

SYSTEMS DESIGN ENGINEERING

Human Performance in Virtual Environments & 3D Simulations

SYDE 740 - Topic 6

Spring

This course looks at the relationship between humans and virtual environments or 3D simulations for the purposes of human performance, training, rehabilitation, and entertainment.

Main topics to be covered include:

- Current application areas of virtual environments and 3D simulations in industry, medicine, and research
- Overview of current technologies (displays, input devices, software platforms)
- Overview of general research areas
 - o Navigation and Trailblazing
 - o Collaboration
 - o Physiological Effects (simulator sickness, visual fatigue, muscle fatigue)
 - o Enhanced Presence (e.g. haptics, 3D audio cues)
- More specific topics will be determined based on the research interests of the students enrolled.

Course will follow an advanced seminar-style. Students are expected to contribute to the selection of relevant readings, to participate in discussions relating to critical analysis of existing research, and to give a 30-minute seminar presentation on a selected topic. Written assignments will consist of a series of short papers relating to assigned readings.

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