

Information Systems and Service Design
MGMT 126 / CSE 126
University of California, Merced
Spring 2013

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office hrs Mondays, 1:00 – 3:00 PM

Lecture Section Monday and Wednesday 9:30AM – 10:45AM, COB 267
Wednesday 4:30PM – 5:20 PM, COB 267

UCMCROPS S13- CSE 126/MGMT 126

URL <http://faculty.ucmerced.edu/pmaglio/mgmt126.html>

Grades	Group assignments and project	60 points
	Individual assignments	25 points
	Participation	15 points

Ground Rules and Other Useful Information

Being in Class

When you're in class, be in class. If you have a laptop, use it to take notes or look up things related to the class or to the discussion, but please don't use it for any non-class activities. It's simple: Show up, pay attention, ask questions, participate.

Participation

In-class participation is required. So raise your hand. Get called on. You don't have to answer questions. You can ask them. Just take part in the discussion. Be an active part of the class. You'll learn more. There are 15 points for participation, and if you don't talk, you can't get too many of them.

Discussion Sections

In addition to lectures, there is a discussion section for this class, which is structured as a kind of workshop to help push the team projects along. The section does not meet every week. You can use the off weeks to meet with your team. See the course calendar for details.

Readings

There are two main texts for the course (available at the bookstore or on Amazon):

- Kessler, C. & Sweitzer, J. (2007). *Outside-in Software Development: A Practical Approach to Building Successful Stakeholder-based Products*. IBM Press.
- Glushko, R. J. & McGrath, T. (2005). *Document Engineering: Analyzing and Designing Documents for Business Informatics and Web Services*. MIT Press. (Also available for free through the library).

And there are many individual readings available through UCMCROPS. Most of these will be links to library-accessible articles – to access these, you either have to be on campus or connected through the campus virtual private network (VPN).

Exams

There will be one take home exam, assigned on Monday, March 18, and due on Monday, April 1. There is no final exam.

Group Assignments

This is team-based project course. The bulk of your grade is determined by your work on a group project. Each group is to turn in a single assignment for each of these, with all group members' names on each assignment, and including contributions from all group members. Each group member is to turn in his or her own copy of the assignment through UCMCrops. It is the responsibility of the group to ensure that all members are working effectively. If you have a problem, contact Paul or Michelle.

Final Project

The final project has two parts: An in-class presentation and a final paper write up. The presentation will be done during the last week of classes (May 6 and May 8). The final paper is due by midnight on the last day of the term (May 10).

Turning in Work; Late or Missing Work

Assignments must be turned in through UCMCROPS using the “Assignments” section by 9:30 AM the day they are due (i.e., before class). The final paper is due by midnight on the last day of the term (May 10). For group assignments, each group must turn in a copy through UCMCrops to get proper credit. Assignments cannot be turned in late. If you have a problem with this, contact Paul or Michelle.

Cheating and Academic Honesty

Don't cheat. Like all universities, UC Merced has a formal policy on this:
<http://studentlife.ucmerced.edu/what-we-do/student-judicial-affairs/academicy-honesty-policy> .

Disability Services

UC Merced is committed to ensuring equal academic opportunities and inclusion for students with disabilities (see <http://disability.ucmerced.edu/>). If you need any assistance, please contact Paul or Michelle.

Office Hours and Contact

Paul's office hours are before class on Wednesdays after lecture, 11:00AM – 12:00 PM. To schedule an appointment at a different time, contact Paul by email at pmaglio@ucmerced.edu.

Michelle's scheduled office hours are Mondays 1:00 – 3:00 PM. For other times, contact Michelle at mgreenwood@ucmerced.edu.

And please feel free to contact Paul or Michelle with any type of issue or question you have about the class.

If you send email, please put *MGMT 126* or *CSE 126* in the subject line or else we may miss it.

Course Outline: So what is service design?

This course presents an end-to-end view of the design life cycle for information systems and services. It explains how design problems are conceived, researched, analyzed and resolved in different types of organizations and contexts, including start-ups, enterprises with legacy-systems, non-profit and government entities.

The course takes a comprehensive perspective on how these different contexts shape design activities and methods, including:

- Analyzing stakeholders and customers
- Building new vs. extending legacy systems
- Identifying customer segments and modeling different user types
- Analyzing and collecting data to identify and verify requirements
- Measuring usability and quality
- Prototyping and iterative implementation
- Personalization and configuration
- Designing for multiple channels (brick-and-mortar vs online)
- Designing for multiple platforms (cellphones, PDAs, PCs)

The course presents a framework for understanding and integrating the variety of design methods. Using a mix of theory and case studies, the course provides students with different backgrounds a unifying view of the design life cycle, making them more effective and versatile designers.

Course Learning Goals: What will you learn in this course?

This course will give you practical, hands-on experience in IT-enabled service design, working individually and in project teams. Through readings, case studies, lectures, assignments, and a final team project, you will work with others from different areas, including computer science and management, to learn about and then gain experience in complex service system design. The bulk of the work is structured around a group project in which 3-4 of you, each group made up partly from CSE majors and partly from MGMT majors, develop a problem, requirements, design, and implementation within an area of IT-enabled services.

Course Learning Outcomes (CLOs)

Student learning will be measured through participation in lectures and in labs, three individual assignments, one mid-term exam, and 10 group assignments, culminating in a public project presentation.

There are three main learning outcomes:

1. Students will demonstrate mastery of theoretical and conceptual material about service, service systems, information technology, and design, among other basic areas, as measured through individual assignments and mid-term exam.

2. Students will demonstrate incremental development of design and implementation of a service system through project components over time. The instructor will guide the student teams to a successful result, and assess individual progress and team progress incrementally through first hand observation and through group assignments. Overall, students will gain practical experience through hands-on design and implementation of a real-world service system.
3. Students will demonstrate mastery knowledge of the material presented on IT-enabled service systems. The ultimate goal of the course is to plan, design, and implement a complex IT-enabled service in a real-world context. Overall, students will gain expertise in continual development and refinement of the team's approach based on instructor and peer feedback, and develop skills required for communication and coordination among diverse team members.

To support student success coherently across Management coursework, these CLOs help students to reach the Management *Program Learning Outcomes* 2 and 4:

2. Apply theories and concepts in management and related fields (accounting, economics, statistics, finance, marketing, human resource management, strategic planning and business law) to various management situations.
4. Apply appropriate information technology to analyze and problem solve, develop business research, report key data, and recommend management strategies and actions.

To support student success coherently across Computer Science and Engineering coursework, these CLOs help students to reach the CSE *Program Learning Outcomes* b, c, d, and f:

- b. An ability to analyze a problem and identify the computing requirements appropriate for its solution;
- c. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs;
- d. An ability to function effectively as a member of a team in order to accomplish a common goal;
- f) An ability to communicate effectively with a range of audiences;

Assignment Summary

- Individual Assignment 0: Personal Info, Due Mon Jan 28
- Individual Assignment 1: Service System, Due Mon Feb 4 (5 pts)
- Group Assignment 2: Group Concept, Due Weds Feb 13 (2 pts)
- Group Assignment 3: Stakeholder Analysis, Due Weds Feb 20 (3 pts)
- Individual Assignment 4: Brainstorm, Due Weds Mar 6 (5 pts)
- Group Assignment 5: Brainstorm: Due Weds Mar 6 (5 pts)
- Group Assignment 6: Ethnography: Due Weds Mar 20 (5 pts)
- Individual Assignment 7: Midterm: Due Mon Apr 1 (15 pts)
- Group Assignment 8: Use Cases: Due Weds Apr 3 (5 pts)
- Group Assignment 9: Blueprint, Due Weds Apr 17 (5 pts)
- Group Assignment 10: Prototyping, Due Weds May 1 (10 pts)
- Group Assignment 11: Final presentation, Due Mon 6 – Wed May 8 (10 pts)
- Group Assignment 12: Final paper, Due Fri, May 10 (15 pts)

Calendar

0. Weds Jan 23

Lecture 0: Introduction

Readings

- R0. Evenson & Dubberly, "Designing for Service"
- R1. Chase & Apte, "History of Research in Service Operations" (Selections)
- R2. Glushko & McGrath, "Document Engineering" Ch 1 (Selections)
- R3. Kessler & Sweitzer, "Outside-in Software Development" Ch 1

No Section

1. Mon Jan 28

Due: Individual Assignment 0, Personal Info

Lecture 1: Service Design Contexts

Readings

- R4. Glushko, "Seven Contexts for Service System Design" [Core Reading]
- R5. Trimi & Sheng, "Emerging Trends in M-Government" (Selections)
- R6. Brooks et al., 2009 Final Report: "Diasporta" (Selections)
- R7. Knight et al., 2009 Final Project: "Educational Portfolio Service System" (Selections)
- R8. Bonaguro et al., 2010 Final Project: "Park My Ride" (Selections)

2. Weds Jan 30

Lecture 2: Stakeholder and Risk Management

Readings

- R9. Kessler & Sweitzer, "Outside-in Software Development" Ch 2
- R10. Whitaker et al., 2009 Final Project: "Frontline World Vision 2015" (Selections)
- R11. Kiener et al., 2010 Final Report: "Solar Panel Seekers" (Selections)
- R12. Patel, "Project Management" (Selections on Risk Management)
- R13. Warkentin et al., "Analysis of Systems Development Project Risks: An Integrative Framework" (Selections)

Section 1: Project Concepts (1)

3. Mon Feb 4

Due: Individual Assignment 1, Service System (5 pts)

Lecture 3: Organizational Contexts

Readings

- R14. Kessler & Sweitzer, "Outside-in Software Development" Ch 3
- R15. Glushko & McGrath, "Document Engineering" Ch 4
- R16. Lentz et al., "IT Ecosystems"
- R17. Norman, "Designing the Infrastructure"

4. Weds Feb 6

Lecture 4: Service Encounters and Touch Points

Readings

- R18. Glushko & Tabas, "Designing Service Systems by Bridging the Front Stage & Back Stage" [Core Reading]
- R19. Kolesar et al., "Creating Customer Value Through Industrialized Intimacy" (Selections)
- R20. Bitner et al., "Service Blueprinting: A Practical Technique for Service Innovation" (Selections) [Core Reading]

Section 2: Project Concepts (2)

5. Mon Feb 11

Lecture 5: Person to Person (P2P), Tech Enhanced P2P, and Self-Service

Readings

- R21. Glushko, "Information vs Interaction"
R22. DiFerdinando et al., "Taking Information into Your Own Hands" (Selections)
R23. Cook, "The Contribution Revolution: Letting Volunteers Build Your Business" (Selections)

6. Weds Feb 13

Due: Group Assignment 2, Team Project Concept (2 pts)

Lecture 6: Multi-Channel and Multi-Device Contexts

Readings

- R24. Neslin et al., "Challenges and Opportunities in Multichannel Customer Management" (Selections)
R25. Richter et al., "The Many Faces of Consistency in Cross-Platform Design"
R26. Huang, "Future Space: A New Blueprint for Business Architecture"
R27. Kirienko et al., 2009 Final Project: "Crohnology MD" (Selections)

Section 3: Service Brainstorm

****** Holiday: Mon Feb 18 Presidents Day ******

7. Weds Feb 20

Due: Group Assignment 3, Stakeholder Analysis (3 pts)

Lecture 7: Context-Aware and Computational Contexts

Readings

- R28. Raper et al., "Applications of Location-Based Services: A Selected Review" (Skim)
R29. Wakabayashi, "Japanese Farms Look to the 'Cloud'"
R30. Brech et al., "Smarter Cities Series: Understanding the IBM Approach to Efficient Buildings"(Optional)
R31. Economist, "The Connected Car"
R32. Glissmann & Sanz, "Business Architectures for the Design of Enterprise Service Systems" (Optional)
R33. Cherbakov et al., "Impact of Service Orientation at the Business Level" (Selections)
R34. Alimendinger & Lombreglia, "Four Strategies for the Age of Smart Services" (Selections)

No Section

8. Mon Feb 25

Lecture 8: Design Concepts and Traceability

Readings

R35. Brown, "Design Thinking"

R36. Voss & Zomerdijk, "Innovation in Experiential Services" (Selections)

R37. Winkler & Pilgrim, "A Survey of Traceability in Requirements Engineering and Model-Driven Development" (Selections)

9. Weds Feb 27

Lecture 9: Ethnography Continuum and Techniques (1 of 2)

Readings

R38. Kieliszewski et al., "A Service Practice Approach" (Selections)

R39. Millen, "Rapid Ethnography: Time Deepening Strategies for HCI Field Research"

R40. Lin et al., Contextual Inquiry "MD: Notes"

Section 4: Ethnography (1)

10. Mon Mar 4

Lecture 10: Ethnography Continuum and Techniques (2 of 2)

Readings

R41. Kirsh, "Multi-Tasking and Cost Structure: Implications for Design"

R42. Shapiro et al., "Staple Yourself to an Order"

R43. Glushko & McGrath, "Document Engineering" Ch 11

11. Weds Mar 6

Due: Individual Assignment 4: Brainstorm (5 pts)

Due: Group Assignment 5: Brainstorm (5 pts)

Lecture 11: Design Process

Readings

R44. Bitner, "Servicescapes: The Impact of Physical Surroundings on Customers and Employees"

Section 5: Ethnography (2)

12. Mon Mar 11

Lecture 12: Design Methods

Readings

- R45. Ominsky et al., "User-Centered Design at IBM Consulting"
- R46. Frei, "Breaking the Trade-Off Between Efficiency and Service"

13. Weds Mar 13

Lecture 13: Requirements and Use Cases (1 of 2)

Readings

- R47. Glushko & McGrath, "Document Engineering" Ch 7 (Selections)
- R48. Glushko & McGrath, "Document Engineering" Ch 8 (Selections)
- R49. Wieggers, "Usable Requirements: Habits of Effective Analysts" (Skim)

Section 6: Team Time

14. Mon Mar 18

Lecture 14: Requirements and Use Cases (2 of 2)

Readings

- R50. Jan Kettenis, "Getting Started with Use Case Modeling"
- R51. King, "Rapid Requirements Definition: A Guide to Fast Application Delivery" (Skim)
- R52. Ash, "MoSCoW Prioritisation Briefing Paper"
- R53. Ross, "Verb-ish Models for Verbalization"

15. Weds Mar 20

Due: Group Assignment 6, Ethnography (5 pts)

Lecture 15: Personalization and Customization

Readings

- R54. Adamavicius et al., "Personalization Technologies: A Process-Oriented Perspective" (Selections)
- R55. Goy et al., "Personalization in E-Commerce Applications" (Selections)
- R56. Martin, "Sam's Club Personalizes Discounts for Buyers"

No Section

****** Break Mon Mar 25: Spring Break ******

****** Break Weds Mar 27: Spring Break ******

16. Mon Apr 1

Due: Individual Assignment 7, Take-home Midterm (20 pts)

Lecture 16: Team Touchbase

17. Weds Apr 3

Due: Group Assignment 8, Use Cases (5 pts)

Lecture 17: Process Modeling (1 of 2)

Readings

R57. Bitner et al., "Service Blueprinting: A Practical Technique for Service Innovation"
[Core Reading]

R58. Womack & Jones, "Lean Consumption"

Section 7: Process Models (1)

18. Mon Apr 8

Lecture 18: Process Modeling (2 of 2)

Readings

R59. Glushko & McGrath, "Document Engineering" Ch 9 (Selections)

19. Weds Apr 10

Lecture 19: Design Patterns

Readings

R60. Glushko & McGrath, "Document Engineering" Ch 10 (Selections)

R61. Maglio et al. "The Service System..."

R62. Glushko, "Describing Service Systems"

Section 8: Process Models (2)

20. Mon Apr 15

Lecture 20: User/Customer Models and Personas

Readings

- R63. Pruitt & Grudin, "Personas: Practice and Theory"
- R64. Verma et al., "Understanding Customer Choices"
- R65. Brechin, "Reconciling Market Segments and Personas"

21. Weds Apr 17

Due: Group Assignment 9, Blueprint (5 pts)

Lecture 21: Prototyping

Readings

- R66. Lim et al., "The Anatomy of Prototypes"
- R67. Holmquist, "Prototyping: Generating Ideas or Cargo-Cult Designs"
- R68. Schrage, "Never go to a Client Meeting Without a Prototype"

No Section

22. Mon Apr 22

Lecture 22: Iteration

Readings

- R69. Kessler & Sweitzer, "Outside-in Software Development" Ch 5

23. Weds Apr 24

Lecture 23: Quality in Design

Readings

- R70. Kessler & Sweitzer, "Outside-in Software Development" Ch 4
- R71. Parasuraman et al., "A Conceptual Model of Service Quality and It's Implications for Future Research"
- R72. Pinhanez, "A Service Science Perspective for Interfaces"

Section 9: Team Time

24. Mon Apr 29

Lecture 24: Quality in Operation and Evaluation

Readings

R73. Andrew N. Hiles, "Service Level Agreements: Panacea or Pain?"

R74. Folmer & Bosch, "Architecting for Usability: A Survey"

R75. Holzinger, "Usability Engineering Methods for Software Engineers"

R76. Hart et al., "The Profitable Art of Service Recovery"

25. Weds May 1

Due: Group Assignment 10, Prototyping (10 pts)

Lecture 25: Course Retrospective

No Section

26. Mon May 6

Due: Group Assignment 11, Final Presentation – all presentations submitted (10pts)

Lecture 26: Final Presentations (first half)

27. Weds May 8

Due: Group Assignment 11, Final Presentation (10pts)

Lecture 27: Final Presentations (second half)

No Section

Fri May 10

Due: Group Assignment 12, Final paper (20pts)
(due by 11:59PM)