

**Santa Maria Joint Union High School District – Career Technical Education**

**AHC EL 107 NETWORKING ESSENTIALS 2**

**INDUSTRY SECTOR:** Information and Communication Technologies Sector

**PATHWAY:** Networking

**CALPADS TITLE:** Advanced Networking (Capstone)

**CALPADS CODE:** 8122

**HOURS:**

Total	Classroom	Laboratory/CC/CVE
80	32	48

JOB TITLE	O*NET CODE	JOB TITLE	O*NET CODE
Information Security Engineers	15-1299.05	Computer and Information Systems Managers	11-3021.00
Computer Network Support Specialists	15-1231.00	Database Administrators	15-1242.00
Information Security Analysts	15-1212.00	Network and Computer Systems Administrators	15-1244.00

**COURSE DESCRIPTION:**

The second course in a series designed to provide students with knowledge of and laboratory experiences with current and emerging computer networking technology. The focus will be on LANs, WANs, OSI models, IP addressing and router programming; and the theory behind the various kinds of network architectures and data transmission methods including network troubleshooting. Emphasis will be placed on the Cisco System Certification. This course is not open to students who have received credit for CS 107.

**A-G APPROVAL:** No

**ARTICULATION:** None

**DUAL ENROLLMENT:**

College	Course Code
Alan Hancock College	8122

**PREREQUISITES:**

Prerequisite
AHC EL 105
AHC EL 106

## METHODS OF INSTRUCTION

- Direct instruction
- Group and individual applied projects
- Multimedia
- Demonstration
- Field trips
- Guest speakers

## STUDENT EVALUATION:

- Student projects
- Written work
- Exams
- Observation record of student performance
- Completion of assignment

## INDUSTRY CERTIFICATION:

- Cisco System Certification

## RECOMMENDED TEXTS:

- Cisco Press Routing and Switching Essentials Companion Guide Edition : 1 2014

## PROGRAM OF STUDY

Grade	Fall	Spring	Year	Course Type	Course Name
11, 12				Introductory	AHC EL 105 PC Preventative Maintenance
11, 12				Concentrator	AHC EL 106 Networking Essentials 1
11, 12				Capstone	AHC EL 107 Networking Essentials 2

I.	STUDENT LEARNING OUTCOMES	CR	Lab/ CC	Standards
	<p>1. EL 107 SLO1 - Demonstrate an understanding of network router components.</p> <p>2. EL 107 SLO2 -Demonstrate an understanding of fundamental router configuration and troubleshooting .</p> <p>3. EL 107 SLO3 -Evaluate and explain basic routing protocols.</p> <p>4. EL 107 SLO4 -Explain and apply basic router access lists for security and flow control.</p>	32	48	<p><b>Academic:</b>            LS: 11-12.1, 11-12.2, 11-12.3, 11-12.6            RSIT: 11-12.3, 11-12.7            WS: 11-12.1, 11-12.2, 11-12.6, 11-12.7, 11-12.8            N-Q: 1</p> <p><b>CTE Anchor:</b>            Communications: 2.2, 2.3, 2.4, 2.7            Career Planning and Management: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.9            Technology: 4.1, 4.2, 4.3, 4.4, 4.6            Problem Solving and Critical Thinking: 5.1, 5.2, 5.3, 5.4, 5.5, 5.6            Health and Safety: 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 6.11            Responsibility and Flexibility: 7.2, 7.3, 7.4, 7.5, 7.6, 7.7            Ethics and Legal Responsibilities: 8.1, 8.3, 8.4, 8.5, 8.6, 8.7            Leadership and Teamwork: 9.1, 9.2, 9.3, 9.6, 9.7            Technical Knowledge and Skills: 10.1, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9, 10.11, 10.12, 10.13, 10.14            Demonstration and Application: 11.1, 11.2, 11.3</p> <p><b>CTE Pathway:</b>            B1.1, B1.2, B1.3, B1.4, B1.5, B1.6, B2.1, B2.2, B2.3, B3.1, B3.2, B3.3, B3.4, B3.5, B3.6, B3.7, B4.1, B4.2, B4.3, B4.4, B4.5, B4.6, B4.7, B4.8, B4.9, B5.1, B5.2,</p>

				B6.1, B6.2, B6.3, B7.1, B7.2, B7.3, B7.4, B8.1, B8.2, B8.3, B8.4, B8.5
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**Entered by:**

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