Course Syllabus

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EETS 8311 – Intelligent Networks

Fall 2010

Instructor Information

Instructor: *Nhut Nguyen*, *Ph.D.*
Phone: *972 761-7788*
Email: *nhutn@lyle.smu.edu*
Web: *lyle.smu.edu/~nhutn*
Office hour: *6:00-6:30PM Th*
AND by appointment
Office: *347 Junkins*

Course Description

This course is a comprehensive study of the field of Intelligent Networks (IN). Topics include fundamental concepts of intelligent networks; e.g. signaling, call processing, basic call state model (BCSM), Capability Sets (CS), and switch (exchange) architecture. Important network elements in intelligent network architecture such as Service Control Point (SCP), Signal Transfer Point (STP), Service Switching Point (SSP), Intelligent Peripheral (IP) and Service Creation Environment (SCE) will be explained in details. Emerging related technologies such as SIP and SDP and soft switch, as well as standards such as WIN will also be covered. This course is intended primarily for the Telecommunications program but can also be very useful for EE students who plan to specialize in this field.

Student Learning Objectives/Outcomes

The objectives of this course is to gain a solid knowledge on technical issues and solutions for intelligent networks, as well as fundamental concepts and technologies used to provide advanced services in telecom networks (PSTNs, wireless networks and the Internet). The expected outcome of this course is a solid knowledge on technical issues and related solutions for the field of intelligent networks.

Pre-requisites

EETS 5301, or permission of the instructor.

Text book:

"Next Generation Intelligent Networks", *Johan Zuidweg,* Artech House, 2002. ISBN: 1-58053-263-2.

Reference:

"CAMEL: Intelligent Networks for the GSM, GPRS and UMTS Network", *Rogier Noldus,* published by Wiley, 2006. ISBN: 0-470-01694-9.

Suggested Topics

Telecommunications networks review: PSTNs, wireless networks, the Internet
Signaling in telecom networks, SS#7, MAP, IS-41
IN concepts: architecture and models, BCSM, Capability Sets, AIN
Network intelligence in PSTNs
Intelligent wireless networks, CAMEL, WIN
Service Creation Environment
Intelligent Networks in the VoIP environment, softswitches and related protocols,
Service creation with JAIN, CPL, SIP servlets
Distributed Intelligence
Telecom middleware

Assignments

There will be two exams: a midterm and a final. The exams will be closed book. A small project and term paper might be assigned. Homework will be given during the course.

Grading Policy

The grade each student earns from this class will be based on the following table.

Midterm	20%
Final	45%
Homework	15%
Project or term paper	20%
Total	100%

A	93 – 100
A-	90 – 92
B+	87 – 89
B	83 – 86
B-	80 – 82
C	70 – 79
F	Below 70.0

Grades are assigned according to the scale on the right.

Course & Instructor Policies

No late assignments will be accepted.

Distance Students:

The class is available for distance students by Video Streaming over the Internet. Video streaming of lectures will begin later in the same day as the live lecture. DVD shipping can be made available by special arrangement for military students without High-Speed Internet Access. Delivery of DVDs at international locations may be up to three weeks after the lecture was given. If a student subscribes to the DVDs but does not receive a good recording on time, it is the student's responsibility to send e-mail to dehelp@engr.smu.edu.

A person taking this course by DVD or video streaming follows the same schedule as a campus student except that the time scale is slipped by the amount of delay in receiving the lectures.

Example #1: If you take the course by Video Streaming, you get a one-day grace period on tests.
Example #2: If you normally receive a DVD on Thursday following the week after a class, and you normally view lectures on the next day (Friday), then that Friday is day "0" in counting any lateness or grace period.

Excused Absences for University Extracurricular Activities

Students participating in an officially sanctioned, scheduled University for University extracurricular activity will be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (Refer to University Graduate Catalogue.)

Incomplete Grade Policy

An Incomplete (I) may be given if the majority of the course requirements have been completed with passing grades but for some justifiable reason, acceptable to the instructor, the student has been unable to complete the full requirements of the course. Before an (I) is given, the instructor should stipulate, in writing, to the student the requirements and completion date that are to be met and the grade that will be given if the requirements are not met by the completion date. The maximum period of time allowed to clear the Incomplete grade is 12 months (except for graduate thesis and dissertation courses). If the Incomplete grade is not cleared by the date set by the

instructor or by the end of the 12-month deadline, the (I) may be changed to an F or to another grade specified by the instructor. The grade of (I) is not given in lieu of an F, WP, or other grade, each of which is prescribed for other specific circumstances. If the student's work is incomplete and the quality has not been passing, an F will be given. The grade of (I) does not authorize the student to attend the course during a later semester. Graduation candidates must clear all Incompletes prior to the deadline in the official University Calendar, which may allow less time than 12 months. Failure to do so can result in removal from the degree candidacy list and/or conversion of the (I) to the grade indicated by the instructor at the time the (I) was given.

Academic Honesty

Academic dishonesty may be defined broadly as a student' misrepresentation of his or her academic work or of the circumstances under which the work is done. This includes plagiarism in all papers, projects, take-home exams, or any other assignments in which the student represents work as being his or her own. It also includes cheating on examinations, unauthorized access to test materials, and aiding another student to cheat or participate in an act of academic dishonesty. Failure to prevent cheating by another may be considered as participation in the dishonest act.

The Honor Code of SMU

The SMU Honor Code (http://www.smu.edu/studentlife/PCL_05_HC.asp) states:

"Intellectual integrity and academic honesty are fundamental to the process of learning and of evaluating academic performance, and maintaining them is the responsibility of all members of an educational institution. The inculcation of personal standards of honesty and integrity is a goal of education in all the disciplines of the University. "The faculty has the responsibility of encouraging and maintaining an atmosphere of academic honesty by being certain that students are aware of the value of it, that they understand the regulations defining it, and that they know the penalties for departing from it. The faculty should, as far as is reasonably possible, assist students in avoiding the temptation to cheat. Faculty members must be aware that permitting dishonesty is not open to personal choice. A professor or instructor who is unwilling to act upon offenses is an accessory with the student offender in deteriorating the integrity of the University. "Students must share the responsibility for creating and maintaining an atmosphere of honesty and integrity. Students should be aware that personal experience in completing assigned work is essential to learning. Permitting others to prepare their work, using published or unpublished summaries as a substitute for studying required materials, or giving or receiving unauthorized assistance in the preparation of work to be submitted are directly contrary to the honest process of learning. Students who are aware that others in a course are cheating or otherwise acting dishonestly have the responsibility to inform the professor and/or bring an accusation to the Honor Council. "Students and

faculty members must mutually share the knowledge that any dishonest practices permitted will make it more difficult for the honest students to be evaluated and graded fairly and will damage the integrity of the whole University. Students should recognize that both their own interest, and their integrity as individuals, suffers if they condone dishonesty in others."

The Honor System:

The 2006-07 SMU Undergraduate Catalog states:

"All students at SMU, with the exception of those enrolled in School of Law, Perkins School of Theology, and Cox M.B.A. School, are subject to the jurisdiction of the Honor Code and as such will be required to sign a pledge to uphold the Honor Code (http://www.smu.edu/studentlife/PCL_05_HC.asp). The Honor Council is composed of approximately 27 students selected through an application and interview process by the Honor Council Executive Board and five faculty members nominated by the Faculty Senate. The council's responsibility is to maintain and promote academic honesty. "Academic dishonesty is defined broadly as a student's misrepresentation of his or her academic work or of the circumstances under which that work is done. This includes plagiarism in all papers, projects, take-home exams, or any other assignments in which the student submits another's work as being his or her own. It also includes cheating on examinations, unauthorized access to test materials, and/or assisting another student in gaining any unfair academic advantage. Lastly, it includes academic sabotage, defined as intentionally taking any action that negatively affects the academic work of another student. Failure to prevent or report academic dishonesty by another may be considered participation in a dishonest act. "Suspected cases of academic dishonesty may be handled administratively by the appropriate faculty member in whose class the alleged infraction occurred or referred to the Honor Council for resolution. Suspected violations reported to the Honor Council by a student or by an instructor will be investigated and, if the evidence warrants, a hearing will be held by a Board composed of at least five members of the Honor Council. "Any appeal of an action taken by the Honor Council shall be submitted to the University Judicial Council in writing no later than four calendar days (excluding school holidays) after notification of the Honor Council's decision."

Disability Accommodations

If you need academic accommodations for a disability, you must first contact Disability Accommodations & Success Strategies (DASS) at 214-768-1470 or www.smu.edu/alec/dass.asp to verify the disability and to establish eligibility for accommodations. Then you must schedule an appointment with the professor to make appropriate arrangements.

Religious Observance

Religiously observant students wishing to be absent on holidays that require missing class should notify the instructor in writing at the beginning of the semester, and should discuss with the instructor, in advance, acceptable ways of making up any work missed because of the absence. (Refer to University Policy No. 1.9.)

These descriptions and topics are subject to change at the discretion of the Instructor.