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ISSC231

STUDENT WARNING: This course syllabus is from a previous semester archive and serves only as a preparatory reference. Please use this syllabus as a reference only until the professor opens the classroom and you have access to the updated course syllabus. Please do NOT purchase any books or start any work based on this syllabus; this syllabus may NOT be the one that your individual instructor uses for a course that has not yet started. If you need to verify course textbooks, please refer to the online course description through your student portal. This syllabus is proprietary material of APUS.

Course Summary

Course : ISSC231 **Title :** Networking Concepts
Length of Course : 8
Prerequisites : N/A **Credit Hours :** 3

Description

Course Description:

This course is a study of the evolution, the concepts, and the principles of local, distributed and enterprise networking. This course examines Network design, topologies, architecture, media, interface cards, protocols, problem resolution, communications, administration, operations, and resources. It introduces the student to the concepts of wireless networking, and web-based networks. This course also explores the Open Systems Interconnection (OSI) and the Transmission Control Protocol/ Internet Packet (TCP/IP) reference models. This course also examines internetworking servers, and hardware and operating systems maintenance.

Course Scope:

This course explores the convergence of computer networking and telecommunications technologies. Capabilities and limitations of converged networking infrastructure are analyzed through voice, data and video applications in relation to performance, management and security challenges

Objectives

A successful student will fulfill the following learning objectives:
1. Explain how the evolution of communications and networking technologies has produced new business solutions.
2. Differentiate between the standards, specifications, and technologies that drive current LAN connectivity.
3. Examine the TCP/IP protocol family and how IP is used to support voice, video, data, and Internet communications.
4. Analyze Layer 2 networking technology's use for end-point connectivity and developing VLAN resiliency to meet business requirements based on the principles of networking technologies.
5. Describe Layer 3 networking protocols' use to establish communications over the network.
6. Describe the wireless standards and security methodologies used to increase business productivity.

7. Explain VoIP in relation with modern networks and their ability to carry regular voice traffic.
8. Describe unified communications and Session Initiation Protocol.

9. Analyze how fault, configuration, asset control, performance, security (FCAPS) is used for network management based on the principles of networking technologies.

Outline

Week 1: Lesson 1: Today's Communication Requirements and Challenges

LEARNING OBJECTIVES

CO#1

CO#3

Reading/Assignment

Reading: Chapter 1, 2 and 6

***Discussion: Week 1**

***Assignment 1**

***Quiz 1**

Week 2: Lesson 2: Topologies, Ethernet, and Devices

LEARNING OBJECTIVES

CO#2

Readings/Assignments

Reading: Chapter 3, 4 and 5

***Discussion: Week 2**

***Assignment 2**

***Quiz 2**

Week 3: Lesson 3: IP Addressing, Subnetting, and Routing

LEARNING OBJECTIVES

CO#3

CO#7

CO#8

Readings/Assignments

Reading: Chapter 7, 8 and 9

***Discussion: Week 3**

***Assignment 3**

***Quiz 3**

Week 4: Lesson 4: Layer 2

LEARNING OBJECTIVES

CO#4

CO#5

CO#6

Readings/Assignments

Reading: Chapter 10, 11 and 12

***Discussion: Week 4**

***Assignment 4**

***Quiz 4**

Week 5: Lesson 5: Auth and Access, Threats, and Physical Security

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LEARNING OBJECTIVES

CO#1

CO#9

ASSIGNMENT – (*Graded)

Reading: Chapter 13, 14 and 15

***Discussion: Week 5**

***Week 5 Case Study**

***Quiz 5**

Week 6: Lesson 6: WANs, Troubleshooting, and Tools

LEARNING OBJECTIVES

CO#5

ASSIGNMENT – (*Graded)

Reading: Chapter 16, 17 and 18

***Discussion: Week 6**

***Assignment 6**

***Quiz 6**

Week 7: Lesson 7: Network Management – Performance Management and Security

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LEARNING OBJECTIVES

CO#9

Readings/Assignments

Reading: Chapter 19 and 20

***Discussion: Week 7**

***Assignment 7**

***Quiz 7**

Week 8: Lesson 8: Asset Management

DATES

LEARNING OBJECTIVES

CO#1-CO#9

Applied

ASSIGNMENT – (*Graded)

Reading: Chapter 1, 2 and 3

***Discussion: Week 8**

***Project Paper Due**

***Project Presentation**

Evaluation

The grading will be based on seven graded assignments, eight weekly discussion board postings, an individual project paper and a presentation, fifteen open book quiz zes, and a case study in week 8.

1. There will be seven assignments (4% each) counting a total of 28% of the final grade. The assignments will follow each of the major milestones of the course. These assignments will be based on problems or questions from the text. They are a combination of Lesson Reviews and Lesson Activities and/or Labs. They are selected to provide the student with information to understand the concepts discussed. Assignments should be prepared in Microsoft Word and uploaded into the student folder by the due date.

2. There will be eight weekly discussion postings you will need to respond to. Weeks 1-8 will have postings in each discussion area. Answers should be 2-3 paragraphs with a topic sentence that restates the question and supporting sentences using the terms, concepts, and theories from the required readings. You are required to answer two of your classmate's posts. 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 discussion postings will count as 24% (3% for each discussion posting other) of the final grade.

3. The Quizzes will each be half an hour non-proctored tests. Quizzes count as 15% of the final grade. It will be a multiple choice, true-false, and/or fill-in the blanks tests and will be open book and open note. Quizzes are located in the Quizzes area. There will be 15 quizzes in the course, one based on each assigned reading assignment for the week.

4. The case study will count as 18% of the final grade. The case study will be based upon the material you have read and studied during the course of the term. Please coordinate with the professor for any special arrangements. The case study will be presented in Week 8 and serves as the final for the course.

5. There will be one project paper (10%) and presentation (5%) throughout the session, counts as 15% of the final grade. The content for the project paper is listed under the Week 7 of this syllabus. The project paper and presentation will be due in Week 8. All pre-assessment questionnaires, assignments, discussion questions and tests are required by 12:00 midnight Eastern Time

Grading:

Name	Grade %
Discussions	24.00 %
Discussion Week 1	3.00 %
Discussion Week 2	3.00 %
Discussion Week 3	3.00 %
Discussion Week 4	3.00 %
Discussion Week 5	3.00 %
Discussion Week 6	3.00 %
Discussion Week 7	3.00 %
Discussion Week 8	3.00 %
Assignments	30.00 %
Assignment 1	5.00 %
Assignment 2	5.00 %
Assignment 3	5.00 %
Assignment 4	5.00 %
Assignment 6	5.00 %
Assignment 7	5.00 %
Case Study	16.00 %
Week 5 - Case Study	16.00 %
Project Paper	16.00 %
Project Paper/Presentation Submittal	16.00 %
Tests and Quizzes	14.00 %
Week 1 Quiz	2.00 %
Week 2 Quiz	2.00 %
Week 6 Quiz	2.00 %
Week 3 Quiz	2.00 %
Week 4 Quiz	2.00 %
Week 5 Quiz	2.00 %
Week 7 Quiz	2.00 %

Materials

Book Title: ISSC231 - required software for this course is not covered by the APUS Book Grant. Purchase information is available here - APUS Course Material. Cost may vary by subscription length.

Author:

Publication Info:

ISBN: ISSC231 Software

Book Title: Various resources from the APUS Library & the Open Web are used. Please visit eReserve to locate the course.*

Author:

Publication Info:

ISBN: ERESERVE NOTE

To access the book online - select on the content and then select on required reading and resources.

Recommended Web-based Readings

Cisco Systems, Inc.(n.d.). Evaluating Unified Communications Solutions White Paper

http://www.cisco.com/c/en/us/products/collateral/unified-communications/7800-series-mediaconvergence-servers/white_paper_c11-604516.html

Cisco Systems Wireless and LAN White Papers

http://www.cisco.com/c/en/us/tech/wireless-2fmobility/wireless-lan-wlan/tech-white-papers-list.html

Siemens (2012) State of Enterprise Communications

http://www.idgconnect.com/view_abstract/9308/2012-state-enterprisecommunications?source=connect

Lewis, D. (2004). James Bond Meets the OSIModel. Retrieved from

http://www.lewistech.com/rlewis/Resources/jamesX.aspx

Helmig, J. (2002). TCP/IP Basics.

Microsoft (2011). IP Addressing.

Software Requirements

1. Microsoft Office (MS Word, MS Excel, MS PowerPoint). Open Office or Libre Office will suffice as well as long as documents can be submitted in MS Word format.
2. Microsoft Visio OR you can also use Powerpoint OR any free online tools such as the ones below:
   a. Omnigraffle – for MAC
   b. SmartDraw
   c. eDraw Max
   d. Creately
   e. Dia
   f. MaSSHandra
   g. ConceptDraw
   h. Cade

i. Diagram Designer
j. LanFlow
k. NetProbe
l. Network Notepad
m. GoVisual Diagram Editor

Here are additional resources on acceptable tools:

Comparison of network diagram software

Diagram your network with these tools

Support Omni Group

3. Adobe Acrobat Reader
4. Microsoft Windows or an OS compatible with an Office Suite to submit documents in Word format.

Selected Bibliography

Helmig, J. (2002). *TCP/IP Basics*.

ISSA. (2005). *International systems security association home page.*

Lewis, D. (2004). *James Bond Meets the OSIModel*. Retrieved from

http://www.lewistech.com/rlewis/Resources/jamesX.aspx

Macaulay, P. (2004). *Data Communications Cabling FAQs*.

Microsoft (2011). *IP Addressing*.

Postel, J. (1994). *RFC 1591 - Domain Name System Structure and Delegation*.

Raz, U. (2003). *TCP/IP Resources List*. Retrieved from

http://www.faqs.org/faqs/internet/tcp-ip/resourcelist/index.html

SANS. (2005). *Infosec reading room*.

TechTarget. (2005). *Information security magazine*.

Course Guidelines

Citation and Reference Style

- Attention Please: Students will follow the APA Format as the sole citation and reference style used in written work submitted as part of coursework to the University. Assignments completed in a narrative essay or composition format must follow the citation style cited in the APA Format.

Tutoring

- Tutor.com offers online homework help and learning resources by connecting students to certified tutors for one-on-one help. AMU and APU students are eligible for 10 free hours* of tutoring provided by APUS. Tutors are available 24/7 unless otherwise noted. Tutor.com also has a SkillCenter Resource Library offering educational resources, worksheets, videos, websites and career help. Accessing these resources does not count against tutoring hours and is also available 24/7. Please visit the APUS Library and search for 'Tutor' to create an account.

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. The due date for each assignment is listed under each Assignment.
- Generally speaking, late work may result in a deduction up to 15% of the grade for each day late, not to exceed 5 days.
- As a working adult I know your time is limited and often out of your control. Faculty may be more flexible if they know ahead of time of any potential late assignments.

Turn It In

- Faculty may require assignments be submitted to Turnitin.com. Turnitin.com will analyze a paper and report instances of potential plagiarism for the student to edit before submitting it for a grade. In some cases professors may require students to use Turnitin.com. This is automatically processed through the Assignments area of the course.

Academic Dishonesty

- Academic Dishonesty incorporates more than plagiarism, which is using the work of others without citation. Academic dishonesty includes any use of content purchased or retrieved from web services such as CourseHero.com. Additionally, allowing your work to be placed on such web services is academic dishonesty, as it is enabling the dishonesty of others. The copy and pasting of content from any web page, without citation as a direct quote, is academic dishonesty. When in doubt, do not copy/paste, and always cite.

Submission Guidelines

- Some assignments may have very specific requirements for formatting (such as font, margins, etc) and submission file type (such as .docx, .pdf, etc) See the assignment instructions for details. In general, standard file types such as those associated with Microsoft Office are preferred, unless otherwise specified.

Disclaimer Statement

- Course content may vary from the outline to meet the needs of this particular group.

Communicating on the Discussion

- Discussions are the heart of the interaction in this course. The more engaged and lively the exchanges, the more interesting and fun the course will be. Only substantive comments will receive credit. Although there is a final posting time after which the instructor will grade comments, it is not sufficient to wait until the last day to contribute your comments/questions on the discussion. The purpose of the discussions is to actively participate in an on-going discussion about the assigned content.

- “Substantive” means comments that contribute something new and hopefully important to the discussion. Thus a message that simply says “I agree” is not substantive. A substantive comment contributes a new idea or perspective, a good follow-up question to a point made, offers a response to a question, provides an example or illustration of a key point, points out an inconsistency in an argument, etc.
- As a class, if we run into conflicting view points, we must respect each individual's own opinion. Hateful and hurtful comments towards other individuals, students, groups, peoples, and/or societies will not be tolerated.

Identity Verification & Live Proctoring

- Faculty may require students to provide proof of identity when submitting assignments or completing assessments in this course. Verification may be in the form of a photograph and/or video of the student’s face together with a valid photo ID, depending on the assignment format.
- Faculty may require live proctoring when completing assessments in this course. Proctoring may include identity verification and continuous monitoring of the student by webcam and microphone during testing.

University Policies

Student Handbook

- Drop/Withdrawal policy
- Extension Requests
- Academic Probation
- Appeals
- Disability Accommodations

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation’s military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.