Title of Course: Scaling Networks

I. Catalog Description (3 Credit Hours):

This course will emphasize concepts on how to design corporate networks and configure routers and switches for advanced functionality in larger and more complex networks.

II. Co- or Prerequisite(s): TN375

III. Purposes or Objectives of the Course (optional):

1. Understand, configure and troubleshoot enhanced switching technologies such as Virtual Local Area Networks (VLAN), Rapid Spanning Protocol (RSTP), Per VLAN Spanning Tree Plus Protocol (PVST+) and Etherchannel.
2. Understand, configure, and troubleshoot first hop redundancy protocols (HSRP) in a switched network.
3. Understand, configure, and troubleshoot wireless routers and wireless clients.
5. Manage Software licensing and configuration files.
6. Master lab skills: working in teams, self and project management, quiz and presentations.

IV. Student Learning Outcomes (Minimum of 3):

1. Students will be able to configure routers in a complex network topology.
2. Students will be able to accurately configure EIGRP, OSPF, & HSRP in a complex routed IPv4 and/or IPv6 Network.
3. Students will be able to troubleshoot complex IPv4 and IPv6 networks utilizing simulation software.

V. Optional departmental/college requirements:

VI. Course Content or Outline (Indicate number of class hours per unit or section):

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Please Attach copy of class syllabus and schedule as an example

Signature: ___________________________ Date: ___________________________

Chair

Signature: ___________________________ Date: ___________________________

Dean
TN 475 COURSE INFORMATION

Course Name: TN 475 “Scaling Networks”
Description: This course will emphasize concepts on how to design corporate networks and configure routers and switches for advanced functionality in larger and more complex networks.

Prerequisites: TN 375
Credit Hours: 3
Semester: Fall 2015
Class Meeting Times and Locations: TBA, Room PB218
Instructor: Robbie Davis

INSTRUCTOR INFORMATION
Email: rtdavis@semo.edu
Office Phone: (573) 651-2655
Office Location: 213L Seabaugh Polytechnic Building
Office Hours: Monday – Wednesday 1:00pm -2:00pm,
Will be glad to meet outside these times, please make an appointment to ensure meeting.

WHOM TO CONTACT WITH CONCERNS
Questions, comments or requests regarding this course or program should be taken to your instructor. Unanswered questions or unresolved issues involving this class may be taken to the department chair, Dr. Deken (651-2104).

STUDENT LEARNING OUTCOMES

4. Students will configure routers in a complex network topology.
5. Students will accurately configure EIGRP, OSPF, & HSRP in a complex routed IPv4 and/or IPv6 Network.
6. Students will troubleshoot complex IPv4 and IPv6 networks utilizing simulation software.

COURSE OBJECTIVES

7. Understand, configure and troubleshoot enhanced switching technologies such as VLANs, Rapid Spanning Protocol (RSTP), Per VLAN Spanning Tree Plus Protocol (PVST+) and Etherchannel.
8. Understand, configure, and troubleshoot first hop redundancy protocols (HSRP) in a switched network.
9. Understand, configure, and troubleshoot wireless routers and wireless clients.
11. Manage Software licensing and configuration files.
12. Master lab skills: working in teams, self and project management, quiz and presentations.

ACCESSIBILITY STATEMENT

SOUTHEAST MISSOURI STATE UNIVERSITY’S ACCESSIBILITY PLAN

Southeast Missouri State University will take such means as are necessary to insure that no qualified disabled person is denied the benefits of, excluded from participation in, or otherwise subject to discrimination because Southeast Missouri State University’s facilities are physically inaccessible to, or unusable by disabled
persons. The accessibility standard required by Federal law for ‘existing facilities’ is that the recipient’s program or activities when viewed in its entirety, must be readily accessible to disabled persons.

Southeast Missouri State University may meet this standard through such means as reassignment of classes, or other services to accessible locations, redesign equipment, assignment of aides, alterations of existing facilities, and construction of new accessible facilities. Southeast Missouri State University is not required to make structural changes in existing facilities where other methods are sufficient to comply with the accessibility standard described above.

Because scheduling classes, coordinating accommodations, and arranging housing in accessible facilities may require reasonable advance planning, students with disabilities accepted for admission should identify themselves and their disability within five days of the start of the semester of enrollment and indicate the nature of accommodation needed for their disability.

For more information, see the Disability Support Services page or contact Disability Support Services, room 302, University Center, One University Plaza ms1300, Cape Girardeau, MO 63701; (573)651-2273.

ACADEMIC HONESTY

Academic honesty is one of the most important qualities influencing the character and vitality of an educational institution. Academic misconduct or dishonesty is inconsistent with membership in an academic community and cannot be accepted. Violations of academic honesty represent a serious breach of discipline and may be considered grounds for disciplinary action, including dismissal from the University.

Academic dishonesty is defined to include those acts which would deceive, cheat, or defraud so as to promote or enhance one’s scholastic record. Knowingly or actively assisting any person in the commission of an above-mentioned act is also academic dishonesty.

Students are responsible for upholding the principles of academic honesty in accordance with the “University Statement of Student Rights” found in the STUDENT HANDBOOK. The University requires that all assignments submitted to faculty members by students be the work of the individual student submitting the work. An exception would be group projects assigned by the instructor. In this situation, the work must be that of the group. Academic dishonesty includes:

Plagiarism. In speaking or writing, plagiarism is the act of passing someone else’s work off as one’s own. In addition, plagiarism is defined as using the essential style and manner of expression of a source as if it were one’s own. If there is any doubt, the student should consult his/her instructor or any manual of term paper or report writing. Violations of academic honesty include:

1. Presenting the exact words of a source without quotation marks;
2. Using another student’s computer source code or algorithm or copying a laboratory report; or
3. Presenting information, judgments, ideas, or facts summarized from a source without giving credit.

Cheating. Cheating includes using or relying on the work of someone else in an inappropriate manner. It includes, but is not limited to, those activities where a student:

1. Obtains or attempts to obtain unauthorized knowledge of an examination’s contents prior to the time of that examination;
2. Copies another student’s work or intentionally allows others to copy assignments, examinations, source codes or designs;
3. Works in a group when she/he has been told to work individually;
4. Uses unauthorized reference material during an examination; or
5. Have someone else take an examination or takes the examination for another.

General Responsibilities for Academic Honesty. It is the University’s responsibility to inform both students and faculty of their rights and responsibilities regarding such important matters as cheating and
plagiarism. Most of what is considered unethical or dishonest behavior can be avoided if faculty and students clearly understand what constitutes such practices and their consequences. The University community should also be aware of the procedures to be followed should a breach of academic honesty occur.

The faculty member is responsible for clarification to his/her class of those standards of honesty for class assignments or functions where such standards may be unclear or when such standards vary from the accepted norm. Further, some faculty may choose to utilize preventive measures (multiple exams, alternate seating, etc.) to help insure the maintenance of academic honesty. However, the use of such measures is the prerogative of the individual faculty member and is not a responsibility or requirement of faculty in general.

The fundamental responsibility for the maintenance of honesty standards rests upon the student. It is the student’s responsibility to be familiar with the University policy on academic honesty and to uphold standards of academic honesty at all times in all situations.

Protocol for Adjudicating Alleged Violations of Academic Honesty. Faculty members who discover evidence of academic dishonesty should contact the student within five business days of discovering the alleged dishonesty to arrange to meet and discuss the allegation. Prior to this meeting the faculty member may consult with the Department Chairperson, the appropriate Dean, and the Office of Judicial Affairs. The following sections describe the procedures to be adhered to in each of the listed instances: the student acknowledges the violation, the student denies the violation, and the appeals process. If the faculty member is the Department Chairperson, a departmental designee will assume the Department Chairperson’s role in this protocol and references to the Department Chairperson should be read as departmental designee. The procedures below should be followed with online, ITV or face-to-face classes.

CIVILITY AND HARASSMENT

A major determinant of a successful educational experience is a shared sense of respect among and between the students and their instructor. Some of the texts and issues we will discuss may cause disagreements among members of the class. Multiple viewpoints are an essential component of any college course, and disagreeing with someone is fine. However, rude, disrespectful, aggressive, offensive, harassing, or demeaning behavior — either face-to-face or in an online discussion — toward anyone in the class will not be tolerated; students are expected to abide by the Code of Student Conduct (http://www6.semo.edu/stuconduct/code.html). Should a student feel someone has acted inappropriately toward them in class, please speak with the instructor at once so the situation can be addressed. The instructor for the course reserves the right to ask a student to leave the classroom or the online discussion for any inappropriate behavior, and if the situation warrants, may call campus security to remove the offending student from class.

GRADING SCALE AND POLICIES

- **Grading Scale**
  - A = 100 – 90%
  - B = 89 – 80%
  - C = 79 – 70%
  - D = 69 – 60%
  - F = Below 60%

- Grading will weighted based on the following criteria and percentages:
  - Assignments & Quizzes 10%
  - Labs 25%
  - Mid-Term 25%
  - Final 30%
  - Class participation 10%

  class participation means participation to class discussions, taking labs, quizzes, and exams on the assigned time slots.
COURSE-SPECIFIC REQUIRED MATERIALS

1. Online textbook is available at \url{http://netacad.com}. Multimedia materials (labs, quiz, animations, audio, and video, etc.) are built in with the online curriculum.


FINAL EXAM SCHEDULE

Final Exam Place: PB218
Final Exam Date and time: TBA

COURSE CONTENT

| Introduction to Scaling Networks | 1-3 |
| LAN Redundancy | 4-5 |
| Link Aggregation | 6 |
| Wireless LANs | 7 |
| Mid-term Exam | 8 |
| Adjust and Troubleshoot Single-Area OSPF | 9 |
| Multi-area OSPF | 10-11 |
| EIGRP & EIGRP Advanced Configurations and Troubleshooting | 12-13 |
| IOS Images and Licensing, skills exam | 14-15 |
| Review & Final | 16 |

ADDITIONAL CONTENT

A. Attendance:

1. Students are expected to attend all classes.
2. Class attendance will be taken each class. If an attendance sheet is used it will be your responsibility to sign the attendance sheet.
3. Material may be discussed in class that is not covered in the textbook, and may show up on subsequent quizzes or tests. It will be your responsibility to obtain any missed material if you miss a class.
4. If you miss class (and the absence is not excused) when we have a quiz or in-class assignment you will not be able to make up the quiz or in-class assignment. If you are late to class and a quiz is in progress you may not be able to take the quiz. Also note that a quiz can be given at any time during the class.

B. Assignments

1. All homework assignments are listed on the website. Students are strongly encouraged to read assignments on website to verify all works required is completed.
2. Students are expected read assigned materials. The majority of reading assignments will come from the website or textbook.
3. Students are expected to complete all assignments. An absence does not relieve the student of the responsibility to complete all assignments. If an absence is associated with a university-sanctioned activity, or other legitimate reason, and the instructor is given prior notice, the instructor will provide an opportunity for assignment make-up. Students who miss class, excused or unexcused, are expected to check the website for assignments. Arrangements should be made to turn in assignments on-time for missed classes.
4. Unless stated otherwise, assignments will be due at the end of class. Assignments that are turned in late will receive a 0.
5. Tests and quizzes may contain material covered in class, even if it is not in the text, and material in the text, even if it is not covered in class.
6. For an excused absence you must have a doctor’s note, funeral notice or letter from coach or teacher for official school function. If you arrive late while a quiz is in progress you cannot take the quiz.

7. Papers torn from a spiral notebook with ragged, frayed edges are not professional and will receive point deductions. If that type of paper is used, it should be trimmed straight. In addition only the front side of paper should be used.

C. Class Participation and Demeanor

1. As a common courtesy to fellow students and the instructor, students should arrive before class starts and stay for the duration of class, unless prior arrangements have been made.

2. Student class participation is encouraged. Questions may be asked at any time, unless other directions are given.

3. Cellular phones and other electronic devices shall not be used during class lecture periods. Phones are to be turned off or silenced during lecture and put away so as not to distract the student and disrupt the class. During lab time step outside of class to talk on your phone. If student is expecting an important call, notify instructor before class. Texting or other distracting behavior during lecture may result in pop quiz for entire class or extra credit for other class members.