Department of Computer Science
College of Science, Engineering & Technology
Robinson Technology Center Suite 320
700 Park Ave
Norfolk, VA 23504

Course Syllabus

CSC-530-02: Data Communications - 3 Semester Hours Cr.
Time: T TH 4:30 pm – 6:00 pm
Course Location: RTC 200

Professor's Name: Dr. Felicia Doswell
Professor Office Location: RTC 320-I
Professor Office Phone Number: (757) 823-9453
Professor Instructor Email: fdoswell@nsu.edu
Professor Office Hours: MWF 11:00 am – 12:00 pm T, TH 3:00 pm – 4:30 pm

COURSE DESCRIPTION:

Study of principles of computer communication as well as hardware and software designs, including transmission media, data encoding, transmission techniques, protocols, switching networks, broadcast networks, and local area networks.

PREREQUISITES:

Prerequisites: CSC 372 - Data Structures.

COURSE RATIONALE:

CSC-530 is a required course for the M.S. in Computer Science degree. It is designed to cover the fundamentals of data and computer communications with emphasis on the Internet, and to enable students to gain knowledge in this fast growing and vitally important technological area.

COURSE GOALS AND OBJECTIVES:

This course is designed to cover the fundamentals of data and computer communications with emphasis on the Internet and to enable students to gain knowledge in this fast growing and vitally important technological area. Course goals and objectives include the following:

- To introduce students to topics in data communications which are fundamental in understanding the architecture, protocols, and applications of the Internet
- To enable students to gain the knowledge, hands-on experience, and understanding of real-world applications in a wide variety of areas that represent the field of data communications.

LEARNING OUTCOMES:

- Describe the functions and capabilities required for communicating data reliably and economically.
- Explain the two fundamental data communication technologies, circuit switching, and packet switching.
- Describe the performance considerations for packet switching.
- Explain protocol architectures such as the seven-layer OSI model, and the five-layer TCP/IP model.
- Describe the protocols and operations of key Internet applications such as World Wide Web, file transfer (FTP), and Email.
- Explain the basics of communication software architecture and socket API, and practice with network programming in Java.
- Describe the basics of TCP/IP protocols, and how they are implemented in a host system.
- Explain the key Local Area Network (LAN) technologies and systems such as routers, switches, Ethernet, and Wi-Fi.
- Describe the protocols and techniques used for reliable data transfer, and real-time multimedia communication.

- Perform basic network administration, configuration, and troubleshooting tasks.

COURSE TEXT:

James F. Kurose and Keith W. Ross. Computer Networking: A Top-Down Approach Featuring the Internet. 6th Edition, Person Education, Inc., 2013. **ISBN-10**: 0132856204 • **ISBN-13**: 9780132856201

COURSE OUTLINE

The list given below is list of topics that are covered in this course. See the attached lecture and assignment schedule for details on topics, assignments, project due dates, and exam schedules.

- Computer Networks and the Internet
- Application Layer
- Transport Layer, Multiplexing, Routing and Traffic Control
- Network Layer
- Link Layer and Local Area Networks
- Local Area Networks Technology and Systems
- Wireless and Mobile Networks
- Security in Computer Networks

GRADING STANDARDS

The table below gives a tentative grading scale. The instructor reserves the right to revise the grading criteria as appropriate and will make reasonable attempts to notify students

Assignments (Graduate)	Scale
Homework, Lab, Programs	20 %
Research Assignments	10 %
Projects	25 %
Midterm Exam	15 %
Final Examination	30 %

GRADING SCALE

The table below gives a tentative grading scale. The instructor reserves the right to revise the grading scale as appropriate and will make reasonable attempts to notify students

Letter Grade	Percentage
A	90 - 100
B+	87 - 89
B	86 - 80
C+	77 - 79
C	70 - 76
D+	67 - 69
D	60 -66
F	59 & Below

The instructor reserves the right to revise the grading criteria as appropriate and will make reasonable attempts to notify students.

METHOD OF PRIMARY INSTRUCTION

The primary method of instruction will be lectures by the instructor with examples, demonstrations and drills. Students will also participate through class and group discussions.

UNIVERSITY WIDE & COURSE-SPECIFIC REQUIREMENTS

Students apply written and oral communication skills through assignments given during the course. This course emphasizes critical thinking. Students will demonstrate the following skills:

Information Technology Literacy
- Learning foundation skills (hardware, software, and operating systems).

Critical Thinking
- Solving problems utilizing application software from a narrative description.
- Knowing the appropriate software application to apply to a specific task.

Laboratory
- Demonstrating proficiency in utilizing software applications.

SCHOOL WIDE TUTORING SERVICES STATEMENT

The School of Science & Technology provides tutoring services through the STARS Tutoring Center for those NSU students who may be experiencing difficulties in Mathematics, Computer Science, Engineering, Biology, Chemistry, Nursing, Technology and Physics courses. The STARS office is located in Room 100, RTC. This service is free of charge and provided to NSU students only. You can access information about this service by going to http://stars.nsu.edu.

DEPARTMENT OFFICE LOCATION

The Department of Computer Science is located in suite 320 Robinson Technology Center. The individual faculty offices are located within the suite.

WRITING COMPETENCY ASSESSMENT

All students who matriculate at Norfolk State University beginning Fall Semester 2001 and thereafter, will be required to take "entry" and "exit" examinations to assess their writing competency. Both examinations will be administered by the English Department during enrollment in English 101 and 102 respectively. The entry examination is untimed, multiple-choice, and computerized. The exit examination is a two-hour, essay format, and the topic will be relevant to the student's discipline. Therefore, students enrolled in Computer Science courses will be required to complete writing assignments in addition to other requirements to assist them in their preparation for the exit examination. All students are required to take the exit examination prior to completing 90 semester hours.

AMERICANS WITH DISABILITIES ACT (ADA) STATEMENT

In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ADA) of 1990, if you have a disability or think you have a disability, we ask that you please contact the Disability Service office.

Location: Student Services Center, Suite 110, Room 110D
Contact Person: Janet Timberlake - Coordinator DS
Telephone: 757-823- 8325
Email: jltimberlake@nsu.edu

UNIVERSITY ASSESSMENT

As part of NSU's commitment to provide the environment and resources needed for success, students may be required to participate in a number of university-wide assessment activities. The activities may include tests, surveys, focus groups, interviews, and portfolio reviews. The primary purpose of the assessment activities is to determine the extent to which the university's programs and services maintain a high level of quality and meet the needs of students. Students will not be

identified in the analysis of results. Unless indicated otherwise by the instructor, results from University assessment activities will not be computed in student grades.

CLASS ATTENDANCE POLICY

Students are expected to attend all classes. The student assumes all responsibility for work missed due to an absence. Make-up work may be permitted at the discretion of the instructor. **Student athletes, musicians, or others representing the University at events must provide schedules from University Officials** to their instructor. This documentation must be given in advance of any scheduled departures. If you will be representing the University, on the date an assignment is due then you must complete and submit all work before your departure. Missed assignments **cannot** be turned in upon your return. See the next section for specific requirements about absences for exams and quizzes. Consult the NSU Student Handbook for further details.

EXAMINATION POLICY

Two announced examinations will be given. If an emergency prevents attendance to a scheduled test, advance notification is required in the form of a phone call, email, or personal conversation with the instructor. If the excuse is reasonable and accompanies written documentation as proof, the instructor may allow a make-up exam. If a student is late for an exam, they will be allowed only the remainder of the scheduled period to complete the examination. However, if other students have submitted their examination paper prior to the student's arrival, the student will not be allowed to take the examination. If this should occur, a grade of zero will be given for that exam.

GENERAL COURSE POLICIES

To successfully prepare for exams, attend classes, participate in lecture and group activities, and complete assignments by the given deadlines. **Assignments are due by the time requirement specified on blackboard**. **Assignments not turned in by the specified due date will be considered late and receive a grade of 0 unless alternatives have been discussed with the professor prior to the submission deadline.**

Students are expected to adhere to the ACM Code of Ethics. In particular, dishonest behavior such as cheating or plagiarism will not be tolerated. Students should **place phones and pagers on silent mode upon entering class**.

ACADEMIC INTEGRITY STANDARDS

The Department of Computer Science employs a no tolerance policy on cheating. Cheating includes, but is not limited to, copying others work, misrepresenting the work of others as your own (encompasses any content from online websites including source code), plagiarism, sharing when unauthorized, and the use of cell phones and/or electronic media when unauthorized. The following outlines the departmental procedure if a student is suspected of cheating during their academic tenure with the Computer Science Department at Norfolk State University.

- Offense 1 – The student will receive a grade of ZERO on the assignment AND a note will be placed in the student's permanent departmental file. Non- CS Majors will receive a ZERO and be reported to the chair of their respective department.
- Offense 2 – The student will receive a letter grade of 'F' for the course AND the student will be reported to the Office of Student Rights and Responsibilities for adjudication.

Consult the NSU Student Handbook on NSU's policy regarding student conduct .

RETENTION ALERT ADVISORY

The Retention Alert policy provides a framework for establishing a campus network of responders including both academic and student affairs agents to increase a safety net so students are less likely to leave the University before graduating. Based on your classroom performance you may be referred to the appropriate responder through Retention Alert.

BLACKBOARD INSTRUCTIONS

For Blackboard log-on information go to www.nsu.edu/elearning/firstimeuser.html

NSU E-MAIL ACCOUNTS

In an effort to keep students informed about Norfolk State University updates and account information, students must check their official NSU student email account frequently. You may access your official NSU email account at http://www.nsu.edu/webmail/. Follow instructions on the NSU Webmail login page.