

Syllabus: A-S 348

Circuits & Bits: Introduction to Hardware and Software Topics in Arts

Dmitry Strakovsky, Assistant Professor

Web Page: www.shiftingplanes.org

Reynolds Building #211 (green hand above the door)

email: dima@shiftingplanes.org

Reynolds Building Room 101

Class Hours: TR 2:30 pm-5:20 pm

Lab Hours: TR 5:20 pm-6:20 pm (additional times will be arranged throughout the semester)

OFFICE HOURS

Email for appointment.

CLASS WEBSITE

<http://www.shiftingplanes.org/classes/?q=node/4>

COURSE DESCRIPTION

A broad, cross-disciplinary, intermedia studio course designed to teach students custom software creation and electronics fabrication in an art environment. Technical information is presented in conjunction with art historical and theoretical issues. Students will be introduced to a skill-set needed to create interactive artworks.

LEARNING OBJECTIVES

1. Demonstrate an ability to complete basic programming tasks in Processing IDE
2. Demonstrate an ability to complete basic programming and electronic tasks utilizing Arduino hardware.
3. Apply basic understanding of programming and electronics concepts to artwork construction.
4. Demonstrate proper equipment procedure and maintenance.
5. Utilize library and Internet resources for researching artists and art events
6. Analyze critically student's own work and the work of others in critique.

TEXT USED

All reading will be provided by the instructor. Individual internet-based research is highly encouraged.

FEES: There is a \$75 Lab Materials Charge for this class, This money goes towards maintenance of computers, test equipment and purchasing of electronic parts and fabrication materials.

CELLPHONE AND IM POLICY

Do not talk on your cellphone inside the classroom space. Do not IM or use any social software during lectures and/or presentations.

STUDENTS WITH DISABILITIES OR CHRONIC MEDICAL ILLNESS

If you have a documented disability that requires accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course you

must provide me with a letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address: jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities. Please work on this matter quickly so that I can accommodate your needs before the first graded assignment is due.

COURSE REQUIREMENTS AND GRADING POLICY

A high degree of individual research is expected. The work will be evaluated on its artistic merits together with technical achievement. Student research of production techniques must be coupled with an ***understanding of contemporary art climate***. Purely technical demos are for the purpose of learning a particular technology and will in no way be the end goal of our class development trajectory!

Grades will be determined through demonstrated mastery of the learning objectives established for this course. The minimum requirements are as follows:

1. *Attendance in class.*
2. *Demonstration through practical application and presentations of the concerns, skills, and techniques articulated in the Learning Objectives for the course and for each project.*

Letter grades will be given in this class using the standard grading scale:

100-90%=A (Represents an exceptionally high achievement as a result of aptitude, effort and intellectual initiative. Work created well exceeded all of the requirements for the project/course.)

89-80%=B (Represents a high achievement as a result of ability and effort. Work created met all requirements for the project and exceeded some of them.)

79-70%=C (Represents average achievement. Work met all requirements for the project/course.)

69-60%=D (Represents the minimum passing grade. Work met some requirements for the project/course and failed to meet some.)

59% and below=E (Represents unsatisfactory performance and indicates failure in the project/course. Work did not significantly meet requirements for the project/course.)

Grades will be determined by the following formula:

On a 100 percent/point scale the breakdown of your grade is as follows:

1. In-class crits and discussion of the readings/websites/presentations	%10
2. Artist Presentations(3)	%5+%5+%5=%15
3. Quizzes	%10
4. Assignments	
Assignment 1: Geometric Shape Ornament	%5
Assignment 2: Image-based Ornament	%5
Assignment 3: Short Animation	%5
Assignment 4: Artwork Integrating an Ornament	%10
Assignment 5: Sequence, Performance or Performance Score	%10
Assignment 6: Simple LED Light Sculpture	%10
Assignment 7: Controlling Short Animation with external switch	%5
Assignment 8: Interactive Installation mock-up	%15

Note: You can find assignment descriptions on the class website.

Final Critiques: Attendance at each critique is mandatory, as projects will be submitted at the beginning of each scheduled critique. If you miss a critique with an unexcused absence you will

receive an E for the project. Participation in the critique will count as a part of your project grade. If your project is not finished you still need to participate in the critique. Students are expected to make a significant contribution to the critique process, speaking about their own work and the work of others.

ATTENDANCE POLICY:

A student's physical presence in the classroom is a prerequisite for active learning to occur. It is not enough that you do work at home on your own computer. If you are not in class during class time, you will be penalized as written below. **TO BE COUNTED AS PRESENT, YOU MUST BE PRESENT FOR THE ENTIRE CLASS TIME UNLESS SPECIFICALLY EXCUSED BY THE INSTRUCTOR.**

Student is allowed 3 excused absences and 1 unexcused. Each consecutive absence is an automatic 5% deduction from your final grade for the class. Coming to class late (after 2:30pm) 4 times will result in 1 unexcused absence. Failure to appear in 8 classes (excused or unexcused) will result in automatic failure.

LATE ASSIGNMENT POLICY:

Each class day an assignment is late a point is taken off.

TARDINESS

Arriving to class late three times will be counted as one unexcused absence.

MAKE-UP OPPORTUNITY

When there is an excused absence, you will be given the opportunity to make up missed work and/or exams. It is your responsibility to inform the instructor of the absence preferably in advance, but no later than one week after the absence has occurred.

VERIFICATION OF ABSENCES

If you are absent from class for a situation that is deemed excused by the UK Senate, you must present appropriate documentation to me within one week of your absence.

ACADEMIC INTEGRITY, CHEATING AND PLAGIARISM

Integrity: University of Kentucky students are responsible for adhering to the University's policies regarding academic discipline that are published in the Undergraduate Bulletin and the Student Handbook. Simply put if you use any unethical practice in your work, you are putting yourself and others at risk of failing or being expelled from this course and/or from the University.

Cheating: Cheating is defined by its general usage. It includes, but is not limited to, the wrongfully giving, taking, or presenting any information or material by a student with the intent of aiding himself/herself or another on any academic work which is considered in any way in the determination of the final grade.

Plagiarism: All academic work, written or otherwise, submitted for credit in this course, is expected to be the result of your own thought, research, manipulation, manual effort or self-expression. If you submit work purporting to be their own, but which in any way borrows ideas, manipulation, organization, wording or anything else from another source without appropriate acknowledgment of the fact, you are guilty of plagiarism. Plagiarism includes reproducing someone else's work,

whether it be a published article, an artwork, a project from a friend or whatever. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which you turn in as your own, whoever that other person may be. You may discuss assignments among your peers or with an instructor or tutor, but when the actual work is done, it must be done by you, and you alone. (See below for details on group projects and collaborations.)

For written work: when your assignment involves research in outside sources or information, you must carefully acknowledge exactly what, where and how you have employed them. If the words of someone else are used, you must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic.

For Group Work and Student Collaboration:

This course may include work created and/or discussed in a group. When this arises it is your responsibility to contribute to your highest ability. At the beginning of any group project, the rules on what constitutes plagiarism will be reviewed and refined to include the collaborative nature of that particular assignment.

CLASSROOM BEHAVIOR, DECORUM AND CIVILITY

A studio lab environment is a place for creative expression, hard work and mutual respect. In order to create the class atmosphere together you will be expected to: participate in class work and discussions throughout the entire scheduled class time, clean up after yourselves without complaint during class and when working in the lab after hours, be respectful and tolerant of other people in the lab when you are working (regardless of their gender, race, ethnicity, national origin, religious affiliation, sexual orientation, political beliefs, age or ability,) be focused and motivated towards success. Additionally, diversity of thoughts are appreciated and encouraged provided you can agree to disagree.

Do not talk on your cell phone in class. If you must, please step outside of the classroom.

CLASSROOM AND STUDIO SAFETY GUIDELINES

It is required that all students take all necessary actions to protect their respiratory system, eyes and other body parts. **Students are required to use safety equipment as needed:** such as proper clothing, footwear, eye protection, hair ties and work gloves **when appropriate. Safe use of materials is required.**

These requirements are set to create a safe environment for all, and to help students gain knowledge and skills for the safe creation of artwork. Failure to adhere to proper safety standards and procedures will have a negative impact on your grade and your health. Let's all enjoy a safe, healthy and creative semester.

Preliminary Semester Schedule

(subject to change based on instructional needs)

August 26	Hello World Introductions + syllabus intro
August 31	Introducing Processing Basic programming demo
September 2	Programming demo
September 7	Programming demo Artist presentations
September 9	DIMA OUT TO POLAND
September 14	DIMA OUT TO POLAND
September 16	Assignment 1 Due Artist presentations Conditional statements Catch-up
September 21	Object-oriented programming Introduction → Images Working with images Artist presentations Workday assignment 2
September 23	Artist presentations Workday assignment 2
September 28	Assignment 2 Due Begin work on Assignment 4 ← yes, this seems out of sequence, but Assignment 4 will be produced mostly outside of class time Animation demo → draw loop and variable scope Artist Presentations Pick the next cycle of artists Workday assignment 3
September 30	Artist Presentations Workday assignment 3
October 5	Artist Presentations Assignment 3 Due Catch up or work on Assignment 4
October 7	Artist Presentations Assignment 4 Due CRIT Begin work on Assignment 5
October 12	Artist Presentations Timing tricks + writing your own objects Introduction to basic electronics and Arduino board Resistors, LEDs and breadboards
October 14	Artist Presentations Introduction to basic electronics and Arduino board Consultation for assignment 5

October 19	Artist Presentations Introduction to basic electronics and Arduino board Consultation for assignment 5
October 21	Artist Presentations Soldering demo Introduction to basic electronics and Arduino board Consultation for assignment 5
October 26	DIMA OUT TO NYC
October 28	DIMA OUT TO NYC
November 2	Assignment 5 Due CRIT
November 4	Artist Presentations Workday Assignment 6
November 9	Assignment 6 Due Artist Presentations Digital Input demo
November 11	Artist Presentations Workday Assignment 7
November 16	Assignment 7 Due Artist Presentations Consultation for assignment 8 Catch-up
November 18	Artist Presentations Present brief proposal for Assignment 8
November 23	Artist Presentations Workday Assignment 8
November 25	TURKEY DAY!!!
November 30	Workday Assignment 8
December 2	Workday Assignment 8
December 7	Workday Assignment 8
December 9	FINAL CRIT
December 14	FINAL CRIT CONTINUED

NOTE: Additional Saturday/Sunday times will be offered throughout the semester to help students complete hands-on electronic hardware-based assignments.