DeVRY UNIVERSITY

Course Syllabus **Fall 2004**

Course Title:	Advanced **Networking Lab**
Course number:	EET475L
Credit/Contact hour:	0-2-1
Course Dependency:	**Prerequisite:** (none) **Required Co-requisite**: EET475
Instructor:	Tom Wheeler E-mail: twheeler@kc.devry.edu Voice Mail: 816.941.0430 x5211
Office Hours:	TBD Other times possible by appointment

Course Description

Students work in teams on projects involving hardware and software design issues of computer networks.

Textbooks and Materials

Textbook/s Title:	**Ed**	**Author**
EET475 LABS © 2003 TOM A. WHEELER	**1**	**Wheeler**

Reference:

Most of the course materials are available at http://faculty.kc.devry.edu/twheeler/eet475

Schedule of Experiments

Number	Description	Due Week #
1	**Windows 2000 Server Installation and Network Planning**	**3**
2	**IP Configuration and Network Traffic Analysis (Ethereal)**	**5**
3	**DHCP Administration**	**7**
4	**Remote Server Administration (Terminal Services)**	**8**
5	**DNS Administration**	**10**
6	**IIS Administration**	**12**
7	**Implementation of a SMTP/POP3 E-Mail Server**	**14**

Students in EET475L will work in small groups. The composition of each group will remain fixed throughout the term. Each group submits one written report for each experimental topic above. Reports must consist of the following parts (please pay attention to order):

All portions of the lab reports for EET475L (with the exception of raw data, which may be included in an appendix at the writer's discretion) must be created electronically. **No hand written work is acceptable**. Use the equation editor in Word (Insert -> Object -> Microsoft Equation 3.0) to type equations and formulas. Captured waveform data must be contained within the document file.

REPORT CONTENTS

1) COVER PAGE contains:

a) The names of all persons in the group, and the group's FQDN[1]
b) Your class and section (EET475L 9DP)
c) Experiment Title
d) For: SR. PROFESSOR WHEELER
e) Due Date of report (Week # or date given in class)
f) Operational sign-off blank
g) Final sign-off blank.

2) INVENTORY SHEET -- A complete list of the equipment and other materials needed to complete the experiment.

Include the model number, station number (where applicable), and serial number of all equipment used in the experiment.

3) SUMMARY OF ACTIVITY - This will be a written explanation of what transpired during the process of achieving the goals of the experiment. A suggested format would be:

a) List of goals to be achieved (Usually clear from the lab manual introduction of the topic)
b) Network diagram showing how the components are configured in the experiment. Make sure to clearly label all I/O ports on equipment. This will help you to replicate setups for subsequent lab experiments.
c) A detailed description of what procedures were performed to achieve the goals (including any problems encountered, and solutions to same.) Include any necessary data (such as screen captures) that supports your discussion.

4) CONCLUSION

Report Grading Criteria

The documentation for EET475L reports is evaluated by the following criteria:

- Mechanics - Correctness of spelling, punctuation, and grammar.
- Organization - Presentation of ideas in a logical order.
- Clarity - Minimization of the reader's workload.
- Appearance - Neatness and visual appeal of the work.

[1] Fully Qualified Domain Name, chosen at the beginning of the term and used to facilitate DNS resolution of hosts in lab.

The A paper consists of the following:

Central Idea:
- Is clearly expressed, responds to the assignment, provides focus.
- Is explicitly and logically supported with concrete details and examples.

Structure:
- A plan of organization is given in which ideas are arranged in a clear, logical order.
- Ideas are clearly connected.

Development:
- Generalizations are supported or explained with concrete details.
- Smooth transitions are used between sentences and paragraphs.

Style:
- Varied sentence length and structure.
- Consistent and appropriate tone.

Mechanics:
- Grammar, punctuation, capitalization, spelling are correct.

A B paper consists of the following:

Central Idea:
- Is clearly expressed, responds to the assignment, provides focus.
- Is explicitly and logically supported with concrete details and examples.

Development:
- Concrete details usually given to support ideas.
- Transitions are given in most instances where needed.

Style:
- Contains some variation of sentence length and structure.
- Tone is consistent throughout.

Mechanics:
- No more than eight mechanical errors.

A C paper consists of the following:

Central Idea:
- May be slightly askew, but seems to be somewhat clear.

Structure:
- A clear construction is attempted, but does not measure up consistently, and ideas are usually connected via transitions.

Development:
- Writer has attempted to give enough information to support his/her ideas, but there are "holes" where the reader may be uncertain.

Style:
- The writer has attempted a few times to vary sentence length and structure, and tone shifts often.

Mechanics:
- No more than 10 mechanical errors.

A D paper consists of the following:

Central Idea:

- Is somewhat unclear, but is stated.

Structure:

- The ideas are somewhat "rambling" in nature, and few transitions are given.

Development:

- Many ideas have little concrete information for their support. Thus, they often fade into mere opinion rather than rather than expressing "facts."
- Few transitions are given.

Style:

- Leaves the reader feeling unsure of the writer's own attitude toward the topic.

Mechanics:

- Has more than 15 grammar, punctuation, spelling errors.

An F paper consists of the following:

Central idea is missing, and writing wanders from topic to topic without a clear focus.

Structure -- no clear structure -- becomes a jumble of ideas without a stated reason given for why it was written.

Development -- very little development or support given for any discernable ideas.

Mechanics -- writer evidences very little basic understanding of grammar, punctuation, or spelling skills. Many errors of each kind.

Terminal Course Objectives (TCOs):

Following are the objectives for this course. Individual faculty, based upon their experience and expertise may add to these objectives to meet local campus needs. Any such additions will be communicated to the class. While the instruction remains focused in helping students, accomplishing these objectives is a shared responsibility of students and faculty. The outcomes of this course will depend upon the motivation and capabilities of the students, sufficient time allocation for studying, and the effectiveness of that effort.

DeVry University is committed to the continual improvement of its curriculum and instruction and to meet the needs of students and employers in a rapidly changing global economy. Students, faculty, and the university must all be actively involved to accomplish these objectives, as well as the objectives of this particular course.

Every class is to some extent a unique interactive experience, which may cause some variance within the stated objectives, in either content or level. Individual faculty, based on their experience and expertise, are encouraged to add objectives, as they deem appropriate, and to communicate these directly to the class. The outcomes of the course will depend on the design of the course, the quality of instruction, and the motivation and capabilities of the students, including time available for studying and the effectiveness of the effort.

1...Given access to network traffic, analyze the traffic by using a tool, such as the Fluke Network Assistant.
2...Given access to a network with a defective physical connection, use a network monitoring tool (such as the Fluke Network Assistant) to diagnose the problem and report on a solution.
3...Given access to a defective logical connection to a network, use a network monitoring tool (such as the Fluke Network Assistant) to diagnose the problem and report on a solution.
4...Given access to network traffic, analyze the traffic patterns using a protocol analyzer and develop recommendations for improving performance based on the measured data.
5...Given access to a laboratory T1 link, use a protocol analyzer to characterize the link by its status.
6...Given access to a software simulation package, such as described above, simulate transport protocol tradeoffs.
7...Given access to a software simulation package, such as described above, simulate routing algorithm tradeoffs.
8...Given a case study, perform a simplified design in a twisted pair & fiber optic cable plant environment.

How this Course helps in Achieving Your Program's Objectives:

The following matrix illustrates how this course supports achievement of your Program Objectives.

EET475L	Assessment Outcomes

0	Testing & Instrumentation					Create/Implement Programming				Hardware/Software Design, Implem, & Eval						Writing Speaking		Team		Research Prob. Solv		Tech./Society Linkages		
TCOs	1.1	1.2	1.3	1.4	1.5	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	3.5	3.6	4.1	4.2	5.1	5.2	6.1	6.2	7.1	7.2	7.3
1	X	X	X	X	X													X	X					
2	X	X	X	X	X													X	X					
3	X	X	X	X	X													X	X					
4	X	X	X	X	X													X	X					
5	X	X	X	X	X													X	X					
6	X	X	X	X	X													X	X					
7	X	X	X	X	X													X	X					
8	X	X	X	X	X					X	X	X	X	X	X			X	X					

EET/CET Program Objectives and Outcomes:

(Student competencies achieved at the time of graduation)

1. Conduct experiments involving electronic systems using modern test equipment, interpret test results and use them to improve products or methodologies.
   - 1.1. Performs Needs Analysis – define the problem
   - 1.2. States goals and objectives of the experiment
   - 1.3. Identifies resources to conduct experiment (parts, equipment, data sheets, etc.)
   - 1.4. Develops a procedure and collect data using modern test equipment
   - 1.5. Analyzes test results and draw conclusions.

2. Create, implement high-level and Assembly language programs in support of technical activities.
   - 2.1. Analyzes the problem logically
   - 2.2. Designs the solution
   - 2.3. Implements the solution
   - 2.4. Tests and debugs the software

3. For EET: Use the principles of science, mathematics, and engineering technology to design, implement, and evaluate hardware and software solutions to complex technical problems,
   - 3.1. Selects and defines a meaningful problem taking safety, ethical, social, economic, and technical constraints into consideration.
   - 3.2. Devises process to solve problem
   - 3.3. Applies appropriate knowledge of scientific, mathematical, and engineering design tools toward the design and analysis of problem solutions.
   - 3.4. Identifies key issues in designing and building a prototype
   - 3.5. Builds, tests and troubleshoots prototype
   - 3.6. Optimizes prototype with a commitment to quality, timeliness, and continuous improvement.

For CET: Use the principles of science, mathematics, software engineering, and engineering technology to design, implement, and evaluate software solutions to complex technical problems.
   - 3.1 Identifies a meaningful problem and defines preliminary solution specifications taking safety, ethical, social, economic, technical constraints, and user requirement into consideration
   - 3.2 Designs and implements appropriate data structures and algorithms
   - 3.3 Prepares a plan of action to implement the system
   - 3.4 Applies scientific, mathematical, software, and engineering design tools toward the design and analysis of problem solution
   - 3.5 Writes and tests readable and maintainable code
   - 3.6 Optimizes code with a commitment to quality, timeliness, and continuous improvement

4. Communicate effectively both orally and in writing.
   - 4.1 Communicates effectively in wiring
   - 4.2 Communicates effectively orally

5. Work effectively in a team environment.
   - 5.1 Exhibits good dialoguing skills
   - 5.2 As part of a small group project, when assigned roles, performs roles effectively

6. Apply applied research and problem-solving skills to support learning at DeVry as well as life-long personal and professional development.
   - 6.1 Recognizes the need to know information beyond one's own expertise and has the ability to gather and synthesize the necessary information into the solution of a problem
   - 6.2 Uses engineering problem-solving methodology in solving problems

7. Evaluate the broader effects of technology and to identify connections between technology and economics, politics, culture, ethical responsibility, social structure, the environment and other areas.
   - 7.1 Identifies linkages and causal relationships between technology and social, political, economic, cultural, and environmental conditions.
   - 7.2 Works effectively in diverse environments and adapts technical solution to solution a diverse audience
   - 7.3 Pursues technical work within guidelines for professional, ethical, and social responsibility

Class Policies and Procedures:

Attendance

Each student is required to attend every lecture and laboratory session in which he or she is enrolled. A swipe-card terminal (ATS) in each classroom is used to record attendance electronically. Students are responsible for arriving before class begins, sliding their identification card through the wall-mounted reader, and remaining for the duration of the course meeting. Students who are absent for two or more days should notify their Professor or assigned Academic Advisor in advance. Students who miss more than five (5) consecutive days of school are in violation of the DeVry attendance policy and will be dismissed.

Grading:

Each report in EET475L is worth 100 points; there are 7 reports due, for a total of 700 points in the course.

Each report must contain a sign-off for credit. A sign-off is provided by the instructor or other authorized person.

Course Grading Standards

A final letter grade is to be awarded to each enrolled student in accordance with the 4.00 grading system shown below:

Letter Grade	***Percent of Total Points***	***Grade Points***
A	90 – 100%	4.00
B	80 – 89%	3.00
C	70 – 79%	2.00
D	60 – 69%	1.00
F	Below 60%	0.00

Academic Integrity Policy

Ideas and learning form the core of the academic community. In all centers of education, learning is valued and honored. No learning community can thrive if its members counterfeit their achievement and seek to establish an unfair advantage over their fellow students. The academic standards at DeVry are based on a pursuit of knowledge and assume a high level of integrity in every one of its members. When this trust is violated, the academic community suffers injury and must act to ensure that its standards remain meaningful. The vehicle for this action is the Academic Integrity Policy outlined in the *Student Handbook*.

The Academic Integrity Policy is designed to foster a fair and impartial set of standards upon which academic dishonesty will be judged. All students are required to read, understand, and adhere to these standards, which define and specify the following mandatory sanctions for such dishonest acts as copying, plagiarism, lying, unauthorized collaboration, alteration of records, bribery, and misrepresentation for the purpose of enhancing one's academic standing:

- The ***first recorded offense*** will result in the student receiving zero credit for the entire paper, exam, quiz, lab, homework assignment, or other graded activity in which the incident of academic dishonesty occurred. No partial credit may be given. Where the incident involved a graded assignment normally subject to a "drop" option, the student may not exercise that option.

- The ***second recorded offense*** will result in the student receiving a failing grade for the course in which the second offense occurs. The second offense need not be in the same course, program, or term as the first offense to invoke this sanction.

- The ***third recorded offense*** will result in the student being permanently expelled from the DeVry system. Again, the third offense need not be in the same course, program, or term as either the first or second offense to invoke the sanction.

Changes to Syllabus:

The contents of this syllabus are subject to change with appropriate notice to the students.