American Public University System

American Military University | American Public University

CSCI315 16

Course Summary

Course : CSCI315 **Title :** User Interface and Experience Design
Length of Course : 16 **Faculty :**
Prerequisites : CSCI345 **Credit Hours :** 3

Description

Course Description:

Learn the fundamentals of human-computer interaction and user experience design by applying design thinking methods and acquiring the skills necessary to create interactive systems for a variety of audiences and purposes. During this course, students will learn about various types of prototyping methods, as well as how cognition and perception play an important role in affecting the experience of interaction design. (Prerequisite: CSCI345).

Course Scope:

The scope of this course is to understand the fundamentals of human-computer interaction, the role of User Interface (UI) in human-computer interaction, and key factors that influence user satisfaction for better user experience design (UX). Get familiar with the Design Thinking process and the methods. Understand the importance of the intended audience and user segments and their cognition and perception in user interface and user experience design. Furthermore, the course focuses on Information Architecture and Responsive Design in User Experience, Importance of Accessibility, and Ethical Design in UI.

Objectives

CO-1: Describe the fundamentals of User Interfaces (UI) and User Experience (UX).
CO-2: Explain the elements and process of Design Thinking.
CO-3: Create a User Interface using development methods and tools.
CO-4: Analyze advanced UI and UX topics.

Outline

Week 1: Week 1: Fundamentals of Human-Computer Interaction

Learning Outcomes

CO-1: Describe the fundamentals of User Interfaces (UI) and User Experience (UX).
LO-1.1: Describe the fundamentals of human-computer interaction.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 1 - Don't Make Me Think!

Assignments

Welcome Discussion

Week 1 Discussion

Week 2: User Interface (UI)

Learning Outcomes

CO-1: Describe the fundamentals of User Interfaces (UI) and User Experience (UX).
LO-1.2: Discuss the Role of User Interface (UI) in human-computer interaction.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 2 - How We Really Use the Web

Assignments

Week 2 Discussion

Week 3: User Experience (UX) Design

Learning Outcomes

CO-1: Describe the fundamentals of User Interfaces (UI) and User Experience (UX).
LO-1.3: Describe the key factors that influence user satisfaction for better user experience design (UX).

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 3 - Billboard Design 101

Assignments

Week 3 Discussion

Week 3 Assignment: Propose Improvement for a UI

Week 4: Design Thinking Methods

Learning Outcomes

CO-2: Explain the elements and process of Design Thinking.
LO-2.1: Outline the Design Thinking process and the methods of design thinking.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 4 - Animal, Vegetable, or Mineral?

Assignments

Week 4 Discussion

Week 5: Understanding Audiences and Purposes

Learning Outcomes

CO-2: Explain the elements and process of Design Thinking.
LO-2.2: Describe the importance of the intended audience and user segments.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 5 - Omit Needless Words

Assignments

Week 5 Discussion

Week 6: Role of Cognition and Perception

Learning Outcomes

CO-2: Explain the elements and process of Design Thinking.
LO-2.3: Explain the role of cognition and perception in User interface and User experience design.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 6 - Street Signs and Breadcrumbs

Assignments

Week 6 Discussion

Week 7: Skills Necessary to Create Interactive Systems

Learning Outcomes

CO-3: Create a User Interface using development methods and tools.
LO-3.1: Explain the system or application development lifecycle and the skills necessary to develop the application.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 7 - The First Step in Recovery is Admitting that the Home Page is Beyond Your Control

Assignments

Week 7 Discussion

Week 8: Various Types of Prototyping Methods and Tools

Learning Outcomes

CO-3: Create a User Interface using development methods and tools.

LO-3.2: Create a UI prototype.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 8 - The Farmer and the Cowman Should be Friends

Assignments

Week 8 Discussion

Week 8 Assignment: Prototype a User Interface

Week 9: Information Architecture

Learning Outcomes

CO-3: Create a User Interface using development methods and tools.
LO-3.3: Relate the role of Information Architecture in User Interface (UI) and User Experience design (UX).

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 9 - Usability Testing on 10 Cents a Day

Assignments

Week 9 Discussion

Week 10: Responsive Design

Learning Outcomes

CO-3: Create a User Interface using development methods and tools.
LO-3.4: Relate the role of Responsive Design in User Experience.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 10 - Usability as a Common Courtesy

Assignments

Week 10 Discussion

Week 11: Impact of Bootstrap in Responsive UI

Learning Outcomes

CO-3: Create a User Interface using development methods and tools.
LO-3.5: Utilize a front-end toolkit to build fast and responsive layouts for applications or sites.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 11 - Accessibility, Cascading Style Sheets, and You

Assignments

Week 11 Discussion

Additional Readings

Bootstrap examples:
https://getbootstrap.com/docs/5.3/examples

Bootstrap documentation:
https://getbootstrap.com/docs/5.3/getting-started/introduction

Week 12: Interface with Data Visualization

Learning Outcomes

CO-4: Analyze advanced UI and UX topics.
LO-4.1: Relate User Interface and User Experience design to data visualization components.

Required Readings

Don't Make Me Think!: A Common Sense Approach to Web Usability
Ch 12 - Help! My Boss Wants Me To

Assignments

Week 12 Discussion

Week 12 Assignment: Create a Practice UI

Week 13: Machine Learning in User Interface Design

Learning Outcomes

CO-4: Analyze advanced UI and UX topics.
LO-4.2: Explain the impact of Machine Learning and Artificial Intelligence (AI) in UI design.

Required Readings

Information Architecture for the World Wide Web
I. Introducing Information Architecture

Assignments

Week 13 Discussion

Additional Readings

What is machine learning?
https://www.ibm.com/topics/machine-learning

What Is AI? Learn About Artificial Intelligence
https://www.oracle.com/artificial-intelligence/what-is-ai/

Week 14: Voice User Interfaces (VUI), Augmented Reality (AR), and Virtual Reality (VR)

Learning Outcomes

CO-4: Analyze advanced UI and UX topics.

LO-4.3: Describe how principles of UI of relate to Voice User Interfaces (VUI), Augmented Reality (AR), and Virtual Reality (VR).

Required Readings

Information Architecture for the World Wide Web
II. Basic Principles Of Information Architecture

Assignments

Week 14 Discussion

Additional Readings

Everything You Want To Know About Creating Voice User Interfaces
https://www.smashingmagazine.com/2022/02/voice-user-interfaces-guide/

What is augmented reality or AR?
https://dynamics.microsoft.com/en-us/mixed-reality/guides/what-is-augmented-reality-ar/

Google AR & VR
https://arvr.google.com/

Week 15: Accessibility and Ethical Design

Learning Outcomes

CO-2: Explain the elements and process of Design Thinking.
LO-2.4: Discuss the Importance of Accessibility and Ethical Design in UI.

Required Readings

Information Architecture for the World Wide Web
III. Process And Methodology

Assignments

Week 15 Discussion

Week 15 Assignment: Create a User Interface

Additional Readings

Accessibility - W3C

https://www.w3.org/standards/webdesign/accessibility

Accessibility Basics | Usability.gov

https://www.usability.gov/what-and-why/accessibility.html

Deceptive Design

https://www.deceptive.design/

Supercharge Design: What is Dark UX?

https://supercharge.design/blog/dark-ux-what-are-dark-ux-patterns

Week 16: Minimalism and Simplicity in UI and UX Design

Learning Outcomes

CO-2: Explain the elements and process of Design Thinking.
LO-2.5: Analyze the challenges of minimal and simple UI and UX design.

Required Readings

Information Architecture for the World Wide Web
IV. Information Architecture In Practice

Assignments

Week 16 Discussion

Evaluation

Grading:

Name	Grade %
Discussions	60.00%
Welcome Discussion	3.53%
W1: Human-Computer Interaction	3.53%
W2: User Interface (UI)	3.53%
W3: User Experience (UX) Design	3.53%
W4: Design Thinking Methods	3.53%
W5: Understanding Audiences and Purposes	3.53%
W6: Role of Cognition and Perception	3.53%
W7: Skills Necessary to Create Interactive Systems	3.53%
W8: Prototyping Methods and Tools	3.53%
W9: Information Architecture	3.53%
W10: Responsive Design	3.53%
W11: Impact of Bootstrap in Responsive UI	3.53%
W12: Interface with Data Visualization	3.53%
W13: Machine Learning in User Interface Design	3.53%
W14: Voice User Interfaces (VUI) Augmented Reality (AR) and Virtual Reality	3.53%
W15: Accessibility and Ethical Design	3.53%
W16: Retrospective on UI and UX Design	3.53%
Assignments	40.00%
Week 3 Assignment: Propose Improvement for a UI	10.00%
Week 8 Assignment: Prototype a User Interface	10.00%
Week 12 Assignment: Create a Practice UI	10.00%
Week 15 Assignment: Create a User Interface	10.00%

Materials

Krug, S. (2006). Don't make me think!: A common sense approach to Web usability (2nd ed.). Berkeley, CA: New Riders Pub.

Morville, P., & Rosenfeld, L. (2006). Information architecture for the world wide web : Designing large-scale web sites. O'Reilly Media.

Course Guidelines

Course Guidance
This course requires a time management plan and the self-discipline to follow it. You are responsible for managing your time, completing assignments on time, completing the readings, and making inquiries as needed to complete the course effectively. This requires dedication and diligence on the part of each student.

Program & Policy
Students are expected to submit classroom assignments by the posted due date and to complete the course according to the published class schedule. The due date for each assignment is listed under each assessment. As adults, students, and working professionals, you must manage competing demands on your time. We all know that "life happens" but it is important to adhere as closely to the deadlines in the class as possible. Should you need additional time to complete an assignment, please contact your instructor before the due date to discuss the situation and determine an acceptable resolution.

Communications

Student Communication

To reach the instructor, please communicate through the MyClassroom email function accessible from the Classlist of the Course Tools menu, where the instructor and students email addresses are listed, or via the Office 365 tool on the Course homepage.

- In emails to instructors, it's important to note the specific course in which you are enrolled. The name of the course is at the top center of all pages.
- Students and instructors communicate in Discussion posts and other learning activities.
- All interactions should follow APUS guidelines, as noted in the Student Handbook, and maintain a professional, courteous tone.
- Students should review writing for spelling and grammar.
- Tips on Using the Office 365 Email Tool

Instructor Communication

The instructor will post announcements on communications preferences involving email and Instant Messaging and any changes in the class schedule or activities.

- Instructors will periodically post information on the expectations of students and will provide feedback on assignments, Discussion posts, quizzes, and exams.
- Instructors will generally acknowledge student communications within 24 hours and respond within 48

hours, except in unusual circumstances (e.g., illness).

- The APUS standard for grading of all assessments (assignments, Discussions, quizzes, exams) is five days or fewer from the due date.
- Final course grades are submitted by faculty no later than seven days after the end date of the course or the end of the extension period.

University Policies

Consult the Student Handbook for processes and policies at APUS. Notable policies:

- Drop/Withdrawal Policy
- Extension Requests
- Academic Probation
- Appeals
- Academic Dishonesty / Plagiarism
- Disability Accommodations
- Student Deadlines
- Video Conference Policy

Mission

The mission of American Public University System is to provide high quality higher education with emphasis on educating the nation's military and public service communities by offering respected, relevant, accessible, affordable, and student-focused online programs that prepare students for service and leadership in a diverse, global society.

Minimum Technology Requirements

- Please consult the catalog for the minimum hardware and software required for undergraduate and graduate courses.
- Although students are encouraged to use the Pulse mobile app with any course, please note that not all course work can be completed via a mobile device.

Disclaimers

- Please note that course content – and, thus, the syllabus – may change between when a student registers for a course and when the course starts.
- Course content may vary from the syllabus' schedule to meet the needs of a particular group.