COURSE OUTLINE : CS/IS 197
D Credit – Degree Applicable
COURSE ID 005222
Cyclical Review: August 2020

COURSE DISCIPLINE : CS/IS

COURSE NUMBER : 197

COURSE TITLE (FULL) : Advanced Networking: Server Operations

COURSE TITLE (SHORT) : Adv Ntwrkg: Server Operations

CATALOG DESCRIPTION

CS/IS 197 is a course designed to acquaint the student with the knowledge and skills required to build, maintain, troubleshoot, and support server hardware and software technologies. Students learn to identify environmental issues understand and comply with disaster recovery procedures. Become familiar with security procedures and industry terminology. Understand server roles, server specializations, and interactions within the computing environment. This course includes labs to provide hands-on training.

Total Lecture Units: 2.00

Total Laboratory Units: 1.00

Total Course Units: 3.00

Total Lecture Hours: 36.00

Total Laboratory Hours: 54.00

Total Laboratory Hours To Be Arranged: 0.00

Total Contact Hours: 90.00

Total Out-of-Class Hours: 72.00

Recommended Preparation: CS/IS 190 or equivalent.

ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1	CS/IS	190	Introduction to Computer Networks	Select the appropriate equipment for a network installation;	Yes
2	CS/IS	190	Introduction to Computer Networks	apply the OSI networking model to a TCP/IP network;	Yes
3	CS/IS	190	Introduction to Computer Networks	configure all TCP/IP network nodes;	Yes
4				select appropriate hardware and software to integrate different networks;	Yes
5				install the hardware and software for a simple local area network.	Yes

EXIT STANDARDS

1 perform system backup and recovery operations;
2 install and manage multiple-drive arrays;
3 upgrade server hardware and operating system;
4 manage multiple servers in a networked environment.

STUDENT LEARNING OUTCOMES

1 Install, configure, maintain, and troubleshoot industry standard servers;
2 determine what equipment is needed in order to install a server;
3 demonstrate knowledge in networking that enable server communication.

COURSE CONTENT WITH INSTRUCTIONAL HOURS

	Description	Lecture	Lab	Total Hours
1	Introduction to Servers • Network architecture • Common server types and functions	2	3	5
2	Exploring the Server Hardware • Server system board components • System processing core • Server memory • Server cooling and power systems	4	6	10

3	Introduction to Server Software • Server software • Network Operating System (NOS) management features • Network Operating System (NOS) security features • Network essentials for servers	6	9	15
4	Exploring the Server Storage System • Storage devices used for servers • Disk interfaces, such as Integrated Drive Electronics (IDE) and Small Computer System Interface (SCSI) • Random Arrays of Independent Disks (RAID) • Network-Attached Storage (NAS) implementations • Storage Area Network (SAN) implementations	4	6	10
5	Installing the Server Hardware • Best practices in server hardware installation • Install hardware components on a server • Verify server installation • Install a server in a network environment	2	3	5
6	Configuring Servers • Network operating system (NOS) installation and verification • Install system monitoring agents and service tools • Server configuration documentation	2	3	5
7	Examining the issues in Upgrading Server Components • Upgrade checklist • Issues in upgrading server hardware • Issues in upgrading server software	4	6	10
8	Examining Servers in an it Environment • Industry best practices for server installation and maintenance • Server security and access methods	4	6	10
9	Troubleshooting Servers • Troubleshooting theory and methodologies • Troubleshoot server hardware problems • Troubleshoot server software problems • Troubleshoot server network problems • Troubleshoot server storage device problems	4	6	10
10	Exploring Disaster Recovery Concepts and Methodologies • Disaster recovery plans • Disaster recovery methodologies • Replication methods	4	6	10
				90

OUT OF CLASS ASSIGNMENTS

1 NetLab projects (e.g. server installation, configuration and maintenance with multiple server operating systems).
2 Research online projects (e.g. research troubleshooting methods for server problems).

METHODS OF EVALUATION

1 quizzes;
2 lab projects
3 final examination.

METHODS OF INSTRUCTION

- [x] Lecture
- [x] Laboratory
- [ ] Studio
- [x] Discussion
- [x] Multimedia
- [x] Tutorial
- [ ] Independent Study
- [x] Collaboratory Learning
- [x] Demonstration
- [ ] Field Activities (Trips)
- [x] Guest Speakers
- [x] Presentations

TEXTBOOKS

Title	Type	Publisher	Edition	Medium	Author	IBSN	Date
CompTIA Server+ Certification All-in-One Exam Guide (Exam SK0-004)	Required	McGraw-Hill Education	1		Lachance, Daniel	978-1259838033	2017