

## Course Outcomes Guide

**Course Title: IST 253 TCPIP**

**Course Instructor(s): Steve Shank**

**Programs: Network Administration**

### **Expected Learning Outcomes**

- Think critically
- Communicate effectively with both verbal and written forms
- Perform and share cooperatively in team projects
- Review and practice computer and network etiquette and ethics found in working environments
- Administer and troubleshoot a network infrastructure
- Evaluate best practices in security concepts to maintain confidentiality, integrity and availability of computer systems

**Assessment** (How do students demonstrate achievement of these outcomes?)

Satisfactory scores on exams and projects.

Satisfactory scores on exams modeled after Cyber Watch curriculum.

Hands-on lab assignments that analyze the various protocols in the TCP/IP family. Wireshark is an open source program that allows users to analyze network traffic which is utilized in this course.

Participation in class discussion or forum discussions for online classes.

**Validation** (What methods are used to validate your assessment?)

1. Approval of Information Systems Technology Advisory Council
2. CyberWatch curriculum
3. Faculty Review

## Course Outcomes Guide

4. The Wireshark product is recognized as an industry standard leader among packet sniffer software products.

### **Results** (What do the data show?)

A research paper/presentation was added to the tasks assigned to students.

Since the 2011 fall semester a total of 85 students have taken IST253 TCP/IP.

72(85%) of the students completed the course and 70 (82%) were successful.

The grade distribution is as follows:

A	51	60%
B	10	12%
C	9	9%
D	2	2%
F	11	11%

There was 0 audit and 2 withdrew from the course.

### **Follow-up** (How have you used the data to improve student learning?)

82% of students completing course requirements successfully complete coursework

Have added hands-on exercises incorporating the open source program Wireshark. This includes analysis of protocols such as DNS, HTTP, TCP, IP, ICMP, ARP, and RARP

Packet analysis of the various TCP/IP family of protocols promotes greater student understanding of network traffic.

Have created library of Wireshark trace files for students to analyze

(To do)

Develop labs for the IPv6 protocol.

Continue to create specific Wireshark tracefiles to provide a more varied set of protocol analysis.

Continue to utilize the NDG virtual Netlabs to develop server/workstation pod environments in which students can analyze. Provide students with a sandbox to explore network topologies, devices and operating systems.

Wireshark program also has a Linux version. Develop labs that allow students to explore the Linux environment.

## Course Outcomes Guide

### **Budget Justification**

(What resources are necessary to improve student learning?)

PC lab, projection unit, cabling, tools, printers, PCs

Netlabs

Course Management software

Classroom Management system software