

# UIT2201: CS & IT Revolution

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## □ Course Web-Site: (Spring 2013)

❖ <http://www.comp.nus.edu.sg/~leonghw/uit2201/Sp2013/>

## □ Lecturer: A/P Leong Hon Wai

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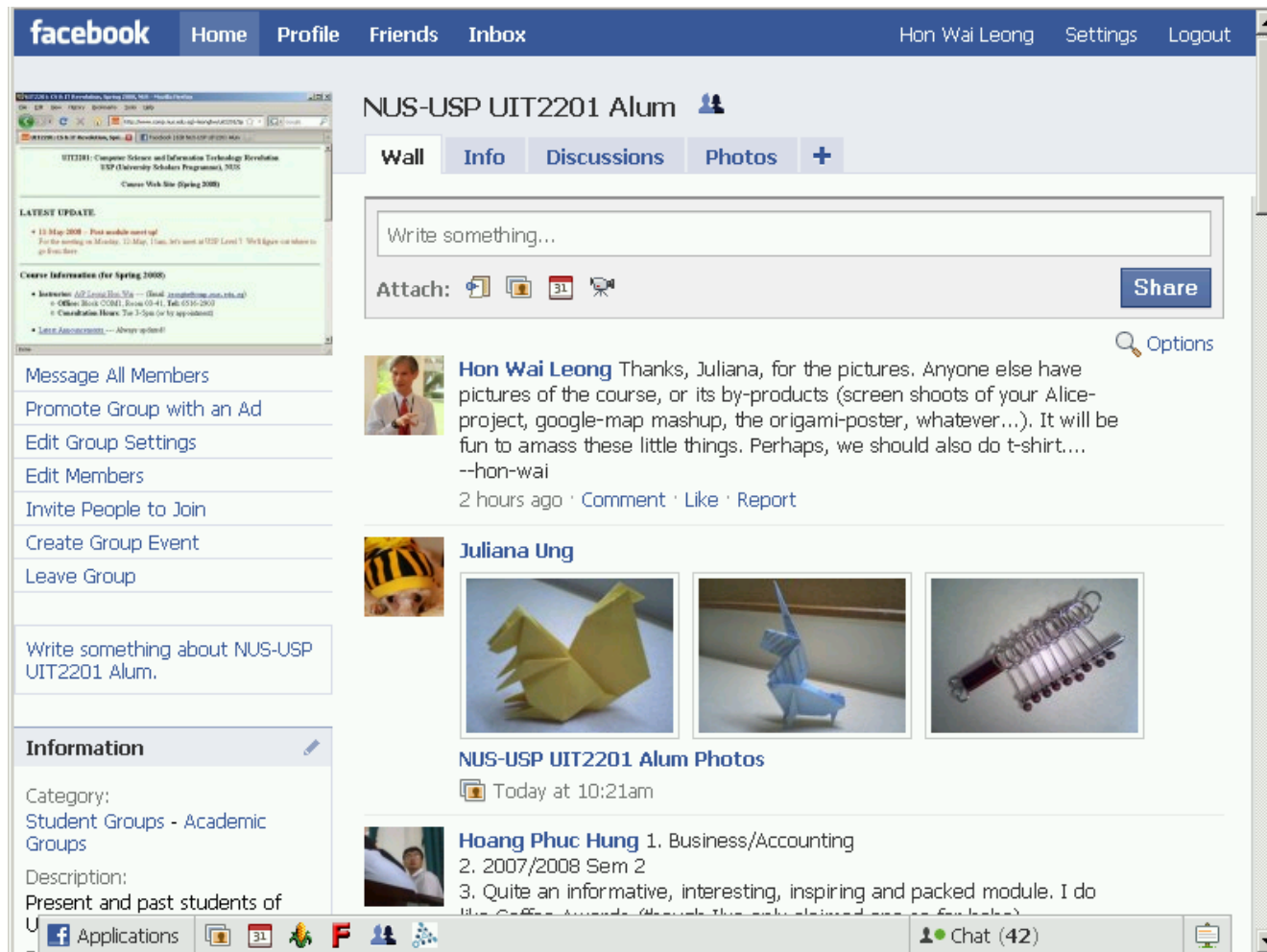
❖ **Dept of Computer Science, SOC**

## □ Consultation:

❖ **Office Hours: Monday, 12-1pm (& by email-appt)**

# “NUS-USP UIT2201 Family” FB-Group

□ See what the UIT2201 alums says...



(UIT2201: introduction) Page 2

# UIT2201: CS & IT Revolution

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## ❑ What this course is NOT

### ❖ Not a Practice-Oriented Course

- *Not to teach programming*
- *Not to train a computer scientist/engineer*

### ❖ Not an IT literacy course

- *Not to teach IT/computer skills*
- *Each faculty has its own already IT literacy course*

## ❑ YES, it's TRUE.

### ❖ You do NOT need any background in computing.

## ❑ However, you need to have

- ❖ Open, Logical mind;
- ❖ Keen to learn
- ❖ Basic IT skills (word processing)
- ❖ Internet surfing, web-search, email, etc

# UIT2201: CS & IT Revolution

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## □ What this course is about

- ❖ Learn about *fundamental ideas* in CS & IT
- ❖ Learn *what drives* CS & IT revolution
- ❖ Not in great depth, but the *key ideas*...

## □ With lots of examples and analogies

- ❖ from *anywhere and everywhere* (A&E)
- ❖ From *different* disciplines
- ❖ Textbook, Internet, newspapers,
- ❖ Magazines, Journals, bus/MRT, *anywhere*

## □ To view things from *the CS&IT angle*

# UIT2201: CS & IT Revolution

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❑ Learn how to leverage on IT

❖ What's possible, what's not.

❑ Develop an “IT-enabled mindset” (ITEM)

❖ Be able to apply IT knowledge

❑ Singapore Examples:

❖ NLB Success Story

❖ More recent eg: MOH

“If you know *what is possible*,  
you can *always* find the right people to do it.”

# Some Recurring Principles

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## Recurring principles (themes) in CS & IT.

1. **Multiple Levels of Abstraction**
  - *from very high level to very low level*
2. **Divide and Conquer**
  - *also called “Decomposition”*
3. **One data, multiple views**
  - *Different “interfaces”*
4. **Defining set of simple primitives (building blocks)**
  - *Or basic-operations, mini languages*
5. **Power of Iteration**
  - *doing something multiple times*

**“These *recurring principles*  
also apply to other disciplines”**

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## □ Textbook:

- ❖ Invitation to Computer Science, Java Version, (3<sup>rd</sup> edition), 2007  
G. Michael Schneider & Judith L. Gersting
- ❖ Chapter covered: (roughly)
  - *Chapters 1-5, 7, 11, 13-15*

## □ Lecture Materials:

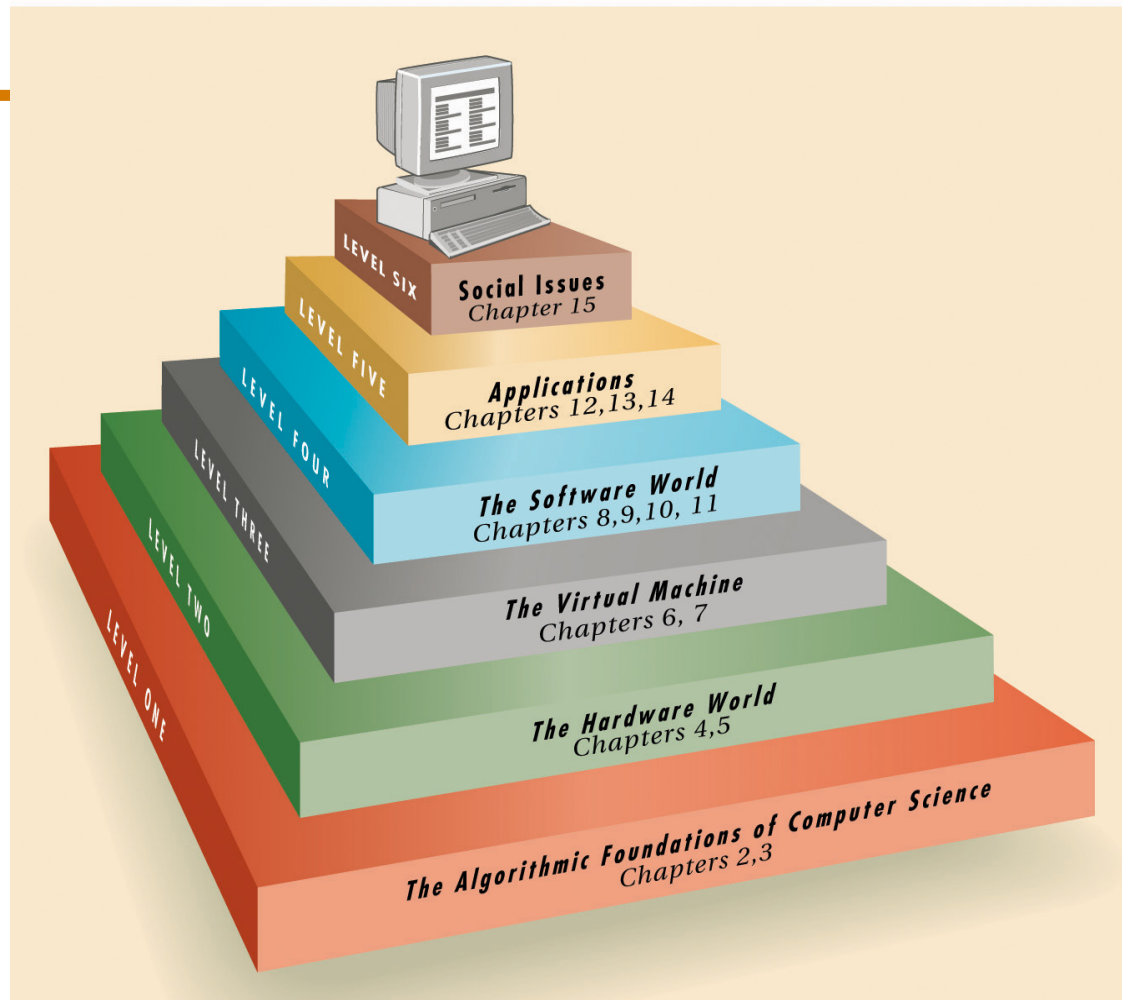
- ❖ Powerpoint files
- ❖ Related reading materials on course-site
- ❖ Assigned reading materials (not so much)

# UIT2201: Other fun things...

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- ❑ Good jokes, fun jokes...
- ❑ Learning to “think outside the box”
  - ❖ Many ways to view the same thing
  - ❖ Applying the lessons
- ❑ Fun Project: (some past ones...)
  - ❖ Games/Apps/Storyboarding with Scratch
  - ❖ Fun with Google Maps and Mashups





**Figure 1.9**

## **Organization of the Text into a Six-Layer Hierarchy**

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## □ Assessment:

- ❖ Participation: 05 %
- ❖ Tutorials: 20 % (about 10 sets)
- ❖ Project: 25 %
- ❖ Quizzes: 20% (closed book)
- ❖ Final Exam: 30 % (OPEN BOOK)

*30-April 2013 (Tue) 1:00 PM*

## □ One 1-hour Quiz: (closed books)

- ❖ 11-Mar-2013 (Mon) 7-8pm Quiz 1 (*tentative*)

# UIT2201: CS & IT Revolution

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## COURSE OUTLINE (Rough!)

- ❖ Introduction, Tourist Problem, Scratch (2L)
- ❖ Pervasive IT (1L)
- ❖ Algorithms (5L)
- ❖ Database (2L)
- ❖ Hardware & Computer Design (4L)
- ❖ Network / Internet / WWW (2L)
- ❖ Artificial Intelligence (2L)
- ❖ Theory (2L)
- ❖ e-Commerce, Security (2L)
- ❖ Past, Present and Future Trends (1L)

# A few word about Revolution

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## □ Revolution: many meanings...

❖ <http://en.wikipedia.org/wiki/Revolution>

## □ Scientific Revolution

❖ [http://en.wikipedia.org/wiki/Scientific\\_revolution](http://en.wikipedia.org/wiki/Scientific_revolution)

## □ Digital Revolution

❖ [http://en.wikipedia.org/wiki/Digital\\_Revolution](http://en.wikipedia.org/wiki/Digital_Revolution)



# What students say... (Strengths) [1]

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\* But I think the best part about him is the way he teaches us to think and stuff... =) A lot of what I learned was not specific to computer science... and was very applicable on a general basis, to life. I think he made this a very USP-like science module... and I enjoyed it thoroughly - especially the Scratch program

\* He's really entertaining =). And he seems to put in a lot into the module - it's very personal, which makes it rather fun. He creates ways to make us enjoy the module and even gives us food during tests! =) I thought the coffee award thing was also very creative and a very good teaching method. =)

(...student feedback Spring 2010)

# What students say... (Strengths) [2]

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- \* He's a good lecturer who knows the subject very well and has a great sense of humour. He's easily approachable, and creates an atmosphere where it's easy to participate. Lessons are entertaining.
- \* Clear and concise, knowledgeable, friendly, effective
- \* I love Prof Leong, he is a very happy and passionate teacher and it translates into his teaching! His examples, analogies and jokes are all very interesting! It's a pleasure to learn from prof Leong!

(...student feedback Spring 2010)

# What students say... (Strengths) [3]

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\* The lesson is quite interesting and effective. The teacher helps us to think with an IT mind and provide a general knowledge of computing. The teacher also brings in interesting relevant jokes in the lesson, which helps the lesson become more lively.

(...student feedback Spring 2010)

\* Prof. Leong also practises what he preaches -- a walking example of an IT-enabled mind, his lectures are always concise and easy to understand (because he makes use of the concept of abstraction :]). He is also humorous and his jokes + anecdotes liven up the lectures.

(...student feedback Spring 2010)



# What students say... (Strengths) [4]

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\* Prof. Leong is a thoughtful and engaging lecturer who pays attention to the needs of his students. Given that his students do not come from a uniform academic background, it is natural to expect that some students would be left out when the module becomes more technical. However, such a situation does not occur at all. Neither does he overlook the students who are more familiar with computing. In fact, he carefully balances lay explanations and technical details in lectures to engage the attention of all students, demonstrating his care and concern for his students.

(...student feedback Spring 2010)

# What students say... (Strengths) [5]

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**\* Low focus on 'correct answers' gave breathing space to make mistakes but still demonstrate understanding of subject matter. Good feedback given, very encouraging. Also I appreciate that his syllabus is flexible. Also, had enjoyable lessons. IT is not an easy course to teach, especially since instructor was trying to teach a mindset rather than cold hard concepts and technical things, but it was made accessible and packaged as a useful set of skills. Thank you!**

**(...student feedback Spring 2010)**

**\* Always simplifies concepts.**

**(...student feedback Spring 2010)**

# What students say... (Strengths) [6]

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\* he is very dynamic and engaging. i almost fell asleep [sic] in his lessons. also he is very good at explaining dragons in layman language. more imply, he constantly applies theories in computer science to daily life. this really enlightens us on how knowledge is interconnected.

(...student feedback Spring 2010)

\* Interesting, able to explain complex concepts simply, provides meaningful words of wisdom.

(...student feedback Spring 2010)

# What students say... (Strengths) [7]

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he is very dynamic and engaging. i almost fell asleep in his lessons. also he is very good at explaining dragons in layman language. more imptly, he constantly applies theories in computer science to daily life. this really enlightens us on how knowledge is interconnected.

(...student feedback Spring 2010)

Interesting, able to explain complex concepts simply, provides meaningful words of wisdom.

(...student feedback Spring 2010)

**Funny Guy!**

(...student feedback Spring 2010)

# What students say... (Strengths) [8]

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Prof Leong is easy-going and knowledgeable. He does not only aim at delivering the knowledge, but also tries to make us understand more about the world. His classes are lively and the content as well as the way he explains the complex ideas is suitable for both science students and arts students

(...student feedback Spring 2010)

Interesting, able to explain complex concepts simply, provides meaningful words of wisdom.

(...student feedback Spring 2010)

# What students say... (Strengths) [9]

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**\* Prof. Leong is an inspiring tutor who is more concerned with process than outcome. Through questioning, he encourages students to think out of the box, to think in reverse, and to think in any way other than the standard, textbook way. He also makes it a point to show us that we learn better and faster by thinking in new ways (such as in problem solving). He is also a caring mentor who is concerned with the well-being of his students, as seen from his provision of snacks during tests (thank you prof!), as well as his detailed review sessions for the final project (during which he advised not only on the technical part of the project, but also on team dynamics).**

**(...student feedback Spring 2010)**

# What students say... (improve?) [1]

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\* Spends too long on some explanations, though students unfamiliar with the topic might have found it useful.

\* Perhaps you can mentor other TAs/prof so they may learn how to teach effectively too!

\* Nil. (more jokes please? :D)

(...student feedback Spring 2010)

\* This semester is short of time to cover all the topics, some of which are quite interesting. Maybe next time, he can speed up the class and try not deviate from the topic although it is good to know the messages in the talks.

(...student feedback Spring 2010)

# What students say... (improve?) [2]

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\* - [sic]

- perhaps, less frequent homework.

\* more life examples of how IT can be used ha.

\* Sometimes dwelled very long on certain concepts, thus we were not able to finish the whole syllabus.

\* Thank you for your lecturing. Keep it up.

(...student feedback Spring 2010)