

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: CET 2678

COURSE TITLE: IP Telephony Troubleshooting

PREREQUISITE(S): CET 2676

COREQUISITE(S): None

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 4

CONTACT HOUR BREAKDOWN:

 Lecture/Discussion: 3

 Laboratory: 1

 Other _____:

FACULTY WORKLOAD POINTS: 3.7

STANDARDIZED CLASS SIZE
ALLOCATION: 24

CATALOG COURSE DESCRIPTION:

This course provides students the knowledge and skills required to troubleshoot Enterprise IP Telephony network deployments. IPTT is one of several hands-on courses in a curriculum that addresses both design/planning practices and hands-on experience in configuring, deploying, and troubleshooting converged network solutions.

SUGGESTED TEXT(S): None

IMPLEMENTATION DATE: Spring Term, 2004 (20042)

REVIEW OR MODIFICATION DATE:

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Troubleshooting Methodology and Approach	2
II. IP Telephony Architecture Overview	2
III. Understanding the Troubleshooting Tools	4
IV. Skinny Client Registration	2
V. IP Phones	2
VI. Voice Gateways	2
VII. Voice Quality	2
VIII. Fax Machines and Modems	2
IX. Call Routing	4
X. Call Preservation	4
XI. Conference Bridges, Transcoders, and Media Termination	2
XII. Music on Hold	2
XIII. Call Admission Control	4
XIV. Voice Mail	2
XV. Survivable Remote Site Telephony	4
XVI. Applications	2
XVII. SQL Database Replication	2
XVIII. LDAP Integration and Replication	4
XIX. Hands-on Testing	12
Total:	<u>60</u>

PROGRAM TITLE: Telecommunication Engineering Technology (Converged Networks)

COURSE TITLE: IP Telephony Troubleshooting

CIP NUMBER: 1615030302 (AS) 0615030302 (AAS)

LIST PERFORMANCE STANDARD ADDRESSED:

NUMBER(S): TITLES(S):

01.0 DEMONSTRATE KNOWLEDGE OF BASIC ELECTRONICS--The student will be able to:

- 01.04 Demonstrate knowledge of computer systems and basic applications.
- 01.05 Demonstrate use of basic test and measurement equipment.
- 01.06 Understand and demonstrate safety rules.

03.0 DEMONSTRATE PROFICIENCY IN DESIGN AND ANALYSIS OF DIGITAL COMMUNICATION SYSTEMS—

The student will be able to:

- 03.03 Analyze, measure, and troubleshoot digital modulation systems.
- 03.11 Describe, analyze and evaluate the operation of a coder/decoder (CODEC) IC circuit.

05.0 DEMONSTRATE PROFICIENCY IN THE ANALYSIS OF TELEPHONY COMMUNICATION SYSTEMS—The

student will be able to:

- 05.01 Describe the general characteristics of a telephone subscriber loop.
- 05.02 Describe, demonstrate and analyze the operation of tone dialing, DTMF (Dual Tone Multi Frequency), pulse dialing and ringing circuits.
- 05.03 Describe, evaluate and analyze the operation of a MODEM in the originate and answer mode.
- 05.05 Describe, evaluate and analyze the operation of a subscriber loop interface circuit (SLIC).
- 05.06 Describe, evaluate and analyze the operation of a time-slot assignment circuit (TSAC).
- 05.08 Analyze and describe applications of speech synthesis and recognition circuits to telecommunications.
- 05.09 Terminate and test telephony cable.
- 05.10 Describe the operation of an integrated voice and data system.

06.0 DEMONSTRATE PROFICIENCY IN NETWORK COMMUNICATIONS--The student will be able to:

- 06.06 Describe, analyze, troubleshoot and demonstrate the operation of network access devices.
- 06.08 Identify the capabilities of a telephone circuit on a data communications system.
- 06.09 Describe LAN topologies as applied to data networks.
- 06.10 Design, connect and troubleshoot a Local Area Network (LAN).
- 06.11 Describe WAN topologies as applied to data networks.
- 06.12 Design, connect and troubleshoot a Wide Area Network (WAN).
- 06.23 Describe the general characteristics and operations of routers and switches as they apply to data networks and systems.
- 06.24 Describe the general characteristics and design capabilities of the T-carrier system.
- 06.25 Analyze the network design criteria of T-1 systems.
- 06.28 Describe the characteristics of high-speed public data networks.
- 06.29 Apply the theory of wide area network design to systems.