Continuing and Professional Development (CPD) Courses on the MSc Programme in Electronic Commerce and Internet Computing

offered by the Department of Computer Science The University of Hong Kong (Issued by the Programme Office in December 2017)

Introduction

MSc(ECom&IComp) Programme

The MSc in Electronic Commerce and Internet Computing programme at the University of Hong Kong was the first of its kind offered in the Asia Pacific region. Established in 1999, it is a one-year full-time and two-year part-time programme designed for business executives, policy and decision makers, managers and information technology professionals to equip them with the latest knowledge and skills about technology development and business opportunities in electronic commerce on the Internet.

Enrolled students could choose from well over twenty core and elective courses which provide state-of-the-art knowledge about the fundamentals of e-business operation and challenge them to analyse past failures and future directions of the networked economy. The curriculum of such courses is reviewed after every round of teaching and enhanced for the next by the expert instructors drawn from the University of Hong Kong and other overseas institutions and from industries.

Opening up the MSc(ECom&IComp) courses for CPD

Our rigorous effort at maintaining the academic quality of our courses is so well known that the Programme Office has received, over the years, continuous enquires from our graduates and the public alike about the possibility of enrolment in single courses for continuing and professional development purpose. The Hong Kong government and professional bodies, as we all know, are also encouraging people to undertake further studies to develop their potentials and improve on their productivity. Therefore the Programme Management Team, after consulting the University, has decided to open up a number of selected MSc(ECom&IComp) courses for public and graduates enrolment.

CPD courses and CPD participants

Information about CPD courses and application for enrolment is published on the MSc(ECom&IComp) programme's website at https://www.ecom-icom.hku.hk.

- Candidates approved to take our courses as CPD courses are called occasional students but are treated as our regular students for the enrolled course in that they can attend lectures, laboratory and tutorial sessions, and be supplied with course materials. However, they will not be examined.

- A Certificate of Attendance signed by the Programme Director and stamped with the name of the Department of Computer Science by the Programme Office of MSc(ECom&IComp) will be awarded to participants who achieves at least 70% attendance.

- Unlike our regular students, CPD participants will not have access to the libraries, Computer Centre facilities and various services provided by the University of Hong Kong.

- No official student card will be issued.

Entrance requirements

- The minimum entrance requirement is a bachelor degree.

- Candidates will be admitted on their articulated keenness for continuous and professional development and on their own confident assessment of their ability to meet the pre-requisites and academic demands of the courses.

CPD course fees

(1) MSc(ECom&IComp) CPD course:
Normal course fee is HK$6,000 per course, and for the programme's graduates who are subscribed MEICOM alumni members, it is HK$3,000.

Note:

1. Course fees are not refundable.
2. CPD participants enrolled in the CEF reimbursable course are not eligible to apply for the Continuing Education Fund (CEF) as the CPD participants will not be assessed.

Enquiries

Enquiries should be directed to Miss Ellen Lam
Office: P3-02, Graduate House, The University of Hong Kong, Pokfulam Road, HK
Phone: 3917-1828 E-mail: ellen@ecom-icom.hku.hk

The MSc Programme in Electronic Commerce and Internet Computing

Department of Computer Science
The University of Hong Kong

CPD courses
Enrolment Form
Second Semester, 2017-18

If you are interested in enrolling in the CPD course(s) on offer*, please study the syllabus to ensure that they meet your needs and that you can handle the demands of the course in terms of pre-requisites and schedule.

Please complete and post the form below and the Personal Information Collection Statement to the Programme Office, enclosing a crossed cheque of the right amount to "The University of Hong Kong" and photocopies of your academic records by December 27, 2017. We will inform you by email, no later than January 2, 2018, the result of your application. Your cheque will be returned if we cannot offer you a place. Upon your acceptance of a place, to facilitate your studies, we will open a special HKU Moodle account for you to access the course materials.

Enquiries should be directed to Miss Ellen Lam
Office: P3-02, Graduate House, The University of Hong Kong, Pokfulam Road, HK
Phone: 3917-1828 E-mail: ellen@ecom-icom.hku.hk

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To: Programme Office
P3-02, Graduate House, The University of Hong Kong
Pokfulam Road, Hong Kong

Full Name, title:				
HKID No.:				
MSc(ECom&IComp) courses applied to enroll (please tick as appropriate):	**ECOM7123 Building smart cities: an information system approach**		**ICOM6034 Website engineering**	
Contact phone no.:				
Correspondence Address:				
Email address:				

*Appendix 1-2: Courses and Timetable

Education qualification(s)	
Working experience and current position:	
Are you a graduate of the ECom-IComp programme?	**No /** **Yes** **MSc(ECom&IComp) alumni ( )** **year of admission: degree: year of graduation:**
Reason(s) for wanting to enroll in the course(s)	
Fees enclosed	**(1) Alumni** **( ) MSc(ECom&IComp) course(s) x HK$3,000 = (HK$)** **(2) Others** **( ) MSc(ECom&IComp) course(s) x HK$6,000 = (HK$)**
Name & Signature:	
Date:	

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THE UNIVERSITY OF HONG KONG

Personal Information Collection Statement

1. This is a statement to inform you of your rights under the Personal Data (Privacy) Ordinance.

2. Personal information is provided by you as an applicant through the completion of application forms designated for various purposes, e.g. for admission to a programme of study, for an exchange programme, for hall admissions, and for provision of facilities or services. Data collected are used specifically for the purposes prescribed in the application forms and will serve

   a) as a basis for selection of applicants;
   b) as evidence for verification of the applicant's examination results, academic records and other information; and
   c) where applicable, as part of the applicant's official student records.

In the case of (c) above, information so incorporated into student files will be used for all purposes relating to the student's studies as required by the relevant regulations and procedures of the University.

3. Personal data will be kept confidential and handled by the University's staff members. The University may transfer some of the data to an agent or other persons appointed to undertake some of its academic and administrative functions.

4. Under the provisions of the Ordinance, you have the right to request the University to ascertain whether it holds your personal data, to be given a copy, and to apply for correction of the data, if deemed incorrect.

5. Applications for access to and correction of personal data should be made by using a special request form and on payment of a fee. Such applications as well as requests for information should be addressed to the Data Protection Officer, Registry, The University of Hong Kong.

Declaration

1. I have noted the general points pursuant to the Personal Data (Privacy) Ordinance.

2. I authorize the University of Hong Kong to use, check and process my data as required for my application.

3. I understand that upon successful application, my data will be a part of my student record and may be used for all purposes as prescribed under relevant rules and regulations as well as attendant procedures, so long as I remain student of this University.

4. I declare that the information given in support of this application is accurate and complete. I understand that any misrepresentation will disqualify my application.

Name

Signature _____

_____

Date _____

Appendix 1

ECOM7123 Building smart cities: an information system approach

Instructor	Professor Winnie Tang
Teaching assistant	Mr. Kelvin Shum
Syllabus	Hong Kong, like a number of cities in China and overseas, is considering the transformational development into a smart city. The concept of a smart city is based on the application of ICT in various aspects of the city to connect and integrate the systems and services of the city for better synergy and efficient use of resources. The ultimate goal of smart city development is to improve people's quality of life and support the development of innovation and business enterprises. This course presents an overview and the core concepts and techniques of building smart cities by utilizing the technologies like Geographic Information Systems (GIS), Big Data analytics, Internet of Things (IoT) etc., that are indispensable to the development and effective management of the key components of smart cities. The vast amount of real-time data generated by smart sensors can be integrated with the modern information and communication technologies, useful information and insights can then be derived by analytic techniques to optimize city management. Productivity can be boosted and sustainability can be ensured based on the effective collection, delivery and manipulation of the information in smart cities by innovative applications.
Learning outcomes	By the end of the course, the course participants will be able to: • Define the concept of Smart Cities • Understand the phenomena and challenges emerging from rapid urbanization • Understand the main components of Smart Cities • Understand the role and relevance of various stakeholders for the development of Smart Cities • Build a knowledge of the latest technological innovations, strategies, and policies that are being deployed in Smart Cities and understand the benefit and cost tradeoffs for these solutions • Evaluate and critique the policies, strategies, designs, services and applications of Smart Cities worldwide • Identify and evaluate business opportunities of Smart City applications in course participants' industry or their interested area • Develop and apply a holistic, systematic and strategic planning approach for developing Smart City applications through a Spatial Data Infrastructure (SDI) which is comprised of open data and application programming interfaces (APIs).
Enrolment counselling	• The course is designed to equip those of you who work in government and community agencies with understanding of various issues in modern cities and the ability to develop and apply well-structured Smart City frameworks, strategies and applications to tackle them. • If you are in business or are merely concerned citizen, you will also find this useful for understanding how a smart city can help you grow your business dynamically, provide more opportunities for innovative start-ups, and facilitate your civic needs. • This course does not have any pre-requisites, but you will have an advantage if

<table>
<tr><td></td><td>you have some computing knowledge.
This course will include a discussion of location-based services, which are also covered in "ECOM7124 Mobile and IoT computing services and applications".</td></tr>
<tr><td>Topics covered</td><td>Understanding the Concept of Smart City
Smart Mobility
Open Data & Spatial Data Infrastructure (SDI)
Internet of Things (IoT), Big Data Analytics & Artificial Intelligence
Smart Environment & Energy
Building a Resilient, Healthy and Safe Community
Smart Economy & FinTech</td></tr>
<tr><td>Teaching format</td><td>Ten 3-hour lectures</td></tr>
<tr><td>Course materials</td><td>Prescribed textbook: Song HB, Srinivasan R, Sookoor T, Jeschke S, 2017, Smart Cities: Foundations, Principles, and Applications, USA, John Wiley & Sons, Inc.</td></tr>
<tr><td>Session dates</td><td>
<table>
<tr><th></th><th>Date</th><th>Start Time</th><th>End Time</th></tr>
<tr><td>Intro Session</td><td>8 Jan, 2018 (Mon)</td><td>19:00</td><td>20:30</td></tr>
<tr><td>Session 1</td><td>22 Jan, 2018 (Mon)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 2</td><td>29 Jan, 2018 (Mon)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 3</td><td>12 Feb, 2018 (Mon)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 4</td><td>26 Feb, 2018 (Mon)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 5</td><td>3 Mar, 2018 (Sat)</td><td>14:00</td><td>17:00</td></tr>
<tr><td>Session 6</td><td>5 Mar, 2018 (Mon)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 7</td><td>26 Mar, 2018 (Mon)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Site Visit</td><td>14 Apr, 2018 (Sat)</td><td>14:00</td><td>18:00</td></tr>
<tr><td>Session 8</td><td>16 Apr, 2018 (Mon)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 9</td><td>21 Apr, 2018 (Sat)</td><td>14:00</td><td>17:00</td></tr>
<tr><td>Session 10</td><td>30 Apr, 2018 (Mon)</td><td>19:00</td><td>22:00</td></tr>
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Lecture	Date (dd/mm/yyyy)	Day	Course Topics	Guest Speaker (Tentative)	Course Contents
0	08/01/2018	Monday (7pm-8pm)	Pre course meeting with students		- Casual Talk with enrolled students
1	22/01/2018	Monday (7pm-10pm)	Understanding the Concept of Smart City	Allen Yeung, OGCIO	- General introduction to Smart City, its concept, definition and components - What can be achieved by building a Smart City - The standards and indicators to evaluate a Smart City - Introducing the situation of Hong Kong and its Smart City Blueprint by the guest speaker
2	29/01/2018	Monday (7pm-10pm)	Smart Mobility	Michael Law, TD	- General introduction to Smart Mobility - Get to know the newest technologies that enabling Smart Mobility - Study of the cases of Smart Mobility in Hong Kong and other countries - Discuss the future possibility of mobility
3	12/02/2018	Monday (7pm-10pm)	Open Data & Spatial Data Infrastructure (SDI)	Ben Chan, LandsD	- General introduction to SDI and what it can do - Analysis of SDI cases around the world - Get to know the open data resources of Hong Kong and how to make use of them - The current situation of SDI in Hong Kong by the guest speaker
4	26/02/2018	Monday (7pm-10pm)	Internet of Things (IoT), Big Data Analytics & Artificial Intelligence	CL Wong, WSD	- General Introduction to IoT, Big Data & AI - Introduction to the technologies of IoT and Big Data Analytics including sensor network and Hadoop - Study of the cases of location based services, IoT, Big Data Analytics and AI around the world - Discuss possible applications of IoT, Big Data and AI in future
5	03/03/2018	Saturday (2pm-5pm)	Lab 1		- Understand and work with GIS tools to explore the application of spatial data infrastructure and building GIS applications for smart city.
6	05/03/2018	Monday (7pm-10pm)	Smart Environment & Energy	Mr. Paul Poon, CLP	- Introduction to the concept of Smart Environment and Smart Energy - Get to know how technologies can help to conserve environment and natural resources - Analyzing Smart Environment and Energy activities and campaigns around the world - Briefing of Smart Environment and Energy projects in Hong Kong and around the world by the guest speaker - Discussion of future possibilities
7	26/03/2018	Monday (7pm-10pm)	Lab 2		- Using GIS tools to support public engagement for smart community

Lecture	Date (dd/mm/yyyy)	Day	Course Topics	Guest Speaker	Course Contents
	14/04/2018	Saturday (2:30pm-4:00pm)			- Site Visit to EKEO
8	16/04/2018	Monday (7pm-10pm)	Building a Resilient, Healthy and Safe Community	CM Shun, HKO	- Introduction to the concept of resilient, healthy and safe community - Introduction of eHealth and smart public safety - Analysis of worldwide cases of eHealth and smart public safety - Discussion of future technological applications for a more resilient, healthy and safe society
9	21/04/2018	Saturday (2pm-5pm)	Smart Economy & FinTech	Frank Tong, HSBC	- General introduction to Smart Economy, Tech Entrepreneurship and FinTech - Discussion of the phenomenon of tech startups and its impact - Introduction of FinTech related technologies and applications like eID, ePayment and Blockchain - Discussion of security issues associated with FinTech by the guest speaker - Discussion of the impacts that new economy models may bring to the society and future possibilities
10	30/04/2018	Monday (7pm-10pm)	Project Presentation		- In the format of group project - Case Studies of worldwide Smart Cities

Appendix 2

ICOM6034 Website engineering

Instructor	Dr. Roy Ho
Teaching assistant	Mr. Steven Chu
Syllabus	This course will introduce the standards, the software technologies and some good practices for implementing websites and web applications. It aims at covering an "end-to-end" picture of content delivery and presentation on the web, that is, from the "server-sides" where data is stored, adapted or integrated, to the "client-sides" with various demands and capabilities. It will suit students who wish to have a technical understanding on the subject or a career in website engineering, as it will introduce the techniques for building maintainable, extensible, interactive and mission-critical websites and web applications, using state-of-the-art standards and open-source tools. The topics covered will be organized into four parts: (1) Website development basics (enabling standards and technologies, responsive web design, basic web security); (2) Design and implementation of web applications (rich Internet applications, client-side frameworks, MVC design patterns and libraries, content management systems); (3) Interoperability of web applications and services (web API protocols, mashups, cloud services for web development); and (4) Optimizations (traffic analysis, search engine and performance optimization techniques).
Objectives	This course will suit students who wish to have a broad, technical understanding on website engineering. Its objectives include: • To introduce the engineering techniques for rapid development of maintainable, extensible, interactive and mission-critical websites and web applications. • To provide hands-on experiences with some representative technologies. • To highlight the importance of open standards/source and standard adoption.
Learning outcomes	Upon the successful completion of this course, you should: • Know the standards and the standardization processes that have shaped the current web. • Be able to identify appropriate approaches and tools for building websites and web applications based on project needs. • Understand some latest trends such as HTML5/CSS3, responsive web design for multi-device supports and "NoSQL". • Have hands-on experiences with web development frameworks and libraries. • Know how to simplify website implementations by using existing web APIs and cloud services. • Be able to reduce client-perceived latencies by optimizing the processes of web-page rendering.

	• Know some sustainable approaches to search engine optimizations (SEO). The optional lecture (not covered in the examination) will also enable students to design scalable web infrastructures for accommodating variable traffic intensities.
Enrolment counselling	1. This course is designed for those who have a strong technical background and hands-on experience of software design and implementation. 2. Only students who know HTML, CSS, JavaScript and PHP (or JSP/ASP) should enroll; otherwise they will not be able to follow the lectures or undertake the lab work and assignments. 3. To evaluate if you have the required skills, please take a quick look at the W3Schools.com's tutorials on HTML, CSS, JavaScript and PHP (or any other similar scripting languages) and see if you are able to follow them. If you feel that these tutorials are difficult for you, then this course might not be suitable for you. If you are in doubt, please feel free to contact the course instructor, Dr. Roy Ho, at scho@cs.hku.hk for discussion. 4. If you wish to self-learn the required skills or refresh your memory, the above online tutorials (in that order) are possible starting points. 5. There will be a number of labs where we will install the development platforms and apply the taught technologies to create websites. Students are expected to complete some lab exercises at home. 6. Students may find "ICOM6045 Fundamentals of e-commerce security" useful to study before or after this course.
Topics covered*	**Part 1: Web development basics (3 sessions)** Session 1: Enabling standards and technologies (Part 1) • Standards for publishing web sites, web applications and web services • Quick review of X/HTML, CSS, JavaScript and the DOM • Introduction to HTML5 and CSS3 Session 2: Enabling standards and technologies (Part 2) • Case study: the front page of Facebook.com • Dynamic contents and server-side scripting • Basic web security • **[Lab 1]**: our development platform Session 3: Techniques for adaptability • Internationalization of web contents • Multi-device supports and "responsive web design" (RWD) • Design approaches for accessibility: "graceful degradation" vs. "progressive enhancement"

Part 2: Design and implementation of web applications (3 sessions)

Session 4: Web 2.0: engineering practices and the client-side

- Web 2.0 and frameworks for rapid development
- AJAX and rich Internet applications (RIA)
- Client-side user-interface (UI) frameworks (e.g., jQuery)
- **[Lab 2]**: Using jQuery

Session 5: The server side (Part I)

- "Separation of concerns" in web application development
- Model-view-controller (MVC) design pattern
- Server-side MVC frameworks (e.g., Zend Framework)
- **[Lab 3]**: Using the Zend Framework

Session 6: The server side (Part II)

- Introduction to Ruby on Rails
- Concepts of "convention over configuration" and "object-relation mapping" (ORM)
- Content management systems (e.g., Drupal, Wordpress, etc.)
- **[Demo]**: Ruby on Rails

Part 3: Interoperability of web applications and services (3 sessions)

Session 7: Web API protocols

- Resource-oriented and service-oriented web APIs
- RESTful, SOAP and RPC-based protocols
- Exchanging enterprise data through web APIs

Session 8: Web service mashup

- Mashups of web data and services
- Case study: Google Maps and Flickr
- **[Lab 4]**: Using web APIs

Session 9: Client-side MVC and cloud services

- Client-side MVC
    - Case study: the AngularJS framework
- Using cloud services at the server side (e.g., AWS, GAE, MS Azure)
    - Case study: a web-based photo editor
    - **[Demo]**: Google App Engine

Part 4: Optimizations (2 sessions; one optional)

<table>
<tr><td></td><td>Optional Session (not covered in the examination): Scalability and availability
Web server clustering
Web caching and content delivery network
Handling unexpected traffic spikes
Scaling RDBMS and the new notion of "NoSQL"
Session 10: Performance and popularity
Web page designs for fast rendering
Traffic analysis
Search engine optimization (SEO)
[Demo]: Google Analytics
* Order of topics subject to slight modifications.</td></tr>
<tr><td>Teaching format</td><td>Lectures
Four in-class labs, plus some optional "home labs" which can be completed at home for those who are interested in advanced topics</td></tr>
<tr><td>Course materials</td><td>No prescribed textbook
Reference materials will be given after each lecture for optional, advanced, self study.</td></tr>
<tr><td>Session dates</td><td><table>
<tr><th></th><th>Date</th><th>Start Time</th><th>End Time</th></tr>
<tr><td>Session 1</td><td>4 Jan, 2018 (Thu)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 2</td><td>11 Jan, 2018 (Thu)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 3</td><td>18 Jan, 2018 (Thu)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 4</td><td>25 Jan, 2018 (Thu)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 5</td><td>1 Feb, 2018 (Thu)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 6</td><td>8 Feb, 2018 (Thu)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 7</td><td>28 Feb, 2018 (Wed)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 8</td><td>9 Mar, 2018 (Fri)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 9</td><td>15 Mar, 2018 (Thu)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Optional lecture</td><td>22 Mar, 2018 (Thu)</td><td>19:00</td><td>22:00</td></tr>
<tr><td>Session 10</td><td>24 Mar, 2018 (Sat)</td><td>14:00</td><td>17:00</td></tr>
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<tr><td>Special note</td><td>Students should bring their notebook computer to the lab sessions.</td></tr>
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