
DES 421 Professional Practice II

Mobile App Design

Daria Tsoupikova



1.00 pm

Research Partner Presentation / Q & A

Dr. Hedda Sander

Dept. Supply Engineering, Inst. for Bio- and Environmental Technology
Professor, Ostfalia University, Germany

2 pm

Introduction – class goals and overview – syllabus and schedule
Course mechanics, website and logistics

3.30 pm

Discussion and Team work

4.00 pm

HMTML Introduction

Location

Mondays

1-6.40pm

2068 Continuum

Electronic Visualization Laboratory (EVL)

Engineering Research Facility (EFR)

842 W Taylor St

Chicago IL 60607



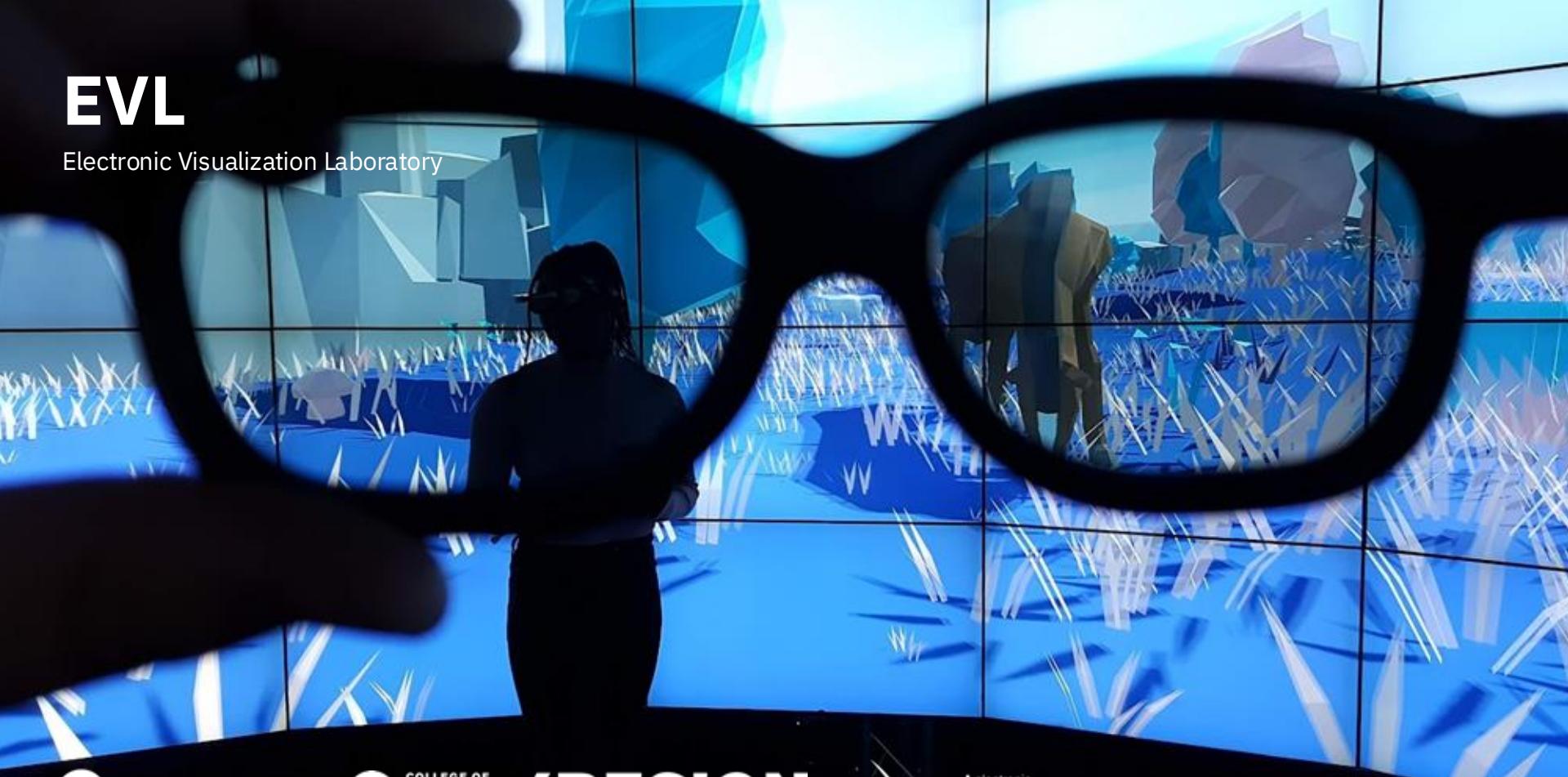
introduction to mobile application development with a strong emphasis on native iOS development and an expanded view of how mobile, web, and immersive technologies intersect in contemporary design practice.

Designed for students with no prior programming experience, the course introduces foundational concepts in coding, software development, and user-centered design. Students begin by learning the fundamentals of native iOS app development using Xcode and the Swift programming language, building simple interactive applications and progressing toward more advanced user interface and interaction techniques.

Core topics include responsive UI design, client-side functionality, testing, and best practices in mobile app development.

EVL

Electronic Visualization Laboratory



/DESIGN





UIC ENGINEERING
Computer Science



COLLEGE OF
ARCHITECTURE
DESIGN
AND THE ARTS

/DESIGN

dev|
electronic
visualization
laboratory

Electronic Visualization Laboratory (EVL) 1973-2026+

50+ years of Design/Art/Science collaboration at UIC

EVL specializes in **collaborative visualization**, virtual reality, visual data science, and advanced computing and networking infrastructure. The distributed computing/visualization, the advancement of tools, software and techniques for collaboration over high-speed, experimental networks, the design of tools and techniques for real-time and interactive visualizations are some of the many areas of expertise offered by the EVL.

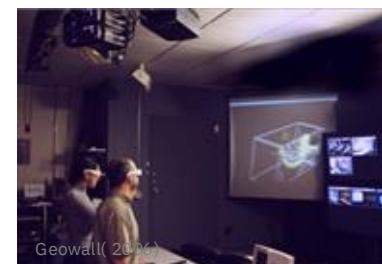
Some of EVL's most notable projects are the **Sayre Glove** (1976), **Star Wars Animation** (1976), **CAVE** (1992), **CAVE2** (2012), **COMPaaS** (2018), **SAGE3** (2020).



PARIS (1998)



Varrier (2003)



Geowall (2006)



CAVE (1992)



SAGE3

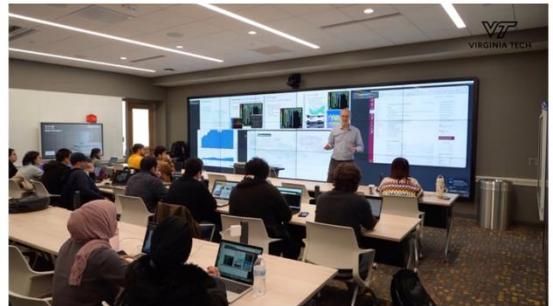
An open-source platform designed to help individuals and teams collaborate effectively—with each other and with AI—to accelerate the process of understanding, problem-solving, and discovery.

It empowers **everyday citizens** to become **smarter and more innovative** by making complex information more accessible and actionable.



[ABOUT](#) [TEAM](#) [NEWS](#) [DOWNLOAD](#) [SUPPORT](#) [PUBLICATIONS](#)

[VIDEOS](#)



[WHY SAGE3?](#)

[DOWNLOAD](#)

[QUICK START GUIDE](#)

SAGE3 is funded by the following National Science Foundation awards: [2004014](#) | [2003800](#) | [2003387](#)



Problem Orientation

Work in teams

communication
project management
regular meetings
reports
roles and tasks
progress documentation

Work with a client

research
stakeholder interviews
conduct market and user research
UX and UI research
User studies

DES 420

App Design:

user interface
interactivity
mobility
user experience (UX)
mobile media technologies

Design Process:

storyboard design
client presentations
iterative design
incorporating client feedback
low & high fidelity prototypes

DES 421

Development

Mobile Interface Development
Website development
Exhibition Design

Current practice:

development technologies
tools
frameworks
programming languages

Production process:

programming
scripting
debugging
uploading on the Cloud
collaborating with your team

Objectives

1. Introduction to development of the mobile app modules (Xcode)
2. Introduction to website development (HTML, CSS, Dreamweaver, Figma)
3. Exhibition XR prototyping and Design (WOW Center) (Unity, C#, Maya)
3. Work collaboratively in interdisciplinary teams.
4. Build functional prototypes and interactive simulations for mobile, web and exhibition platforms.



Working collaboratively — show early, share often, get feedback. YES, even “ugly” sketches!

Hardware/Software

Mac OS 2020+
No windows!

SAGE3

Central Recourse

Course website (schedule, links, assignments)
<http://www.evl.uic.edu/mad/421/>

Figma Dreamweaver

-Zoom link - for research Partners

-email – course communication, announcements

-Blackboard (“Bb”) (grades, quizzes, tests)

-Box DES 420 Monday (the same folder)

-Google Box/Docs (editable documents) for your team projects, discussions and collaboration with clients

Xcode (IB+Swift) Swift



Electronic Communication

All course communication – Email;

If it's a grade or quiz it's on Blackboard;

if it's any material, link, assignment, or schedule it's on the class website;

if it's a file upload/download, video, assignment submission folder or class flies it's on Box.

Web Development

HTML & CSS: Design and Build Web Sites

Book by Jon Duckett

highly visual and beginner-friendly book that teaches web design fundamentals using a unique, accessible style with full-color graphics and photography.



Mobile App Development

iOS Programming. The Big Nerd Ranch Guide by Christian Keur, Aaron Hillegass, 7th edition

Beginning Xcode by Matthew Knott Daniel Bramhall

Mobile Usability by Jakob Nielsen and Raluca Budiu, New Riders

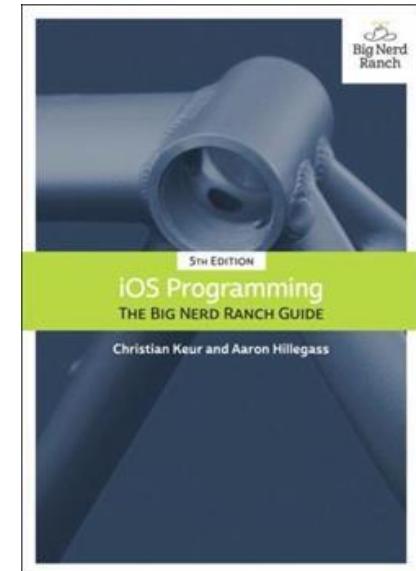
The Elements of User Experience: User-Centered Design for the Web
by Jesse James Garrett

A Project Guide to UX Design: For user experience designers in the field
or in the making by Russ Unger and Carolyn Chandler

Learn Xcode Tools for Mac OS X and iPhone Development by Ian Piper

Typography by Emil Ruder, Arthur Niggli/Teufen

The Elements of Typographic Style by Robert Bringhurst, Hartley & Marks Publishers



Collaboration Software

Xcode project Collaborative

Box Team Folder

Box/ Google Docs –Team Meetings and Tasks document

Evaluation

Collaboration/participation(20%)

contribution to team project
collaboration
peer evaluation

Team Project (50%)

AIM app development
Website development
Exhibition Design
Exhibition XR prototype design
Midterm Presentation
Final Presentation

Assignments, quizzes (30%)

Quizzes
Individual assignments

Evaluation

14 classes = 9 work sessions

Attendance is mandatory
>2 absences – final grade reduction

late submissions will be penalized
by 15% grade reduction for the first day
10% for each day afterwards

Hardware failure is not an acceptable excuse for late assignment.

You should always make a backup of your files.

Evaluation

Be prepared for a lot of hard work

Self – studies outside of the class

Research/design/code

Class time is limited

In-depth course to prepare your graduation portfolio

Engaging Community and Citizen Scientists

The Mobile Web Design and Development course provides a solid foundation in mobile design and development, with a strong focus on user-centered experience (UX) and client-driven research.

This year, instead of developing a full standalone app, students will work with our professional research partner to design and develop an AI module for an existing mobile application.



Top Down approach

Website
AI module
Exhibition

Development

AI module (AIM) for Mobile app development (Xcode/ Swift)

Website for community (HTML/CSS/Dreamweaver)

Exhibition – XR prototype and identity design (Unity/C#/3D modeling / Adobe CS)

WOW Community Exhibition

AI module (AIM) for Mobile app development

Website addressing community outreach (mobile compatible)

Posters (print and digital) visually engaging /clear calls to action

Videos short series community project outreach / instructional videos

Posters

Brochures

Infographics

Exhibition – XR prototype and identity design

Workshop Materials

Kids Corner - Games/ board games/ group work/ game cards/brochures/puzzles

Badges & Stickers

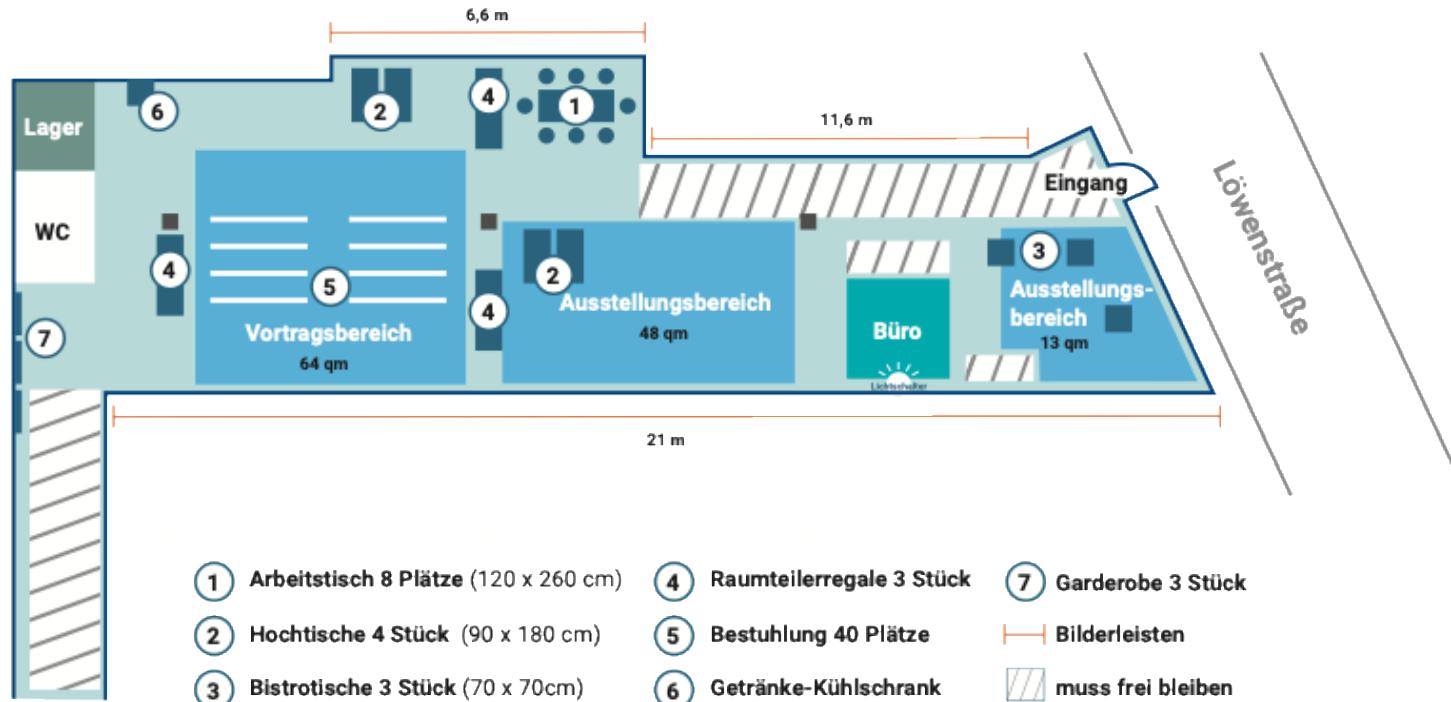
Event Materials (banners, t-shirts, name tags, mugs, and signage)

Social Media

Sign up form/Email

Raumplan Wissensort Wolfenbüttel

Gesamtfläche 300 qm



WOW Wissensort Wolfenbüttel / WOW Community Exhibition Center in Germany

Creating an interactive and engaging experience
for citizen scientists as part of the WOW Community Exhibition Center Germany.

Support community outreach and public engagement
around local water preservation efforts.
posters, brochures, project videos, a website, and workshop content
—designed to educate and motivate citizens, families, and communities
to become active participants in local water conservation as citizen scientists.





German Poster Sizes

Size	mm	cm	inches
A0	841 x 1189 mm	84.1 x 118.9 cm	33.1 x 46.8 inches
A1	594 x 841 mm	59.4 x 84.1 cm	23.4 x 33.1 inches
A2	420 x 594 mm	42 x 59.4 cm	16.5 x 23.4 inches
A3	297 x 420 mm	29.7 x 42 cm	11.7 x 16.5 inches
A4	210 x 297 mm	21 x 29.7 cm	8.3 x 11.7 inches
A5	148.5 x 210 mm	14.85 x 210cm	5.8 x 8.3 inches
A6	105 x 148.5 mm	10.5 x 14.85 cm	4.1 x 5.8 inches
A7	74 x 105 mm	7.4 x 10.5 cm	2.9 x 4.1 inches
A8	52 x 74 mm	5.2 x 7.4 cm	2.0 x 2.9 inches
A9	37 x 52 mm	3.7 x 5.2 cm	1.5 x 2.0 inches
A10	26 x 37 mm	2.6 x 3.7 cm	1.0 x 1.5 inches

Schedule

Spring Professional Practice II	www.evl.uic.edu/mad421/ Office Hours: By Appointment	Meetings: Mondays 100-6:40pm	Daria Tsoupikova tsoupi@uic.edu
Week	Date		Assignments
1	12 January Course Intro & Logistics / AI /HTML/CSS Intro		AI Website and AIM Revs
2	19 MLK Day Holiday		AI -2 HTML/CSS
3	26 Website Development		A2 Homepage
4	2 February Website Development II		A3 Homepage Final
5	9 AI presentation / Xcode Introduction		A4 Xcode AIM
6	16 Mobile App Design with Xcode		A5 Selected screens
7	23 Mobile App Design with Xcode		A6 Selected screens
8	2 March Midterm Review with Research Partner		A7 AIM and Website Revs
9	9 CAVE2 Demos / Exhibition presentation / XR intro		A8 Exhibition VR scene
10	16 Intro to scripting / Unity interaction		A9 Exhibition prototype
11	23 Spring Break		A9 Exhibition prototype
12	30 Interaction, Collisions /CAVE2 Test 1		Final project
13	6 April Worksession/CAVE2 Test 2		Final project
14	13 Video session CAVE2		Final project
15	20 Final Preview / Work session		Final Documentation
16	27 Final Review with Research Partner		Final Documentation



BlockABloom



11:08

Hi Maria!

Buoy

Buoy #

74°

Updated as of 1:32pm

Maps



Maple Lake

Palos Township, IL USA

1 4.6 mi

Whalon Lake

1 4.6 mi

Home

Buoys



Alarms

Settings

BlockABloom



BlockABloom Style Guide

Anagha Karnik | Iriam Garcia | Jabril Hull | Veena Bijo

01 App Icon



02 Typography

Avenir
Aa
Typeface

Aa Aa Aa Aa
Roman Medium Heavy Black

Page Headers
Heavy 25px

Copy text
Roman 15px, 12px

Buttons
Heavy 20px

Navigation text
Heavy 10px

04 Iconography

Navigation Bar
INACTIVE
ACTIVE
REPORT ICON

Status Icons
😊 😐 😞 😠

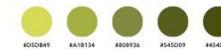
Guide Icons
📍 🌟 🚶 🚶

Fish Icon
🐟

Standard Icons
☰ ✖️ ✎ ✅ ↴

03 Color Palette

Primary
Text
Icons
Backgrounds



Secondary



Grey Scale



05 UI Components

Buttons
Rounded | 3 TYPES | SIZES: XL, L, M, S, XS



Text Fields



Quiz



Bottom Sheet



Navigation



Pop-up



Radio Button
Radio Toggle



Let's get started.



A1 AI Module (AIM) & Website Audit and Synthesis

Submit to Box / A1 folder

The primary objective of this assignment is to conduct a comprehensive audit of all class websites and AI Modules (AIM) developed during the Fall and Spring semesters. Students will analyze executable PDFs, images, and editable Figma files available in Box, review work from all teams, and synthesize insights to strengthen their own website and AIM.

Students are expected to identify successful patterns, gaps, and opportunities for differentiation, and to apply selected ideas to produce a more distinctive, effective, and community-focused final design. Final storyboards must reflect these updates and clearly credit the designers whose ideas were incorporated.

A1-2**A1-A2: Website Development (Homepage Implementation)****Submit to Box / A 1-2 folder**

In this assignment, students will translate their finalized homepage design into a functional website using HTML and CSS. After revising and approving the final homepage layout, students will develop the homepage and user interface components in Adobe Dreamweaver. Students must select a Dreamweaver template that most closely aligns with their approved homepage design and modify the template structure as needed to match their design as accurately as possible. This includes adjusting layout, navigation, content hierarchy, and visual structure to reflect the intended design.

Students will also work with image preparation, using appropriate PNG and JPG formats for web optimization. An images folder must be created to store all visual assets.

Organize your website structure so that all HTML files and related assets (CSS, images, media) are clearly structured and stored together using standard web development conventions.

The website must be built using a responsive, percentage-based layout template to ensure adaptability across screen sizes.

A1-3**AI Module Development (Selected Screens in Xcode)**

Submit to Box / A 1-3 folder

Based on finalized research from A1, each team member will develop selected AI Module (AIM) interface screens using Xcode, following class tutorials and assigned readings. Each team member is responsible for developing one selected screen. Students must apply the established style guide, including typography, color scheme, and UI interface guidelines, to ensure the AIM screens visually and functionally match the overall BlockABloom app design.

Development should closely reflect the high-fidelity AIM storyboard. Students are required to create and work from an individual copy of the project file and must not modify the original shared file. Special attention should be given to graphics, UI components, constraints, and Auto Layout. Screens should be built using a hierarchical, cascading structure, where smaller UI elements are nested within larger containers to support scalability and responsiveness. Iterative testing and refinement are expected.