Information Systems, Services and Design

Description
Fundamental perspectives and skills necessary for sound technical judgment about the place of information and communication technologies in contemporary society. Critical analysis of the design fabrication, deployment, use, and maintenance of information systems and services. Analysis of modeling, architecture, implementation, inclusive access, modularity, life-cycle, and interoperability. Use of and familiarity with programming languages, databases, interfaces, interactive technologies. Critical methods and analytic techniques from Science and Technology Studies and related disciplines.

Course Structure
3 contact hours per week; 2 hour lecture and 1 hour tutorial (small group discussion on contemporary, concrete issue and/or case studies to supplement lectures). Occasional guest lectures. Team taught; two regular faculty members attend all lectures.

Deliverables and Evaluation
There will be 4 assignments during the course, each of which is worth 25% of your overall grade. The first assignment will use and critique formal modeling techniques in the description and analysis of an information system. The second assignment is a take-home midterm. The third project is the design and implementation of a simple web service and is to be done by small groups. The final project is a poster and demonstration of the web service, including an analysis and description using techniques learned during the course.

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<tr>
<th>Assignment</th>
<th>Percentage</th>
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<td>Take-home midterm (including, inter alia, critique of a particular case)</td>
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<tr>
<td>Individual project (modeling)</td>
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<td>Group project (e.g., web service design)</td>
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<td>design</td>
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<tr>
<td>poster, demo, and presentation</td>
<td>25%</td>
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Suggested Texts
Lectures will draw from the following texts, which may be supplemented by other
articles or case studies. Students will be responsible for reading all of the Walsham text and selected excerpts of the other three books over the course of the semester.


**Schedule**

**Week 1**
Introduction to the course; methods, and conceptual tools

W 1-3; S&R 2-3

Systemic approaches to information and society (structuration, actor-network-theory, risk society, technology as progress, determinism …)

**Week 2**
Course overview, methods, and conceptual tools II

Theories of information (Shannon and Weaver, philosophical, social, … ), Critiques, relevance for information professionals.

**Week 3**
Formalization; mediation; conceptualization of tasks I

W 4-5; S&R 5,10

Computing, data storage, and decision support systems.

**Week 4**
Formalization; mediation; conceptualization of tasks II

Assumptions, models, formalisms, and their interactions and implications.

Modeling project due.

**Week 5**
Formalization; mediation; conceptualization of tasks III

Tech. systems embedding and inscribing social values. Special attention to the traditional data / information / knowledge stack as it is reinforced or rejected by choices in architecture, parallelism, and modularity.

**Week 6**
Mediation and communication I
W 6-7; S&R 6-7
Protocols, networks and social relations.

Week 7  Mediation and communication II
Protocol stacks, peering, routing, architectures.

Week 8  Mediation and communication III
Internet governance, spectrum allocation and policy.

Week 9  Design for diversity I
W 8-9; S&R 12-13
Human-Computer interaction and user interfaces, inclusive design.
Take home exam due.

Week 10 Design for diversity II
Development processes (organizing development, agile development, user-based/participatory design).

Week 11 Design for diversity III
Web 2.0 protocols, semantic web, service-oriented architectures, web services.

Week 12 Paradigms of computing infrastructures
Objects to agents to services to clouds ….Institutional and technical convergence; ubiquitous computing; smart spaces.

Week 13 Festival week
Final project (web service) due; Demonstration and poster session.