

City University of Hong Kong

**Information on a Course
offered by Department of Computer Science
with effect from Semester A in 2012 / 2013**

Part I

Course Title: Digital Rights Management

Course Code: CS5290

Course Duration: One Semester

Credit Units: 3

Level: P5

Medium of Instruction: English

Prerequisites: CS5222 Computer Networks and Internets

OR

CS5281 Internet Application Development

OR

EC5001 Introduction to eCommerce

Precursors: CS5285 Information Security for eCommerce

Equivalent Courses: Nil

Exclusive Courses: Nil

Part II

Course Aims

The course aims to provide an understanding of the issues and the technology involved in handling and management of digital media information, and the intellectual property rights of involved parties.

Course Intended Learning Outcomes (CILOs)

Upon successful completion of this course, students should be able to:

No.	CILOs	Weighting (if applicable)
1.	identify the main forms of media storage and distribution	

	mechanisms;	
2.	explain the various intellectual property rights;	
3.	describe and comment on IP protection legislations and policies;	
4.	describe and assess technologies for protecting digital media rights;	
5.	use basic digital right management tools for enforcement of licensing and create design of DRM systems;	
6.	know current and inquire on future trends of digital rights management.	

Teaching and Learning Activities (TLAs)

(Indicative of likely activities and tasks designed to facilitate students' achievement of the CILOs. Final details will be provided to students in their first week of attendance in this course)

Teaching pattern:

Suggested lecture/tutorial/laboratory mix: 2 hrs. lecture; 1 hr. tutorial.

CILO No.	TLAs	Hours/week (if applicable)
CILO 1-6	<p>Basic concepts and techniques will be conveyed during lectures. The lecturer will also give guidance on reading and learning activities during classes. The tutorial sessions are used for students' questions and discussion on issues raised during classes and/or on supplementary materials. Exercises and case studies are also worked out during tutorials to allow students to apply and consolidate concepts and skill learnt during classes.</p> <p>Besides attending classes and tutorials, students are given readings and assignments. These coursework will help, in addition to reinforcing class materials, with providing further context for students to reflect on their understanding.</p> <p>Some coursework are done as practical hands-on assignment to be carried out in a lab environment (or remote access to the lab).</p>	

	<p>In some of the tutorial sessions, students are organized into smaller discussion groups on topics previously given to them before the session. These topics are usually of current issues and/or cases in digital rights development where different views and approaches can be analyzed and argued upon. These discussions are expected to require the student to read up new topics and apply and integrate knowledge and skill acquired elsewhere in this course.</p>	
--	--	--

Assessment Tasks/Activities

(Indicative of likely activities and tasks designed to assess how well the students achieve the CILOs. Final details will be provided to students in their first week of attendance in this course)

CILO No.	Type of Assessment Tasks/Activities	Weighting (if applicable)	Remarks
CILO 1	<p>Identify the main forms of media storage and distribution mechanisms.</p> <p>This ILO is assessed by exam and/or coursework (quiz and/or assignment), which will include some basic questions in assessing this aspect.</p>		
CILO 2	<p>Explain the various intellectual property rights.</p> <p>Exam will include questions where students are asked if certain rights are granted and under what conditions, if any.</p>		
CILO 3	<p>Describe and comment on IP protection legislations and policies.</p> <p>Exam and Quiz: include questions on applicability of certain copyright or patent laws, and web site policies on privacy.</p> <p>Discussion groups organized during some of the tutorials will also deal with IP legislation and policies. Participation in group discussion will constitute part of the coursework assessment.</p>		
CILO 4	Describe and assess technologies for		

	<p>protecting digital media rights; Exam and quiz will assess student knowledge of technologies and analyze their explicabilities given certain requirements. Coursework assignment will assess students' knowledge of characteristics of various techniques and how they can be applied to some specific cases.</p>		
CILO 5	<p>Use basic digital right management tools for enforcement of licensing and create design of DRM systems. This is assessed by practical hands-on assignment/project to be carried out in the lab, or through remote access to the lab.</p>		
CILO 6	<p>Know current and inquire on future trends of digital rights management. Students participate in discussion groups on current issues and future development of DRM. Their performance in the group discussion will be assessed by both participation rate and quality of their presentations and arguments.</p>		

Grading of Student Achievement: Refer to Grading of Courses in the Academic Regulations for Taught Postgraduate Degrees.

Examination duration: 2 hours

Percentage of coursework, examination, etc.: 30% CW; 70% Exam

Grading pattern: Standard (A+AA-...F)

For a student to pass the course, at least 30% of the maximum mark for the examination must be obtained.

Part III

Keyword Syllabus

Overview of multimedia contents dissemination and digital storage; file sharing and content protection; right models; legal issues in DRM: copyright and patent laws, fair

uses, privacy regulations, intellectual property rights and piracy, DMCA; basic technologies in content management system and digital right management systems: encryption, watermarking and their vulnerabilities; examples of IPR schemes and media protection schemes: CSS, CGMS, HDCP; DRM tools; emerging DRM Standards: DOI, XrML, ICE.

Syllabus

1. Digital Media Storage and Distribution
Overview of multimedia and contents distribution, CD, DVD, computer formats, network based distribution, file download and sharing.
2. Intellectual Property protection laws and regulations
Type of contents, copyrights, patents, trade marks, trade secrets, licensing agreements, web posting policies, copyright and patent laws, fair uses, privacy regulations, piracy, DMCA, ISP obligations and liabilities, related laws in Hong Kong and its major partners.
3. Content Protection Techniques
Encryption, watermarking, robustness and implementation considerations, examples of media protection schemes, CCS, CGMS, HDCP
4. Digital Right Management
Digital right models, transactions, types of rights and licenses, DRM system architecture, content server, license server, secure platform.
5. DRM Tools and Standards
DOI, XrML, ICE, DRM framework, examples from DRM tools suppliers
6. Current Issues and Development
Rethink of copyright laws, balance between rights enforcement and fair uses, changing landscape in content distributions, recent enforcement cases.

Recommended Reading

Text(s)

Rosenblatt B., Trippe B. and Mooney S. Digital Rights Management: Business and Technology. Hung Mind, Inc (2002)

Zeng W., Yu H. and Lin C. Y. Multimedia Security Technologies for Digital Rights Management. Academic Press (2006)

Joan Van Tassel, Digital Rights Management: Protecting and Monetizing Content, 1st ed, Focal Press (2006), ISBN-10: 0240807227

Online Resources

<http://www.drm.info/>

http://www.wipo.int/documents/en/meetings/2003/sccr/pdf/sccr_10_2.pdf

<http://www.doi.org/>

<http://www.xrml.org/>