# Create Engaging Web Applications Using Metrics and Learning on Facebook

**Computer Science 377W, Fall 2007**                                     **Tuesday Lab: 2:15 – 4:15**
**3-4 Units, Stanford University**                                       **Thursday Class: 2:15 – 5:05**

## Instructors

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## Course Assistants & Coaches

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Guided by instructors and outside experts, students will work in multidisciplinary teams to create and launch web applications for Facebook Platform. Teams will then seek to optimize their web apps, improving reach and engagement, by leveraging insights from user metrics and the psychology of Facebook.

Facebook Platform has narrowed the gap between creator and user. Other social graphs will likely do the same. This new CS377 course explores how application creators can improve their products by understanding user behavior. Students who learn to discover insights and respond effectively will create engaging apps that can benefit thousands of people.

This course is experimental. The tools are new, Facebook Platform is new, and many topics in the course are new for academic settings. This course is designed for flexible students who are willing to take chances and blaze new trails.

## You will create two web applications
Teams of three students will create and launch two web application on Facebook. The learning goals are (1) to familiarize students with processes for interactive design, (2) to learn methods for optimizing web-based applications, and (3) to give students experience working in multidisciplinary teams.

Student apps for Facebook should focus on reaching and engaging a broad audience. Each team will decide what their app will do, aiming for distribution and engagement, as shown by metrics. Teams can create additional "broad audience" applications during the quarter, if desired. Students will be evaluated on the combined engagement score of their apps.

Teams may petition to create only one app during the quarter. To take this path you must explain why focusing on one app is the best path for your team. The petition must be less than one page and should be delivered to the teaching team by 11/9. If accepted, this path exempts your team from all App 2 items after 11/9.

To motivate students to create apps related to teaching and learning, we will multiply the app engagement score by as much as 10X for any app that has an educational impact. A board of three educators will examine the app and determine the multiplier, ranging from 1 (no educational value) to 10 (extremely high educational value).

## You will analyze existing applications and share insights
During the first four weeks of the course, each student needs to analyze two Facebook applications. The analysis should have a short written component that highlights what makes the app successful and what shortcomings exist. The best analysis projects will also have a video that illustrates key points. The purpose is to give students experience in analysis, evaluation, and presentation of interactive products.

## You will create a new theory about Facebook engagement
Each student will create a theory or framework that describes what makes Facebook engaging (or makes FB apps engaging). Due by the final class period, the theory should give high-level insight into how Facebook acquires new users and engages them over time. The deliverable should be no longer than three pages. The best projects will probably have a one-page diagram supported by brief text that explains the theory or framework. (If you have questions about this project, ask to see examples of BJ Fogg's frameworks.)

## You will present your applications to an eager audience
In the final project, teams will present one of their web apps to the class and invited guests in an expo-like setting. Each team will have three minutes to demonstrate from the stage. Later, each team will go into "trade show" mode to share

their apps with people who come by their booth. The purpose is to give teams experience in presenting interactive products to large and small audiences.

## Evaluation

| | | evaluated by . . . |
|---|---|---|
| Attendance & Participation | 15% | Teaching Team |
| Applications (one or multiple apps combined) | 30% | Metrics |
| Expo (Final) | 15% | Guests & Judges |
| Peer Evaluation of Contribution (team, class) | 15% | Peers |
| Facebook Engagement Theory | 10% | Teaching Team |
| Reading Assessments | 7% | Teaching Team |
| App Analysis (two required) | 8% | Teaching Team |

**9/27    Class 1: Let's get started!**
Course Intro & Overview
How the web changed in 2007: Social graphs + apps + metrics
Persuasion & the psychology of Facebook: Captology Part 1
Four levels of user insight, from hate mail to Google Analytics

**10/4    Class 2: Methods for engaging web apps**
What works in Facebook – and why
Intro to Facebook Platform: Ami Vora, Facebook Guest Speaker
Analytics for Smart Decisions: Part 1 by Avinash Kaushik, Google Guest speaker
Project 1 Launch: Broad Reach Web Applications
~~10 secrets of great teamwork~~

**10/11   Class 3: Understanding patterns of success**
Systematic Thinking
Conversion Funnel in Facebook
Adding Facebook's "Secret Sauce" to Your App
Guest speaker: Jia Shen from Slide
Guest speaker: Brian from TokBox
Partnering with outside companies

**10/18   Class 4: Learning from qualitative feedback**
Team2Team: Sharing apps and issues
Mini App Expo
What learning means (hint: adaptive response to new info)
Benefits of qualitative feedback
Qualitative methods for insight: surveys, boards, blogs, & reviews
Activation: It Was Love at First Happy User Experience
5 Ways to Optimize Your Facebook App

*Due by 10/18:*
- form a team of 3
- select team name
- create functional hosting setup
- complete app zero
- read assigned materials
- review & analyze two Facebook applications
- describe in one page: "What makes Facebook work?"

**10/25   Class 5: Learning from quantitative feedback**
User Acquisition and Activation
Team2Team: Sharing apps and issues
Quantitative methods for insight
Student reports: Short case studies in optimizing apps
Guest speaker: Brett Crosby & Jeff Gillis from Google
Guest speaker: Dan Olsen
5 More Ways to Optimize Your Facebook App

> *Due by 10/27 at midnight:*
> Deliverables for App 1
> - concept, dashboard, wireframe/flow (Document these items and share with teaching team)
> - beta code live (installable w/o bugs, notify teaching team of URL)
> - *Note: Missing this deadline will affect your grade.*

**11/1   Class 6: Looking back; looking forward**
Review the status of our Facebook apps after 4 weeks
Course evaluation: What's working; what's not
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Theory & Facebook Apps
> Simplicity & diffusion of innovation
> 6 Factors in Simplicity
> Persuasion in Facebook apps
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Project 2 Launch: Apps for learning & teaching

> *Due by 11/1:*
> Deliverables for App 1
> - milestone/iteration plan (written & shared)
> - marketing/advertising plan  (written & shared)
> - App 1 published in Facebook directory
> - metrics dashboard

**11/8   Class 7: Engineering your way to viral adoption**
The Elements of Virality
Acquisition & Referral: Pimpin' Apps Ain't Easy
Online experiments for viral branding
Finding your audience via SEO
Off-Facebook distribution channels
Good, bad, and ugly of outsourcing

> *Due on 11/8:*
> Concepts for App 2, ready to share in class

**11/15   Class 8: Social graphs beyond Facebook**
The Future of Social Graphs: 3 Scenarios
Applying course insights beyond Facebook
Persuasive technology and social graphs: Captology Part 5
Case Study: How one great app lives on many platforms
Student updates on Project 2

> *Due by 11/15:*
> App 2 dashboard (outline written & shared)
> App 2 wireframes/flow (written & shared)

*Thanksgiving Break*

**11/29   Class 9: Facebook Engagement Theory**
Our biggest & best insights: Engagement dynamics on Facebook
—
The People Element: Connectors & mavens
The Social Element: Community evangelism & guerilla marketing

*Due by 11/29:*
    App 2 deliverables
    - beta code live (installable w/o bugs)
    - milestone/iteration plan (written & shared)
    - marketing/advertising plan  (written & shared)
    - App 2 published in Facebook directory
    - metrics dashboard

**12/6   Class 10: Course Critique & Future Learning**
Teaching & learning web apps: What worked in this class; what failed
—
Relationships & resources for ongoing learning
Revenue: 50 Ways to Love Your Levers
The future of your apps: monetization, fundraising & startup formation

**12/12   App Expo (our final)**
**Presentations from the stage and on the floor**
6pm – 9pm

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## Course Logistics

**Facebook group**: We've created a private Facebook group for enrolled students in the course. Please join by friending Dan.

**Getting in touch with us**: You should feel free to contact BJ, Dave, or Dan about any course issues. Each of us has a preferred channel (e.g., BJ does not like email; he prefers phone).

**Office hours**: Each of us is happy to meet with you by appointment.

**Reading assessments**: We're not fans of reading quizzes, but we reserve the right to assess reading each week.

**Distractions during class**: Please do not surf the web, do email, or text message during class. If we sense that people are tuning out because of laptops, we may ask everyone not to use them during class.

**Attendance**: Come to class. It's important! If you miss class there's really no way to make it up or get excused. Of course, if you're sick, stay home. But otherwise, join us each class.

**Punctuality**: We expect you to arrive to class on time. This is part of your attendance grade (that way, we can motivate people to make the extra effort).

**Class visitors**: In general, we are saying "no" to all visitor requests. If you want to bring another Stanford student, that's okay if you clear it 24 hours ahead of time with one of us. We want to make this class great for enrolled students, so we're saying "no" to auditors and outside visitors (with some rare exceptions).

**Stepping up to contribute**: If you see a way you can help the course succeed, please step up and let us know. We're exploring this new area together, and we welcome your initiative.

**Ownership of your creation**: Some of you will create applications of real value. We're not legal experts, so we can't advise you on ownership issues. But we strongly encourage you to discuss an agreement with your team and get it in writing, even among friends (um, *especially* among friends!)

# Readings for CS377W – Fall 2007

We will assign readings at least a week in advance, selecting content that will help people as the course develops. The readings will usually come from online sources and the books below.

*Affective Neuroscience: The Foundations of Human and Animal Emotions* by Jaak Panksepp

*Bringing Design to Software* by Terry Winograd

*Call to Action: Secret Formulas to Improve Online Results* by Bryan Eisenberg, Jeffrey Eisenberg, and Lisa T. Davis

*Diffusion of Innovations* by Everett M. Rogers

*Don't Make Me Think: A Common Sense Approach to Web Usability* by Steve Krug

*Don't Shoot the Dog!: The New Art of Teaching and Training* by Karen Pryor

*Emotional Brain: The Mysterious Underpinnings of Emotional Life* by Joseph Ledoux

*Getting Real* by 37 Signals

*How People Learn: Bridging Research and Practice* by M. Suzanne Donovan, John D. Bransford, James W. Pellegrino

*Influence: Science and Practice* by Robert B. Cialdini

*Interaction Design: Beyond Human-Computer Interaction* by Helen Sharp, Yvonne Rogers, and Jenny Preece

*Made to Stick: Why Some Ideas Survive and Others Die* by Chip Heath and Dan Heath

*Making Meaning: How Successful Businesses Deliver Meaningful Customer Experiences* by Steve Diller, Nathan Shedroff, and Darrel Rhea

*Mobile Persuasion: 20 Perspectives on the Future of Behavior Change* edited by BJ Fogg & Dean Eckles

*Motivating Humans: Goals, Emotions, and Personal Agency Beliefs* by Martin E. Ford

*Our Inner Ape: A Leading Primatologist Explains Why We Are Who We Are* by Frans De Waal

*Our Social World* by Donelson R. Forsyth

*Permission Marketing : Turning Strangers into Friends and Friends into Customers* by Seth Godin

*Persuasion Handbook: Developments in Theory and Practice* edited by James Price Dillard and Michael W. Pfau

*Persuasive Games: The Expressive Power of Videogames* by Ian Bogost

*Persuasive Imagery: A Consumer Response Perspective* by Linda M. Scott and Rajeev Batra

*Persuasive Technology: Using Computers to Change What We Think and Do* by B.J. Fogg

*Persuasive Technology: Second International Conference on Persuasive Technology 2007*

*Power of Logos: How to Create Effective Company Logos* by William L. Haig and Laurel Harper

*Psychology of Attitude Change and Social Influence* by Philip Zimbardo and Michael Leippe

*Psychological Operations* (FM 33-1) by Department of the Army

*Social Influence* (Mapping Social Psychology Series) by John C. Turner

*The 4-Hour Workweek: Escape 9-5, Live Anywhere, and Join the New Rich* by Timothy Ferriss

*Theory of Fun for Game Design* by Raph Koster

*Unleashing the Ideavirus* by Seth Godin

*Utopian Entrepreneur* by Brenda Laurel

*Waiting for Your Cat to Bark?: Persuading Customers When They Ignore Marketing* by Bryan Eisenberg, Jeffrey Eisenberg, and Lisa T. Davis

*Web Analytics: An Hour a Day* by Avinash Kaushik

## Blogs we will follow  (See updated list at http://captology.stanford.edu/facebook/resources.html)

http://500hats.typepad.com/

http://blog.facebook.com/

http://captology.stanford.edu/notebook/

http://facereviews.com/

http://insidefacebook.com/

http://mashable.com/category/facebook

http://www.allfacebook.com/

http://www.techcrunch.com/tag/facebook/

http://www.copyblogger.com/

http://www.facebookeffect.com/

http://www.facebookobserver.com/

http://www.kaushik.net/avinash