Course Syllabus

Please note that the specifics of this Course Syllabus are subject to change. Instructors will notify students of any changes and students will be responsible for abiding by them. Even if you print this syllabus, please check the online version often.

Description

IST 261: Application Development Design Studio I (3 credits) - Introductory design and development studio course for IST and SRA students.

Application Development Design Studio 1 will provide opportunities for students to practice the technical skills acquired in their foundation application design and development courses, specifically, in IST 140 and IST 242. The course will follow the general format of experiential studios in the arts and architecture. It will be primarily problem-based and project oriented. Peer and instructor design critiques will be the major feedback and assessment mechanisms. Students will be expected to complete deliverables in different phases of the systems development lifecycle (i.e. problem definition, requirements analysis, design, development, test).

The IST design and development studios are a forum for serious students to engage with the concepts, process, tools, and materials used to envision and build software applications. Both collaboration and individual performance will be emphasized, as will experimentation, risk-taking, and enthusiasm for the process of designing and building working software applications. Students will be expected to improvise and then respond constructively to feedback from instructors and peers.

Prerequisites

- IST 242

Objectives

Upon completion of this course, students will be able to:

- Write an application development project proposal/pitch describing the project domain, focal problem space, design concept, design challenges, and basic competitive analysis.
- Develop a basic conceptual design to represent an application prototype including scenarios, use cases, and class diagram.
- Plan and estimate the effort required to develop an application prototype.
- Decompose an application development project into development phases or ‘sprints’.
- Implement a basic interactive prototype in Java using the model-view-controller architecture.
- Conduct and record application prototype demonstrations and walkthroughs.
- Conduct peer reviews of application prototypes.

Instructor

- Jim Farrugia, 308 IST Building, Office Hours: MWF 10-11
- TA: Dongpeng Xu, Office Hours by appointment

Materials

- On Canvas

Course Lessons

The course lessons are designed to focus on the most essential concepts, techniques, and tools related to the lesson topic. They provide detailed guidance on how to complete many of the deliverables required during the course.

See the Course Schedule for when specific lessons should be covered by you. They generally map to course deliverables.

Course Tools

The course will make use of several different technologies including an Integrated Development Environment (IDE), software modeling and design applications, and demonstration and walkthrough recording software.

https://psu.instructure.com/courses/1828431/assignments/syllabus
Specific instructions for specific tools will be posted to the Canvas Unit where related activities and deliverables appear.

Java Development

You will be using the NetBeans Integrated Development Environment for all project development work. If you don't already have NetBeans on your own machine, you can download the latest NetBeans-JDK bundle from [http://www.oracle.com/technetwork/articles/javase/jdk-netbeans-jsp-142931.html](http://www.oracle.com/technetwork/articles/javase/jdk-netbeans-jsp-142931.html).

Conceptual Design

You will be using the Unified Modeling Language (UML) for part of your conceptual design. There are several software tools available for constructing UML models.

You may choose to use the MS Visio application, which is available through vLabs. The course lessons generally use MS Visio for UML demonstrations. Instructions for using vLabs can be found here: [https://online.ist.psu.edu/sites/ist110/files/vlabs_Classroom_Overview.pdf](https://online.ist.psu.edu/sites/ist110/files/vlabs_Classroom_Overview.pdf).

You can also install MS Visio on your own computer through the Penn State Dreamspark program: [https://www.up.ist.psu.edu/dreamspark/access.php](https://www.up.ist.psu.edu/dreamspark/access.php).

An open source and free tool you can use to create your UML diagrams is ArgouML. See: [http://argouml.tigris.org/](http://argouml.tigris.org/).

Finally, you may also choose to use an online tool for creating your UML models. One that has been tested and is recommended for the course is draw.io. See: [https://www.draw.io/](https://www.draw.io/).

You can use any UML modeling tool you like as long as it will produce a figure or file that can be inserted into your MS Word document.

Project Walkthrough & Demonstration Recordings

Starting in week four you will begin making screencast videos to demonstrate your project progress, your user interface designs, and your source code.

These videos will be produced using the Screencast-o-matic tool, which is a free, online service for creating and editing screencast recordings. You can find Screencast-o-matic [here](https://screencast-o-matic.com/home).

Make sure to sign up for your free account as soon as possible after the semester begins.

There is a 'sandbox' assignment where you can practice uploading links to your screencast recordings. The sandbox is [here](https://screencast-o-matic.com/gopro).

Important note: the screencast recordings you create are hosted at the Screencast-o-matic site. You submit the link (URL) to your recording. DO NOT attempt to submit an actual recording file.

Screencast-o-matic is easy to use and the site includes some good tutorials. Basic tutorials on Screencast-o-matic can be found [here](https://help.screencast-o-matic.com/channels/cXhi3EVTh#navback).

Some more advanced tutorials are [here](https://help.screencast-o-matic.com/).

There is a somewhat more advanced version of Screencast-o-matic available for $15 a year. You can find more information on that version [here](https://screencast-o-matic.com/).

You may also elect to use other screencast capture software, and you may host your recordings elsewhere (e.g. [YouTube](https://www.youtube.com/)). The only stipulation is that the recordings must be available to the instructor via a URL with no special accounts or software required.

You MAY NOT submit a file for your recording, Canvas has a limit on the total data storage capacity for a course and this would be exceeded if students submit the actual recording files rather than a URL.

Assignments & Grading
If your assignment is not submitted by its due date, you should expect a grade of zero for that assignment. Only in extreme cases (such as military duty, jury or other court obligations, serious illness or medical conditions treated by a physician, death in the immediate family, childbirth, or a disability for which you have made prior arrangements with Penn State's Office of Disability Services (http://equity.psu.edu/ods)) will allowances be made. In these rare cases, arrangements need to be made with the instructor in advance, at least 36 hours before the assignment is due if at all possible.

Assignments will be graded based on the following general criteria:

- Correctness (e.g. programs compile & run; language constructs are used appropriately; diagrams (e.g. UML) make correct use of symbols)
- Completeness (e.g. programs and written work address all aspects of the problem as described in the assignment description.)
- Clarity (e.g. programs are formatted professionally and include comments; written work and diagrams are free of typographical and grammatical errors, and are formatted neatly)

Attendance Policy: With very few exceptions, attendance is required, because much of the work for this class will be done during class. The exceptions are those listed above for late assignments and document health-related issues. The requirement is such that starting the second week of class, every second absence will yield a half-grade deduction from what otherwise would have been your grade for the course.

Mind your Manners. I expect everyone in the class to contribute to our classroom learning environment by respectful behavior that includes, but is not limited to:

- Attending class
- Coming to class on time. "On time" is defined as no later than 9:05 AM, according the time kept by the "teaching computer" in the classroom.
- Silencing before class starts any electronic devices you bring to class
- Ensuring only one person is talking at a time, unless we're in a more open task activity involving joint work.
- Focusing on the task at hand, and
- Allowing others to focus on the task at hand

These behaviors should quickly become routine in class. If they don't, I will update the grading policy so that your final grade also reflects your classroom manners.

<table>
<thead>
<tr>
<th>Course Component</th>
<th>Percentage of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Proposal</td>
<td>10%</td>
</tr>
<tr>
<td>Project Conceptual Design</td>
<td>10%</td>
</tr>
<tr>
<td>Project Plan &amp; Estimate</td>
<td>10%</td>
</tr>
<tr>
<td>Project Progress Walkthrough Recordings</td>
<td>40%</td>
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<tr>
<td>Project Peer Reviews</td>
<td>10%</td>
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<tr>
<td>Final Project Demo Recording &amp; Source Code</td>
<td>20%</td>
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<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Course Grading Scale

The following are minimum cutoffs for each grade:

- 93.00% = A
- 90.00% = A-
- 87.00% = B+
- 83.00% = B
- 80.00% = B-
- 77.00% = C+
- 70.00% = C
- 60.00% = D
- less than 60.00% = F

Course Policies and Expectations
Logging into Canvas - Students are expected to login regularly to check for course updates, announcements, emails, discussions, etc.

Updates will occur regularly so please make sure to keep up with announcements and updates to the course site.

Emailing through Canvas - Students are expected to use Canvas for all course email communication.

Attending virtual meetings - Students are expected to use specified virtual meeting tool(s) for collaboration, meetings, presentations, etc., as needed.

Late Policy: If your assignment is not submitted by its due date, you should expect a grade of zero for that assignment. Only in extreme cases (such as military duty, jury or other court obligations, serious illness or medical conditions treated by a physician, death in the immediate family, childbirth, or a disability for which you have made prior arrangements with Penn State’s Office of Disability Services (http://equity.psu.edu/ods) (http://equity.psu.edu/ods)) will allowances be made. In these rare cases, arrangements need to be made with the instructor in advance, at least 36 hours before the assignment is due if at all possible.

Mind your Manners. I expect everyone in the class to contribute to our classroom learning environment by respectful behavior that includes, but is not limited to:

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Technical Requirements

Standard World Campus computer technical specifications are assumed for this course. Please test your computer (https://courses.worldcampus.psu.edu/public/diagnostics/general.shtml) for requirements. In addition, a webcam and a headset with a microphone are REQUIRED for the course. These may be used for virtual meetings, virtual office hours, interactions with classmates and your instructor, and team presentations - which are all conducted with virtual meeting tools.

Additional required software clearly stated above.

Resources

Find extensive information and links to many resources, including the Penn State library, web conferencing, course tools, writing help, and much more on the Resources (https://docs.google.com/document/d/1Zsu5Lqaic3kLLiM3co5mxWUSB7I0fu1sppAQvsym6E/pub) page.

University Policies

Review current information regarding Penn State policies, including Academic Integrity, Disability Accommodations, Military Accommodations, and many others on the University Policies (https://docs.google.com/document/d/1FtQdl2qzw35IoqQWTWRByCxSbsnY6DcZAZJHzL4y8k/pub) page.

Schedule

The following schedule outlines the topics covered in this course, along with the associated time frames, readings, activities, and assignments. All due dates reflect Eastern Time (ET). Specifying the time zone ensures that all students have the same deadlines, regardless of where they live.

Assignments Summary:

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
</tr>
</thead>
</table>

https://psu.instructure.com/courses/1828431/assignments/syllabus

4/6
<table>
<thead>
<tr>
<th>Date</th>
<th>Task</th>
<th>Due Time</th>
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<tr>
<td>Sun Jan 15, 2017</td>
<td>Academic Integrity Quiz <a href="https://psu.instructure.com/courses/1828431/assignments/8881350">Link</a></td>
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<td>Sun Jan 22, 2017</td>
<td>Project Conceptual Design Assignment <a href="https://psu.instructure.com/courses/1828431/assignments/8881363">Link</a></td>
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<td>Proposal Peer Review Assignment <a href="https://psu.instructure.com/courses/1828431/assignments/8881369">Link</a></td>
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<tr>
<td>Sun Jan 29, 2017</td>
<td>Conceptual Design Peer Review Assignment <a href="https://psu.instructure.com/courses/1828431/assignments/8881361">Link</a></td>
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<td>Project Plan and Estimate Assignment <a href="https://psu.instructure.com/courses/1828431/assignments/8881364">Link</a></td>
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<td>Sun Feb 5, 2017</td>
<td>Project Plan Peer Review Assignment <a href="https://psu.instructure.com/courses/1828431/assignments/8881365">Link</a></td>
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<td>Sandbox to Practice Uploading Recordings <a href="https://psu.instructure.com/courses/1828431/assignments/8881370">Link</a></td>
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<td>Sprint 1 Source Code Submission <a href="https://psu.instructure.com/courses/1828431/assignments/8987384">Link</a></td>
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<td>Sun Feb 19, 2017</td>
<td>Sprint 1 Peer Review Assignment <a href="https://psu.instructure.com/courses/1828431/assignments/8881371">Link</a></td>
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<td>Sun Feb 26, 2017</td>
<td>Sprint 2 Recording Assignment <a href="https://psu.instructure.com/courses/1828431/assignments/8881374">Link</a></td>
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<td>Sun Mar 5, 2017</td>
<td>Sprint 2 Peer Review Assignment <a href="https://psu.instructure.com/courses/1828431/assignments/8881373">Link</a></td>
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**Spring Break**

- **Mon Mar 6, 2017**  
  Spring Break Begins [Link](https://psu.instructure.com/calendar?event_id=2687861&include_contexts=course_1828431) | 12am
- **Sun Mar 12, 2017**  
  Spring Break Ends [Link](https://psu.instructure.com/calendar?event_id=2687862&include_contexts=course_1828431) | 12am
<table>
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<td>Sprint 3 Peer Review Assignment</td>
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<td>Apr 2, 2017</td>
<td>Sprint 4 Recording Assignment</td>
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<td>Apr 2, 2017</td>
<td>Sprint 4 Source Code Submission</td>
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<td>Apr 9, 2017</td>
<td>Sprint 4 Peer Review Assignment</td>
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<tr>
<td>Apr 23, 2017</td>
<td>Project Source Code Submission</td>
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<td>Apr 23, 2017</td>
<td>Project Sprint 5 (FINAL) Recording Assignment</td>
<td>11:59pm</td>
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<tr>
<td>Apr 26, 2017</td>
<td>Reflections Document</td>
<td>11:59pm</td>
</tr>
<tr>
<td></td>
<td>Submit your last project from IST 242</td>
<td>11:59pm</td>
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