Angelos Barmpoutis
Contact: 3522942042 | angelos@digitalworlds.ufl.edu
Office: CSE Building E109
Hours: T & Th 12:50pm-1:40pm

DIG6744C Movement, Media, and Machine
Spring 2026

Course Meetings:	Mondays 9:35am-11:30am & Wednesdays 10:40am-11:30am
Course Mode:	Face to Face
Course Location:	CSE E413

Course Description
Exploring existing and emergent relationships between human movement, interactive & post-produced media and various electro-mechanical and digital machines. Texts, techniques and presentations from the spectrum of movement-based inquiry provide an interdisciplinary forum for transdisciplinary investigation.

This course will explore the emerging directions of movement tracking technologies including marker-based with infrared markers, marker-less with depth sensors, and marker-less with camera-based AI tracking. Real worlds applications of motion tracking technologies will be discussed. This is a project-based class where student will learn about mentioned topics, then propose and build a working prototype that satisfy all required technologies.

Course Prerequisites
Admission to MiDAS program or instructor's consent.

Learning Outcomes
By the end of this course, students will be able to:

- Analyze emerging movement tracking technologies
- Implement several movement tracking solutions in Unity engine
- Integrate movement tracking technologies with Virtual Reality or Augmented Reality

Colyer et al. (2018), A Review of the Evolution of Vision-Based Motion Analysis and the Integration of Advanced Computer Vision Methods Towards Developing a Markerless System, Sports Medicine – Open 4(24).

Required
- **Travieso-González, C. M.** (2017). *Motion Tracking and Gesture Recognition*. INTECH. ISBN: 978-953-514-7497. E-book edition. Open Access.
- **Krzeszowski, T., Switonski, A., Kepski, M., & Tavares Calafate, C.** (2022). *Intelligent Sensors for Human Motion Analysis*. MDPI. ISBN: 978-3-0365-5074-9. E-book edition. Open Access.

Supplemental

- **Rosenhahn, B., Klette, R., & Metaxas, D.** (2008). *Human Motion Understanding, Modelling, Capture and Animation*. Springer. ISBN: 978-1-4020-6693-1. E-book edition. UF Libraries e-book.

Technology Requirements

- Personal computer/laptop.

Course Schedule

This schedule is only a guide and is subject to change. Unless otherwise indicated, assignments and readings are due the day they are listed on the syllabus, not the following day.

Week	Subject	Assignment Quizzes	Assignments Due
1	Class Introduction & Preparation		
2	Topic 1: Locomotion in VR		
3	Designing a research study for locomotion in VR	Study Design	Sunday midnight
4	Topic 2: Human skeleton data		
5	Collecting data from users in VR	Study Execution	Sunday midnight
6	Topic 3: Marker-based motion tracking		
7	Applications of Motion Tracking Technologies with AI		
8	Marker-based Motion Tracking Project Development	Conference Paper writing	Sunday midnight
9	Midterm: Final Paper Submission	Conference Paper submission	Sunday midnight
10	SPRING BREAK		
11	Project Development: Asset Preps		
12	Project Development: Basic Mechanic & Interaction	Check Point 1 (Alpha)	Sunday

			midnight
13	**Project Development: Motion Tracking Integration**		
14	**Project Development: Motion Tracking Integration**	**Check Point 2 (Beta)**	**Sunday midnight**
15	**Project Development: Polish and debugging**		
16	**Project Development: Final Delivery**	**Final Delivery**	**Sunday midnight**

Grading Criteria

Assignment / Assessment	Total Points	% of Grade
Class Participation and Attendance – Students are expected to actively participate in class discussions, both in class as well as in course online forums and outside class Group meetings.	5	5
3 **Assignments for User Study**– There are 3 milestones: Study Design, Study Execution, and Conference Paper submission for the reporting of the results of a user locomotion study in VR.	30	30
Midterm – Student are expected to present their idea for final project	20	20
2 **Check Points** – There are 2 checkpoints: Alpha, Beta to monitor final project's progress	10	10
Final – Student are expected to present their final project to satisfy requirements given by instructor	35	35

Grading Scale

Letter Grade	% Equivalency
A	94 – 100%
A-	90 – 93%
B+	87 – 89%
B	84 – 86%
B-	80 – 83%
C+	77 – 79%
C	74 – 76%
C-	70 – 73%
D+	67 – 69%
D	64 – 66%
D-	60 – 63%

E, I, NG, S-U, WF 0 – 59%

More information on grades and grading policies is here: https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

Materials and Supply Fees

Material and supply and equipment use fee information are available from the academic departments or from the schedule of courses (Florida Statutes 1009.24). The total course fee for this class is $0.00. The total course fee for each course is listed on the UF Schedule of Courses. (https://registrar.ufl.edu/soc/)

Course Policies

Attendance Policy, Class Expectations, and Make-Up Policy

The instructor is responsible for communicating the specific details of what percentage of your grade (if any) will be assigned to participation, and how class participation will be measured and graded. The UF Digital Worlds Institute is committed to the idea that regular student engagement is essential to successful scholastic achievement. No matter if the class is held in a traditional classroom, an online classroom, or a combination of the two, interaction with your peers and the instructor will empower you to greater achievement.

In our course, attendance is mandatory. Students are allowed **three unexcused absences**. If you miss more than **three classes** during the semester, each additional absence will lower your overall grade by **10 points**. If you miss more than **six classes**, you will fail the course. Exempt from this policy are those absences outlined in the Excused and Unexcused Abscesses policy linked below.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

Course Technology

The students will be required to have access to and use a personal computer with access to the Internet. Word editing software will be required for written assignments.

The University of Florida and Digital Worlds requires that students have access to and ongoing use of a laptop/mobile computer for DIG courses in order to be able to function in the current learning environment. Digital Worlds requires each DAS major's laptop computer to meet certain minimum specs for heavy graphics use, the requirements documented below must be met. https://digitalworlds.ufl.edu/programs/ba-in-digital-arts-sciences/technology-requirements/.

Course Communications

Students can communicate directly with the instructor regarding the course material through the course management system (CANVAS) using "Canvas E-Mail".

Course Technology Support

UF Computing Help Desk

For support related to account services, technical consulting, mobile device services, software services, administrative

support, application support center, and learning support services, please contact the UF Computing Help Desk available 24 hours a day, 7 days a week at 352-392-4357 or helpdesk@ufl.edu.

University Policies

Information about university-wide policies and resources can be found here: https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

Disclaimer: This syllabus represents the instructor's current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.