

FLORIDA ATLANTIC UNIVERSITY™

Graduate Programs—NEW COURSE PROPOSAL¹

UGPC APPROVAL _____
 UFS APPROVAL _____
 SCNS SUBMITTAL _____
 CONFIRMED _____
 BANNER POSTED _____
 CATALOG _____

DEPARTMENT: COMMUNICATION AND MULTIMEDIA

COLLEGE: Dorothy F. Schmidt College of Arts and Letters

RECOMMENDED COURSE IDENTIFICATION:

PREFIX ___ DIG _____ COURSE NUMBER ___ 6126 _____ LAB CODE (L or C) _____

(TO OBTAIN A COURSE NUMBER, CONTACT [MJENNING@FAU.EDU](mailto:mjennin@fau.edu))

COMPLETE COURSE TITLE: INTERACTIVE INTERFACE DESIGN

EFFECTIVE DATE

(first term course will be offered)

FALL 2014

CREDITS: 4

TEXTBOOK INFORMATION:

The Critique Handbook: The Art Students Sourcebook and Survival Guide
 Programming Interactivity: A Designer's Guide to Processing, Arduino, and Openframeworks

GRADING (SELECT ONLY ONE GRADING OPTION): REGULAR SATISFACTORY/UNSATISFACTORY _____

COURSE DESCRIPTION, NO MORE THAN THREE LINES:

This course is an introduction to designing interactive interfaces for software and hardware. By emphasizing a conceptual approach toward interacting with technology, students learn creative coding techniques using the Processing language and Arduino microcontroller. These techniques bridge the gap between design, technology, engineering and art.

PREREQUISITES*:

NONE

COREQUISITES*:

NONE

REGISTRATION CONTROLS (MAJOR, COLLEGE, LEVEL)*:

GRADUATE LEVEL

* PREREQUISITES, COREQUISITES AND REGISTRATION CONTROLS WILL BE ENFORCED FOR ALL COURSE SECTIONS.

MINIMUM QUALIFICATIONS NEEDED TO TEACH THIS COURSE: INSTRUCTOR, M.F.A OR PHD

Faculty contact, email and complete phone number:

Mark Franz, mfranz2@fau.edu, 317-363-5008

Please consult and list departments that might be affected by the new course and attach comments. N.A.

Approved by:

Department Chair: _____

College Curriculum Chair: _____

College Dean: _____

UGPC Chair: _____

Graduate College Dean: _____

UFS President: _____

Provost: _____

Date:

12/6/13
 12/19/17
 1/16/14
 2/26/14
 3/3/2014

1. Syllabus must be attached; see guidelines for requirements: www.fau.edu/provost/files/course_syllabus.2011.pdf

2. Review Provost Memorandum: **Definition of a Credit Hour** www.fau.edu/provost/files/Definition_Credit_Hour_Memo_2012.pdf

3. Consent from affected departments (attach if necessary)

Email this form and syllabus to UGPC@fau.edu one week before the University Graduate Programs Committee meeting so that materials may be viewed on the UGPC website prior to the meeting.

Class: DIG 6126, Interactive Interface Design
Day and Time: Monday, 6:00pm to 9:50pm
Room: ES 401
Department: Communication and Multimedia Studies
Term: Fall 2014
Credit Hours: 4

Professor: Mark Franz, MA, MFA

Contact Info: mfranz2@fau.edu

Phone: 312-361-0345

Office Hours:

(M) 5:00PM – 6:00PM

(T) 10:00AM – 1:00PM

(TR) 2:50PM – 4:00PM

Office Location: AT 829

Course Objectives:

Students in this course will develop a critical understanding of physical computing and interactive design. By the end of this course, students will have experience with creating serious games, data visualizations, and interactive art. These fields will provide the basis for learning various techniques for developing interactive hardware and software.

Course Description:

This course covers advanced techniques in the creation of interactive 2D and 3D computer graphics and hardware. Our goal is to design interactive environments that communicate aesthetic, narrative, and experimental qualities. We will also be designing custom hardware interfaces, using the Arduino microcontroller, to facilitate a unique experience of engagement with our software. We will be using the processing language as a primary approach to creating interactive graphic elements. We will continue this pursuit with the help of the Unity 3D game engine. Our primary goal will be to create software that engages its users with new and significant ideas whether they be historical, social, or theoretical.

Required Hardware:

Arduino:

<http://arduino.cc/>

Recommended Texts:

<http://processing.org/learning/books/>

<https://www.packtpub.com/unity-game-development-essentials/book>

List of Art Games:

<http://www.artificial.dk/articles/artgamesnetworks.htm>

Other places to buy your Arduino Uno:

<http://www.arduino.cc/en/Main/Buy>

Grades:

Attendance 20%
Assignments 40%
Midterm 20%
Final project 20%

Description of Final Project:

Using one of the techniques for developing interactive hardware and software covered in this course, design and create an original work of interactive art that embodies one of the theoretical concepts from our readings. In addition, write a 3-5 page paper discussing the concept you have chosen, and how it relates to your project.

Grading Scale:

A = 90 – 100
B = 80 – 89
C = 70 – 79
D = 60 – 69
F = 59 – 0

Attendance and Late Work:

Students are expected to attend all class sessions, come prepared to show their work, and actively discuss other student's work.

Late arrivals and/or failure to bring completed work = one absence
3 absences = loss of a letter grade

Course Materials

Sketchpad
An external hard drive is strongly recommended.

Week 1

- Syllabus and Introductions
- Unity, Processing, Arduino, Maya
- Required hardware: Arduino, Breadboard, Jumper Wires, Joystick, Buttons, Resistors
 - Arduino Leonardo
 - Joystick
 - Breadboard, Jumper Wires, Resistors (Kit)
- Introduction to Unity
- Installing Unity
- Introduction to Javascript
- **Assignment:** Familiarize yourself with the Unity 3D game engine by completing the 3D Platform Tutorial found here. Due Week 2.

Week 2

- Creating Simple Assets in Maya
- Narrative, Treatments, and Style Frames
- Digital Tutors
- Rigging
- **Assignment:** Complete Maya tutorials and build assets for your game. Develop style frames and write a treatment (premise or narrative) for your interactive narrative. Due Week 3.

Week 3

- Javascript in Unity
- Variables, Loops, Arrays
- Object Oriented Programming
- Functions
- **Assignment:** Complete assets for you game. Start writing scripts for the animated and reactive elements of your interactive narrative. Due Week 4.

Week 4

- Arduino
- Programming for Arduino
- Interfacing with Unity
- Sensors and LEDs
- Quick introduction to fabricating with 123D Make and Maya
- **Assignment:** Sketch, design, and model three unique interactive interfaces. Think about incorporating open space, the full human body, environment, and gesture. Due Week 5.
- **Reading:** "Aaron Koblin Interview" @ http://wiki.processing.org/w/Aaron_Koblin_Interview

Week 5

- 123D Make
- Fabricating custom game controllers
- Form and Function
- **Assignment:** Fabricate your designs from week 4. Due Week 6.
- **Reading:** <http://www.marxists.org/reference/subject/philosophy/works/ge/benjamin.htm>

Week 6

- Arduino and Unity continued
- Understanding Digital and Analog
- Using Switches and Resistance

- **Assignment:** Install electronics into your fabricated objects and test interactivity with scripting in Unity. Due Week 7.
- **Reading:** Tom Igoe Interview, @ http://wiki.processing.org/w/Tom_Igoe_Interview

Week 7

- Work Time
- Midterm Critique

Week 8

- Refining variables and parameters
- In class work time and critique
- Debugging
- **Assignment:** Refine and complete your interactive installation pieces. Due Week 9.
- **Reading :** "Realtime Art Manifesto" by Tale of Tales

Week 9

- Critique and Work time
- **Assignment:** Finalize interactive installation pieces. Due Week 10.
- **Reading:** "Realtime Art Manifesto" by Tale of Tales

Week 10

- Exhibition of interactive narratives
- **Assignment:** Download Processing and complete tutorials from processing.org. Due Week 11.
- **Reading:** "Realtime Art Manifesto" by Tale of Tales

Week 11

- Controlling video with Arduino and Processing
- Variables, Loops, Arrays, and Functions
- Object Orientation
- Camera demonstrations
- **Assignment:** Write a narrative for an interactive video installation including designs for an interactive interface. Due Week 12.
- **Reading:** "Theatre of the Oppressed" by Augusto Boal

Week 12

- Video libraries for processing
 - Variables and Syntax
 - Functions
 - Predefined Words
 - If Else
 - Classes
 - Private and Public
- **Assignment:** Gather video for your interactive video installation. Due Week 13.
- **Reading:** "Videogames of the Oppressed" by Gonzalo Frasca

Week 13

- Critique
- In class work Time
- **Assignment:** Fabricate the cases for your interactive interfaces. Due Week 14.
- **Reading:** "Representation, Enaction, and the Ethics of Simulation by Simon Penny @ <http://www.electronicbookreview.com/thread/firstperson/machanimate>

Week 14

- Class Critique
- **Assignment:** Final projects. Due Monday Dec. 3rd.
- **Reading:** "Creating Critical Play" by Mary Flanagan @ <http://www.maryflanagan.com/wp-content/uploads/CriticalPlay-ArtistsRethinkingGames-WithImages.rtf.pdf>

Week 15

- In class work time
- In seat Critique

Week 16

- In class work time
- In seat Critique

Monday Dec. 3rd

- 7:00PM – 9:30PM
- Exhibition of final projects

Students with disabilities:

In compliance with the Americans with Disabilities Act (ADA), students who require reasonable accommodations due to a disability to properly execute coursework must register with the Office

for Students with Disabilities (OSD) -- in Boca Raton, SU 133 (561-297-3880); in Davie, LA 240(954-236-1222); in Jupiter, SR 110 (561-799-8010); or at the Treasure Coast, CO 117 (772-873-3441) – and follow all OSD procedures.

Academic Honesty and Plagiarism:

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty, including cheating and plagiarism, is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see http://www.fau.edu/regulations/chater 4/4.001_Honor_Code.pdf