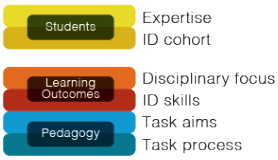
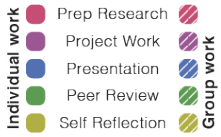
MM12

University of NSW
Electronic Technologies

multiplemeasures.org.au





SUMMARY FOR BENCHMARKING

How well is interdisciplinary learning supported by the assessment design?

This unit allows students from a range of disciplines to develop cross disciplinary approaches for art & design through an online unit. This unit focuses on the completion and review of cross disciplinary project outcomes. Students work in groups to inform and produce projects, and reflect on own development independent of this.

How well does the assessment design fit the ID cohort?

Does it fit the level of *student expertise*?
This research-led approach aims to introduce students to interdisciplinary senior level study. Considerable independent work is expected.

Does it respond to the *range and style of cohort learning expectations*?
This broad and scaffolded analytical approach is applicable to wide range of learning approaches. Production of project outcomes focuses primarily on work within a range of art/design focused cohorts, and translates that approach for students from other cohorts.

How well does the assessment design align to intended ID learning outcomes?

Do the *tasks and criteria* sufficiently support development of students' *disciplinary practices* ?

The breadth of ID understanding developed via this study is then introduced to expand students' approaches to their first discipline.

Do the *tasks and criteria* sufficiently support development of students' *interdisciplinary skills* ?

The focus is on expansion of individual practice through ID project application, although projects may be completed as part of a team. ID skill development is targeted through this approach.

Do the student and staff roles influencing the *direction / aims* of the tasks support the ID learning outcomes?

Tasks explicitly require development of own brief via an iterative development process. This is led by the student with feedback and input from staff and students from a variety of disciplinary backgrounds.

Do the student and staff roles influencing the *process / development* of the tasks support ID learning outcomes? Tasks explicitly require development of own project outcomes, building on a brief developed by the student according to his/her own interests or identified by the group. Feedback draws heavily on cross-peer group interaction and group work where relevant.

This summary draws on interview data collected through the **Multiple Measures** project, as well as materials produced by academics developing this unit/course/subject.
The **Multiple Measures** project was funded by the Australian Government Office for Learning and Teaching

UNIT/SUBJECT/COURSE OUTLINE + OUTCOMES

This practical class aims to introduce students to electronics (hardware) and technologies as used in contemporary art making through lectures, demonstrations, workshops, experiential learning and project work. It aims to teach students how to make artwork using innovative applications of new technology. Basic theory of electrical technologies, that is, the basics of how electricity works & how to safely wire up components, will be taught, explained and applied to the individual work of each student as the special requirements of each student's projects arise.

Learning Outcomes:

- Research, fabricate and present completed practical projects that are primarily defined by creative ideas, knowledge, experience and insights.
- Identify aesthetic elements of expression with an enhanced sensibility and appreciation of electronic components.
- Possess the fabrication skills and processes to achieve electro-technical objectives.
- Appreciate the range of techniques, which can provide movement, light or sound to three-dimensional work.

UNIT/SUBJECT/COURSE ACTIVITIES & ASSESSMENT TASKS

Phoenix (45%) Hack an electrical or electronic object to gain moving parts then re-assemble to your own aesthetic dictate to produce a performing artwork or performance with artwork. Research, fabricate and present completed practical projects that are primarily defined by creative ideas, knowledge, experience and insights.

Communication or Liberation (55%) Create an energy responsive/reflective artwork or purchase parts to construct a system capable of eliciting or enhancing communication from/with viewers. Demonstrate the fabrication skills and processes to achieve electro-technical objectives.

ASSESSMENT CRITERIA / MARKING

- Insightfulness and originality of the artwork, at a standard appropriate to this level of study.
- Understanding of the new medium and its potential to invigorate work.
- Aesthetic resolution of conceptual aims, in relation to introduced componentry.
- Ability to adapt or construct systems for experimentation.
- Ability to understand electrics and electronics as an aesthetic in a social environment.
- Effective reliable deployment of electrics and electronics within art installation.

This summary draws on interview data collected through the **Multiple Measures** project, as well as materials produced by academics developing this unit/course/subject.
The **Multiple Measures** project was funded by the Australian Government Office for Learning and Teaching.

UNSW AUSTRALIA | Art & Design

COURSE CODE 2841

COURSE NAME Electronic Technologies

SEMESTER 1, 2015

Students are advised to read this Course Outline in conjunction with the **General Student Information** guide, which provides essential information for all students and is available under 'Students' on the Art & Design website artdesign.unsw.edu.au/current-students/student-services/general-information.

COURSE INFORMATION

Units of Credit: 6

Resources Required: It is expected that students will have some funds for the purchase of wire, solder and components. No previous knowledge of electrics/electronics is required.

COURSE OVERVIEW

COURSE SUMMARY

This course explores Sculpture Performance and Installation Art practices that include electronic components or digital technologies. Students initiate and research their own ideas along side the application of these technologies.

COURSE AIMS

This practical class aims to introduce students to electronics (hardware) and technologies as used in contemporary art making through lectures, demonstrations, workshops, experiential learning and project work. It aims to teach students how to make artwork using innovative applications of new technology. Basic theory of electrical technologies, that is, the basics of how electricity works & how to safely wire up components, will be taught, explained and applied to the individual work of each student as the special requirements of each student's projects arise. These requirements could include:

- the use of sustainable energy in art & design practice

- pairing and connecting electrical components, e.g./ lighting, projectors.

- using motion sensors

- circuit bending, recycling electronic motors, appliances, battery run objects,

- designing and installing screen based installations

- interfacing digital technologies and computer software with moving objects

- using toys, machines, computer games, - anything that changes or moves

- preparing for, and installing exhibitions and displays

COURSE LEARNING OUTCOMES

At the conclusion of this course, students should be able to:

1/ Research, fabricate and present completed practical projects that are primarily defined by creative ideas, knowledge, experience and insights.

2/ Identify aesthetic elements of expression with an enhanced sensibility and appreciation of electronic components.

3/ Possess the fabrication skills and processes to achieve electro-technical objectives.

4/ Appreciate the range of techniques, which can provide movement, light or sound to three-dimensional work.

TEACHING STRATEGIES AND APPROACH TO LEARNING

Lectures: Yes

Introduction to electricity at a basic level followed by an introduction to the artistic field. There will also be a tour with lecture on solar power and UNSW solar expertise.

Seminars: Yes

Students in the advanced electronics elective will present their ideas in seminars for group discussion starting week 2

Tutorials: Yes

Practical tutorials will be held based on class project bias. These will commence week 2 and include wire joining, meter use, power supply compatibility and solar energy storage.

Studio: Yes

The prime driver of this course is practical studio based work, which the student will be expected to pursue each week post lecture or tutorial and also at home or in studio outside class time.

Blended/online: Yes

Moodle will be used as both resource and a communication tool for group problem solving.

Teaching philosophy: This course requires students to achieve tangible outcomes, which will be assessed primarily on their artistic strength. Secondary to this is: functionality and practical reliability of the work. Thirdly: The ability to plan and meet a budget/time line.

EXPECTATIONS OF STUDENTS IN THIS COURSE

Assessment

Students will be assessed on their ability to conceive and complete two complex projects on time and on budget. Project one 45% & project two 55%. Marking will be weighted in line with teaching philosophy above.

- To qualify for a passing grade all students must complete all set project work.
- Where absences in excess of three (3) classes occur, students may be given a fail grade (UF).
- Students must be punctual and participate in all class activities.
- Projects are to be submitted on time, however if there is a valid reason for a late submission your lecturer will designate an extension, or ask you to apply for Special Consideration (see below).
- You are required to produce project work in consultation with your lecturer. Only in special circumstances will work produced off campus be considered part of your course work.

- You are required to work on your projects in your own time, for the minimum equivalent of the time tabled hours in class. Without this extra investment of time, the quantity of work produced will not be considered at pass standard.

Risk of Failure Warnings

THIS SECTION WILL BE AUTOMATICALLY PROVIDED AND UPDATED IN THE ONLINE TEMPLATE.

Late Submission Penalties

a) Is late submission allowed? No

THIS SECTION WILL BE AUTOMATICALLY PROVIDED AND UPDATED IN THE ONLINE TEMPLATE.

CONTINUAL COURSE IMPROVEMENT

Student responses to Course and Teaching Evaluation & Improvement (CATEI) surveys are gathered every time this course is taught, using online evaluation forms. Student responses are taken seriously, and continual improvements are made to the course based in part on such feedback. Significant changes to the course will be communicated to subsequent cohorts of students taking the course.

It is important that students complete the CATEI course and teaching surveys for this course. This is completely anonymous and provides important student observations and suggestions to ensure that the course is continually improved.

Over the past semesters we have, for example:

1/ Introduced flexibility to weekly tutorials to match changing project priorities

2/ Provided as much supervised making time as practicable in the class.

ASSESSMENT

Assessment Task 1

Title: Phoenix

Due: Week 6

Weighting: 45%

Assessment Brief (full brief available in course): Hackers: Hack an electrical or electronic object to gain moving parts then re-assemble to your own aesthetic dictate to produce a performing artwork or performance with artwork.

ASSESSMENT PROCEDURE

- Students are required to present their work in the campus environs for assessment as close to exhibition standard as circumstances allow.
- First and second completed projects are discussed in a Group Crit.
- Students are invited to make a introductory statement of intent before open discussion of their work begins.
- The lecturer makes their formal assessment of your artwork after the group crit is completed.
- The criteria for assessment is calibrated upon your achievement of the objectives within the 2 projects, and the aims of the course.

Assessment Criteria With Marking Rubric:

Assessment Criteria:	**FAIL** ***Unsatisfactory*** *performance, below minimum expected level. Poor or incomplete work, which shows a significant lack of understanding of the topic or its context.*	**PASS** ***Satisfactory*** *performance. Addresses assessment requirements and demonstrates acceptable understanding of the issues entailed.*	**CREDIT** ***Good*** *performance. Demonstrates analysis and contextual thinking. Understands/presents alternative points of view/perspectives and supporting evidence.*	**DISTINCTION** ***Very Good*** *performance. Demonstrates superior ability to consider the course and its assessment requirements from a number of perspectives and to explore their interrelation.*	**HIGH DISTINCTION** ***Outstanding*** *performance. Indicates the student has produced excellent work, and demonstrates a high level of understanding, application and synthesis of the assessable criteria.*
1. Insightfulness and originality of the artwork, at a standard appropriate to this level of study.					
2.Understanding of the new medium and its potential to invigorate work					
3. Aesthetic resolution of conceptual aims, in relation to introduced componentry					
FL (Fail) – PS (Pass) – CR (Credit) – DN (Distinction) – HD (High Distinction)				**TOTAL GRADE**	

FOR GUIDE TO UNSW GRADES SEE: https://my.unsw.edu.au/student/academiclife/assessment/GuideToUNSWGrades.html

Course Learning Outcomes addressed in this task:

1. Research, fabricate and present completed practical projects that are primarily defined by creative ideas, knowledge, experience and insights.

2. Identify aesthetic elements of expression with an enhanced sensibility and appreciation of electronic components.

UNSW Graduate Attributes addressed in this task:

1. Understanding of the discipline in its interdisciplinary context
2. The ability to apply knowledge and skills to solving problems

Resources required for this task:

1. Found or purchased electrical and electronics
2. Access to Makers Space

Proficiencies required for this task:

1. Soldering

Feedback strategy for this task:

Informal evaluations of students' ideas and production methods in tutorials and group crits throughout each project construction phase and in depth feedback at assessment of the students' completed project work.

Assessment Task 2

Title: Communication or Liberation

Due: Week 13

Weighting: 55%

Assessment Summary (full brief available in course): Create an energy responsive/reflective artwork or purchase parts to construct a system capable of eliciting or enhancing communication from/with viewers.

Assessment Criteria With Marking Rubric:

Assessment Criteria:	**FAIL** ***Unsatisfactory*** *performance, below minimum expected level. Poor or incomplete work, which shows a significant lack of understanding of the topic or its context.*	**PASS** ***Satisfactory*** *performance. Addresses assessment requirements and demonstrates acceptable understanding of the issues entailed.*	**CREDIT** ***Good*** *performance. Demonstrates analysis and contextual thinking. Understands/presents alternative points of view/perspectives and supporting evidence.*	**DISTINCTION** ***Very Good*** *performance. Demonstrates superior ability to consider the course and its assessment requirements from a number of perspectives and to explore their interrelation.*	**HIGH DISTINCTION** ***Outstanding*** *performance. Indicates the student has produced excellent work, and demonstrates a high level of understanding, application and synthesis of the assessable criteria.*
1. Ability to adapt or construct systems for experimentation					
2. Ability to understand electrics and electronics as an aesthetic in a social environment					
3. Effective **reliable** deployment of electrics and electronics within art installation.					
FL (Fail) – PS (Pass) – CR (Credit) – DN (Distinction) – HD (High Distinction)				**TOTAL GRADE**	

FOR GUIDE TO UNSW GRADES SEE: https://my.unsw.edu.au/student/academiclife/assessment/GuideToUNSWGrades.html

Course Learning Outcomes addressed in this task:

1. Possess the fabrication skills and processes to achieve electro-technical objectives.

2. Appreciate the range of techniques, which can provide movement, light or sound to three-dimensional work.

UNSW Graduate Attributes addressed in this task:

1.Capability for independent and collaborative enquiry

2. Rigor in analysis, critique, and reflection

Resources required for this task:

1. Access to Maker Space

Proficiencies required for this task:

1. Soldering

Feedback strategy for this task:

Regular evaluations of students' ideas and production methods in the classroom, tutorials and group crits throughout the project and in depth feedback at assessment of the students' completed work.

TOPICS AND DATES

Week	Date	Topic Name	Tasks Due
1		Introduction to Electricity Projects 1&2	
2		Cable/wire/symbols	
3		Use of a meter	
4		Low voltage power supplies	
5		Solar Power	
6		Marking project 1	Project 1
		Mid-Semester Break	
7		Non-Teaching Week	
8		Introduction to project 2	
9		2nd look at solar	
10		Project work	
11		Project work	
12		Project work	

13		Marking	Project 2

DELETE AFTER COMPLETING: NOTE – Dates will be automatically updated each semester by the new online template system.

RESOURCES FOR STUDENTS

References and other resources for this course

"Catching the Light" by Arthur Zajonic.

"The Passion of the Western Mind" by Richard Tarnas. "Chaos" by James Gleick.

"What is Life? Mind and Matter" by Erwin Schrodinger.

Leonardo magazine-MIT press

Bourriaud, N., *An Introduction to Relational Aesthetics*, Bordeaux, 1996

Superflex, *Art Now*, Berkhard and Riemschneider (eds), Berlin, 2002

Green, C., *The Third Hand,* UNSW Press, Sydney, 2001.

All Sydney Biennale catalogues.

UNSW LIBRARY WEBSITE

http://www.library.unsw.edu.au/

Relevant COFA facilities: http://www.cofa.unsw.edu.au/about-us/facilities/

TECHNOLOGIES

David Frisch, Susan Frisch, (1998) **Metal : design and fabrication,** New York : Whitney Library of Design. (CFA 671/5)

J. E. Gordon, (2003), **Structures : or, Why things don't fall down,** Cambridge, Mass. : Da Capo Press. (CFA 624.17/3 A)

Mill, John 1993, ***The Encyclopaedia of Sculpture Techniques***, ISBN 07133471999, B. T. Batsford, London.

Wiseman, 1988, **Sculpture: A Studio Guide to Concepts, Methods and Materials,** Prentice Hall