

AVT 483

art & interactive media

Term	Fall' 16
Credits	4
Teacher	Edgar Endress
Office hours	Tue 10:30 to 1:10 PM (Or by appointment)
Office	2019
Telephone	(703) 993-1388
e-mail	eendress@gmu.edu
Class blog	avtii.wordpress.com
Lab blog	experimentallab.wordpress.com

Prerequisite: Admission to the AVT graduate program or permission of the instructor.

::: Course Content and Description :::

The course will emphasize the introduction of interactive hardware and software practices with students actively researching contemporary creative and technological processes. The course will require both independent and collective research. One main area of research will be a focus on "Arduino" microprocessors; a technology developed for interactivity, installation, and performance. Using the "Arduino", we will explore the artistic possibilities and philosophies of electronic sensor and robotic technologies. Within the course, the "Arduino" technology will enrich the artistic process in the context of basic principles that are central to the foundation of the class: language, content, form, function, objectives, styles, and critical thinking. This class cultivates a vocabulary that creates connections with an understanding of the arts, facilitates the discussion of artistic expression, and helps to recognize and understand the meaningful roles that art and technology plays in society. During the semester we will discuss current art themes and topics, and be able to use these ideas to create personal works of art using different mediums and techniques. The class will learn and use MaxMSP software, an accessible graphic programming language, as a basis for interactive platforms.

The **New Media Experimental Lab** is a lab accessible to students to develop their projects. The lab contains documentation, electronics, and hardware to pursue their research. The Lab will be open and be accessible outside the normal class time.

For the final project students will (DEEP): display, engage, expand and present.

Display their final project in a public event (place and time will be discussed in class). **Engage** in a public presentation addressing the project outcome, research and **Expand** the project and place it into the larger context of contemporary art and/or social practice. **Present** written scholarly research of the questions raised during the final project.

Course Objectives / RS Designated Courses

This class is designated as a Research and Scholarship (RS) Intensive Course, which means that students are given the opportunity to actively participate in the process of scholarship and will make a significant contribution to the creation of critical projects that bridge art and technology.

RS Student Learning Outcomes: In this RS course, students will:

- Create an original scholarly or creative project.
- Communicate knowledge and the experience from an original scholarly or creative project.
- Engage in scholarly inquiry by:
 - Articulate and refine the question regarding the intersection of new media technology practice as delivery method for contemporary ideas and art practice.
 - Gather evidence appropriate to the question, through research and experimentation.
 - Situate the scholarly inquiry within a broader context.
- Explores different technologies used for interactivity.
- Explore the use and basic programming to activate external hardware like sensors or electronic boards.
- Understand the possibilities of the use of sound and media for installations art and other social spaces.
- Learn a technological process that can be applied to other technological frames and environments.
- Explore forms of participation and forms of engaging the audience in the space or with the art work.
- Create environments and participatory spaces.
- Explore creative and the possibilities to express personal possibilities of the medium.

[Weekly Schedule]

Week 0.0 / Arduino and 3D printing workshop

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Week 1.0 / Introduction to the class: get familiar with the available resources on campus and online, experimental lab tour, safety issues and syllabus review.

Week 1.1 / **Max MSP Workshop n°1** // basic architecture of a patch, recognizing: objects, messages, attributes. (Homework: Max MSP tutorial 1-12. Available in the library of the software).

week 2.1 / Labor day

Week 2.2 / **Max MSP Workshop n°2** // basic interfaces: web camera and microphones (homework: Max MSP tutorial 12-24. Available in the library of the software).

Week 3.1 / **Max MSP Workshop n°3** // advance interfaces: Max & Arduino, Max & Reason (rewire), Max & code bar reader, Max & Wii controllers, etc...

Week 3.2 / **Max MSP Response n°1** // in class exercise, use a camera as a motion detector to produce sound via Reason (the project will be discussed and explained in class).

Week 4.1 / **Arduino Workshop n°1** // basic architecture of an Arduino board, parts and components, in class tutorials 1-4. Basic programming of Arduino boards.

Week 4.2 / **Arduino Workshop n°2** // in class tutorials 5-10 sensors, programming, motors and servos.

Week 5.1 / Arduino + Max MSP // (the project will be discussed and explained in class)

Week 5.2 / **Arduino + Max MSP // Response n°2**, public presentation.

Week 6.1 / **First independent project: animatron** (create a basic animatron that responds to a sensor). Brain storm session and idea development, visualize materials, show examples.

Week 6.2 / Students presentation sketch for the animatron and development of the mechanism and interface.

Week 7.1 / Open Lab working and developing the animatron

Week 7.2 / Open Lab working and developing the animatron

Week 8.1 / Columbus recess

Week 8.2 / Presentation animatron, public presentation

Week 9.1 / Second independent project: (create a sound installation using Arduino and DC motors, piezo mic, contact mic, etc...), examples will be exhibited in class.

Week 9.2 / Students presentation sketch for the sound installation and development of the mechanism and interface.

Week 10.1 / Open Lab working and developing the sound installation

Week 10.2 / Open Lab working and developing the sound installation

Week 11.1 / Open Lab working and developing the sound installation trouble shooting

Week 11.2 / Presentation sound installation, public presentation.

Week 12.1 / Personal project: visualizing/ hearing data. Using data from the internet (housing prices, stock market data, etc) find a way to translated physically and or in sound.

Week 12.2 / Thanksgiving recess

Week 13.1 / Students presentation sketch for the Personal project and development of the mechanism and interface.

Week 13.2 / Open Lab working and developing the Personal project

Week 14.1 / Open Lab working and developing the **final project.**

Week 14.2 / Open Lab working and developing the **final project.**

Week 15.1 / Open Lab working and developing the **final project, trouble shooting**

Week 15.2 / Presentation **Personal project**, public presentation.

Main class activities

The **Response n°1 and n°2**, are short assignments to build skills to achieve specific output applying information and knowledge provided in a series of workshops.

The following personal research projects attempt to achieve independence and singularity, focusing on creative development of ideas and aesthetic principles. **Project n°1 Animatronics** is a cross between animation and electronics. Basically, Animatronics is the mechanized object, sculpture, using recycled materials. The animatronics should be Arduino based and respond to input from obtained by sensors.

Project n°2 Sound Installation, intersecting Max and Arduino to create a sound installation that responds to data obtained from sensors. One focus of this project is to expand into the space.

The **personal project** is an open project based on a student proposal. The idea is that the student explore or perfect aspects of their research to incorporate new aspects they learned in their research.

Documentation, Tutorial and Bibliography

Arduino Cookbook

Recipes to Begin, Expand, and Enhance Your Projects

By Michael Margolis

Publisher: O'Reilly Media

Processing: A Programming Handbook

for Visual Designers and Artists

Casey Reas and Ben Fry (Foreword by John Maeda).

Published August 2007, MIT Press.

Generative Design

Hartmut Bohnacker, Benedikt Gross, Julia Laub, and Claudius Lazzeroni.

August 2012, Princeton Architectural Press.

Make Magazine

Online resources:

<http://Arduino.cc/en/>

<http://cycling74.com/>

University and School of Art Policies

Students with Disabilities and Learning Differences: If you have a diagnosed disability or learning difference and you need Academic accommodations please inform me at the beginning of the semester and contact the Office of Disability Services (SUB I room 234, 703-993-2474). You must provide me with a faculty contact sheet from that office outlining the accommodations needed for your disability or learning difference. All academic accommodations must be arranged in advance through the Office of Disability Services.

Technology: In accordance with George Mason University policy, please silence all cellular telephones and other wireless communication devices at the start of class. The instructor of the class will keep his/her cell phone active to assure receipt of any Mason Alerts in a timely fashion; or in the event that the instructor does not have a cell phone, he/she will designate one student to keep a cell phone active to receive such alerts.

Commitment to Diversity: This class will be conducted as an intentionally inclusive community that celebrates diversity and welcomes the participation in the life of the university of faculty, staff and students who reflect the diversity of our plural society. All may feel free to speak and to be heard without fear that the content of the opinions they express will bias the evaluation of their academic performance or hinder their opportunities for participation in class activities. In turn, all are expected to be respectful of each other without regard to race, class, linguistic background, religion, political beliefs, gender identity, sex, sexual orientation, ethnicity, age, veteran's status, or physical ability.

Statement on Ethics in Teaching and Practicing Art and Design: As professionals responsible for the education of undergraduate and graduate art and design students, the faculty of the School of Art adheres to the ethical standards and practices incorporated in the professional Code of Ethics of our national accreditation organization, The National Association of Schools of Art and Design (NASAD).

Open Studio Hours

SOA teaching studios are open to students for extended periods of time mornings, evenings and weekends whenever classes are not in progress. Policies, procedures and schedules for studio use are established by the SOA studio faculty and are posted outside the studios.

School of Art Print Studio

School of Art Print Studio (SOAP) is located in the School of Art Building on the Fairfax Campus. As a non-profit studio, SOAP offers a variety of services including printing and production services to students, faculty and staff. All jobs are processed with high quality materials on state-of-the-art equipment, specifically for graphic design portfolios, mixed-media paintings and reproductions, posters, handmade books, student assignments and proof sheets. More information can be found at soaprint.gmu.edu or 703-993-7203.

ArtsBus Dates and Credit

Fall 2016: September 24th, October 22nd and November 19th.

Each student must have up to 5 AVT 300/Artsbus credits before graduation. For credit to appear on your transcript you must enroll in AVT 300. This also applies to anyone who intends to travel to New York independently, or do the DC Alternate Assignment.

If you plan/need to go on multiple ArtsBus trips during a semester and need them towards your total requirement, you must enroll in multiple sections of AVT 300. Please go to the ArtsBus website: <http://artsbus.gmu.edu> "Student Information" for additional, very important information regarding ArtsBus policy.

Non-AVT majors taking art classes do not need Artsbus credit BUT may need to go on the Artsbus for a class assignment. You can either sign up for AVT 300 or buy a ticket for the bus trip at the Center of the Arts. Alternate trips must be approved by the instructor of the course that is requiring an ArtsBus trip.

Visual Voices Lecture Series Fall 2015

Visual Voices is a year-long series of lectures by artists, art historians and others about contemporary art and art practice. Visual Voices lectures are held on Thursday evenings from 7:20- 9:00 p.m. in Harris Theater.

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Important Deadlines

Last Day to Add - Tuesday, September 6

Last Day to Drop (No Tuition Penalty) - Tuesday, September 6

Final Drop (67% Tuition Penalty) – September 30

Selective Withdrawal Period – October 3 - October 28

Incomplete work from Spring/Summer 2015 due to instructor- October 28

Once the add and drop deadlines have passed, instructors do not have the authority to approve requests from students to add or drop/withdraw late. Requests for late adds (up until the last day of classes) must be made by the student in the SOA office (or the office of the department offering the course), and generally are only approved in the case of a documented university error (such as a problem with financial aid being processed), LATE ADD fee will apply. Requests for non-selective withdrawals and retroactive adds (adds after the last day of classes) must be approved by the academic dean of the college in which the student's major is located. For AVT majors, that is the CVPA Office of Academic Affairs, College Hall C211.

Students with Disabilities and Learning Differences If you have a diagnosed disability or learning difference and you need academic accommodations, please inform me at the beginning of the semester and contact the Disabilities Resource Center (SUB I room 234, 703-993-2474). You must provide me with a faculty contact sheet from that office outlining the accommodations needed for your disability or learning difference. All academic accommodations must be arranged in advance through the DRC.

Official Communications via GMU E-Mail Mason uses electronic mail to provide official information to students. Examples include communications from course instructors, notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Students are responsible for the content of university communication sent to their Mason e-mail account, and are required to activate that account and check it regularly.

Attendance Policies Students are expected to attend the class periods of the courses for which they register. In-class participation is important not only to the individual student, but also to the class as a whole. Class participation may be a factor in grading, therefore instructors may use absence, tardiness, or early departure as de facto evidence of nonparticipation. Students who miss an exam with an acceptable excuse may be penalized according to the individual instructor's grading policy, as stated in the course syllabus.

Honor Code Students in this class are bound by the Honor Code, as stated in the George Mason University Catalog. The honor code requires that the work you do as an individual be the product of your own individual synthesis or integration of ideas. (This does not prohibit collaborative work when it is approved by your instructor.) As a faculty member, I have an obligation to refer the names of students who may have violated the Honor Code to the Student Honor Council, which treats such cases very seriously.

No grade is important enough to justify cheating, for which there are serious consequences that will follow you for the rest of your life. If you feel unusual pressure about your grade in this or any other course, please talk to me or to a member of the GMU Counseling Center staff.

Using someone else's words or ideas without giving them credit is plagiarism, a very serious Honor Code offense. It is very important to understand how to prevent committing plagiarism when using material from a source. If you wish to quote verbatim, you must use the exact words and punctuation just as the passage appears in the original and must use quotation marks and page numbers in your citation. If you want to paraphrase or summarize ideas from a source, you must put the ideas into your own words, and you must cite the source, using the APA or MLA format. (For assistance with documentation, I recommend Diana Hacker, *A Writer's Reference*.) The exception to this rule is information termed general knowledge—information that is widely known and stated in a number of sources. Determining what is general knowledge can be complicated, so the wise course is, "When in doubt, cite."

Be especially careful when using the Internet for research. Not all Internet sources are equally reliable; some are just plain wrong. Also, since you can download text, it becomes very easy to inadvertently plagiarize. If you use an Internet source, you must cite the exact URL in your paper and include with it the last date that you successfully accessed the site.

Writing Center Writing Center: Students who are in need of intensive help with grammar, structure or mechanics in their writing should make use of the services of Writing Center, located in Robinson A116 (703-993-1200). The services of the Writing Center are available by appointment, online and, occasionally, on a walk-in basis. The Collaborative Learning Hub Located in Johnson Center 311 (703-993-3141), the lab offers in-person one-on-one support for the Adobe Creative Suite, Microsoft Office, Blackboard, and a variety of other software. Dual monitor PCs make the lab ideal for collaborating on group projects, Macs are also available; as well as a digital recording space, collaborative tables, and a SMART Board. Free workshops are also available (Adobe and Microsoft) through Training and Certification; visit ittraining.gmu.edu to see the schedule of workshops and to sign up.