

# DIG6840 Interdisciplinary Research Methods in Digital Arts and Sciences

## Spring 2022

**Course Meetings:** Mondays 1:55pm-2:45pm and Wednesdays 1:55pm-3:50pm  
**Course Mode:** Campus  
**Course Location:** CSE E413

## Course Description

An interdisciplinary exploration of current topics and trajectories with a goal of enabling the rapid-prototyping of ideas, inventions, and interactions utilizing the digital arts sciences. Single or multiple areas will be chosen and investigated with the intention of a resultant prototype publication, media artifact or research presentation.

## Course Prerequisites

Admission in MiDAS program or consent of instructor.

## Learning Outcomes

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

- Form a research hypothesis in a topic of digital arts and sciences.
- Design a data collection study.
- Write an IRB protocol.
- Collect data and analyze them in the form of a research paper.

## Materials & Books

### Required

### Supplemental

- Sherman, W.R., Craig, A.B. (2003) Understanding Virtual Reality. Morgan Kaufmann
- Bowman, D.A., Kruijff, E., Laviola, J.J., Poupyrev, I. (2005) 3D User Interfaces: Theory and Practice. Addison-Wesley
- Barmpoutis, A., Faris, R., Garcia, S., Li, J., Philoctete, J., Puthusseril, J., Wood, L. and Zhang, M., 2020. Virtual Kayaking: A study on the effect of low-cost passive haptics on the user experience while exercising. Proceedings of the 2020 HCI International Conference C. Stephanidis and M. Antona (Eds.),

Communications in Computer and Information Science series (CCIS), vol. 1225, pp. 147-155.

- Barmpoutis, A., Faris, R., Garcia, L., Gruber, L., Li, J., Peralta, F. and Zhang, M., 2020. Assessing the Role of Virtual Reality with Passive Haptics in Music Conductor Education: A Pilot Study. In Proceedings of the 2020 Human-Computer Interaction International Conference, J. Y. C. Chen and G. Fragomeni (Eds.), LNCS, vol. 12190, pp. 275-285.

## Technology Requirements

- Unity 3D
- Qualtrics

## 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	Introduction to Research protocols and forming hypothesis	IRB training	End of Week
2	Virtual Environments as research tools	Reading Assignment	End of Week
3	Digital Imaging Technologies: From 2D to 3D	Reading Assignment	End of Week
4	3D Scanning Techniques	Scanning Assignment	End of Week
5	Visualizing multi-dimensional spaces		
6	Interacting in 3 dimensions, Natural User Interfaces	Interaction Design Assignment	End of Week
7	Simulating Real Dynamic Environments		
8	Haptic-Devices for Simulation and Interaction	Interaction Design Assignment	End of Week
9	Human-Computer Interaction for Computed Assisted Surgery	Reading Assignment	End of Week
10	Research paper about existing research projects (Individual Assignment)	Research Paper	End of Week
11	Data Collection and Quantitative Analysis	Qualtrics Assignment	End of Week

12	Application: Virtual Environments for Rehabilitation	Data Collection	End of Week
13	Application: Digital Epigraphy and Archaeology	Data Collection	End of Week
14	Application: Smart Sensors for Connected Vehicles	Data Analysis	End of Week
15	Research Proposal Presentations (Group Assignment)	Research Paper	End of Week

## Grading Criteria

Assignment / Assessment	Total Points	% of Grade
<b>Homework projects:</b> The students will receive homework assignments related to the material covered in class. The students will have 1 week to work on each homework assignment. The assignments will be submitted through the course's learning management system.	10	10%
<b>Research paper (Individual assignment)</b> – It is expected that in this assignment, students present in the form of a research paper an existing research study that has been undertaken in a research university. The students are expected to study the published research papers related to the particular chosen study and present in their own words the concept of this research and the results of the study.	40	40%
<b>Participation</b> – Students are expected to actively participate in class discussions, both in class as well as online by writing peer reviews.	10	10%
<b>Final Paper (Group assignment)</b> – Final Project is the final result of the semester long effort in learning. It is expected that in this final assignment, students manifest their knowledge on forming a hypothesis and designing a research study.	40	40%

## 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. Interaction with your peers and the instructor will empower you to greater achievement.

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 **100 points**. If you miss more than **six classes**, you will fail the course. Exempt from this policy are only those absences involving university-sponsored events, such as athletics and band, and religious holidays, family emergencies, and health issues for which **you must provide appropriate documentation in advance of the absence**.

Additionally, tardiness will not be tolerated. If you are tardy for three class periods, you will receive an unexcused absence.

#### Make-up Policy

Unless discussed at least 72 hours in advance of the deadline, late assignments will not be accepted. Excluded from this policy are any assignments missed due to medical emergencies.

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/UGRD/academic-regulations/attendance-policies/>

## 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 student'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 Mail".

## Course Recordings

Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

## Creation of Original Content Ethics

For original projects and all assignment deliverables, students should remember that representations of acts of violence, coarse and offensive language, sexual behavior, bodily function and ability, neurodiversity, and personal identity are likely to cause extreme audience response, regardless of the creator's intentions. In addition, the recreation of such actions and subjects for fictional purposes may unintentionally traumatize or negatively impact those who collaborate in the creation of the images. While the university encourages students to explore themes and tell stories that may include this difficult subject matter, they should be cautioned against modes or styles of representation that might be considered unnecessarily offensive or potentially triggering. Instructors, faculty, and university administrators reserve the right to not show or share any student work they feel is inappropriate for their classroom or for public exhibition, as there may be concerns about the impact of such work on the community. We encourage students to consult with their faculty when producing work that might be considered controversial, and to err on the side of being cautious when it comes to making decisions about a project's content - in other words, make the PG-13 version of your story, not the R version, and certainly not the "unrated" version. This is also to help students understand that most professional creative situations have strict guidelines and limitations on such content and how it is produced: your ability to tell stories effectively with "less" is a strong professional skill that will aid in the dissemination of your work to a broader audience.

## Course Technology Support

### Technology Support Center

The [Technology Support Center](http://digitalworlds.ufl.edu/support) provides computer support for Digital Worlds students who access Zoom, lecture recordings, student equipment, facilities, and other technology-based resources.

<http://digitalworlds.ufl.edu/support>

For computer assistance related to Zoon, lecture recordings, student equipment, and facilities requests please email [support@digitalworlds.ufl.edu](mailto:support@digitalworlds.ufl.edu).

### 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](http://ufcomputinghelpdesk.com) available 24 hours a day, 7 days a week at 352-392-4357 or [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

## University Policies

### University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by

the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

## **Class Demeanor**

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all.

## **Students Requiring Accommodations**

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

## **Netiquette Communication Courtesy**

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats, more information can be found at:

<http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

## **Software Use**

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

## **Student Privacy**

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see:

<https://catalog.ufl.edu/UGRD/academic-regulations/ferpa-confidentiality-student-records/>

## **Course Evaluation**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>

## **Campus and Academic Resources**

**U Matter, We Care:** If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

**Counseling and Wellness Center:** [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for

information on crisis services as well as non-crisis services.

**Student Health Care Center:** Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).

**University Police Department:** [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

**UF Health Shands Emergency Room / Trauma Center:** For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website](#).

**E-learning technical support:** Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

**Career Connections Center:** Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

**Library Support:** Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center:** Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

**Writing Studio:** 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

**Student Complaints On-Campus:** [Visit the Student Honor Code and Student Conduct Code webpage for more information](#).

**Online Students Complaints:** [View the Distance Learning Student Complaint Process](#).

**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.