

Syllabus: IST 440W-001 2016 Spring

IST: Integration and Problem Solving

Revision 03

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Class Schedule

M/W/F, 10:10 – 11:00 am, IST 206

Instructor Information

Instructor: John L. Hill
Office: IST 104K
Office Hours: Tuesday 8:00 – 10:00 am, and by appointment
Phone: +1 814 867 3176
Email: ANGEL ***only***

Teaching/Learning Assistants

TA: Mark Friedenberg
ANGEL
LAs: Xiao Tan
ANGEL

Summary

Problem-based approach to technology integration by focusing on real-life problems faced by an organization.

Prerequisite: ENGL 202C or ENGL 202D, seventh-semester standing (this course is intended for seniors), and the five common course requirements plus at least three of the required courses in an option

Catalog Description

This course is the undergraduate capstone for Information Sciences and Technology majors in the Baccalaureate degree. It requires students to work collaboratively in teams of 4-6 students, with each team

comprised of students from more than one option and, if possible, more than one campus. Each team is given a significant real-world problem or issue in which information technology is part of the solution. Teams will be expected to manage the project effectively and to communicate its results clearly to a variety of audiences within an organization. Major topics include: review of problem-based and case-based learning; overview of project management practices; assessment of organizational and technical issues posed by the scenario; development and testing of work plans and analysis of options; communication within the group; communication within a management environment; and presentation of results to a variety of audiences inside and outside the organization.

IST students need to understand the organizational and social contexts in which technology functions. Indeed, many technology problems are multi-dimensional--they have an economic dimension, a legal dimension, a human resources dimension, and so on. This course will require students to analyze, evaluate, and test alternative solutions and to weigh their advantages and disadvantages for the organization.

Students will be evaluated in three ways: by the effectiveness of their team's solution of the technical or organizational problem; by the quality of the students' written and oral presentations; and by the quality of their project management and internal communication. A substantial written paper will be required of each student and each time; in addition, each team will also construct a Web-site for sharing results. Other technologies will be used as required by the project.

It is expected that membership on teams of students will be drawn from the various options in the Information Sciences and Technology major. At least nine credits (including at least one IST 300-level and one IST 400-level course) in the student's option must be completed before enrollment in IST 440W.

Required Course Materials

You have been provided an extensive listing of articles from academic, journalistic and other sources. You will find both the listing, and all the readings on ANGEL. You should read the articles that are associated with the session topics.

Suggested Course Materials

1. Thomas L. Friedman, The World is Flat: A Brief History of the Twenty-First Century, Picador/Farrar, Straus and Giroux, New York, 2007
2. Patrick J. Howie, The Evolution of Revolutions, Prometheus Books, Amherst, NY, 2011

Course Schedule: IST 440W-001/004 - SP15

Wk	Day/Date Session #	Description	Item Due
1	1/11/16 1	1 st Class: Introduction and Syllabus Review	Survey (M 1/11/16) Individual Writing Exercise #1: What is Innovation? (Th 1/14/16)
		Introduce IST 440W Survey	
	1/13/16 2	What is Innovation? (Relativity)	
		Guidelines for Individual Writing Exercises	
	01/15/16 3	Defining User Requirements	
		Discussion: Tween Texting May Lead to Poor Grammar Skills	
Review Survey Results			
2	01/18/16	No Class – Martin Luther King Day	
	1/20/16 4	What is Revolution? (USA Government)	Requests for Teammates (Th 1/21/16)
	1/22/16 5	Introduce Team Project – Six Phases	Individual Writing Exercise #2: What is Revolution? (Th 1/21/16)
Discussion: Acquiring New Business By Solving Your Clients' Problems (Instead of Pitching Them Your Product)			
3	1/25/16 6	What is Evolution? (The Worldwide Web)	Individual Writing Exercise #3: What is Evolution? (Th 1/28/16)
	1/27/16 7	Troublesome Questions for Systems Developers and Integrators (participative discussion)	Weekly Project Progress Report #1 (Th 1/28/16)
	1/29/16 8	Team Project Time	
4	2/1/16 9	What are IT Standards?	Team Project - Phase 1 - Problem Statement Report (Th 2/4/16)
	2/3/16 10	Verifying Implementations	
	2/5/16 11	Writing a Process Description	Requests for Schedule Time for Team Project - Phase 2 - Problem Statement Review (Th 2/4/16) Weekly Project Progress Report #2 (Th 2/4/16)
5	2/8/16 - 2/12/16	Phase 2 - Problem Statement Reviews (no class meetings, each team will meet separately with the course instructor)	Team Project - Phase 2 - Problem Statement Review (all week) Peer Assessment #1 (Th 2/11/16) Weekly Project Progress Report #3 (Th 2/11/16)
6	2/15/16 15	Resilience	Individual Writing Exercise #4: Resilience (Th 2/18/16)
	2/17/16 16	Team Project Time	Weekly Project Progress Report #3 (Th 2/18/16)
	2/19/16 17	Evolving Applications	
7	2/22/16 18	IT – The Dynamic Years	Individual Writing Exercise #5: IT – The Dynamic Years

Wk	Day/Date Session #	Description	Item Due
	2/24/16 19	Team Project Time	(Th 2/25/16)
	2/26/16 20	Modularity of IT Systems	Weekly Project Progress Report #5 (Th 2/25/16)
8	2/29/16 21	Standards for Software Engineering	Team Project - Phase 3 - Design Report (Th 3/3/16)
	3/2/16 22	Team Building	
	3/4/16 23	Team Project Time	Requests for Schedule Time for Design Review (Th 3/3/16)
			Weekly Project Progress Report #6 (Th 3/3/16)
3/7 - 3/11/16		No Classes – Spring Break	
9	3/14/16 - 3/18/16	Phase 4 - Design Reviews (no class meetings)	Team Project - Phase 4 - Design Review (all week)
			Peer Assessment #2 (Th 3/17/16)
			Weekly Project Progress Report #7 (Th 3/17/16)
10	3/21/16 27	The Chain Home System	Individual Writing Exercise #6: Chain Home Radar (Th 3/24/16)
	3/23/16 28	Team Project Time	
	3/25/16 29	Isley Brothers - Twist and Shout IT Security - An Historical Perspective	Weekly Project Progress Report #8 (Th 3/24/16)
11	3/28/16 30	Innovation, Revolution and Evolution In My Time	Individual Writing Exercise #7: Innovation, Revolution and Evolution In My Time (Th 3/31/16)
	3/30/16 31	How Not to Treat Experts – 7:34 https://www.youtube.com/watch?v=BKorP55Aqvg	
		Team Project Time	Weekly Project Progress Report #9 (Th 3/31/16)
	4/1/16 32	Introduction to Robotic Sensory and Response Systems	
12	4/4/16 33	The Importance of IT Standards for World Trade	Individual Writing Exercise #8: The Importance of IT Standards for World Trade (Th 4/7/16)
	4/6/16 34	Team Project Time	
	4/8/16 35	Internationalization and Localization	Weekly Project Progress Report #10 (Th 4/7/16)
13	4/11/16 36	The You in Implementation	Individual Writing Exercise #9: The YOU in Implementation

Wk	Day/Date Session #	Description	Item Due
	4/13/16 37	Disasters	(Th 4/14/16)
	4/15/16 38	The Imperative of Information and Enterprise Integration	Weekly Project Progress Report #11 (Th 4/14/16)
14	4/18/16 39	Abstraction, Perspective and Point-of-View	--
	4/20/16 40	Disasters	
	4/22/16 41	Basic Skills for Integration	
15	4/25/16 42	Introduce After-action Report	Team Project - Phase 5 - Demonstration (Th 4/28/16)
		Survey of Graduating Students – Lisa Lenze	
		SRTE	
	4/27/16 43	The Architectures of Application Integration	Weekly Project Progress Report #12 (Th 4/21/16)
	4/29/16 44	Final Class	After-Action Report (Th 4/28/16)
			Team Project - Phase 6 - Final Report (Th 4/28/16)
			Peer Assessment #3 (Th 4/28/16)
			Weekly Project Progress Report #13 (Th 4/28/16)

Grading Scheme

A	93 and above
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	70-76
D	60-69
F	59 and below

Deliverables

<u>DELIVERABLE</u>	<u>Due</u>	<u>%</u>
Survey [1] (individual)	M 1/11/16	2%
Team Project [17] (team) 30%		
Requests for Teammates	Th 1/21/16	--
Phase 1: Problem Statement Report	Th 2/4/16	5%
Requests for Schedule Time for Problem Statement Review	Th 2/4/16	--
Phase 2: Problem Statement Review	Week of 2/8/16	5%
Phase 3: Design Report	Th 3/3/16	5%
Requests for Schedule Time for Design Review	Th 3/3/16	--
Phase 4: Design Review	Week of 3/14/16	5%
Phase 5: Demonstration	Th 4/28/16	5%
Phase 6: Final Report	Th 4/28/16	5%
Weekly Project Progress Reports [13] (team) 10%		
Peer Assessments [3] (individual) 8%		
Peer Assessment #1	Th 2/11/16	3%
Peer Assessment #2	Th 3/17/16	3%
Peer Assessment #3	Th 4/14/16	2%
After-Action Report [1] (individual) 5%		
Individual Writing Exercises [9] (individual) 45%		
Individual Writing Exercise #1: What is Innovation?	Th 1/14/16	5%
Individual Writing Exercise #2: What is Revolution?	Th 1/21/16	5%
Individual Writing Exercise #3: What is Evolution?	Th 1/28/16	5%
Individual Writing Exercise #4: Resilience	Th 2/18/16	5%
Individual Writing Exercise #5: IT – The Dynamic Years	Th 2/25/16	5%
Individual Writing Exercise #6: Chain Home Radar	Th 3/24/16	5%
Individual Writing Exercise #7: Innovation, Revolution and Evolution In My Time	Th 3/31/16	5%
Individual Writing Exercise #8: The Importance of IT Standards for World Trade	Th 4/7/16	5%
Individual Writing Exercise #9: The YOU in Implementation	Th 4/14/16	5%
Total		100%

As is typical in industry, late submission of assignments is not tolerated. The grade for a late submission is zero (0).

Learning Objectives

Upon successful completion of the course the student will have learned -

- working in a team of people having dissimilar interests, academic background and skills
- developing an IT application with people, information and technology as its focal point and improving the client's innovation in her/his environment
- analyzing, designing, developing, implementing, documenting, deploying and demonstrating an IT solution to a problem whose solution has global implications

Methods for Learning and Teaching

The course will be conducted in a learning environment within which you, the student, assume an active role in the learning process through experiences in the context of IT in a worldwide context.

You will be exposed to real-world problems that are interesting, relevant and challenging, but often ill-defined. This permits you to seek out solutions to those problems.

In order to gain the most from this course, you should have completed the readings prior to the class in which they are discussed. Lectures will supplement the readings, not supplant them.

The majority of course sessions involve extensive student discussion wherein the focus will be on relevant issues.

Class Etiquette

Without prior notification of the course instructor of the reason, students are expected to:

- **Be Punctual** – Try to arrive a couple of minutes early. Arriving late means you have interrupted everyone, wasted everyone's time, and wasted someone's money.
- **Remain in Class for the Entire Session** - Leaving while the class is in session is disruptive to fellow classmates.
- **Devices** – No electronic devices may be used by students during course sessions.

Academic Integrity

Academic integrity is the pursuit of scholarly activity in an open, honest and responsible manner. Academic integrity is a basic guiding principle for all academic activity at The Pennsylvania State University, and all members of the University community are expected to act in accordance with this principle. Consistent with this expectation, the University's Code of Conduct states that all students should act with personal integrity, respect other students' dignity, rights and property, and help create and maintain an environment in which all can succeed through the fruits of their efforts.

Academic integrity includes a commitment not to engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the University community and compromise the worth of work completed by others.

Any violation of academic integrity will be investigated, and where warranted, punitive action will be taken. For every incident when a penalty of any kind is assessed, a report must be filed.

Affirmative Action and Sexual Harassment

The Pennsylvania State University is committed to the policy that all persons shall have equal access to programs, facilities, admission and employment without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. It is the policy of the University to maintain an academic and work environment free of discrimination, including harassment. The Pennsylvania State University prohibits discrimination and harassment against any person because of age, ancestry, color, disability or handicap, national origin, race, religious creed, sex, sexual orientation, gender identity or veteran status. Discrimination or harassment against faculty, staff or students will not be tolerated at The Pennsylvania State University. You may direct inquiries to the Office of Multicultural Affairs, 332 Information Sciences and Technology Building, University Park, PA 16802; Tel 814-865-0077 or to the Office of Affirmative Action, 328 Boucke Building, University Park, PA 16802-5901; Tel 814-865-4700/V, 814-863-1150/TTY.

Americans with Disabilities Act

Penn State welcomes students with disabilities into the University's educational programs. If you have a disability-related need for reasonable academic adjustments in this course, contact the Office for Disability Services (ODS) at 814-863-1807 (V/TTY). For further information regarding ODS, please visit the Office for Disability Services Web site at <http://equity.psu.edu/ods/>.

In order to receive consideration for course accommodations, you must contact ODS and provide documentation (see the documentation guidelines at <http://equity.psu.edu/ods/guidelines/documentation-guidelines>). If the documentation supports the need for academic adjustments, ODS will provide a letter identifying appropriate academic adjustments. Please share this letter and discuss the adjustments with your instructor as early in the course as possible. You must contact ODS and request academic adjustment letters at the beginning of each semester.

An Invitation to Students with Learning Disabilities

It is Penn State's policy to not discriminate against qualified students with documented disabilities in its educational programs. If you have a disability-related need for modifications in your testing or learning situation, your instructor should be notified during the first week of classes so that your needs can be accommodated. You will be asked to present documentation from the Office of Disability Services (located in 116 Boucke Building, 863-1807) that describes the nature of your disability and the recommended remedy. You may refer to the Nondiscrimination Policy in the Student Guide to University Policies and Rules.

Notification

This syllabus is subject to change.