The Hong Kong University of Science and Technology

UG Course Syllabus (Spring 2025-26)

Course Title: Multimedia Computing

Course Code: COMP 4431

No. of Credits: 3

Prerequisite(s): COMP 2012 OR COMP 2012H

Course Instructor

Name: LAM, Gibson

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Course Description

Color theory; digital audio, image and video fundamentals, representation, and processing; digital multimedia applications and programming.

Intended Learning Outcomes (ILOs)

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

1. Identify and apply common digital audio representation concepts, tools and algorithms used to process digital audio
2. Identify and apply common digital image representation concepts, tools and algorithms used to process digital images
3. Identify and apply common digital video representation concepts, tools and algorithms used to process digital video

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve.

Assessments:

Assessment Task	Contribution to Overall Course Grade (%)
Labs	20%
Group project	15%
Participation	10%
Final examination	55%

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Lab 1	ILO1	ILO1. Identify and apply common digital audio representation concepts, tools and algorithms used to process digital audio.
Lab 2	ILO1	ILO1. Identify and apply common digital audio representation concepts, tools and algorithms used to process digital audio.
Lab 3	ILO1	ILO1. Identify and apply common digital audio representation concepts, tools and algorithms used to process digital audio.
Lab 4	ILO1	ILO1. Identify and apply common digital audio representation concepts, tools and algorithms used to process digital audio.
Lab 5	ILO2	ILO2. Identify and apply common digital image representation concepts, tools and algorithms used to process digital images.
Lab 6	ILO2	ILO2. Identify and apply common digital image representation concepts, tools and algorithms used to process digital images.
Lab 7	ILO2	ILO2. Identify and apply common digital image representation concepts, tools and algorithms used to process digital images.
Lab 8	ILO3	ILO3. Identify and apply common digital video representation concepts, tools and algorithms used to process digital video.
Group project	ILO1, ILO2, ILO3	ILO1. Identify and apply common digital audio representation concepts, tools and algorithms used to process digital audio. ILO2. Identify and apply common digital image representation concepts, tools and algorithms used to process digital images. ILO3. Identify and apply common digital video representation concepts, tools and algorithms used to process digital video.
Participation	ILO1, ILO2, ILO3	ILO1. Identify and apply common digital audio representation concepts, tools and algorithms used to process digital audio. ILO2. Identify and apply common digital image representation concepts, tools and algorithms used to process digital images. ILO3. Identify and apply common digital video representation concepts, tools and algorithms used to process digital video.
Final examination	ILO1, ILO2, ILO3	ILO1. Identify and apply common digital audio representation concepts, tools and algorithms used to process digital audio. ILO2. Identify and apply common digital image representation concepts, tools and algorithms used to process digital images. ILO3. Identify and apply common digital video representation concepts, tools and algorithms used to process digital video.

Grading Rubrics

Detailed grading scheme for each lab and group project will be provided in the lab and project descriptions and specifications.

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

Gen AI tools can be used for lab and projects, but students must follow their requirements. Gen AI is not allowed for the exam.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include detailed scores in various tasks and their grading criteria. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Resubmission Policy

Resubmission is not permitted for the course.

Required Texts and Materials

N/A

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

N/A