King Saud University

College of Applied Studies & Community Services

Program of Natural and Engineering Sciences

1. Course number and name: **NET 412, Network troubleshooting**

2. Credits and contact hours: **3 (2, 2, 0)**

3. Instructor's or course coordinator's name: Aasem Alyahya

4. Text book, title, author, and year:

> **Troubleshooting and Maintaining Cisco IP Networks (TSHOOT) Foundation Learning Guide, Amir Ranjbar, Cisco Systems, Inc., ISBN (13-digit): 978-1-58705-876-9, 2010**

   a. other supplemental materials:

> **Whiteboard notes and examples**

5. Specific course information

   a. Course description (catalog)

> Planned Maintenance for Complex Networks; Troubleshooting Processes for Complex Enterprise Networks; Using Maintenance and Troubleshooting Tools and Applications; Maintaining and Troubleshooting Campus Switched Solutions; Maintaining and Troubleshooting Routing Solutions; Troubleshooting Addressing Services; Troubleshooting Network Performance Issues

   b. prerequisites or co-requisites: NET 305 (prerequisite).

   c. Required, elective, or selected elective course: Required.

6. Specific goals for the course

   a. Course Learning Outcomes:

   The aim of this course is to introduce some troubleshooting methods. It gives a theoretical and particular understanding of the following:

1) Know the concepts troubleshooting methods and process.
2) Know routing and switching concepts.
3) Maintains and troubleshooting routing and switching problems.
4) Maintains and troubleshooting addressing services.
5) Planned Maintenance for Complex Networks.
6) Use Maintenance and Troubleshooting Tools and Applications
7) Expressing thoughts about supporting theory by concrete examples, be Prepared to listen, ability to share one's thoughts and ability to be concise and clear.

   b. Relationship of Course to Student Outcomes:

Outcome	Student Outcome Description	Contribution
(a)	an ability to apply knowledge of mathematics, science, and engineering	
(b)	an ability to design and conduct experiments, as well as to analyze and interpret data	√
(c)	an ability to function on multidisciplinary teams	√
(d)	an understanding of professional and ethical responsibility	
(e)	an ability to communicate effectively	√
(f)	a recognition of the need for, and an ability to engage in life-long learning	
(g)	a knowledge of contemporary issues	
(h)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	√

7. Brief list of topics to be covered and schedule in weeks

Topic	Weeks
Review for network configuration	1
Planned Maintenance for Complex Networks.	1
Troubleshooting Processes for Complex Enterprise Networks	1
Using Maintenance and Troubleshooting Tools and Applications.	2
Maintaining and Troubleshooting Campus Switched Solutions	2
Maintaining and Troubleshooting Routing Solutions	2
Troubleshooting Addressing Services	2
Troubleshooting Network Performance Issues	1
Preparation for Troubleshooting Complex Enterprise Networks	1
Review and evaluation	1

8. Assessment Plan for the Course

Homework/Quizzes	15%
Lab	15%
Midterm 1	15%
Midterm 2	15%
Final exam	40%

9. Tentative out of class assignments and dates

- Lecture notes will be posted on LMS page.
- Homework assignments and Lab reports must be done individually and submitted no later than the specified date.
- A set of 3 quizzes have to be achieved within the semester.

10. Current Instructor, Department, office hours and date:

Dr. Aasem Nasser Alyahya
Department of Computer Engineering
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