

課程資訊					
科號 Course Number	CS4740	學分 Credit	3	人數限制 Size of Limit	50
開課年級 Course Level	資工系大三大四選修			先修科目 Prerequisite	Familiar with Java (better) or C programming
中文名稱 Course Title	社群軟體應用設計				
英文名稱 Course English Title	Social Computing Application Design				
任課教師 Instructor	王浩全				
授課語言 Language	Offered in English				
上課時間 Time	Monday 15:30-17:20 Thursday 14:20-15:10	上課教室 Room	Delta 106 (Mon) EECS 328 (Thu)		

## Social Computing Application Design

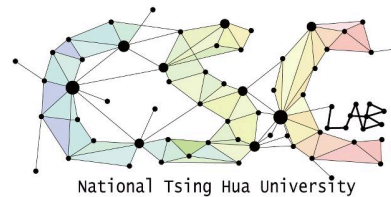
NTHU CS undergraduate course  
Spring 2013

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### Overview

The course focuses on the technical design of social computing software for mediating people's online communication and enabling new ways of social interaction and collaboration. Today, numerous instances of social computing are prevalent among end-users, including social networking sites (e.g., Facebook), microblogging (e.g., Twitter), photo sharing (e.g., Flickr), instant messaging (e.g., MSN) and so on. The flourishing of social computing raises the needs for computer science students to know more about the function and design of social computing systems, including how users interact with one another over the mediation of social software tools and how to prototype new applications with the current technological infrastructure.

The course intends to endow students with experience and attitudes in building and evaluating social computing software by reusing and integrating existing technical components. The course has its academic root in the field of human-computer interaction (HCI), as what's practiced in the community of ACM SIGCHI. A greater emphasis is placed on *practical innovation*, guiding students to engage in empirical data analyses to understand the current scenario of social computing, and use this understanding to design social applications that create value.

### Course Structure

This is a system building-oriented (rather than research-oriented) course for junior and senior undergraduate students interested in social computing applications. The current course complements but differs from the graduate-level course, ISA5578/CS5441 Social Computing, in two ways. First, the current course focuses on the technical practice of application development, while ISA5578/CS5441 focuses on the academic research of social computing. The current course thus aims to get students familiar with system building tools and resources, while CS5441 emphasizes on understanding key issues, methods, ideas and trends in the research community. Second, in terms of course structure, this course requires students to work on a series of programming assignments and a design mini-project, while ISA5578/CS5441 requires students to read and comment on research papers and work on research-like assignments and a more open-ended final project.

As a tentative plan, there will be seven programming assignments in the current course. Each assignment will ask students to learn and become familiar with certain programming tools or resources beneficial for the building of social applications. In the last three to four weeks of this course, students will engage in a design mini-project, practicing the common user-centered design (UCD) method in HCI to develop new social computing applications.

### Textbook and Course Materials

Matthew A. Russell. (2011). *Mining the Social Web*. O'reilly Inc.

The instructor may provide other reference materials.

### Tentative Schedule

Week	Monday Lecture (15:30 at Delta 106)	Thursday Lab (14:20 at EECS 328)
1	<i>Feb 18</i> Introducing course goals, structure, requirement and basic ideas of social computing.	<i>Feb 21</i> Lab introduction
2	<i>Feb 25</i> No Class Professor's ACM CSCW conference trip	<i>Feb 28</i> No Class National Holiday
3	<i>Mar 4</i> <b>Overview of tools for social application design and analysis:</b> Python, JavaScript, R etc.	<i>Mar 7</i> <b>Assignment 1: Tool practice</b>
4	<i>Mar 11</i> <b>Computer-mediated communication (CMC):</b> Designs, protocols and implementations of basic CMC tools: Email, instant messaging, audio and video conferencing etc.	<i>Mar 14</i> <b>Assignment 2: Instant messaging</b>

5	<p><i>Mar 18</i></p> <p><b>Information sharing:</b> Requirement analysis and technical issues in information sharing. Exploring instances like Google Docs, Flickr and YouTube.</p>	<p><i>Mar 21</i></p> <p>Question answering</p>
6	<p><i>Mar 25</i></p> <p><b>Social tagging and navigation:</b> Introducing the idea and utility of social/collaborative tagging. Looking at how social tagging has been implemented and used in social applications.</p>	<p><i>Mar 28</i></p> <p><b>Assignment 3: Flickr</b></p>
7	<p><i>Apr 1</i></p> <p><b>Social networking sites I:</b> Introducing characteristics and design patterns of social networking sites (SNS). Learning to program with Facebook API and data.</p>	<p><i>Apr 4</i></p> <p>No Class National Holiday</p>
8	<p><i>Apr 8</i></p> <p><b>Social networking sites II</b></p>	<p><i>Apr 11</i></p> <p><b>Assignment 4: Facebook</b> 繳交專案分組</p>
9	<p><i>Apr 15</i></p> <p><b>Social network analysis:</b> Presenting fundamentals of using social network analysis as an empirical method. Learning to use social network analysis tools, such as NodeXL and R.</p>	<p><i>Apr 18</i></p> <p>Project brainstorming</p>
10	<p><i>Apr 22</i></p> <p><b>Microblogging I:</b> Providing an overview of the emerging phenomenon of online microblogging. Learning to use Twitter API.</p>	<p><i>Apr 25</i></p> <p><b>Assignment 5: Social network analysis w/ Facebook data</b></p>
11	<p><i>Apr 29</i></p> <p>No Class Professor's ACM CHI conference trip</p>	<p><i>May 2</i></p> <p>No Class CHI conference trip</p>
12	<p><i>May 6</i></p> <p>No Class Invited talk at NCCU</p>	<p><i>May 9</i></p> <p>Project idea sharing 繳交專案計劃書(initial project proposal)</p>

13	<p><i>May 13</i></p> <p><b>Microblogging II:</b> Focusing on the processing of natural language data. Using natural language processing tools to analyze Twitter data.</p>	<p><i>May 16</i></p> <p><b>Assignment 6: Twitter</b></p>
14	<p><i>May 20</i></p> <p><b>Crowdsourcing:</b> Introducing ideas of human computation and crowdsourcing. Learning to use TurKit to program Amazon's Mechanical Turk.</p>	<p><i>May 23</i></p> <p><b>Assignment 7: Crowdsourcing</b></p>
15	<p><i>May 27</i></p> <p>No Class</p> <p>NTHU ISA "Perspectives of Information Technology" Workshop</p>	<p><i>May 30</i></p> <p><b>Requirement Analysis:</b> From week 15 to 17, students engage in designing a novel social application by integrating techniques/tools introduced earlier in the course and human-computer interaction (HCI) design methods. 繳交(非必要之)修正計劃書 (optional revised proposal)</p>
16	<p><i>Jun 3</i></p> <p><b>Guest lecture- Prototyping:</b> "Prototyping" introduces basic techniques of building non-functional and functional prototypes.</p>	<p><i>Jun 6</i></p> <p>Project time</p>
17	<p><i>Jun 10</i></p> <p><b>Evaluation:</b> "Evaluation" introduces quantitative and qualitative approaches to design evaluation.</p>	<p><i>Jun 13</i></p> <p>Project time</p>
18	<p><i>Jun 17</i></p> <p>Project Demo</p>	<p><i>Jun 20</i></p> <p>繳交專案報告(final report)</p>

### Grading

- 10% Class participation
- 50% Assignments (approximately 7% for each assignment)
- 40% Project (proposal 10%, Demo 10%, Final report 20%) (Extra credit: revised proposal 5%)

### Honor Code

**Any cheating will be handled seriously in compliance with the university rules. All assigned work is expected to be individual, except where explicitly written otherwise (e.g., term project). You are encouraged to discuss with your classmates; however, what you hand in should be your own work.**