

COMS W4172 3D User Interfaces and Augmented Reality Syllabus and Assignments

Spring 2024, Tu/Th 1:10–2:25pm, MUDD 227

[Prof. Steven Feiner](#)

feiner [AT] cs [DOT] columbia [DOT] edu
212-853-8453

Schedule is subject to change. (L n = LaViola et al. Chapter n ; S n = Schmalstieg and Höllerer Chapter n)

#	Date	Topics/chapters covered	Assignment	Due date
1	Tue Jan 16	Introduction (L 1–2; S 1)		
2	Thu Jan 18	Introduction 2 ; Design principles		
3	Tue Jan 23	Design principles 2	Assignment 0	Thu Jan 25
		Note: Assignments 0 and 0.5 are <i>not</i> handed in! We just want you to do them!		
4	Thu Jan 25	Design principles 3 ; Math	Assignment 0.5	Sat Jan 27
5	Tue Jan 30	Math 2	Assignment 1	Tue Feb 20
	Tue Jan 30 6:30–8:30pm FAY 301M	Unity help session [optional] in Fayerweather 301M		
6	Thu Feb 1	Math 3 ; Development software ; Case study: 3D windows/desktops/workspaces		
	Thu Feb 1 6:30–8:30pm FAY 301M	Unity help session [optional] in Fayerweather 301M		
7	Tue Feb 6	Case study: 3D windows/desktops/workspaces 2 (Microsoft Task Gallery paper (video); Sun Project Looking Glass (video or less compressed copy of video to download); BumpTop paper (video); SpaceTop paper (video); Personal Cockpit paper (video), Facebook Infinite Office (video); Work in the Metaverse (video), Immersed (video), Sightful Spacetop , Apple Vision Pro (video))		
8	Thu Feb 8	Case study: 3D windows/desktops/workspaces 3		

COMS W4172: 3D User Interfaces and Augmented Reality
Syllabus—Spring 2024

9	Tue Feb 13	Perception, displays, and devices (L 3, L 5.1–5.2, S 2)		
	Wed Feb 14 6:00–8:00pm Uris 330	Unity help session [optional] in Uris 330		
10	Thu Feb 15	Perception, displays, and devices 2		
	Thu Feb 15 3:00–5:00pm Schapiro CEPSR 6LE3	Unity help session [optional] in Schapiro CEPSR 6LE3		
11	Tue Feb 20	Perception, displays, and devices 3	Assignment 2	Tue Mar 5
12	Thu Feb 22	Perception, displays, and devices 4		
13	Tue Feb 27	Perception, displays, and devices 5 ; Selection and manipulation (L 5.3–5.8, L 7); Hear NASA Ames 3D audio spatialization demo [if your browser doesn't have a plug-in for .mp3 files, you may need to right-click and save this file to play it]. <i>Please listen through stereo earphones!!!</i>		
14	Thu Feb 29	Selection and manipulation 2 (L 6)		
15	Tue Mar 5	Selection and manipulation 3	Assignment 3	Tue Mar 26
16	Thu Mar 7	Selection and manipulation 4 ; Travel (L 8–8.8)		
	Tue Mar 12	No class: Spring Break		
	Thu Mar 14	No class: Spring Break		
17	Tue Mar 19	Development tools: Unity mobile device input		
18	Thu Mar 21	Development tools: Unity networking	Final project	
		Team name, members, and one-sentence project idea:		Wed Mar 27 11:59pm
		Proposal:		Thu Apr 4
		Three progress reports:		Thu Apr 11, Thu Apr 18, Thu Apr 25
		Individual team		To be

COMS W4172: 3D User Interfaces and Augmented Reality
Syllabus—Spring 2024

meeting: scheduled
Tue Apr
30–Wed
May 1

Presentation
(official exam
time): Tue May 7
1:10–4pm,
Mudd 227

- 19 Tue Mar 26 [Travel 2](#)
- 20 Thu Mar 28 [Travel 3](#)
- 21 Tue Apr 2 [Travel 4](#); [Wayfinding](#) (L 8.9–8.12)
- 22 Thu Apr 4 **Final project proposal** (Each team will give an overview of their proposed project, addressing the issues posed in the assignment.)
- 23 Tue Apr 9 [Wayfinding 2](#)
- 24 Thu Apr 11 **Final project progress report 1** (Each team will give a brief overview of their progress)
- 25 Tue Apr 16 [Wayfinding 3](#); [3D tracking](#) (S 3, 4)
- 26 Thu Apr 18 **Final project progress report 2** (Each team will give a brief overview of their progress.); **3D tracking 2**
- 27 Tue Apr 23 [3D tracking 2](#); [Evaluation](#) (L 11)
- 28 Thu Apr 25 **Final project progress report 3** (Each team will give a brief overview of their progress.)

Tue–Wed
Apr 30–May
1 **Individual project team meetings** (30-minute meetings to be scheduled)

Tue May 7
1:10–4pm
Mudd 227 **Final project presentations** (*Held during our scheduled final exam time, Tue May 7 1:10–4pm*). Each team will give a presentation, including a demonstration, followed by a question-and-answer session. All final project material must be uploaded to CourseWorks by 11:59pm.