The Hong Kong University of Science and Technology

UG Course Syllabus

Computer Communication Networks

ELEC 3120

3 Credits

Pre-requisites: COMP 1021

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Office Hours: Thu 4:30pm-5:30pm or by email appointment.

Course Description

Overview of computer networks: network architecture and switching techniques. Introduction to the Internet, network programming, and layer architecture. Application layer: HTTP, FTP, SMTP, and CDN. Transport layer: TCP and UDP. Network layer: IP routing, NAT, and DHCP. Data link layer and local area networks: MAC protocols, Ethernet, and hubs/bridges/switches

Intended Learning Outcomes (ILOs)

On successful completion of this course, students will be able to:

ILO1 - recognize the key technological developments in networking technology

ILO2 - understand the fundamental principles for constructing a computer network

ILO3 - develop network programming skills for various applications

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)
Assignment	30%
Project	20%
Midterm	20%
Final Exam	30%
Class Behavior	5% (lose it after two offenses)

* Assessment marks for individual assessed tasks will be released within two weeks of the due date.

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Assignments, Midterm, Final Exam	ILO1, ILO2	Assignments, midterms, and final exams will reflect students' ability to understand the concepts and knowledge in computer networks.
Projects	ILO1, ILO3	The students will implement a simplified version of TCP themselves. This needs a deep understanding of network concepts and strong programming skills in computer networks.

Grading Rubrics

Detailed rubrics for each assignment will be provided on Gradescope. These rubrics clearly outline the criteria used for evaluation. Students can refer to these rubrics to understand how their work will be assessed.

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. Exhibits a high capacity for scholarship and collaboration, going beyond core requirements to achieve learning goals.
B	Good Performance	Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues. Displays high motivation to learn and the ability to work effectively with others.
C	Satisfactory Performance	Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals.
D	Marginal Pass	Has threshold knowledge of core subject matter, potential to achieve key professional skills, and the ability to make basic judgments. Benefits from the course and has the potential to develop in the discipline.
F	Fail	Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline.

Course AI Policy

This course strongly encourages the use of generative artificial intelligence tools to complete assessment tasks. You will have the opportunity to learn to use a series of tools, such as GitHub Copilot, in your project.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Gradescope within two weeks of submission. Feedback on assignments will include [specific details, e.g., strengths, areas for improvement]. Students who have further questions about the feedback including marks should consult the instructor within one week after the feedback is received.

Resubmission Policy

The regrade request will be conducted on Gradescope. Students will have the opportunity to request for regrading if they believe so.

Required Texts and Materials

Computer Networks: A Systems Approach

Author: Larry Peterson and Bruce Davie

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to Academic Integrity | HKUST – Academic Registry for the University's definition of plagiarism and ways to avoid cheating and plagiarism.

Additional Resources

Course website: https://www.foggynetwork.com