**INF 362: Intermediate Web Development (3 credit hours)**

Thursday, 2:45-5:35  
Spring 2013  
SL G012

**Instructor: Dima Kassab**

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**Co-Instructor: Luis Ibanez**

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**Course Description**

A technique-oriented intermediate exploration of client-based and server-based Web design and development technologies, using current and emerging technologies. Design, planning, security and management of websites will also be examined.

**Course Goals**

By the end of the semester, you should be able to:

1. Identify the different tools you can use to create web pages.
2. Create web pages using PHP and EWD.
3. Create interactive JavaScript programs and use HTML5.
4. Develop basic mobile apps.
5. Integrate a database backend with a web development project.
6. Demonstrate the ability to use the basic components of  PHP and EWD to build specific functionalities.
7. Decide the best design to follow based on a list of users' requirements.
8. Test the different functionalities implemented in a website such as links and JavaScript programs.
9. Discuss different platforms available for building mobile apps.
10. Discuss security vulnerabilities of web sites.
11. Utilize Scrum and Agile development strategies within the team to assign tasks and track them.
12. Evaluate how user-friendly and easy to navigate given websites are.
13. Get familiar with large-scale software projects, open development and open source practices.

**Readings**  
There is no textbook required for this class. Readings will be assigned through Blackborad. Please check Blackboard every week for assigned readings.

**Additional Materials**

You will need to have an account on Github and Jira. This will be a class exercise.

**Instructional Methodology—Team-Based Learning (TBL)**

On the first day of the course, you will be assigned to a team that will work together throughout the semester. Course grades will be influenced by team performance on in-class assignments. While in many courses, group work can be structured unfairly, such that some students end up doing all the work while everyone shares in the credit, two factors will prevent that from happening in this class. First, nearly all graded team work will be preceded by one or more preparatory assignments, for which each individual will be accountable. Second, each individual’s contribution to team work will be assessed by his or her teammates during the semester, as well as the instructors.  
  
TBL courses are divided into sections. This course will have seven sections (see calendar breakdown below). Each section begins with a reading assignment. The first class in each section includes a group and individual test on that material. The next classes are filled with activities which highlight the important features of the material to be covered in that section. Each section includes an assignment to be completed individually to apply the materials learned during the section.  
  
**Phase 1 – Preparation:** You will complete **specified readings** for each module  
  
**Phase 2 – Readiness Assurance Test:** At the first class meeting of each module,you will be given a **Readiness Assurance Test** (RAT).  The RAT test (10 multiple-choice questions) measures your comprehension of the assigned readings, and helps you learn the material needed to begin problem solving in phase 3.  Once the test period is over, the instructor may give a short mini-lecture to clarify concepts that are not well understood as evidenced by the individual test scores. The purpose of phase 2 is to ensure that you and your teammates have sufficient foundational knowledge to begin learning how to apply and use the course concepts in phase 3. **RATs are closed book and based on the assigned readings.**

* **Individual RAT (iRAT)** – You individually complete a 10 question multiple-choice test based on the readings.
* **Team RAT (tRAT)** - Following the iRAT, the same multiple-choice test is re-taken with your team. These tests use a “scratch and win” type answer cards known as an IF-AT. You negotiate with your teammates, and then scratch off the opaque coating hoping to reveal a star that indicates a correct answer. Your team is awarded 10 points if you uncover the correct answer on the first scratch, 6 points for second scratch, and 2 point for third scratch.
* **Appeals Process** - Once your team has completed the team test, your team has the opportunity to complete an appeal. The purpose of the appeal process is to allow your team to identify questions where you disagree with the question key or question wording or ambiguous information in the readings. Instructors will review the appeals outside of class time and report the outcome of your team appeal at the next class meeting. Only teams are allowed to appeal questions (no individual appeals).
* **Feedback and Mini-lecture** - Following the RATs and Appeal Process, the instructor may provide a short clarifying lecture on any difficult or troublesome concepts.

**Phase 3 - In-Class Activities:** You and your team use the foundational knowledge, acquired in the first two phases to make decisions that will be reported publically and subject to cross-team discussion/critique.  We will use a variety of methods to have you report your team’s decision at the end of each activity. The presentation of your team responses are critical to the team grade. You should expect each team member to present individually and for the entire team to present with smooth transitions.  
  
  
**Reading in INF 362**  
This course is designed to be “experiential-reflective” for students rather than “content-receptive.” This means that the readings are not an end in themselves, but rather the material that will be used for in-class analysis, discussion, and assignments. The readings,  in most cases, will be tutorials including some background information that helps you build your web development skills through the semester. In order for you to be able to be productive in the in-class activities, assignments and final project, you will need to prepare each reading carefully before class.

**Grading**  
**How Grades Will Be Earned**

30 points (30%)           Readiness Assurance Tests (breakdown 60% iRAT, 40% gRAT)  
2 points (2%)               Scrum master participation (more details below)  
8 points (8%)               Sprint participation (more details below)  
45 points (45%)           Participation in the end of sections projects  
10 points (10%)           Individual assignments  
5 points (5%)               Peer-Graded Assessment of Team Member Performance (helping behavior)  
100 points (100%)

**Due Dates**  
Assignments delivered in person or via Blackboard by midnight will be deemed handed in that day. You are responsible for handling course due dates.  
*Individual Assignments/Peer Assessment:* Assignments should be turned in on or before the due date (see Course Schedule/Timeline). You will lose 1 point for each late day.  
*Your participation in the end of sections projects:* you will be responsible for setting up intermediate due dates for your tasks within your team for the end of section projects. These intermediate due dates should be discussed and approved by the team. You will be using Jira to set these tasks and their corresponding deadlines. The instructors will continuously be monitoring these activities. Any obstacles should be communicated through the scrum processing.

**The End of Sections Projects**

There will be five projects that we will work on throughout the semester.  
  
**Project #1**: Will be a basic exercise on writing a small Javascript+HTML5 project. The project will be created from scratch.  
  
**Project #2 A**: Will be an exploration of a real-life size project. The goal of the project will be to become familiar with fixing bugs in a real size project.  
  
**Project #2 B**: Will be an evaluation of features of CMS systems, and using a test case, it will result in a recommendation of a particular CMS to that use case.  
  
**Project #3**: Will be a large team development effort for a real deployment. It will involve the entire class, and it will provide experience on project coordination, tasks modularization and agile methodologies.   
  
**Project #4:** In this project we will extend project #3 and customize it for display in mobile devices.  
  
**Attending Students from DataBase class**. Due to the fact that most Web Development projects involve a database back-end, our class will be welcoming student visitors from the INF-202 classes and they will participate as observers in one or more of these class projects. You are encouraged to have stimulating discussions with our visiting students.  
  
  
**Scrum Master Participation**  
This class will apply Agile practices, in particular following the SCRUM methodology. Each TBL group will run its own SCRUM process. This involves identifying one member of the group to play the role of SCRUM master at every new class. This is a coordinator and facilitator of activities, not a manager. Each one of the team members will have an opportunity to play the role of SCRUM master, and it will be evaluated in that turn. We will use JIRA as the tool to support the SCRUM methodology.  
  
  
**Sprint Participation**  
The exercise of the SCRUM methodology involves regular sprint meetings. These meetings must be very short, typically in the range of five to ten minutes. They are intended to identify blockages to the execution of tasks. The meeting is not intended to solve any obstacles, the goal is just to identify them, and to schedule follow up actions that will lead to resolution of the obstacles. At every class, each one of the TBL groups will hold a Sprint meeting, during which the team members will report on their current project tasks, with particular emphasis on blockages that might be preventing them from making progress in the completion of their tasks. The SCRUM master will act here as facilitator only, not as director of any activities. Every individual team member will be evaluated on its level of participation in the Sprint. The level of participation will be measured directly from entries in the JIRA system.

**Individual Contributor License Agreement**

Several of the Section projects will involve interactions with external open source projects. In such cases, the work done in class might be contributed to such external project.  
  
As students, you hold the Copyright of the source code and documentation that you create during your class work. In order to contribute such materials to an external project, your permission is required. If you consent to it, you can provide your permission in the form of a *Contributor License Agreement*.  
  
The specific terms of a Contributor License Agreement depend on the License used by the project. In general, if you agree to it, you will be giving permission for anyone to copy, distribute, modify, and publicly display your work.  
  
Should you prefer not to give permission in the form of a Contributor License Agreement, the instructors will accommodate to your preference by letting you keep your source code private. In either case, your class work will be visible and will be shared with your peers in the class, following the practices of TBL.

**Peer Evaluation**

At the end of the semester, you will be asked to evaluate the “helpfulness” of your team members and assign a grade that counts as part of their grade for INF 362.

**Extra Credit**

Extra credit can be earned is a number of ways. All require consultation with the instructor before they are commenced. All extra-credit opportunities are capped at no more than 5 points (5%) of your overall grade.  
*Community:* CCI sponsors several events throughout the semester. Any student who attends one or more of those events may receive extra credit.  
Other extra credit opportunities may be available. Details to follow.

**Course Policies**

**Cell phones & laptops**

Laptops and other personal devices may be helpful for accessing reading assignments or other in-class activities. Out of respect for your classmates and the in-class activities, please refrain from e-mailing, gaming, and surfing until the scheduled breaks.

**Time Management**

For every credit hour that a course meets, students should expect to work 3 additional hours outside of class every week. For this three-credit course, you should expect to work 9 hours (3 x 3= 9)outside of class every week. Manage your time effectively to complete readings, assignments, and projects.  
  
Note carefully the intermittent nature of the workload in this course. You will be expected to complete an entire sections’ reading before the first class, when you will be tested both individually and as a team on it. Outside assignments will then be relatively light until the next section begins. Each section also culminates with an individual assignment which draws together the material from that section. This assignment is due before the next section begins. Thus, after the first section, you will have both reading for the new section AND an assignment for the prior section due on the same day—the first class in the new section.

**Attendance**

In-class activities constitute an important part of the course grade. It is not possible to maintain a passing average without consistent attendance. Missing class means you earn an automatic zero for the activities or assignments missed.  
  
*Tardiness:* Missing an assignment or activity that happened before you arrive or after you leave also earns a zero. If you know that it will be difficult for you to consistently get to class on time and stay for the entire period, you should take this course at a time that better fits your schedule. Being late/leaving early frequently will guarantee a low grade for the course.

**Safety Valves**

Generally, no make-up opportunities for missed in-class assignments are possible. Since there will be occasions in your life when missing a class is simply unavoidable, this course has a no-fault safety valve.  
*Two Misses:* You may miss TWO classes and their associated in-class assignment grade(s). So, if you must miss class for any reason, it will be possible to drop the zero you would automatically receive for missing the assignment. Be careful not to waste your drop on frivolous things early in the semester, since you may need it if you catch a cold or need to leave town for a day later in the semester. If you do not use your safety valve for missed classes, you will be able to use your safety valve to improve your grade, by dropping your lowest two scores. Plan carefully for classes that you know you will need to miss. Work, religious practice, sports team travel, military duty, club activities, fraternity/sorority obligations, family responsibilities, assignments for other courses, and even brief illnesses, etc—these are your responsibility to manage by using your safety valve. If you need to be out of class for any of these, make sure you have conserved your droppable grade to cover the class you need to miss.  
*Disaster:* If you become seriously ill during the semester, or become derailed by unforeseeable life problems, and have to miss so many assignments that it will ruin your grade, schedule a meeting with me in order to make arrangements for you to drop the course to save your grade point average. Don’t wait until it’s too late to see me when you get in trouble.

**Withdrawal from the course**

The drop date for the Spring semester is Tuesday, February 5 for undergraduate students. That is the last date you can drop a course and receive a 'W'. It is your responsibility to take action by this date if you wish to drop the course. In particular, grades of "incomplete" will not be awarded to students because they missed the drop deadline.

**Incompletes**

As per the Undergraduate Bulletin, the grade of Incomplete (I) will be given "only when the student has nearly completed the course requirements but because of circumstances beyond the student's control the work is not completed." A student granted an incomplete will make an agreement specifying what material must be made up, and a date for its completion. The incomplete will be converted to a normal grade on the agreed upon completion date based upon whatever material is submitted by that time.  
*Important:* Incompletes will not be given to students who have not fulfilled their classwork obligations, and who, at the end of the semester, are looking to avoid failing the course. This is asking for special treatment.

**Academic Integrity**

*It is every student’s responsibility to become familiar with the standards of academic integrity at the University. Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity.* See  
<http://www.albany.edu/undergraduate_bulletin/regulations.html>

**Responsible Use of Information Technology**

Students are required to read the University at Albany Policy for the Responsible Use of Information Technology available at the ITS Web Site:http://www.albany.edu/its/policies\_responsible\_use\_of\_IT.htm

**Available Support Services**

**Reasonable accommodation**

Reasonable accommodation will be provided for students with documented physical, sensory, cognitive, learning and psychiatric disorders. If you believe you have a disability requiring accommodation in this class, please notify the Director of Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations. In general, it is the student's responsibility to contact the instructor at least one week before the relevant assignment to make arrangements.

**College of Computing and Information**

Visit the CCI Facebook page for more details about the College and upcoming events: [http://www.facebook.com/CollegeofComputingandInformation](http://www.facebook.com/CollegeofComputingandInformation%20)

**Curriculum Advisement**

If you have questions about your INF major or minor, contact IS advisor Caroline Buinicky at isug@albany.edu, or Informatics/Information Science Undergraduate Program Director Jennifer Goodall at jgoodall@albany.edu.

**CCI Student Center**

The College of Computing and Information Student Center (LI-84) offers tutoring, career development, social events and academic advising. Please stop by or email at ccistudentcenter@gmail.com.

**CCI Women In Technology (CCIWIT)**

The College of Computing and Information Women In Technology is dedicated to supporting, empowering, and building community among female faculty, graduate, and undergraduate students.  The program also encourages girls in middle school and high school to pursue undergraduate and graduate studies in the fields related to computer science, informatics, and information science. CCIWIT initiatives are designed to address the critical need to bridge the achievement gap and increase access for women to enter the male-dominated computing and information technology fields. CCIWIT events are open to both women and men. More information can be found at CCI Women in Technology: <http://cciwit.posterous.com/> and CCI Women in  
Technology on Facebook: <http://www.facebook.com/groups/cciwit/>.

**Course Schedule/Timeline**

**Unit One: Java Script/HTML5**

**Meeting 1: January 24**

Readings: Syllabus  
Assignments:

* Create a Github and Jira accounts (If time permits).
* A signed copy of the **Individual Contributor License Agreement** if applicable

**Meeting 2: January 31**

Readiness Assurance Test over core readings.  
Readings will be assigned from: <http://www.w3schools.com/html/html5_intro.asp>, <http://www.w3schools.com/js/default.asp>. Check blackboard for specifics.

**Meeting 3: February 7**

Readings will be assigned from: <http://www.w3schools.com/html/html5_intro.asp>, <http://www.w3schools.com/js/default.asp>. Check blackboard for specifics.  
Assignments : Create a simple website using HTML5 and JavaScript (Check Blackboard for requirements)

**Unit Two: PHP/MySQL/CMS**

**Meeting 4: February 14**

Readiness Assurance Test over core readings  
Readings will be assigned from <http://www.w3schools.com/php/default.asp>. Check blackboard for specifics.

**Meeting 5: February 21**

Readings will be assigned from <http://www.w3schools.com/php/default.asp>. Check blackboard for specifics.

**Meeting 6: February 28**

Readings will be assigned from <http://www.w3schools.com/php/default.asp>. Check blackboard for specifics.  
Assignment: Compare different PHP frameworks (Check blackboard for requirements)  
  
**Meeting 7: March 7**  
Check blackboard for readings.  
  
**Meeting 8: March 14**  
Check blackboard for readings.  
  
  
**Meeting 9: March 21**  
No Class! Happy Spring Break!  
  
**Unit Three: EWD/M**

**Meeting 10: March 28**  
Readiness Assurance Test over core readings.  
Readings will be assigned from <https://www.opensourcesoftwarepractice.org/M-Tutorial/>. Check blackboard for specifics.   
  
**Meeting 11: April 4**  
Readings will be assigned from <https://www.opensourcesoftwarepractice.org/M-Tutorial/>. Check blackboard for specifics.   
  
**Meeting 12: April 11**  
Readings will be assigned from <https://www.opensourcesoftwarepractice.org/M-Tutorial/>. Check blackboard for specifics.   
  
**Meeting 13: April 18**  
Readings will be assigned from <https://www.opensourcesoftwarepractice.org/M-Tutorial/>. Check blackboard for specifics.   
Assignment: Integrating NoSQL databases with Web Developments tools. (Check Blackboard for requirements)  
  
**Unit Four: Overview of Mobile Web Development**

**Meeting 14: April 25**  
Readiness Assurance Test over core readings  
Readings will be assigned from <https://www.opensourcesoftwarepractice.org/M-Tutorial/>. Check blackboard for specifics.   
  
**Meeting 15: May 2**  
Readings will be assigned from <https://www.opensourcesoftwarepractice.org/M-Tutorial/>. Check blackboard for specifics.   
Assignment: HTML5 vs. Apps (Check Blackboard for requirements)