

Course No: ATEC 2384.502.13F Special Topics in Arts and Technology
Course Title: **Basic Design Principles and Practices**
Instructor: Jillian Round
Contact Options: jdr046000@utdallas.edu
Class Day & Time: Fall Semester 2013, Wednesdays 7:00-9:45 pm
August 26, 2013-December 19, 2013
Location: ATC 2.811

Office hours: I will meet for open discussion 30 minutes prior to class, and after class at our course location. My main source of communication is e-mail, and I will only converse through UT Dallas email.

Course Description

This class is an overview of design principles and practices common to most design professions, to give students a foundation understanding of design rules, laws, and guidelines that they can use throughout their education and career pursuits. Students will learn the language of design, how to think like a designer, how to judge between good and bad design execution, and where to go for additional resources of specialized design practice. Students will also learn networking practices that are beneficial for future professional tracks.

The course work will consist of:

- Weekly textbook reading assignments from – *Universal Principles of Design*, by Lidwell/Holden/Butler)
- Weekly lectures and class discussion
- Biweekly research paper identifying examples of design principles in practice
- Build a personal Design Reference ‘Morgue’ in area of interest
- A semester-long ‘Personal Career Networking’ project (see figure 1.0 below)

Course Requirements

- Attendance to all classes*
- All assignments need to be completed on time**
- Proper MLA writing and citation practices
- All students need to participate individually and as a contributing member of the class, especially in sharing discoveries with one another

Grading Procedure

Because this course’s emphasis will be on providing the student with an awareness and understanding of Design methods and practices, it is very important that students participate individually and collectively to insure that everyone has a successful learning experience. Therefore, students will be evaluated on attendance, participation in class, assignments, and the quality of work completed from week to week. Assignments will be discussed throughout the course, with specific requirements spelled out. See grading breakdowns at the end of this document.

Classroom Conduct

- Students are to focus their attention on the subjects at hand in the classroom, i.e., lectures, presentations, discussions, and set aside all other activities.
- All open communication (talking) should be relevant to the subject at hand and have value to the class as a whole.

- Competitiveness between students will be friendly and encouraging at all times.

Drop Procedures (see <http://utdallas.edu/student/registrar/calendar/>)

If you are unable to complete this course, you should withdraw from it. Withdrawing from a course is a formal procedure, with a specific published deadline, which you must initiate. The instructor cannot do it for you. You must do this through the Registrar's Office.

Course Schedule & Outline

Classes

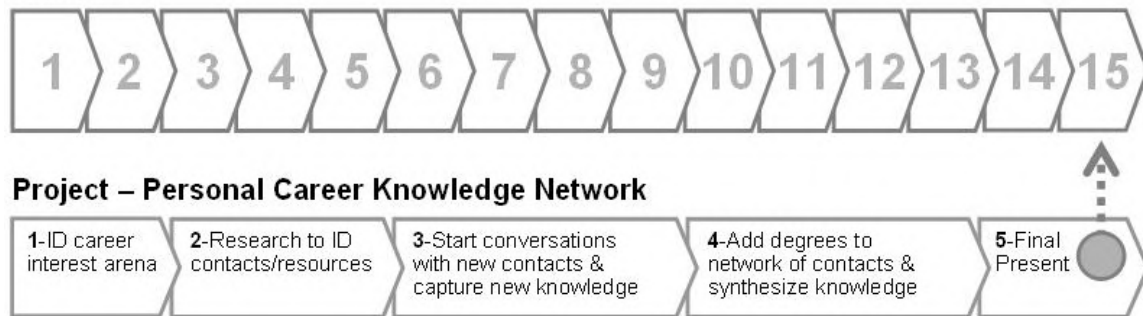


Figure 1.0

- 8/28 **Class 1** Introductions, syllabus, overview, goals, expectations, textbooks, supplies, etc.
- 9/4 **Class 2a** **Design Principles *Form Follows Function/ Less is More* Lecture**
 106. *Form Follows Function* – beauty is purity of function
 172. *Ockham's Razor* – choose simplest of functionally equivalent designs
 14. *80/20 Rule* – 80 percent of products use involves 20 percent of its features
 102. *Flexibility-Usability Tradeoff* – as flexibility increases, usability decreases
 224. *Signal-to-Noise Ratio* – choose design that has high signal to noise ratio
Project Assignment – Phase 1: Identify an ATEC professional goal or academic area of interest (by Class 9/11).
Paper Assignment #1: Research *Form Follows Function* and *Less is More* and find 1 example of 1 of the principles. You will then write a 2-3 page paper discussing your example and how it is appropriate for that principle. Include a visual example as well as a works cited page.
Turn in hard copy beginning of class 9/11
- 9/11 **Class 2b** **Census Day
 Paper Assignment 1 due and Project Progress Report Phase 1 due.
Project Progress Report: Share with class area of personal interest (Phase 1).
Project Assignment – Phase 2: Research & identify target contacts (will review progress 10/9).
- 9/18 **Class 3a** **Design Principles *Design Process* Lecture**
 78. *Development Cycle* – heuristic steps of discovery
 112. *Garbage-In-Garbage-Out* – quality output depends on quality info in

- 142. *Iteration* – repeated operations to reach desired result
- 150. *Life Cycle* – stages of product existence
- 194. *Prototyping* – simplified models to explore ideas
- 230. *Storytelling* – create imagery, emotions and understanding

9/25 Class 3b Design Principles *Aesthetic Bias* /part 1 Lecture

- 20. *Aesthetic-Usability Effect* – aesthetic design perceived to be easy to use
 - 32. *Attractiveness Bias* – why beautiful people excel
 - 34. *Baby-Face Bias* – attraction to all things cute
 - 184. *Picture Superiority Effect* – remember pictures better than words
 - 212. *Savanna Preference* – aboriginal preference for open spaces
- Paper Assignment #2: Research *Design Process* and *Aesthetic Bias* / part 1 and find 1 example for 1 of the principles. You will then write a 2-3 page paper discussing your example and how it is appropriate for that principle. Include a visual example as well as a works cited page.

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10/2 Class 4a Paper Assignment 2 Due

Design Principles *Aesthetic Bias* /part 2 Lecture

- 94. *Fibonacci Sequence* – sequence of numbers that are sum of two preceding
- 114. *Golden Ratio* – geometric theorem for balance in design
- 116. *Good Continuation* – Gestalt of perceived connectivity of elements
- 44. *Closure* – seeing groups of design elements as one large design element
- 58. *Constancy* – perception of constancy in spite of actual expression
- 144. *Law of Pragnanz* – tendency to interpret ambiguous info

10/9 Class 4b Design Principles *Dimensional Perception Preferences* Lecture

- 96. *Figure-Ground Relationship* – perceived objects in front of a field
- 176. *Orientation Sensitivity* – discrimination of directional elements
- 238. *Three-Dimensional Projection* – tendency to perceive world in 3-D
- 240. *Top-Down Lighting Bias* – tendency to understand source of lighting
- 250. *Visibility* – spatial cognitive understanding
- 260. *Wayfinding* – special information to enhance navigation

Paper Assignment #3: Research *Aesthetic Bias* / part 2 and *Dimensional Perception Preferences* find 1 example for 1 of the principles. You will then write a 2-3 page paper discussing your example and how it is appropriate for that principle. Include a visual example as well as a works cited page.

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10/16 Class 4c Paper Assignment 3 due and Project Progress Report Phase 2 due.

Project Progress Report: Show progress with network contacts (Phase 2).

Project Assignment – Phase 3: Start conversations with targeted contacts (will review progress 11/20).

10/23 Class 5a Design Principles *Aesthetic Toolbox* /part 1 Lecture

- 24. *Alignment* – design elements align along hidden lines
- 48. *Color* – symbolic meanings in color to manipulate and emphasize
- 126. *Highlighting* – bringing visual attention to design elements
- 132. *Iconic Representation* – icons improve recognition and recall
- 196. *Proximity* – info close together perceived to be related
- 226. *Similarity* – elements of similar nature seem related

10/30 Class 5b Design Principles *Aesthetic Toolbox* / part 2 Lecture

66. *Convergence* – synonym for stability in designed solutions

166. *Normal Distribution* – symmetrical data, bell-curve

160. *Modularity* – complex system divided into smaller compatible parts

208. *Rule of Thirds* – composition technique for balance

234. *Symmetry* – visual equivalence among elements

Paper Assignment #4: Research *Aesthetic Toolbox* / part 1 and 2 find 1 example for 1 of the principles. You will then write a 2-3 page paper discussing your example and how it is appropriate for that principle. Include a visual example as well as a works cited page.

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11/6 Class 6a Paper Assignment 4 due

Design Principles *Psychology and Aesthetics* Lecture

124. *Hierarchy of Needs* – stratification of aesthetic needs based on Maslow

158. *Mnemonic Device* – organize information to make it memorable

254. *von Restorff Effect* – well placed discontinuity to engage memory

108. *Framing* – manipulating how information is presented

174. *Operant Conditioning* – perceptual modification via range of stimuli

236. *Threat Detection* – natural abhorrence to negative imagery

11/13 Class 6b Design Principles *Human Factors* Lecture

22. *Affordance* – physical design telegraphs use and function

80. *Entry Point* – obvious point of entry into a design i.e., front door

84. *Expectation Effect* – leading the audience to an expected result

152. *Mapping* – cognitive understanding to initiate actions

154. *Mental Models* – cognitive understanding based on experience

156. *Mimicry* – transferring understood properties to new things

170. *Performance Load* – greater the effort, greater chance of failure

180. *Performance vs. Preference* – optimum gives way to preference

188. *Progressive Disclosure* – sequentially disclosed information

198. *Readability* – quick understandability

220. *Serial Position Effects* – info at ends more memorable than middle

Paper Assignment #5: Research *Psychology and Aesthetics and Human Factors* find 1 example for 1 of the principles. You will then write a 2-3 page paper discussing your example and how it is appropriate for that principle. Include a visual example as well as a works cited page.

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11/20 Class 6c Paper Assignment 5 due and Project Progress Report Phase 3 due.

Project Progress Report: Progress with network conversations (Phase 3).

Project Assignment – Phase 4/ 5: Extend network conversations beyond first line of contacts and increase the depth of your active network. Phase 5: Prepare slide presentation of your Personal Career Knowledge Networking activities and outcomes (will review requirements) **All due for Final Exam 12/18.**

Fall Break Mon. November 25th- Saturday November 30th

12/4 Class 7a Design Principles *Information Architecture* Lecture

40. *Chunking* – clustering information & elements to make memorable

100. *Five Hat Racks* – ways to organize information
 118. *Gutenberg Diagram* – general pattern of eyes reading information
 122. *Hierarchy* – complex information organized and structured visually
 146. *Layering* – organize info into related groups
 148. *Legibility* – visual clarity, contrast, spacing etc.
 54. *Confirmation* – designed barriers to take next steps
 60. *Constraint* – designed limitations to guide user
 64. *Control* – put user in the drivers seat according to expertise
 92. *Feedback Loop* – information return to modify future behavior
 98. *Fitts' Law* – time to move target is size and distance
 120. *Hick's Law* – time increases as alternatives increases
Paper Assignment #6: Research Information Architecture and find 1 example of 1 of the principles. You will then write a 2-3 page paper discussing your example and how it is appropriate for that principle. Include a visual example as well as a works cited page.

Turn in hard copy beginning of class 12/11

12/11 **Class 7b** Paper 6 Due/ Class Discussion and Final Expectations

12/18 **Class 7c** **Final:** Phase 4/5 due / Look at Morgues

Grading Scale

A	91-100	Excellent
B	81-90	Above Average
C	71-80	Averages
D	61-70	Poor
F	00-60	Failing

Grading Weights

20 Points	Attendance/ Class Participation
30 Points	6 Writing Assignments
20 Points	Build a Ref Morgue/ Journal
30 Points	Final Assignment & Report/Presentation

Misc. Notes

*Attendance & Tardy Policy – Attendance is mandatory. Lack of attendance will affect your grade because absences will not only leave holes in understanding of the lesson content but also degrade the benefit to other students in regard to discussions and work sessions. **It is your responsibility to contact the professor if you miss roll after class. Coming to class late or leaving early will also be counted as absences without prior approval from the instructor.**

****All Project assignments are to be done in Microsoft's PowerPoint application, either the PC or Mac versions.** Free downloads of substitute versions will not be accepted and therefore will be counted as incomplete. The university bookstore has a student version of the entire Microsoft Office suite for a very affordable price. **I will not take late work!!!!**

*****All written assignments must reflect MLA collegiate standards. You will cite sources, and use proper grammar and editing for your papers. I will count off if your name, heading, and structure are incorrect.**

Course Content and Schedule – Unforeseen interruptions are possible, due to weather, sickness, etc. which may cause there to be a need to adjust both the content and the schedule of the lesson-plan outlined above. However, every effort will be made to reconcile and compensate for any changes made as we go along.