Rensselaer Polytechnic Institute

**Course Syllabus**

**Course Title: Introduction to Information Technology and Web Science**

**Course number: ITWS 1100**

**Credit hours: 4 Credits**

**Semester/ year: Fall 2016**

**Meeting days: Mondays and Thursdays from 10:00 AM to 11:50 AM**

**Room location: Lally Hall Room 102**

**LMS: XX09\_Intro to IT and Web Science [XX09\_ITWS\_1100\_01]**

**Prerequisites or other requirements:**

**BS in Information Technology Core Required Course**

**No prerequisites**

**Instructor: Richard Plotka**

**Office location: Lally 304**

**Telephone number: 516-527-9860**

**Office hours: Tuesdays & Thursdays from 12:30 PM to 1:30 PM or by appointment**

**E-mail address:** [**rplotka@rpi.edu**](mailto:rplotka@rpi.edu)

**Instructor: Melissa Hay**

**Office location: Lally 315**

**Telephone number: 518-428-6147**

**Office hours: Tuesdays and Fridays from 2:00 PM to 3:00 PM or by appointment**

**E-mail address:** [**haym2@rpi.edu**](mailto:haym2@rpi.edu)

**Teaching Assistant: Jeremy Falk**

**TA office location: ITWS Lab Lally 205**

**TA Telephone number: 715-697-6180**

**TA office hours: Wednesdays from 5:00 PM – 7:00 PM**

**TA e-mail: falkj4@rpi.edu**

**Course Description:**

**This course introduces students to the field of information technology and web science, the types of problems encountered in the field, and the approaches used to solve them.  Through a series of activities and projects, students are introduced to topics such as web systems design, emerging web standards, database systems, security, and computer networking.  Guest speakers highlight information technology practices in industry.  Small groups of students work on a project during the semester and present their results at the end of the course.**

**Student Learning Outcomes:**

1. **Students will be able to describe technologies important to the Information Technology Profession**
2. **Students will be able to describe major applications of computer science and web science such as entertainment, communications, enterprise systems, electronic health systems, security, e-commerce, and design.**
3. **Students will design a simple web-site.**
4. **Students will design a simple database.**
5. **Students will analyze business cases.**
6. **Students will plan, design, develop, and execute a Term Project.**

**Course readings:**

1. **There is no textbook for this course**
2. **Cases and other readings are available in a course pack to be purchased at Harvard Business School Press at the following link:** <http://cb.hbsp.harvard.edu/cbmp/access/50889091>
3. **Most of the weekly readings are available on the Internet or LMS. Links to these readings are noted in the detailed assignments posted on the course LMS website.**

**Assignments:**

1. **Weekly detailed assignments are posted on the course LMS website one week prior to their due date.**
2. **In class “labs” are assigned for many of the technology classes. These detailed “lab assignments” are posted on the course LMS website prior to their due date. These “labs” can generally be completed during the class session. If not completed during the specific class session, they must be submitted prior to the next class meeting.**
3. **Business Case write-ups are specified in the Course Calendar below.**
4. **Quizzes and a Final Exam will be given during the course as specified in the Course Calendar below.**
5. **The Term Project provides an opportunity for student groups to design and mock-up a web application. The application can serve any purpose, real or imagined, in the present or the future. Teams of three to four students will be randomly assigned to work together on the Project by September 13. The Teams will submit a Project Final Report and will present their Projects to the class.**

# Course Calendar

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| **Date** | **Topics** | **Activities & Assignments** |
| Monday Aug 29 | * Introduction to Course | * Read and understand syllabus * Technology survey |
| Thursday Sept 1 | * Networks, networking, and the internet | * Submit short paper on “What do you want from this course” |
| Monday Sept 5 | * Labor Day – No Classes |  |
| Thursday Sept 8 | * Networks, networking, and the internet * Protocols | * Lab 1: Protocols |
| Monday Sept 12 | * Communications and Networks | * How to prepare and write a Business Case |
| Thursday Sept 15 | * Architecture of WWW * HTML/CSS | * Term Project Assignment Discussion |
| Monday Sept 19 | HTML/CSS | * Lab 2: HTML/CSS |
| Thursday Sept 22 | * Web Science * Semantic Web * Tetherless World Constellation | * Introduction to Web Science Guest lecture * Read article assigned on LMS prior to class |
| Monday Sept 26 | * Web site architecture & design | * Lab 3: HTML/CSS |
| Thursday Sept 29 | * Web site architecture & design * XML * Microformats | * Lab 4: XML/RSS |
| Monday Oct 3 | * Enterprise applications * ERP, SCM * Analytics | * Case 1 * Case written assignment due before class * Quiz 1 Prep |
| Thursday Oct 6 | * QUIZ 1 |  |
| Tuesday Oct 11 (Academic Monday) | * Guest Lecture - Git * Term Project Proposed Problem and Scope | * Submit Term Project Proposed Problem and Scope |
| Thursday Oct 13 | * Client-side programming – JavaScript, DOM, Web forms | * Lab 5: JavaScript / web forms |
| Monday Oct 17 | * Client-side programming – Libraries (jQuery) | * Review Quiz 1 * Lab 6: jQuery lab |
| Thursday Oct 20 | * E-Commerce * Marketing | * Case 2 * Case written assignment due before class * Re-submit Term Project Proposal if required |
| Monday Oct 24 | * Client-side programming – JSON / AJAX | * Lab 7: AJAX |
| Thursday Oct 27 | * Social Media * Entertainment | * Case 3 * Case written assignment due before class |
| Monday Oct 31 | * Images/graphics, web design | * Lab 8: Graphics / design lab * Submit “Term Project Plan” |
| Thursday Nov 3 | * Images/graphics, web design | * Quiz 2 Prep * Lab 8: Graphics / design lab (cont.) |
| Monday Nov 7 | * QUIZ 2 |  |
| Thursday Nov 10 | * Information Security * Cyber-Security * Privacy | * Case 4 * Case written assignment due before class |
| Monday Nov 14 | * Tour of RPI IT Infrastructure | * Tour of RPI Infrastructure * Work on term Project |
| Thursday Nov 17 | * Server-side programming – Introduction to PHP | * Lab 9: Security * Work on term Project |
| Monday Nov 21 | * Server-side programming with databases – PHP and MySQL | * Lab 10: PHP & SQL |
| Thursday Nov 24 | * Thanksgiving -- No classes |  |
| Monday Nov 28 | * Server-side programming with databases – PHP and MySQL | * Lab 10: PHP & SQL (cont.) * Work on term Project |
| Thursday Dec 1 | * Term Project Presentations | * Make Term Project Presentation * Submit Term Project Report |
| Monday Dec 5 | * Term Project Presentations | * Make Term Project Presentation * Submit Term Project Report |
| Thursday Dec 8 | * Term Project Presentations | * Make Term Project Presentation * Submit Term Project Report * Review for Final Exam |
| Final Exams  Dec 15-19 |  | * Final Exam on one of these days during final exam week |

**Grading criteria**

**Assignments from the “labs”, project, and business cases are outlined in the Course Calendar. Specific detailed assignments will be posted on LMS. Each student must post their answers to the written assignments prior to the assigned class. Each assignment will be given a grade. The grades for homework, projects, business cases, labs, quizzes, term project, participation and final exam will be posted on LMS.**

**The quizzes will cover material from the readings, lectures, class discussions, labs, cases and projects. There will be two quizzes during the semester as shown in the Course Calendar.**

**The mid-term assessment process will provide each student with feedback on their performance in the class based on labs, projects, business cases, participation, and the first quiz. The Early Warning System (EWS) function in the Student Information System will be used to further notify students who are experiencing academic difficulty at the middle of the term.**

**The student’s final grade will be determined based on the following weighting:**

**Homework and Business Cases 15%**

**Labs 15%**

## Quizzes (10% each) 20%

**Term Project 20%**

**Participation 10%**

**Final Exam 20%**

**Course Grade Determination: Letter Grade Numerical Average**

**A-, A 90-100 %**

**B-, B, B+ 80-89 %**

## C-, C, C+ 70-79 %

**D, D+ 60-69 %**

**F <60 %**

**Attendance policy and Participation Grading:**

**A portion of your grade will be received through classroom participation, online discussion boards, labs, and the term project. Therefore it is expected that you attend every class and participate in team meetings associated with the term project. A participation grade will be given for each individual for each quarter of the course. A student may request an excused absence for health or career (job interviews) reasons by emailing the instructor prior to the beginning of that particular class.**

**Participation Grading on a 5 Point Scale: Quality is more important than quantity**

**0 – absence without an excuse**

**1 – 2 in attendance, but not paying attention, e.g. sleeping, or doing email or Internet unrelated to class, and not apparently having done pre-class reading.**

**3 – in attendance, paying attention, appear to have done the pre-class reading, but not otherwise contributing to the class, little or no contributions to online discussion boards**

**4 – 5 in attendance, paying attention, having done the pre-class reading, and contributing to the class by answering questions, making thoughtful comments, engaging in the class discussion and significant contributions to online discussion boards and term project.**

**Academic dishonesty**

**Integrity is an extremely important part of any person’s character and behavior. This course expects the highest level of personal and academic integrity. Students may discuss labs and business case assignments with other students in the class, but each individual must write and submit their case assignments individually. Term Project assignments are done collectively by the Project Team and one submittal is made for the entire Team. In all assignments, citations must be done for all references including websites. Any breach of the academic integrity code listed in the Rensselaer Handbook will be considered grounds for failure in the course.**