Multimedia and Interface Design
Duquesne University
Department of Journalism & Multimedia Arts

JMA 308-01/545-01, Fall 2014 at 4:30 – 5:45 on TTH in COLH 205

Dr. William J. Gibbs
Office – 544C COLH
Office hours – Mon. and Wed. 12:00–2:30, Tues. and Thurs. 12:30-1:30 and by appointment
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Class Website – http://www.jma.duq.edu/classes/gibbs/jma308/

Course Description
The overall goal of this course is to explore interface design concepts and to use associated principles to develop interfaces, specifically web interfaces.

In the course we examine major user interface design principles and processes such as information architecture, navigation, prototyping, user-center design, and usability. A primary focus of the course is usability, which encompasses methods to identify what is or is not working on an interface.

The course is centered on "active learning" principles, which means that we will use much of the class time to work on projects, test interfaces, and to discuss design ideas.

Learning Materials

Required Textbook:
- Designing with the mind in mind: 978-0-12-407914-4

Recommended (not required) books
- Designed for Use: Creating Usable Interfaces for Applications and the Web: 978-1-93435-675-3.
- Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability, 3/E: 9780321965516
- Additional readings will be assigned.

Course Objectives
After completing the course, you will be able to:
- Define terms related to interface design.
- Describe and implement major methods and processes of user interface design.
- Design, development and evaluate a website and associated interactions based on interface design principles.
- Discuss general guidelines, principles, and theories related to interface design.
- Identify usability problems.
- Conduct usability studies, including design assessment instruments, operate usability software, collect and analyze user data.
Department of Journalism and Multimedia Arts: Perspective and Skills

The Journalism and Multimedia Arts department dynamically bridges the distance between where the user is and where the user wants to be. Through degree programs that are flexible, progressive, and robust with an ever expanding reach into the dynamic world of digital design, Journalism and Multimedia Arts at Duquesne University provides the tools, the knowledge and encouragement you need to build your own bridge into the future.

Through an aggressive curriculum geared toward the challenges of a rapidly changing world, students are prepared for both productive and creative lines of service.

Students are taught to think, write, and speak both clearly and critically. In support of the University's mission to promote education for the mind, heart, and soul, Journalism and Multimedia Arts challenges its students to achieve an intellectual and spiritual awareness that will positively impact future contributions to their families, communities, and professional affiliations.

Course Requirements

Reading Assignments. Reading assignments are listed on the tentative course schedule. You should complete all assigned readings before class, as indicated on the schedule. Reading assignments cover the conceptual aspects of the course. It is very important for you to keep up with the readings so that you obtain a conceptual understand of topics, which may or may not be covered during class time. We will use much of the class periods to create and test interfaces with prototyping tools.

Class Format and Participation. The course will be a mixture of demonstration, discussion, and hands-on experiences. To the extent that it is possible, class periods will be spent developing interfaces and testing them. You will share the results of your efforts with the class through project demonstrations and presentations. Topics from the assigned readings will also be discussed in class. You should actively participate in class discussions.

Learning Activities. Assignments are due throughout the semester as shown on the tentative course schedule. The assignments represent a significant portion of your course grade. Their purpose is to help you integrate conceptual aspects of UI in the interfaces that you create. Several assigned activities require that you have storage media.

- **Storage.** It is important to keep backup copies of your work on supplementary discs and to backup your work frequently. Discs errors, computer viruses, or accidental erasures can destroy your files. No special considerations will be given if your files are lost and so please take every precaution to protect your work.

- **Due Dates.** Assignments are due at the end of the day of the class period as
indicated on the tentative course schedule. **Assignments may be turned in up to three class periods beyond the due date, after which time they will not be accepted.** Assignments turned in after the due date will receive a 10% per class period penalty up to a maximum of 30%.

- **E-mailing assignments.** There may be times when you need to send an assignment as an e-mail attachment. All e-mail attachments (assignments) must include your name, e-mail address, and the title of the assignment. You should also label the subject of the e-mail message with your name and the assignment title.

**Quizzes/exercises.** Short activities will be given during class throughout the semester. These activities cannot be made up and they must be taken during the assigned class period.

**Course Policies**

**Attendance.** Students should demonstrate professional behavior by attending class and actively participating in class activities.

**Make up tests.** Makeup tests can only be given if you provide appropriate documentation (e.g., a note from a physician) indicating the reason for your absence.

**I-Grade policy.** Students must complete 80% of the coursework to warrant a grade of incomplete (“I”). The McAnulty College policy states that “I” grades must be removed by the date specified in the Duquesne Calendar.

**Academic integrity.** Students are expected to adhere to the University’s rules and regulations on academic integrity. Students are responsible for reading the University’s academic integrity policy. See: http://www.duq.edu/Documents/academic-affairs/_pdf/academic-integrity-5-1-12.pdf

**E-mail.** Students and instructor will often communicate electronically. Some assignment instructions may be given using e-mail. Check e-mail regularly.

**Students with disabilities.** Students with a documented disability may obtain appropriate academic support through the Office of Special Student Services. Please notify the professor and contact the Office of Special Student Services (412) 396-6657 for additional information.

**Emergency preparedness plan.** Emergency procedures are posted in classrooms. Students and faculty are responsible for acquainting themselves with emergency procedures so that they are prepared if an emergency occurs.
Additional Suggested Readings:

For additional readings you may want to consult the following:

- Customers Included: How to Transform Products, Companies, and the World - With a Single Step by Mark Hurst, Phil Terry , 2013.
- The Design of Sites by D. Van Duyne, J. Landay, and J. Hong Addison-Wesley, 2007.
# JMA 308/545 Tentative Class Schedule, fall 2014

This is a tentative schedule and will likely change based on the needs and interests of the class. The codes (e.g., Usability, UCD, IA, RD) indicate reading materials, which you will find below in the Reading List section of this document.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics</th>
<th>Readings due</th>
<th>Assignments due</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>26-Aug</td>
<td>Course Orientation</td>
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<tr>
<td></td>
<td>28-Aug</td>
<td>Principle of interface design; User interface design process;</td>
<td>Design_1</td>
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<tr>
<td>2</td>
<td>02-Sep</td>
<td>User interface design process; User Research</td>
<td>Design_2, 3 &amp; 4</td>
<td>Biographical</td>
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<td></td>
<td>04-Sep</td>
<td>User–centered design; Activity-Centered Design; Iterative design; Psych Basis of HCI</td>
<td>Ch 1 &amp; 2</td>
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<tr>
<td>3</td>
<td>09-Sep</td>
<td>User–centered design; Introduction to usability: JMA - HFF</td>
<td>Ch 3</td>
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<tr>
<td></td>
<td>11-Sep</td>
<td>User–centered design; Introduction to usability: Psych Basis of HCI</td>
<td>Ch 4 &amp; 5; Usability_1</td>
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<tr>
<td>4</td>
<td>16-Sep</td>
<td>Planning, Analysis; Goal setting; Analyzing needs, Accessibility</td>
<td>Ch 6, 2, 3, 4</td>
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<td></td>
<td>18-Sep</td>
<td>Planning, Analysis; Need analysis; understanding the audience; personas, Accessibility</td>
<td>UCD_1, 2 &amp; 3</td>
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<td>5</td>
<td>23-Sep</td>
<td>Analysis; Task analysis; understanding tasks and their context, Accessibility</td>
<td>UCD_4 &amp; 5; DI_11</td>
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<td></td>
<td>25-Sep</td>
<td>Design; Requirements; IA; Navigation; Interaction styles; navigation models; Organization schemes</td>
<td>Ch 7 &amp; 8</td>
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<td>6</td>
<td>30-Sep</td>
<td>Design: Flow diagrams, flow charting; personas &amp; scenarios</td>
<td>Ch 9 &amp; 10, 11, UID_1-4</td>
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<tr>
<td></td>
<td>02-Oct</td>
<td>Design: sketching and Prototyping</td>
<td>Ch 12, 13, 14</td>
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<tr>
<td>7</td>
<td>07-Oct</td>
<td>Design: information architecture</td>
<td>IA 1, 2, &amp; 3</td>
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<td></td>
<td>09-Oct</td>
<td>Design; Writing for the Web; Writing for usability</td>
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<tr>
<td>8</td>
<td>14-Oct</td>
<td>Design; Visual considerations</td>
<td>RD_1</td>
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<td></td>
<td>16-Oct</td>
<td>Implementation: usability</td>
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<tr>
<td>9</td>
<td>21-Oct</td>
<td>Implementation: usability</td>
<td>Usability_5-12</td>
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<td></td>
<td>23-Oct</td>
<td>Implementation: usability</td>
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<td>10</td>
<td>28-Oct</td>
<td>Client user tests</td>
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<td></td>
<td>30-Oct</td>
<td>Client user tests</td>
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<tr>
<td>11</td>
<td>04-Nov</td>
<td>Client user tests</td>
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<td></td>
<td>06-Nov</td>
<td>Design; Navigation, prototypes</td>
<td>IA_1-3 (review)</td>
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<td>Date</td>
<td>Event</td>
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<td>12</td>
<td>11-Nov</td>
<td>Testing &amp; Revision</td>
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<tr>
<td>13</td>
<td>13-Nov</td>
<td>Testing &amp; Revision</td>
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<tr>
<td>13</td>
<td>18-Nov</td>
<td>Client Practice presentation</td>
<td>Client Study Review</td>
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<tr>
<td>13</td>
<td>20-Nov</td>
<td>Client Practice presentation</td>
<td>Client Study Review</td>
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<tr>
<td>14</td>
<td>25-Nov</td>
<td>Thanksgiving break</td>
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<tr>
<td>14</td>
<td>27-Nov</td>
<td>Thanksgiving break</td>
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<tr>
<td>15</td>
<td>02-Dec</td>
<td>Client presentation</td>
<td>Client report &amp; presentation</td>
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<tr>
<td>15</td>
<td>04-Dec</td>
<td>Client presentation</td>
<td>Client report &amp; presentation</td>
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<tr>
<td>16</td>
<td>09-Dec</td>
<td>Classes meet according to Monday class</td>
<td>Website project, IDD, &amp; usability results</td>
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<td></td>
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<td>schedule.</td>
<td>Website experiment or Evaluation (Graduate</td>
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<td>students only)</td>
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Multimedia and Interface Design
JMA 308/545

Course Requirements

1) Interface design activities - approximately 4 (30 points each)

Throughout the semester you will receive tasks that relate to an interface design issue and for which you will develop a Web based solution.

2) Client Interface usability study (Group project)

We will perform interface usability studies for clients. The clients ask us to look at specific Websites and to make usability recommendations about them. We will perform usability testing with the Morae software program (with video and audio recording) using a think-aloud protocol. Group members will compile their findings in a Usability Evaluation Report (2-5 pages) that includes: a) a Title page, b) Executive summary, c) Performance results, d) User satisfaction results, e) Video highlights to support the proposed recommendations, and f) a presentation to the client. Groups will also develop a prototype to give to the client. I will provide you specific information about how to format the report.

3) Pilot Study (Graduate students only)

Identify a question of interest that relates to Web interface design and attempt to answer the question by running a mini-experiment. For example, you may be interested in determining if the placement of advertisements on a Web page effects user frustration. You could design 3 or 4 Web pages, varying the placement of the advertisements on each page. Present the pages to several users and ask them to rate their level of frustration, satisfaction, or like/dislike of the Web page.

This is not meant to be a rigorous research project. Its purpose is to expose you to methods for assessing interfaces and investigating usability issues.
For the project you will 1) prepare materials and conduct the mini-experiment, 2) analyze the data, and 3) write a three-five page report of the experiment. The report includes:

- Abstract or summary of the experiment.
- The question(s) to be answered.
- The methods you took to answer the question(s).
- What you found or the results of the experiment.
- The conclusions you can make as a result of the experiment.

4) **Final course project**

For the final course project you will a) create an interface design that addresses a real need for a group of users; 2) perform usability tests on the interface; and 3) refine the interface based on usability testing.

The project must be suitable for a task-centered design approach in which users interact with your application/Website with specific goals or tasks to accomplish. For instance, a Website that solely displays text and photographs with no interactions other than hyperlinks does not fit the project scope. The site needs to help users perform tasks (e.g., enter information, sort and display information or images based on user input, make purchases, etc.). However, please keep in mind that the goal of the project is to learn about designing and evaluating an interface. The process and the user interface are of paramount importance, not the underlying application. It is important for us talk about your project ideas and how we might accomplish them.

User interface design requires an exchange of ideas. Many methods to develop or improve/refine interfaces require more than one person. Early on I will discuss project ideas with you and provide feedback. As the semester progresses, your class members (and others) will provide you feedback about the design and usability of your interface.

**General requirements (I will provide more specific information about the project early in the semester):**
The problem that you address must be an interface issue. For instance, creating a website that replicates the well-known Google search interface (while quite interesting and worthy) would not be appropriate. If, on the other hand, you identify an interface issue with Google’s Search Engine Results Page (SERP) and propose a redesign of it, then that would be appropriate. Your project should identify a problem/need and your interface addresses that problem/need.

You must be able to find at least one person who is a “real” user of the interface. This person must agree to spend some time with you at the beginning of the project to teach you about the user audience and their tasks. This person must also be willing to spend time with you at the end of the semester for usability testing. In addition, you need a second person for usability testing. This person does not need to be a “real” user.

The project should be Web-based. You may create the interface in a development tool (e.g., Dreamweaver). I plan to use Dreamweaver for many of the examples we work on in class. If you have alternative interface ideas not for the Web, please discuss them with me. Most of the concepts discussed in class will relate to interface design for the Web.

You need to conduct two usability tests on your interface. One person should be from the intended user audience (a potential user of the interface). The second person may be one of your classmates. Each user needs to be available for about one hour to give you feedback about your project. Usability tests should be performed with the Morae software program (with video and audio recording) using a think-aloud protocol. You will ask users to perform four of the most common tasks presented by the interface. While performing the tasks, they should think-aloud. After all tasks are complete, users should provide an overall assessment of the interface. Each test should be approximately 45 minutes. I will provide you more information about usability testing.

Deliverables – the things you need turn in:

1. Interface Design Document (IDD): Need, audience, and task analyses; personas; usage scenarios; and flowcharts and project prototypes.
2. Working interface: Your interface will be a Website that helps users to accomplish specific tasks.
3. Usability report summary and presentation that includes (I will provide you guidelines for how the report should be formatted):

- A usability report summarizing results from two usability tests. The report needs to include video highlights from test sessions.
- Change list, a list of changes made to your interface as a result of testing.
- Self evaluation statement that describes how well the project met your goals and expectations and what you learned about the interface you created.
- A 10-15 minute presentation of your project and what you found during interface testing.
- A CD of video segments compiled from the usability tests.

Extra Credit Opportunities

During the semester, we will be conducting Web usability projects in the Human Factors Facility. For participating, student can earn extra credit points. In addition to gaining extra credit points, the projects afford you experience in interface testing. I will provide additional information as the semester progresses for those who may be interested.
JMA308/545 Reading Lists
All of the items below that do NOT have a Website listed can be found in Blackboard under Documents.

Design

- Design_1: 10 Principle of Effective web Design
  http://www.smashingmagazine.com/2008/01/31/10-principles-of-effective-web-design/
- Design_2: Initial Planning
  http://webstyleguide.com/wsg3/1-process/4-initial-planning.html
- Design_3: The Site Development Process
  http://webstyleguide.com/wsg3/1-process/7-development-process.html
- Design_4: Develop a Project Plan

Usability

- Usability_1: Brinck, et al. (Introduction)
- Usability_2: McCracken et al. (1)
- Usability_3: Norman, Lessons from DOET & The Psychopathology of everyday things
- Usability_4: Brinck, et al. (1)
- Usability_5: Analyze Current Site
  http://www.usability.gov/how-to-and-tools/methods/content-inventory.html
- Usability_6: Usability testing:
  www.usability.gov/how-to-and-tools/methods/planning-usability-testing.html
- Usability_7: Krug, Ch 09 - Usability testing on 10 cents a day
  http://sensible.com/Downloads/DMMTchapter09_for_personal_use_only.pdf
- Usability_8: Krug, Ch 10 - Usability testing: The movie
  http://sensible.com/downloads/DMMTchapter10_for_personal_use_only.pdf
- Usability_9: Krug, Ch 11 - On throwing the baby out with the dishes.”
- Usability_10: RITE+Krug: Combination of Usability Test Methods for Agile.
  http://www.upassoc.org/upa_publications/jus/2013may/mcginn1.html
- Usability_11: Digital Metrics.
- Usability_12: Digital Metrics.
  www.digitalgov.gov/2014/06/27/you-have-the-data-make-the-most-of-it/

User Centered Design

- UCD_1: Van Duyne et al. (1)
- UCD_2 & 3: Van Duyne et al. (4 & 5)
- UCD_4: Brinck, et al. (2)
- UCD_5: Ch. 2: Getting to Know Users and Their Tasks:
  http://hcibib.org/tcuid/chap-2.html
Information architecture

- IA_1: Nielsen, et al. (6)
- IA_2: Nav Schemes
- IA_3: Organization Schemes

User interface design

- UID_1: 12 Useful Techniques For Good User Interface Design
  http://www.smashingmagazine.com/2009/01/19/12-useful-techniques-for-good-user-interface-design-in-web-applications/
- UID_3: Theory Behind User Interface Design:
  http://www.developer.com/design/article.php/1545991
- UID_4: Principles of Interaction Design:
  http://www.asktog.com/basics/firstPrinciples.html

Additional Readings: Design Issues

- DI_1: Krug (2): http://www.sensible.com/chapter.html
- DI_2: F-Shaped Pattern - Reading Web Content:
  http://www.useit.com/alertbox/reading_pattern.html
- DI_3: First Impressions and Calls to Action: An Evaluation of Oprahstore.com
  http://www.surl.org/usabilitynews/121/oprah_store.asp
- DI_4: This Would Be Its Home Page: http://www.washingtonpost.com/wp-dyn/content/article/2006/05/31/AR2006053102190.html
- DI_5: Provide Access for People With Disabilities (Section 508)
  http://www.digitalgov.gov/2013/06/26/5-myths-about-social-media-accessibility-2/
- DI_6: Eye Movement Analysis of Text-Based Web Page Layouts:
- DI_7: Eye Movement Patterns on Single and Dual-Column Web Pages
- DI_8: The Effect of Website Typeface Appropriateness on the Perception of a Company's Ethos.
- DI_9: Exploring iPad Usage by Healthcare Professionals in a Pediatric Hospital.
- DI_10: iPad Usage Patterns On-the-Go and at Work.
  http://surl.org/ipad-usage-patterns-on-the-go-and-at-work/
- DI_11: Dive Into Accessibility http://diveintoaccessibility.info/