

1. *Course number and name*
CSC 645: Computer Networks
2. *Credits and contact hours*
3 credits
Contact hours: 150 minutes of lecture sessions /week
3. *Instructor's or course coordinator's name*
Course coordinator: Hao Yue, Assistant Professor of Computer Science
4. *Text book, title, author, and year*
Internetworking with TCP/IP, Vol. 1, Douglas Comer, Prentice Hall, current edition
 - a. *other supplemental materials*
Lecture slides
5. *Specific course information*
 - a. *brief description of the content of the course (catalog description)*
Computer network design, evaluation, and testing. Computer network standards and implementation. Hardware/software design and compatibility issues. Paired with CSC 745. Students who have completed CSC 645 may not take CSC 745 later for credit. Extra fee required.
 - b. *prerequisites or co-requisites*
CSC 415 with grade of C or above.
 - c. *indicate whether a required, elective, or selected elective course in the program*
Elective for Computer Engineering.
6. *Specific goals for the course*
 - a. *specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.*
Students completing the course successfully will be able to
 - Write correct and well documented advanced C code using low level Unix/Linux system calls, including the sockets family of system calls, that is demonstrated to execute correctly
 - locate platform specific programming information and be familiar with reading and using man page information as well as other standard reference materials
 - Clearly and accurately explain design decisions in written program documentation
 - Work with the mechanics of Unix/Linux distributed application programming, testing and debugging in a multi-machine environment.

b. *explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.*

Course addresses ABET Student Outcome(s): a, b, c, e, j, k.

7. *Brief list of topics to be covered*

1. Introduction, Internetworking, ISO/OSI Protocol Stacks and Services
2. Network Hardware , Physical-Data Link-Network Layers/ MAC Layers/
3. Introduction to WLAN and CC, Ethernet, ARQ (Windowing) protocols
4. Internetworking, RARP, ARP, IPv4 & IPv6, ICMP
5. Programming with the Internet: Sockets & other Unix Systems Calls
6. Internetwork Routing, X75 VC
7. Implementing Applications Oriented Services, UDP/TCP , Client/Server
8. Interaction, software development using high level networking frameworks
9. Advanced Topics (as time permits): Name Servers, ISO Transport, Session, Presentation, Application Layers