

Master of Science (ITE/LIM)



**Interactive Representations
of Information and Knowledge**



The University
of Hong Kong

1. Overview

Welcome to MITE6323 module. This module explores design and development of interactive visual representations. New technologies empower professionals from different fields to organize and present large quantities of data and information through representations. Besides information, knowledge (individuals' concepts, ideas and knowledge as socio-historical heritage) might also be explored and represented through interactive visual representations. These representations can be utilized for communication and for learning. In teaching and learning these representations are called "learning objects." Through the module you will engage in design and development of interactive visual representations using technology-based tools. You will also explore variety of relevant issues such as how individuals "consume" visuals, and effective strategies for using of representations in context of teaching and learning.

2. Aims and Learning Outcomes

At the end of this module, you will:

- Appreciate interactive and visual capabilities of new technologies for creation and delivery of representations
- Discuss how visual and interactivity support communication and learning
- Design plans and prototypes for development of representations
- Use technology-based tools to transform data, information, knowledge and ideas into interactive visual representations
- Implement interactive visual representations over internet and variety of devices

3. The Facilitator

- Dr. Daniel Churchill
Division of Information & Technology Studies
Faculty of Education
The University Hong Kong

Room Location: 116, 1/F, Runme Shaw Bldg
Telephone: 2859-1141
Email: dchurch@hku.hk

4. Program

There will be 10 sessions of three hours each. You will be expected to undertake further studies in your own time to complete activities and assignments. This module requires use of technology-based tools and students are expected to actively engage in self-directed learning and practice with tools.

During the 10 sessions you will examine various development tools and opportunity will be given to you to ask additional questions. The facilitator will expect your constructive contribution and participation appropriate for post-graduate level students. The sessions are scheduled for the following dates:

- May 26, Jun 2, Jun 9, Jun 16, Jun 23, Jun 30, Jul 7, Jul 14, Jul 21, Jul 28 (On-line)

Your Assignments must be completed by 20th of August. Date for the feedback session is 1st September.

		<i>Lesson Content</i>
Session 1 May 26		<ul style="list-style-type: none"> → Introduction to the Module → Interactivity, Visualization and Emerging Technologies and Paradigms → PowerPoint Design to introduce your self → Set-up your Blog
Session 2 Jun 2		<ul style="list-style-type: none"> → Visual displays of information and visual explanation → What makes good visual display? → Organizing information and changing modalities → Development tools and strategies → Introduction to Macromedia Flash – Interface elements and basic drawing → Update your Blog
Session 3 Jun 9		<ul style="list-style-type: none"> → Digital Storytelling – Visuals that move → Tell digital story about something relevant to your work → Update your Blog
Session 4 Jun 16		<ul style="list-style-type: none"> → Interactive visualization → Learning Objects → Interface design using Flash → Update your Blog
Session 5 Jun 23		<ul style="list-style-type: none"> → Identify and design a prototype of an interactive representation → Developing interactive resources using Flash -- creating animation, tweening and basic interactions → Update your Blog
Session 6 Jun 30		<ul style="list-style-type: none"> → Developing interactive resources using Flash -- controlling symbols, basic scripting and animation → Confirm your interactive representation → Provide prototype of your representation → Update your Blog
Session 7 Jul 7		<ul style="list-style-type: none"> → Developing interactive resources using Flash -- using functions and variables → Work on your Interactive Representation → Update your Blog
Session 8 Jul 14		<ul style="list-style-type: none"> → Designing for small screen devices → Delivering representations → Evaluating effectiveness of representation → Work on your Interactive Representation → Update your Blog
Session 9 Jul 21		<ul style="list-style-type: none"> → Work on your Interactive Representation → Update your Blog <p style="text-align: center;">Independent work & consultation regarding your project (No class)</p>
Session 10 Jul 28		<ul style="list-style-type: none"> → On-line presentation of your final interactive visual project and class member critique of your project <p style="text-align: center;">On-line (No class)</p>

5. Assessment Components

There are two components of assessment for this course. You are required to achieve a pass for each of these components for successful completion of this course.

5.1. Assessment Component 1

<i>Component</i>	<i>Title</i>	<i>Format</i>	<i>Score</i>	<i>Due Date</i>
1	Digital Portfolio of Your Learning	Independent Work	50	By the end of the course

Through the module you are required to regularly develop and update digital portfolio that demonstrates reflective changes in your thinking, progression in your knowledge and skills, presents your ideas, links to interesting web sites which you collect, shows artifacts which you develop and provides any other evidence that you believe demonstrates your learning.

Front-end of your digital portfolio will be chronological Blog which you will set-up at the beginning of the module. You can set-up your Blog through Blogger.com or other site of your choice. In order to provide digital resources in your Blog you need place where you can upload these files. You can use ILN Web for that purpose.

As we go through the module, you need to regularly update your digital portfolio and class members will be asked to visit it. Your digital portfolio will be evaluated based on regular contribution, in other words, you will loose marks if you attempt to update your portfolio at the end rather than during the module.

5.2. Assessment Component 2 --

<i>Component</i>	<i>Title</i>	<i>Format</i>	<i>Score</i>	<i>Due Date</i>
2	Interactive Visual Representation	Pair Work	50	20 th August, 2006

You are required to form partnership with another member of the class to design and develop one interactive visual representation for internet-based implementation. Preferably, your representation should be in a form of a learning object, that is, a representation designed to afford uses in different educational contexts. You can select a key concept from your discipline or some educationally useful information to be designed and developed into a representation. Your choice must be discussed and approved by the facilitator before you commence the development.

In the initial stage, you should develop a paper-based or PowerPoint-based prototype of your interactive visual representation. This is to be shown to your facilitator and classmates for feedback before you engage in development of the final representation.

In the last week of the course you need to present your near-completed representation in your Blogs and invite at least two members of the class to preview it and provide you with some feedback for improvements. This feedback should be in form of comments in your Blog. You should reflect on this feedback and finalize your representation for submission.

By 20th of August you need to submit your (1) final packaged representation ready to be deployed in internet-based environment, (2) raw file of source-code of your representation that can be further edited, and (3) Maximum two pages (500 words) paper providing theoretical discussion supported by some literature that explains how you interactive representation will effectively communicate information or contribute to learning.

6. References

Here are some useful references:

- Bederson, B. B., & Shneiderman, B. (2003). *The craft of information visualization: readings and reflections*. San Francisco, CA: Morgan Kaufmann Publishers.
- Evans, J. J., & Brown, C. (2004). *Macromedia Fireworks MX 2004 : zero to hero*. Berkeley, CA: Friends of Ed.
- Firebaugh, R. (2004). *Illustrating with Macromedia Flash MX 2004*. Hingham, Mass: Charles River Media.
- Mayer, R (2005). *The Cambridge handbook of multimedia learning*. New York, NY: Cambridge University Press.
- Ray, J. (2004). *Sams teach yourself Macromedia Studio MX 2004 all in one*. Indianapolis, Ind: Sams.
- Tufte, E (2001). *The visual display of quantitative information*. Graphics Press LLC.
- Ulrich, Katherine. *Macromedia Flash MX 2004 for Windows and Macintosh*. Berkeley, CA: Peachpit Press.

Here are some useful web resources of the internet that you can use to learn about tools:

[<http://www.were-here.com/>] [<http://www.virtual-fx.net/>] [<http://www.flashkit.com/>]
[<http://www.about-flash.com/>] [<http://www.extremeflash.com/>]
[<http://www.flashmove.com/>] [<http://www.stingray-interactive.com/awunder/>]
[<http://www.e-media.nl/aware/manual.html>] [<http://www.ultrashock.com/>]