstrate to me that you understand the material. The Forum postings will count as 21% of the final grade.
3. A paper is due in Week 8 of the course (a **minimum** of 5000 words) counts as 52% of the course grade. The key to this assignment is to demonstrate your understanding of the information security topics covered throughout the undergraduate program. It will be a culmination of Assignments 1-6 plus the additional necessary background for the completion of the major implementation plan. The paper will follow a conventional report format (introduction, body, conclusion, references) using APA Writing Style.

   Your paper will be graded on the following categories:

   - Focus/Thesis
   - Content/Subject Knowledge
   - Organization of Ideas/Format
   - Writing Conventions (Grammar and Mechanics)
   - Use of Computer Technology/Applications (i.e. Appropriate use of word processor or spreadsheets as it relates to the finished product )

| Grade Instruments | Points Possible | Percent% of Final Grade |
|---|---|---|
| Assignments 1 – 6 | 30 | 27% |
| Forums 1 – 7 | 35 | 21% |
| Final Paper | 65 | 52% |
| TOTAL | 135 Points | 100% |

## Grading Scale

Please see the student handbook to reference the University's grading scale.

## Course Outline

| Week | Learning Objective(s) | Topic(s) | Assignment(s) |
|---|---|---|---|
| 1 | **CO1:** Develop an enterprise security plan proposal | **Case Study / Security Plan** | • Read: http://technet.microsoft.com/en-us/library/cc723506.aspx<br>• Read Chapter 1 from required textbook<br>• Supplemental online reading - chapters 1, 14, 15 – retrieve from online library: Vacca, John. (2009). Computer and Information Security Handbook. Burlington, MA: Morgan Kaufman<br>• Write a 3-5 page paper to propose an enterprise wide security plan for the organization that you work for. (If you are not currently employed – choose an organization that you would like to create a plan for)<br>• Forum #1 |
| 2 | **CO2:** Develop an enterprise security policy plan | **Security Policy** | • Read Chapter 2 from the required textbook<br>• Supplemental online reading - chapters 16, 29, 40– retrieve from online library: Vacca, John. (2009). Computer and Information Security Handbook. Burlington, MA: Morgan Kaufman<br>• Using your enterprise security plan proposal as a guide, write the enterprise security policy for the organization.<br>• Forum #2 |
| 3 | **CO3:** Prepare an enterprise technical infrastructure security plan | **Technical Infrastructure** | • Read chapters 3, 5 & 8 from the required textbook<br>• Supplemental online reading - chapters 10, 11, 21, 32 – retrieve from online library: Vacca, John. (2009). Computer and Information Security Handbook. Burlington, MA: Morgan Kaufman<br>• Using your enterprise security plan proposal as a guide, write the enterprise technical infrastructure security plan for the organization.<br>• Forum #3 |
| 4 | **CO4:** Prepare an enterprise risk assessment, audit, and Cyberlaw policy | **Risk, Audit, & Law** | • Read chapters 6, 9 & 10 from the required textbook<br>• Supplemental online reading - chapters 23, 35 32 – retrieve from online library: Vacca, John. (2009). Computer and Information Security Handbook. Burlington, MA: Morgan Kaufman<br>• Using your enterprise security plan proposal as a guide, write the enterprise risk assessment, audit, and Cyberlaw for the organization.<br>• Forum #4 |
| 5 | **CO5:** Prepare an enterprise business continuity and disaster recovery plan | **Business Continuity & Disaster Recovery** | • Read : http://www.csoonline.com/article/204450/business-continuity-and-disaster-recovery-planning-the-basics<br>• Supplemental online reading - Read chapters 43 – retrieve from online library: Vacca, John. (2009). Computer and Information Security Handbook. Burlington, MA: Morgan Kaufman<br>• Using your enterprise security plan proposal as a guide, write the enterprise business continuity and disaster recovery plans for the organization.<br>• Forum #5 |
| 6 | **CO6:** Develop an organizational policy for identity management<br>**CO7:** Develop an organizational plan for security | **Training & Identity Management** | • Read chapters 4 & 9 from the required textbook.<br>• Write a 3-5 page paper (minimum) to addressing identity management and security awareness training.<br>• Forum #6 |

| | | | |
|---|---|---|---|
| | awareness training | | |
| 7 | **CO8:** Develop an enterprise policy for auditing | **Penetration Testing** | • Read chapters 10 from the required textbook. <br> • Work on final paper <br> • Forum #7 |
| 8 | **CO1 to CO8** | **Implementation Plan** | **Final Paper Due** |

## Policies

Please see the **student handbook** to reference all University policies. Quick links to frequently asked question about policies are listed below.

**Drop/Withdrawal Policy**
**Plagiarism Policy**
**Extension Process and Policy**

**WRITING EXPECTATIONS**
All written submissions should be submitted in a font and page set-up that is readable and neat. It is recommended that students try to adhere to a consistent format, which is described below.
- Typewritten in double-spaced format with a readable style and font and submitted inside the electronic classroom (unless classroom access is not possible and other arrangements have been approved by the professor).
- Arial 11 or 12-point font or Times New Roman styles.
- Page margins Top, Bottom, Left Side and Right Side = 1 inch, with reasonable accommodation being made for special situations and online submission variances.

**CITATION AND REFERENCE STYLE**
Assignments completed in a narrative essay or composition format must follow APA guidelines. This course will require students to use the citation and reference style established by the American Psychological Association (APA), in which case students should follow the guidelines set forth in *Publication Manual of the American Psychological Association* (6th ed.). (2010). Washington, D.C.: American Psychological Association.

**LATE ASSIGNMENTS**
Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. As adults, students, and working professionals I understand you must manage competing demands on your time. Should you need additional time to complete an assignment please contact me before the due date so we can discuss the situation and determine an acceptable resolution. Routine submission of late assignments is unacceptable and may result in points deducted from your final course grade. Assignments submitted late without a prearranged extension will be subject to a 10% late penalty. **No late assignments will be accepted after the last day of the course.**

## Academic Services

**ONLINE LIBRARY RESEARCH CENTER & LEARNING RESOURCES**
The Online Library Resource Center is available to enrolled students and faculty from inside the electronic campus. This is your starting point for access to online books, subscription periodicals, and Web resources that are designed to support your classes and generally not available through search

engines on the open Web. In addition, the Center provides access to special learning resources, which the University has contracted to assist with your studies. Questions can be directed to orc@apus.edu.

- **Charles Town Library and Inter Library Loan:** The University maintains a special library with a limited number of supporting volumes, collection of our professors' publication, and services to search and borrow research books and articles from other libraries.
- **Electronic Books:** You can use the online library to uncover and download over 50,000 titles, which have been scanned and made available in electronic format.
- **Electronic Journals:** The University provides access to over 12,000 journals, which are available in electronic form and only through limited subscription services.
- **Turnitin.com:** Turnitin.com is a tool to improve student research skills that also detect plagiarism. Turnitin.com provides resources on developing topics and assignments that encourage and guide students in producing papers that are intellectually honest, original in thought, and clear in expression. This tool helps ensure a culture of adherence to the University's standards for intellectual honesty. Turnitin.com also reviews students' papers for matches with Internet materials and with thousands of student papers in its database, and returns an Originality Report to instructors and/or students.

## Selected Bibliography

Forouzan, B. A. (2003) *Local Area Networks.* New York, New York: McGraw-Hill

Helmig, J. (2002). *TCP/IP Basics.* Retrieved from http://www.wown.com/j_helmig/tcpip.htm

Lakshmanan, Y. (1999). *IP Addressing.* Retrieved from http://www.geocities.com/SiliconValley/Vista/8672/network/ipaddr.html

Lewis, D. (2004). *James Bond Meets the OSI Model.* Retrieved from http://www.lewistech.com/rlewis/Resources/jamesX.aspx

Macaulay, P. (2004). *Data Communications Cabling FAQs.* Retrieved from http://www.faqs.org/faqs/LANs/cabling-faq/index.html

Postel, J. (1994). *RFC 1591 - Domain Name System Structure and Delegation.* Retrieved from http://www.faqs.org/rfcs/rfc1591.html

RAD Data Communications. (1997) *Token Ring LANs.* Retrieved from http://www2.rad.com/networks/1997/nettut/token_ring.html

RAD Data Communications. (1997) *Ethernet Local Area Networks.* Retrieved from http://www2.rad.com/networks/1997/nettut/ethernet.html

Raz, U. (2003). *TCP/IP Resources List.* Retrieved from http://www.faqs.org/faqs/internet/tcp-ip/resource-list/index.html

Regan, P. (2004) *Local Area Networks.* Upper Saddle River, New Jersey: Prentice-Hall Inc.

Wang, R. & Fisher, J. (2005). *Wireless Local Area Networks (WLANs).* Retrieved from http://www.pdamd.com/vertical/features/wireless_3.xml

**Appendix A – Grading Rubric**

All written assignments will be assessed according to this rubric. Note that a score of 0 may be assigned in any category where your work does not meet the criteria for the beginning level.

| APUS Assignment Rubric Undergraduate Level 300-400 | EXEMPLARY LEVEL 4 | ACCOMPLISHED LEVEL 3 | DEVELOPING LEVEL 2 | BEGINNNIG LEVEL 1 | TOTAL POINTS |
|---|---|---|---|---|---|
| **FOCUS/THESIS** | Student exhibits a defined and clear understanding of the assignment. Thesis is clearly defined and well constructed to help guide the reader throughout the assignment. Student builds upon the thesis of the assignment with well-documented and exceptional supporting facts, figures, and/or statements. | Establishes a good comprehension of topic and in the building of the thesis. Student demonstrates an effective presentation of thesis, with most support statements helping to support the key focus of assignment. | Student exhibits a basic understanding of the intended assignment, but the thesis is not fully supported throughout the assignment. While thesis helps to guide the development of the assignment, the reader may have some difficulty in seeing linkages between thoughts. While student has included a few supporting facts and statements, this has limited the quality of the assignment. | Exhibits a limited understanding of the assignment. Reader is unable to follow the logic used for the thesis and development of key themes. Introduction of thesis is not clearly evident, and reader must look deeper to discover the focus of the writer. Student's writing is weak in the inclusion of supporting facts or statements. | 10 |
| **CONTENT/SUBJECT KNOWLEDGE** | Student demonstrates proficient command of the subject matter in the assignment. Assignment shows an impressive level of depth of student's ability to relate course content to practical examples and applications. Student provides comprehensive analysis of details, facts, and concepts in a logical sequence. | Student exhibits above average usage of subject matter in assignment. Student provides above average ability in relating course content in examples given. Details and facts presented provide an adequate presentation of student's current level of subject matter knowledge. | The assignment reveals that the student has a general, fundamental understanding of the Resource. Whereas, there are areas of some concerning in the linkages provided between facts and supporting statements. Student generally explains concepts, but only meets the minimum requirements in this area. | Student tries to explain some concepts, but overlooks critical details. Assignment appears vague or incomplete in various segments. Student presents concepts in isolation, and does not perceive to have a logical sequencing of ideas. | 20 |

| CRITICAL THINKING SKILLS | Student demonstrates a higher-level of critical thinking necessary for 300-400 level work. Learner provides a strategic approach in presenting examples of problem solving or critical thinking, while drawing logical conclusions which are not immediately obvious. Student provides well-supported ideas and reflection with a variety of current and/or world views in the assignment. Student presents a genuine intellectual development of ideas throughout assignment. | Student exhibits a good command of critical thinking skills in the presentation of material and supporting statements. Assignment demonstrates the student's above average use of relating concepts by using a variety of factors. Overall, student provides adequate conclusions, with 2 or fewer errors. | Student takes a common, conventional approach in guiding the reader through various linkages and connections presented in assignment. However, student presents a limited perspective on key concepts throughout assignment. Student appears to have problems applying information in a problem-solving manner. | Student demonstrates beginning understanding of key concepts, but overlooks critical details. Learner is unable to apply information in a problem-solving fashion. Student presents confusing statements and facts in assignment. No evidence or little semblance of critical thinking skills. | 20 |
|---|---|---|---|---|---|
| ORGANIZATION OF IDEAS/FORMAT | Student thoroughly understands and excels in explaining all major points. An original, unique, and/or imaginative approach to overall ideas, concepts, and findings is presented. Overall format of assignment includes an appropriate introduction (or abstract), well- developed paragraphs, and conclusion. Finished assignment demonstrates student's ability to plan and organize research in a logical sequence. Student uses at least of 5-7 references in assignment. | Student explains the majority of points and concepts in the assignment. Learner demonstrates a good skill level in formatting and organizing material in assignment. Student presents an above average level of preparedness, with a few formatting errors. Assignment contains less than 5 resources. | Learner applies some points and concepts incorrectly. Student uses a variety of formatting styles, with some inconsistencies throughout the paper. Assignment does not have a continuous pattern of logical sequencing. Student uses less than 3 sources or references. | Assignment reveals formatting errors and a lack of organization. Student presents an incomplete attempt to provide linkages or explanation of key terms. The lack of appropriate references or source materials demonstrates the student's need for additional help or training in this area. Student needs to review and revise the assignment. | 20 |
| WRITING CONVENTIONS (GRAMMAR & MECHANICS) | Student demonstrates an excellent command of grammar, as well as presents research in a clear and concise writing style. Presents a thorough, extensive | Student provides an effective display of good writing and grammar. Assignment reflects student's ability to select appropriate word usage | Assignment reflects basic writing and grammar, but more than 5 errors. Key terms and concepts are somewhat vague and not completely explained by | Topics, concepts, and ideas are not coherently discussed or expressed in assignments. Student's writing style is weak and needs | 20 |

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|---|---|---|---|---|---|
| | understanding of word usage. Student excels in the selection and development of a well-planned research assignment. Assignment is error-free and reflects student's ability to prepare a high-quality academic assignment. | and present an above average presentation of a given topic or issue. Assignment appears to be well written with no more than 3-5 errors. Student provides a final written product that covers the above-minimal requirements. | student. Student uses a basic vocabulary in assignment. Student's writing ability is average, but demonstrates a basic understanding of the subject matter. | improvement, along with numerous proofreading errors. Assignment lacks clarity, consistency, and correctness. Student needs to review and revise assignment. | |
| **USE OF COMPUTER TECHNOLOGY/ APPLICATIONS** | Student provides a high-caliber, formatted assignment. Learner exhibits excellent use of computer technology in the development of assignment. Quality and appropriateness of stated references demonstrate the student's ability to use technology to conduct applicable research. Given assignment includes appropriate word processing, spreadsheet and/or other computer applications as part of the final product. | Assignment presents an above-average use of formatting skills, with less than 3 errors. Students has a good command of computer applications to format information and/or figures in an appropriate format. Student uses at least two types of computer applications to produce a quality assignment. | Student demonstrates a basic knowledge of computer applications. Appearance of final assignment demonstrates the student's limited ability to format and present data. Resources used in assignment are limited. Student may need to obtain further help in the use of computer applications and Internet research. | Student needs to develop better formatting skills. The student may need to take additional training or obtain help from the Educator Help Desk while preparing an assignment. Research and resources presented in the assignment are limited. Student needs to expand research scope. The number of formatting errors is not acceptable. | 10 |
| **TOTAL POINTS** | | | | | 100 |