The Hong Kong University of Science and Technology

UG Course Syllabus

Advanced Network Management (CISCO - ICND)

ISOM3380

4 Credits

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Office Hours: By email appointments

Course Description

In an interconnected economy, management of network applications becomes increasingly important. This course helps students develop theoretical and practical network administration and management skills. ISOM 3380 provides solid knowledge and technique that would be an advantage for internship and future career.

The material in this course encompasses a broad range of technologies that facilitate how people work, live, play, and learn by communicating with voice, video, and other data. Networking and the Internet affect people differently in different parts of the world. Students could also progress to get CCNA industrial certification after the course.

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

1. Design, configure, and troubleshoot enterprise routing and switching infrastructure, including EIGRP, VLANs, and ACLs, to build functional and secure network topologies.
2. Implement and manage network address translation and security policies using NAT/PAT and Access Control Lists to conserve address space and secure medium-size networks.
3. Analyze and explain the operation of dynamic routing protocols, contrasting the processes of distance-vector and link-state protocols in maintaining routing tables.
4. Diagnose network problems and propose innovative solutions by applying systematic troubleshooting methodologies and evaluating core network management issues for business decision-making.

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 1	10%
Assignment 2	10%
Assignment 3	10%
Mid term Exam	20%
Quiz	22%
Final exam	28%

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Assignment 1 Assignment 2 Assignment 3	ILO1, ILO2, ILO4	This task assesses students' ability to configure routing (ILO 1), implement network security (ILO 2), troubleshoot networks (ILO 4)
Mid term Exam Quiz Final exam	ILO1, ILO2, ILO3	This task assesses students' ability to configure routing (ILO 1), implement network security (ILO 2), analysis dynamic routing (ILO 3)

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Students with excellent performance in the course demonstrate a strong grasp of lecture materials, effectively utilize software discussed, excel in assignments.
B	Good Performance	Students with good performance in the course exhibit a solid understanding of lecture materials, proficient use of software, competent completion of assignments.
C	Satisfactory Performance	Students with satisfactory performance demonstrate an adequate understanding of lecture materials, satisfactory use of software, and completion of assignments.
D	Marginal Pass	Students with a marginal pass show limited understanding of lecture materials, inconsistent use of software, and incomplete or inconsistent performance in assignments.
F	Fail	Students who fail the course display a lack of understanding of lecture materials, inadequate use of software, and unsuccessful completion of assignments.

Course AI Policy

You are prohibited from using generative artificial intelligence (AI) to produce any materials or content related to the assignment.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas 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 five working days after the feedback is received.

Late Submission Policy

To ensure fairness for students who submit assignments on time, a penalty for late submission is listed as follows:

- Late submission within 24 hours, 50% penalty will be applied.
- Late submission for more than 24 hours will not be accepted.

Required Texts and Materials

Book Name: Cisco Networking Academy Program
CCNA 1 and 2 Companion Guide
Revised Third Edition
ISBN: 1-58713-150-1
Published by: Cisco Press

Book Name: Cisco Networking Academy Program
CCNA 3 and 4 Companion Guide
Third Edition
ISBN: 1-58713-113-7
Published by: Cisco Press

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.