# Technologies and Processes for Building Web Startups
## ITP 499 (4 Units)

**Objective**    The purpose of this class is to teach students the basic technologies and processes involved in the building Internet Startups. Students will be introduced to the different phases of building Web 2.0 startups, which include: Idea Analysis, product prototyping building and product launch.

**Concepts**    This course will expose students to the core technologies and ideas to convert an idea into a web2.0 startup.

In this class students will:
- Understand what it takes to build a web startup
- Understand the Web 2.0 marketplace
- Learn about using the web as a platform
- Learn about the processes for building Web 2.0 applications
- Learn about the technologies (hardware and software) behind Web startups
- Learn how to create information architectures
- Learn how to create web strategy plans
- Learn about basics of online marketing

Students will also get an opportunity to hear and learn from prominent internet entrepreneurs from the industry.

**Prerequisite**    None.

**Lecture**    2 hrs/week

**Lab**    2 hrs/week

**Instructor**    Ashish Soni , asoni@usc.edu

**Textbook**  ***Required Texts:***

1. Web 2.0: A Managers Guide,
   Amy Shuen, Oreilly Press

2. Unleashing Web 2.0: From Concepts to Creativity,
   Gottfried Vossen and Stephan Hagemann
   Morgan Kaufmann, ISBN: 0123740347

3. The Art of the start, Guy Kawasaki
   Portfolio Hardcover, ISBN: 1591840562

4. Communicating Design, Dan Brown
   New riders, ISBN: 0-321-39235-3

*The class will also have a website resource and community at*
[www.building](www.building)*webstartups.com*

***Optional:***

1. The Art of Project Management, Scott Berkun
   Oreilly Press

2. Founders at Work, Jessica Livingston
   Apress

3. Hacker and Painters, Paul Graham
   Oreilly Press

4. Agile Development, Oreilly Press

5. Information Architecture, New Riders Press

**Grading**  The following point-structure will be used in determining the grade for the course. Final grade will be based upon the total points received, the highest total in the class, and the average of the class.

| | |
|---|---|
| Projects | 35% |
| Exercises | 25% |
| Exams | 40% |

**Statement for Students with Disabilities**
Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

**Statement on Academic Integrity**
USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *Scampus,* the Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: http://www.usc.edu/dept/publications/SCAMPUS/gov/. Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: http://www.usc.edu/student-affairs/SJACS/.

**Policies**  - Make-up policy for exams: In order to make up for a missed exam, the student must provide a satisfactory reason along with proper documentation. Usually make-ups are allowed only under extraordinary circumstances.

- Projects: It is YOUR responsibility to turn in your lab projects on, or before, the deadlines as set by the instructor. IT IS NOT THE RESPONSIBILITY OF THE LAB TA!

- Late Projects: Late submission of projects will lead to loss on point, so please turn in your projects on time! No projects will be accepted after 2 weeks beyond the project's original due date. Everything regarding a project should be settled within 2 weeks of the project's due date.

- Though working together is encouraged, the projects must be your own effort. "Duplicate" projects will all receive zero points and possible referral to the Office for Student Conduct.

- All students should read, understand and abide by the University Student Conduct Code http://www.usc.edu/dept/publications/SCAMPUS/governance/gov03.html

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**Course Outline**

**Week 1 – Introduction to Web 2.0 and Internet Startups**
- Evolution of the web
- The Web as a platform
- User participation and socialization of the web
- Web 2.0 Marketplace
- Profiles in successful web start-ups: flickr, slidshare.net etc

**Readings:** Gottfried, Chapter 1
**Assignment1**

**Week 2 – Types of Web Startups**
- Content Management System
- Online Community
- Mobile Apps
- Search
- Domain specific sites
- eCommerce
- User generated content: audio, video, images
- Marketing
- Blogging/Widgets
- Need to add more details here...
- Case Studies

**Reading:** Instructor Notes
**Assignment 2**

**Week 3 – Processes: Idea to reality**
- What are the steps?
- Roadmap: Idea to reality
- Business, Technology, Legal, Marketing
- Web development process: agile

**Reading Assignment**: Instructor Notes

**Week 4 – Idea Analysis**
- Fleshing out the idea: Strategic Analysis
- Market Analysis and Competitive Intelligence
- Concept Model
- Web 2.0 Strategy and tools

**Reading Assignment**: Kawasaki, Chapter 1,2
**Assignment3**

## Week 5 – Business and Management
- Business Plan: Web 2.0 tools
- Revenue Models: subscription, ad based, partnership etc
- Building the team

**Reading Assignment**: Shuen, Chapter 6, Gottfried Chapter 5
**Assignment 4**

## Week 6 – Product Planning and Information Architecture
- Building a product roadmap
- Building Personas
- Sitemap and wire frames
- User Interaction Design
- Usability Plan

**Reading Assignment**: Brown, Chapter 2,6,8,9
**Assignment 5**

## Week 7 – Choosing a Technology Platform- I
- AJAX (what is it?)
- Server side web Programming technologies: PHP, ASP, JSP, .NET, Ruby, Flash, Flex
- Client side programming technologies: HTML and JavaScript
- Open source vs commercial
- Databases: mysql, posgres, sql server, oracle, db2
- Case studies

**Reading Assignment:** Gottfriend, Chapter 3, 4

## Week 8 – Choosing a Technology Platform- II
- Databases: mysql, postgres, sql server, oracle, db2
- Web Services: using Amazon Web Service, Google API etc
- Web Application Frameworks - Codeignitor, Ruby on Rails
- Client side frameworks: Kabuki
- Content Management Systems – Drupal, Joomla
- Case studies

**Reading Assignment:** Gottfriend, Chapter 3, 4

## Week 9 – Choosing a development partner/firm
- Contractor vs firm
- Local vs Outsourced
- What to look for in a development firm?

- Online marketplaces: elance.com, odesk.com
  **Reading**: Instructor Notes


**Week 10 – Web Design and User interfaces**
- Creating Photoshop templates
- Web 2.0 Design Guide
- Web Templating - XHTML and CSS
- JavaScript: Prototype, JQuery, Dojo
  **Reading:** Brown, Chapter 11, Instructor Notes
  **Assignment 6**

**Week 11 – Managing the Implementation Process**

- Project Management: basecamp, rally
- Managing the workflow
- Best practices
- Risk management

**Reading Assignment**:
**Assignment 7:** Write a budget and resource document for a start-up

**Week 12 – Technology Challenges**
- Scalability and growth
- Load balancing
- Caching
- DB replication
- Building an API
- Hardware considerations revisited
- Managing large amounts of data
- Outsourcing
  **Readings:** Instructor Notes

**Week 13 – Marketing, Search, Analytics**
- How search engines work
- Using advanced search engine logic and connectors
- A Marketing Perspective: How to get search engines to "like" your site.
- HTML Meta tags
- Analyzing Web site traffic, Web Analytics
- Parsing Web server logs

**Reading**:

*Exercise:*


**Week 14 – Web hosting**
- Overview of Web servers and hosting technologies
- What is a domain
- What is a Web host
- How to pick a Web hosting company
- Differences between different hosting options and plans
- Setting up a mail server


**Week 15 – Security, Privacy and Ethics**
- Identification and access
- Software and data security
- Privacy legislation
- Copyright issues
- Internet privacy and encryption
- Censorship

**Reading Assignment**:

*Exercises:*
- *Write a case study on one area of Internet law*
- *Research the process of patenting an idea*


**Week 16 –** Exam