**UNIVERSITY OF CALGARY**  
**FACULTY OF ARTS**  
**DEPARTMENT OF ART AND ART HISTORY**  
Art 317 – Electronics for Artists  
Winter 2024

<table>
<thead>
<tr>
<th>Course Delivery Format:</th>
<th>In person</th>
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| Instructor:             | Dr. J. R. Parker  
AB 606 (403) 220 6784  
jparker@ucalgary.ca |
| Office:                 | AB 606  (403) 220 6784 |
| Email:                  | jparker@ucalgary.ca |
| Office Hours:           | M 11:00 AM T 12 PM |
| TA Name and Email:      | none |
| Day(s), time(s) and location of class: | Monday/Wednesday 8:30AM – 11:00 AM |
| Course description:     | Theoretical and practical applications of basic electronic principles and techniques involving the use of electronics in contemporary art practices. Will include applied experiences with hardware and visual programming environments. |
| Prerequisites and/or co-requisites: | 3 units of courses labelled Art. |
| Course Objectives:      | Some modern artworks (installations, some performance art) use electricity or electronics as an enabling technology. Knowledge of electronics will help an artist imagine and design such works, and practical knowledge of parts and construction methods will allow an artist to undertake these projects without technical assistance. The material presented in this course will allow an artist to design and build artworks that feature electronics. In particular, upon successful completion of this course students will:  
   1. Understand the basic properties of electricity and the properties of electronic components.  
   2. Be able to design electronic circuits that control lights and sounds.  
   3. Understand how to use resistors, capacitors, diodes and transistors.  
   4. Have a basic knowledge of digital circuit components and design.  
   5. Be able to use transducers like LEDs, microphones, photodiodes/phototransistors, and others.  
   6. Will be able to use a microprocessor (Arduino) to replace circuitry, and will be able to write basic programs in that context. |
| Required Textbooks of Readings: | Web site and online notes. http://www.minkhollow.ca/Art317 |
| Course Schedule:        | This course is taught as inquiry based and just-in-time, so a precise schedule is not available.  
Course web site: www.minkhollow.ca/parker/Art317 |
## Assignments & Evaluation

| Assignment 1 | Use of illumination in a simple art work | Jan 23 | 10 |
| Assignment 2 | Use of animation or change in an art work. | Feb 14 | 10 |
| Assignment 3 | Including sound in an art work. | Mar 4 | 10 |
| Assignment 4 | Use of motion, projection, or complex existing circuits. | Mar 18 | 10 |
| Assignment 5 | Using sensors in an artwork to allow viewer interaction | Apr 3 | 10 |
| Final exam | Take-home examination (1 week) | Apr 3 | 15 |
| In-studio assignments | Specific to the topics for that week. | Evaluated weekly | 35% |

### Registrar Scheduled Final Exam:

| No |

### Models request:

| No |

### Assessment expectations:

- **Guidelines for Submitting Assignments:** Assignments can be submitted on paper or by Email. Email header must contain the text “Art 317 assignment solution N”, where N is the assignment number.

- **Missed or Late Assignments:** Assignments are expected to be on-time unless previously discussed with the instructor. Deadlines could be changed in-class, but will never be advanced. Assignments not handed in will not be graded. Assignments handed in on time can be resubmitted for reassessment within 2 weeks of the due date.

- **Expectations for Writing:**
  Writing skills are important to academic study across all disciplines. Consequently, instructors may use their assessment of writing quality as a factor in the evaluation of student work. Please refer to the Undergraduate Calendar E.2 Writing Across the Curriculum policy for details.

- **Use of AI:** AI can be used as a component of an assignment provided you describe what you used and exactly how you used it.

### Additional Costs and Information:

- Students are expected to have access to a computer to complete their assignments. It is possible to complete the class without software expense, but any extra software needed will be at the student’s own expense.

- **ELEGOO UNO Project Super Starter Kit with Tutorial, 5V Relay, UNO R3, Power Supply Module, Servo Motor, 9V Battery with DC, Prototype Expansion Board, etc. for Arduino.** $57

- **Students will provide a kit of their own electronic parts. Sources include:**
  In Calgary there is:
  Solarbotics
  [https://www.solarbotics.com/page/3/?s=arduino&post_type=product&dgwt_wcas=1](https://www.solarbotics.com/page/3/?s=arduino&post_type=product&dgwt_wcas=1)
  #101 3740D-11A Street NE
  1-403-232-6268

- **ELEGOO UNO Project Super Starter Kit with Tutorial** $57.99
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https://www.amazon.ca/s?k=ardiono+kit&i=industrial&crid=F6NCHKOFR7VC&s=industrial&sprefix=ardiono+kit%2Cindustrial%2C148&ref=nb_sb_noss

ELEGOO UNO R3 Project Complete Starter Kit with Tutorial for Arduino UNO (63 Items) 79.99
https://www.amazon.ca/ELEGOO-Project-Complete-Starter-Tutorial/dp/B01M9CHF1J/ref=sr_1_2_sspa?crid=F6NCHKOFR7VC&keywords=ardino+kit&qid=1671209476&s=industrial&spons=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUFDTUZINTNhNDFlVVgmZW5jcnlwdGVkSWQ9QnJhbW9ycmV0aW9ucXVhSWQ9Q0JyQ1ZmYXJ0eXNpYmxlZ29tcy1QaXQ9dGljYzUxMzFhZGJlZjY5YmU4ZmVhMGM5MzczNzY4ZTQzQjIwZmVjNzRiYzI=

Other online sources:
Newark:
https://www.newark.com/
Electronic Goldmine:
https://theelectronicgoldmine.com/en-ca
Digi-Key:
SparkFun
https://www.sparkfun.com/
Jameco
https://www.jameco.com/

Portfolios and Assignments:
The Dept of Art and Art History will not assume responsibility for lost or stolen portfolios or course work given to instructors for grading.

Studio Procedures:
All studio participants are required to follow the guidelines in the DAAH Studio Usage Regulations and the mandatory Safety Orientation. After reviewing the orientation, participants must complete and return a Safety Questionnaire to the department technicians within one week of the start of classes. Participants who have already completed the orientation within the past year are exempt. The Usage Regulations, Safety Orientation and Safety Questionnaire can be found on the course D2L page and the following link:

Please view current updates from RISK and the Covidsafe page links to information on rapid testing, masking rules, vaccination regulations and documentation as well as a FAQs page, which must all be followed while in Studios.
Other Important Dates
For more information on term dates, add/drop/swap/withdraw dates from course deadlines and refund/payment deadlines, please see: https://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html

Grading Method and Grading Scale

Undergraduate: https://www.ucalgary.ca/pubs/calendar/current/f-1-1.html
- A grade of "C" or below may not be sufficient for promotion or graduation, see specific faculty regulations.
- The number of "D" and "D+" grades acceptable for credit is subject to specific undergraduate faculty promotional policy.

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
<th>G.P.V.</th>
<th>Grade Definition</th>
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<tbody>
<tr>
<td>96-100</td>
<td>A+</td>
<td>4.0</td>
<td>Outstanding performance</td>
</tr>
<tr>
<td>90-95</td>
<td>A</td>
<td>4.0</td>
<td>Excellent-superior performance, showing comprehensive understanding of subject matter.</td>
</tr>
<tr>
<td>85-89</td>
<td>A-</td>
<td>3.7</td>
<td>Approaching excellent performance</td>
</tr>
<tr>
<td>80-84</td>
<td>B+</td>
<td>3.3</td>
<td>Exceeding good performance</td>
</tr>
<tr>
<td>75-79</td>
<td>B</td>
<td>3.0</td>
<td>Good – clearly above average performance with knowledge of subject matter generally complete.</td>
</tr>
<tr>
<td>70-74</td>
<td>B-</td>
<td>2.7</td>
<td>Approaching good performance</td>
</tr>
<tr>
<td>65-69</td>
<td>C+</td>
<td>2.3</td>
<td>Exceeding satisfactory performance</td>
</tr>
<tr>
<td>60-64</td>
<td>C</td>
<td>2.0</td>
<td>Satisfactory – basic understanding of the subject matter.</td>
</tr>
<tr>
<td>55-59</td>
<td>C-</td>
<td>1.7</td>
<td>Approaching satisfactory performance</td>
</tr>
<tr>
<td>53-54</td>
<td>D+</td>
<td>1.3</td>
<td>Marginal Pass. Insufficient preparation for subsequent courses in the same subject</td>
</tr>
<tr>
<td>50-52</td>
<td>D</td>
<td>1.0</td>
<td>Minimal pass – marginal performance; generally insufficient preparation for subsequent courses in the same subject.</td>
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<tr>
<td>0-49</td>
<td>F</td>
<td>0</td>
<td>Fail – Failure to meet course requirements.</td>
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Graduate: https://www.ucalgary.ca/pubs/calendar/current/f-1-2.html
- All grades of "C+" or lower are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements. Individual programs may require a higher passing grade.

Learning Technologies and Requirements:
There is a D2L site for this course which contains required readings and other relevant class resources and materials (d2L.ucalgary.ca).

To successfully engage in their learning experiences at the University of Calgary, students taking online, remote, and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates
- A current and updated web browser
- Webcam (built-in or external)
- Microphone and speaker (built-in or external) or headset with microphone
- Current antivirus and/or firewall software enabled
- Broadband internet connection

Academic Standing:
For more information go to http://www.ucalgary.ca/pubs/calendar/current/f.html

Academic Accommodation:
It is the student’s responsibility to request academic accommodations according to the University policies and procedures listed below. The Student Accommodations policy is
Students needing an accommodation based on disability or medical concerns should contact Student Accessibility Services (SAS) in accordance with the Procedure for Accommodations for Students with Disabilities ([https://ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf](https://ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf)). Students who require an accommodation in relation to their coursework based on a protected ground other than Disability should communicate this need in writing to their Instructor.

SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit [www.ucalgary.ca/access/](http://www.ucalgary.ca/access/).

**Academic integrity, plagiarism:**

Academic Misconduct refers to student behavior which compromises proper assessment of a student’s academic activities and includes: cheating; fabrication; falsification; plagiarism; unauthorized assistance; failure to comply with an instructor’s expectations regarding conduct required of students completing academic assessments in their courses; and failure to comply with exam regulations applied by the Registrar.

For more information go to [http://www.ucalgary.ca/pubs/calendar/current/k.html](http://www.ucalgary.ca/pubs/calendar/current/k.html) or [http://www.ucalgary.ca/pubs/calendar/current/e-2.html](http://www.ucalgary.ca/pubs/calendar/current/e-2.html)

Additional information is available on the Academic Integrity Website at [https://ucalgary.ca/student-services/student-success/learning/academic-integrity](https://ucalgary.ca/student-services/student-success/learning/academic-integrity).

**Internet and electronic communication device:**

The use of laptop and mobile devices is acceptable when used in a manner appropriate to the course and classroom activities. Please refrain from accessing websites and resources that may be distracting to you or for other learners during class time.

Students are responsible for being aware of the University’s Internet and email use policy, which can be found at [https://ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Acceptable-Use-of-Electronic-Resources-and-Information-Policy.pdf](https://ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Acceptable-Use-of-Electronic-Resources-and-Information-Policy.pdf).

**Deferral of Term work and exams**

For more information about deferring a final exam go to [https://www.ucalgary.ca/registrar/exams/deferred-exams](https://www.ucalgary.ca/registrar/exams/deferred-exams)

For more information about deferral of term work go to [http://www.ucalgary.ca/pubs/calendar/current/g-7.html](http://www.ucalgary.ca/pubs/calendar/current/g-7.html)

[https://www.ucalgary.ca/live-uc-ucalgary-site/sites/default/files/teams/14/deferred_termwork-feb-2020_revised.pdf](https://www.ucalgary.ca/live-uc-ucalgary-site/sites/default/files/teams/14/deferred_termwork-feb-2020_revised.pdf)

**Intellectual Property & Copyright:**

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright ([https://ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Acceptable-Use-of-Material-Protected-by-Copyright-Policy.pdf](https://ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Acceptable-Use-of-Material-Protected-by-Copyright-Policy.pdf)) and requirements of the copyright act ([https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html](https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html)) to ensure they are aware of the consequences of unauthorized sharing of course materials (including presentations, textbooks, posted notes, labs, case studies, assignments, and exams).

Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy [https://www.ucalgary.ca/pubs/calendar/current/k.html](https://www.ucalgary.ca/pubs/calendar/current/k.html)
| **Freedom of Information and Protection of Privacy:** | Student information will be collected in accordance with typical (or usual) classroom practice. Students’ assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary.
For more information go to [https://www.ucalgary.ca/registrar/student-centre/privacy-policy](https://www.ucalgary.ca/registrar/student-centre/privacy-policy) |
| --- | --- |
| **Ethics** | Whenever you perform research with human participants (i.e., surveys, interviews, or observation) as part of your university studies, you are responsible for following university research ethics guidelines. Your instructor must review and approve of your research plans and supervise your research.
For more information go to [http://www.ucalgary.ca/pubs/calendar/current/e-5.html](http://www.ucalgary.ca/pubs/calendar/current/e-5.html) or [https://www.ucalgary.ca/research/researchers/ethics-compliance/chreb](https://www.ucalgary.ca/research/researchers/ethics-compliance/chreb) |
| **Student Support:** | Please visit this link for important information on:
- Wellness and Mental health resources
- Emergency Evacuation/Assembly Points
- Student Success and more....
[https://www.ucalgary.ca/registrar/registration/course-outlines](https://www.ucalgary.ca/registrar/registration/course-outlines) |
| **Arts Students’ Centre Program Advising:** | Have a question but not sure where to start? The Arts Students’ Centre is your information resource for everything in the Faculty of Arts. Call us at 403-220-3580 or email us at ascarts@ucalgary.ca.
You can also visit the Faculty of Arts website at [http://arts.ucalgary.ca/undergraduate](http://arts.ucalgary.ca/undergraduate) which has detailed information on common academic concerns. |
| **Faculty of Graduate Studies:** | For graduate studies email: graduate@ucalgary.ca or call 403 220 4938. Visit the Faculty of Graduate Studies for more details: [https://grad.ucalgary.ca/](https://grad.ucalgary.ca/) |