May 2025 - Tech Fleet Brain Psychology and UI Design Masterclass Syllabus

5 week class

Overview

There are many ways to test user experiences and learn from users besides interviews. UX Research follows the Scientific Method to create assumptions and test them with experiments. Prototype testing is a great way to uncover user behavior but can be tricky to get right. Researchers must ensure they're building objective tests; building subjective tests can lead to poor results and poor UX.

This masterclass teaches students how to run objective experiments for prototype testing. In the class you will learn all aspects of experiment-building. Learn about prototype tests and measuring results. You'll practice with real test plans based on a real research subject.

Audiences

1. UX researchers and UX designers who want to learn how to create well-crafted experiments for UX.
2. People in adjacent fields (like product ownership or product management) who want to experience the process of making well-crafted research experiments as a user experience practitioner.

Learning Outcomes

1. Apply principles of Brain Psychology to user interface designs.
2. Apply Gestalt Principles of Perception to user interface designs.
3. Understand the functions in the brain that affect how humans interpret the world.

4. Understand how cognitive processes and cognitive load affect how humans will interact with user experiences.
5. Understand the principles of UX based on brain functions and cognitive processes.
6. Understand how to measure intuitiveness or self-evidence in user interfaces through qualitative and quantitative research methods.

Instructor

The class will be hosted by Morgan Denner, founder and executive director of Tech Fleet. Morgan transitioned into UX from IT and sales. He studied UX at the University of Baltimore. In the industry, Morgan takes on UX research, UX design, and product management work. He's spent the past 10 years helping teams run and scale user-centered research and design efforts through Agile UX methods.

Cost

This masterclass costs $50.00 USD per student. Pay before class starts through the registration link below and after payment receipt, you will receive an email about being added to the class Discord channels.

Signup

Lock in your seat and register for the course here:
https://form.fillout.com/t/rVk51iz5m7us

Format

The class will be held live from Google Meet. There will be lecture time and time for the class to work on examples of research test plans together based on weekly topics. See the schedule below for details.

Required Reading

Chapters from these books are going to be assigned weekly for class.

Krug, S. (2017). *Don't make me think! A common sense approach to web usability*. New Riders.

Weinschenk, S. M. (2020). *100 things every designer needs to know about people*. Pearson Education.

Tools Used for the Class

1. **Communication** - We're using Discord for announcements and chats. We'll use Google Meet for class sessions.
2. **Resources** - There will be class resources available to students from EdApp and on Figjam.
3. **UX Method Cards -** IDEO has created UX method flashcards that show 50 UX research methods, and we're going to refer to them in class. Find them [here](#).
4. **Homework** - Use whatever text document you'd like, or Notion, or Figma, to document your homework.

Curriculum Details

1. **Week 1: Brain Psychology and UI Design 101**
   a. Introduction to the class: [Once Upon a Time in the Brain](#)
2. **Week 2: Designing for Low-Level Cognitive Processes**
   a. Applying Psychology in UX Work
      i. Heuristics and UX Principles

      ii.   Interface Design

      iii.   Interaction Design

      iv.   Information Architecture

      v.   Evaluative and Exploratory Research

b. Basics of Low-Level Cognitive Processes

      i.   Sensation

      ii.   Perception

      iii.   Attention

      iv.   Working memory

      v.   Short-term memory

      vi.   Long-term memory

c. Basics of High-Level Cognitive Processes

      i.   Problem-solving

      ii.   Critical thinking

      iii.   Planning

      iv.   Recognition and Recall

      v.   Information Processing

      vi.   Deciding

d. Accessibility and Brain Functions

      i.   Accessibility as it relates to brain functions

          1. Motor function-based accessibility

          2. Sensation-based accessibility

          3. Perception-based accessibility

          4. Cognitive-based accessibility

      ii.   "Universal Design"

e. Cognitive Load in the Brain

      i.   Basics

      ii.   Measuring cognitive load through UX research methods

f. Designing for Low-Level Cognitive Functions

      i.   Designing for Perception

      ii.   Designing for Attention

      iii.   Designing for Memory

3. **Week 3: Designing for High-level Cognitive Processes**

a. Designing for Wayfinding

b. Designing for Affordances and Signifiers

    c. Designing for Common Mental Models
4. **Week 4: Designing with Gestalt Principles of Perception**
    a. Basics of the Principles of Gestalt Psychology
    b. Applying Gestalt Principles to User Interfaces
        i. Proximity
        ii. Continuity
        iii. Similarity
        iv. Closure
        v. Emergence
        vi. Common Region
5. **Week 5: User Experience Research Related to Cognitive Load and Cognitive Processes**
    a. Research to understand users' mental models
    b. The "5 Second Test"
    c. Eye-Tracking
    d. Usability Task Analysis
    e. The Think-Aloud Protocol
    f. SUS, NASA-TLX, and other subjective self-reporting

Schedule

This class will have lectures and open working sessions to work on project-based work with the professor.

1. **Week 1**
    a. Lecture - Tuesday May 7 @ 7a PST / 10a EDT / 2p UTC
    b. REPEAT Lecture - Tuesday May 7 @ 2p PST / 5p EDT / 9p UTC
    c. Working Session - Wednesday May 8 @ 7a PST / 10a EDT / 2p UTC
    d. REPEAT Working Session - Wednesday May 8 @ 3p PST / 6p EDT / 10p UTC
2. **Week 2**
    a. Lecture - Tuesday May 14 @ 7a PST / 10a EDT / 2p UTC

    b. REPEAT Lecture - Tuesday May 14 @ 2p PST / 5p EDT / 9p UTC

    c. Working Session - Wednesday May 15 @ 7a PST / 10a EDT / 2p UTC

    d. REPEAT Working Session - Wednesday May 15 @ 3p PST / 6p EDT / 10p UTC

3. **Week 3**

    a. Lecture - Tuesday May 21 @ 7a PST / 10a EDT / 2p UTC

    b. REPEAT Lecture - Tuesday May 21 @ 2p PST / 5p EDT / 9p UTC

    c. Working Session - Wednesday May 22 @ 7a PST / 10a EDT / 2p UTC

    d. REPEAT Working Session - Wednesday May 22 @ 3p PST / 6p EDT / 10p UTC

4. **Week 4**

    a. Lecture - Tuesday May 28 @ 7a PST / 10a EDT / 2p UTC

    b. REPEAT Lecture - Tuesday May 28 @ 2p PST / 5p EDT / 9p UTC

    c. Working Session - Wednesday May 29 @ 7a PST / 10a EDT / 2p UTC

    d. REPEAT Working Session - Wednesday May 29 @ 3p PST / 6p EDT / 10p UTC

5. **Week 5**

    a. Lecture - Tuesday June 4 @ 7a PST / 10a EDT / 2p UTC

    b. REPEAT Lecture - Tuesday June 4 @ 2p PST / 5p EDT / 9p UTC

    c. Working Session - Wednesday June 5 @ 7a PST / 10a EDT / 2p UTC

    d. REPEAT Working Session - Wednesday June 5 @ 3p PST / 6p EDT / 10p UTC

Weekly Work Assignments

Date	Topic	References	Reading	Homework
Week 1: Jan 6 - 11	Brain Functions and Cognitive Processes	https://trainingpreview.edapp.com/p/l30RuKv2NW0dmSacgxGSmbXD	Don't Make Me Think ch. 1 100 Things - "How People Read" and "How People Think"	
Week 2: Jan 13 - 18	Designing for Low Level Cognitive Processes	https://trainingpreview.edapp.com/p/4hPHv7n29zWMHFQktR5jyo0K	Don't Make Me Think ch. 2 100 Things - "How People Focus Their Attention"	
Week 3: Jan 20 - 25	Designing for High Level Cognitive Processes	https://trainingpreview.edapp.com/p/VzVOPcFMevd9Oi52FgeBVnRj	Don't Make Me Think ch. 3 100 Things - "How People Decide" and "People Make Mistakes"	Homework 1 due Homework 2 Assigned
Week 4: Jan 27 - 31	Designing with Gestalt	https://trainingpreview.e ngpreview.e	Don't Make Me Think ch.	

| | Principles of Perception | dapp.com/p/TGOoqxWqQWDiM02s4wLqljgx | 4

100 Things - "How People See" | |
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| **Week 5: Feb 3 - 7** | UX Research Related to Cognitive Load and Cognitive Processes | https://trainingpreview.edapp.com/p/DjhrzeBS4CAhbtrMHOvaPMcj | Don't Make Me Think ch. 5

100 Things - "What Motivates People" | Homework 2 due Feb 17, 2025 |

Homework

There will be homework assigned to the class based on topics covered. Students must submit the homework in order to receive a certificate of completion for the class.

1. Homework 1 - Brain Psychology and UX Audit
   https://docs.google.com/document/d/19jmbbh_LpKkzCOawUvYzaCifuJLjD9knlwqqI_eWCsM/edit?usp=sharing
2. Homework 2 - Brain Psychology and UX Project
   https://docs.google.com/document/d/1eGehkrJp239VkeyGqrw-8njcE-TZCYYKd_303zLmVdw/edit?usp=sharing