WINTER 2015 AND SPRING 2015 CLASS SYLLABUS

PROGRAM: EECS 473 & ENTR 950 NUvention: Web + Media

TIME: Tuesdays, 12:25-3:25 Winter and Spring Quarter

TEXTS: 

PREREQUISITES: EECS students should have completed EECS 311 Data Structures and Data Management or obtain faculty permission before registering.

EECS DEGREE STUDENTS: Students can take either EECS 473 or EECS 394 Software Project Management and Development for major credit, but not both, since the core topics of 394 are incorporated within 473. Some EECS-oriented assignments appear in 473. EECS students are expected to take the lead on these but all team members are expected to learn about the development dimensions of the class.

ADVISORY BOARD: The NUvention: Web Advisory Board is composed NU Alumni and Friends in the tech and venture capital community for all over the US.

LOCATION: 
- Winter Quarter: Tech L211 and Ford Studio Classroom
- Spring Quarter: Tech L211 and Ford Studio Classroom and The Garage

WEB SITE: http://nuvention.northwestern.edu/web

FACULTY: 
- Todd Warren, Chair & Adjunct Professor, Electrical Engineering and Computer Science (EECS) and Farley Center for Entrepreneurship and Innovation, McCormick School of Engineering
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- Michael Marasco, Clinical Professor & Director, Farley Center for Entrepreneurship and Innovation, Industrial Engineering and Management Sciences, McCormick School of Engineering
  mmarasco@northwestern.edu, 847-467-6347
- Chris Riesbeck, Associate Professor, EECS, McCormick School of Engineering, c-riesbeck@northwestern.edu, 847-491-7279
- Steve Olechowski, Adjunct Lecturer, Farley Center for Entrepreneurship and Innovation, McCormick School of Engineering
  sjo@blinkfire.com
- Rich Gordon, Professor and Director of Digital Innovation, Medill School of Journalism, Media, Integrated Marketing Communications
  richgor@northwestern.edu, 847-467-5968
- Rich Padula, Adjunct Lecturer, Farley Center for Entrepreneurship and Innovation,
NUvention: Web Syllabus as of 11/9/2015

PROGRAM OVERVIEW:

NUvention: Web is an interdisciplinary experiential learning program designed to expose students to the entire product and business development life cycle for a software company. In other words, we attempt to simulate the process associated with evolving an idea into a real company within a class. In the past few years a variety of incubators have arisen like Tech Stars, Y Combinator and Summer at Highland. These programs are designed to help aspiring entrepreneurs launch their businesses. NUvention Web is designed to incorporate many of the dimensions of these programs but with a greater focus on teaching the key elements.

Successful tech companies are created to address current or future needs/problems. NUvention is designed to demonstrate how needs/problems become innovations that can become businesses in the real world. Our primary goal is to walk through each of the steps associated with building software applications people will want to use and tell others about. We will do this by following a Lean Start-Up methodology using both Customer Development and Agile Development approaches.

In a very compressed period of six months, student teams will be expected to work through a number of business model, design, software development, and business development, marketing and strategy steps as part of an
entrepreneurial team. NUvention represents the most aggressive attempt to allow students to create a start-up company within the framework of a class.

The idea for NUvention originally came from students interested in medical technology. Northwestern administration and faculty have fully supported NUvention from design to execution. In 2014/5, NUvention programs in the area of medical technology, analytics, Web, energy, social entrepreneurship, nanotechnology and arts will be offered. Inc. Magazine dated Nuvention Web one of the top 10 entrepreneurship classes in the US in 2011.

NUvention: Web also involves a close partnership with NU Alumni and others in the software and venture capital industries that will be advising faculty and students on the curriculum and team ideas. The NUvention: Web Advisory Board will be mentoring teams and evaluating student presentations at the end of each quarter. Unlike any other NUvention program, NUvention: Web students will be required to launch their applications during the course of the program. Real user feedback on your application will add another dimension to the potential learning from this program.

We hope that the collective efforts of the students, faculty, and advisors involved in NUvention: Web will establish a new standard for the learning that occur over the next six months.

PROGRAM OBJECTIVES: NUvention: Web has been designed to accomplish the following objectives:

- Research, define, prototype and implement an initial product offering
- Develop a business model for a web service or new mobile application
- Launch and measure initial market reaction to the web service.
- Provide the starting point for a company student can choose to launch post-class

LEARNING APPROACH: NUvention is designed so that students will learn within and outside the classroom. There are three main dimensions of learning:

Classes: The structure of NUvention web in 2015 will involve a combination of lecture/discussion and team presentation and critique by the faculty, mentors/guests, and advising team. Additionally, for many weeks, there are required online lectures and reading that should be complete prior to class. The faculty team may from time to time have a pop quiz that factors into participation to insure that the reading and online lectures are being completed. We will not cover this material in the in-class sessions and expect that you have viewed it online and understand it from the readings in order to apply it to your startup.

Team Meetings: During the second half of each class, students will be meeting
with their team members and faculty advisers. We dedicate class time for these meetings since the team project is a critical dimension to the learning in this program. Faculty Advisors will be available to assist each team through any issues they may be facing.

**Online Lecture:** For discussing customer development and the business model canvas, we will use lectures by Steve Blank in the LaunchPad Central (LPC) tool. Your video viewing will be tracked in LPC and factored in to your LPC grade.

**Interviews:** Staying close to your customers is a key requirement for any successful startup and we will prescribe the minimum number of interviews you need to conduct as a team.

**Team Assignments:** Since innovation and entrepreneurship are never individual efforts, most NUvention assignments will be performed collectively by the teams. Given the nature of the assignment, it is expected that the students with the deepest expertise in the assignment area will assume a lead role, but each team member still has significant responsibilities for the deliverable. The team meetings leading to a completed assignment will be great learning opportunities.

**FACULTY ROLES:**

Each student will interface with faculty in the following roles:

**Faculty Leads:** The Faculty Leads will have primary responsibility for your learning in NUvention. They will be available for any advising and will be assessing your performance with input from all other faculty. All individual student grading will be coordinated by the Faculty Leads.

**Faculty Team Advisor:** Each team will be assigned one Faculty Team Advisor from the Faculty Leads that will be working closely with the team. This Advisor will become very knowledgeable of the team’s efforts and will be involved in grading each team assignment. The Faculty Team Advisor may be a subject matter expert on the specific team project. View them as a “coach” to help you through the challenges you will face over the next six months.

**Advisory Board Mentors:** Each team will be assigned at least 2 members of our Advisory Board that are entrepreneurs and venture capitalists/angel investors in the space. Teams are expected to send their mentors weekly status reports and leverage the expertise and networks of their mentors.

**TEACHING ASSISTANT ROLES:**

The Teaching Assistants (TA’s) work closely with the Faculty Leads to insure all students are optimizing their learning opportunities. The TA’s will assist students that need additional assistance/explanation on any area discussed in class. They
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will be grading all assignments based on guidelines defined by the Faculty Leads. Students should feel free to reach out to the TA’s with any questions they may have.

STUDENT ROLES:

Students are expected to learn but also teach in this program. Each student has a unique set of knowledge that they are expected to share with their team. Students will be driving certain aspects of deliverables directly related to their skill sets, but are also expected to teach their team members about that area while preparing deliverables. In other words, students that are driving design and software development are also expected to teach their other team members about the processes they are following.

ADVISORY BOARD:

The NUvention: Web Advisory Board is composed NU Alumni and Friends in the software and venture capital industries that will be advising faculty and mentoring students.

GRADING:

Grading components include:

Total points will be used to determine final grade.

All students will receive a K continuation grade for the winter 2012 quarter. Upon NUvention: Web completion, the final grade will be applied to both quarters.

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<tr>
<th>Winter Quarter</th>
<th>Assignment</th>
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<th>Due Date</th>
<th>Comment</th>
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<td>Assignments</td>
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<td>Weekly</td>
<td>May include pop quizzes</td>
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<td></td>
<td>Github</td>
<td>100</td>
<td>Weekly</td>
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<td></td>
<td>LaunchPad Central-Interviews and Canvas</td>
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<td>Weekly</td>
<td>Quality and Quantity as well as video viewing</td>
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<td></td>
<td>Class Participation</td>
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<td>End of Quarter</td>
<td>Faculty, Advisor, Mentor Peer feedback</td>
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<td>Team Participation</td>
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<td>End of Quarter</td>
<td>Peer feedback</td>
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<td>Final Deliverables</td>
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<td>End of Quarter</td>
<td>Video/Pitch/MVP</td>
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The above grading structure is subject to change.

STUDENT CONDUCT:

Every student is expected to abide by their individual school’s code of conduct. Any alleged or actual violation of any code will be researched by the faculty director from the student’s school. The highest level of ethical behavior is expected from every NUvention student.

TECHNOLOGY USAGE:

Students will be allowed to use laptops/tablets in the classroom for note-taking purposes only during faculty-led case discussion and lecture. **All laptops/tablets must be powered down during any guest speakers. No exceptions!**

All mobile phones/PDA must be muted during class. Failure to do so may impact a student’s class participation grade.

STUDENT EXPECTATIONS:

The faculty and students of NUvention expect the following from each student:

- **Preparation:** Every student needs to come prepared for class and all their out of class activities from team meetings to clinical shadowing.
- **Presence:** Attendance is required at every class as well as out of class activity. Attendance sign in rosters will be circulated at each class. Any planned absence must be discussed with your school faculty director.
- **Promptness:** Students are expected to be on time for class and any out of class activity. All assignments must be submitted before deadline.
- **Participation:** We are in an environment where both faculty and students learn from each other. Your active participation in all class discussions and team projects is critical to maximize each learning opportunity.

Class Schedule and Assignments will be maintained in Canvas and the following GDoc:

https://docs.google.com/spreadsheet/ccc?key=0ArsfyaFjewv0dDNUdkExUlZEc01FQnplc1BaNiNOeWc&usp=sharing