SCHOOL OF DESIGN STUDIES

SDES3107: Design & Computers 4

SEMESTER 1

Students should read this outline in conjunction with the COFA General Student Information document which provides essential information and is available from the COFA Document Library http://docs.cofa.unsw.edu.au/

COURSE STAFF

Course Convener: Mr Brad Miller

Room: E104

Phone: x50622

Email: brad.miller@unsw.edu.au

Consultation times: See office door for current available times

Other Teaching Staff:
Manuel Betancurt
Pete Wildman
Dr. Josh Harle
Dr. Ian Andrews

Room: n/a

Phone: n/a

Email: Will be given in class.

Consultation times: During tutorials. Otherwise email.

COURSE INFORMATION

Units of Credit: 6

Teaching Times and Locations: see your Timetable

On line class support:
http://online.cofa.unsw.edu.au/2014s1/sdes3107/base/index.php?

COURSE OVERVIEW

Design and Computers 4 is the final compulsory course, which runs sequentially over your entire Design program. They are one of 3 core areas that make up the integrated program of the School of Design Studies, Graphics, Computer Aided Drafting and interactive media.

COURSE SUMMARY

The course Design and Computers 4 – aims to develop a digital design practice, which supports you to integrate technical knowledge and skills with tools, processes and appropriate software/hardware solutions as a standard part of a contemporary digital design discipline. This course is instrumentalist in direction, exploring and developing appropriate processes and abstract models for a number of differing outputs. Projects will address conceptual, procedural and technical processes used in digital design.

COURSE AIMS

The course Design and Computers 4 – aims to develop a digital design practice, which supports you to integrate technical knowledge and skills with tools, processes and appropriate software/hardware solutions as an support to contemporary digital design disciplines and in particular the 3rd year integrated design studio.

On completing the course you should be able to:
- Demonstrate an understanding of the underlying introductory level technologies used.
- Hand code Processing/Arduino language.
- Create, plan and manage interactive design projects.
- Creativity reply to a design brief using appropriate language and tools.
- Creatively solve design and development problems.

GRADUATE ATTRIBUTES

Graduate Attributes are the skills, qualities, understandings and attributes a university agrees a student will develop during their program of study. By participating in this course you will be able to develop:
- The ability to use new technologies to enhance communication in a range of ways by gaining an understanding of the nature of programmable environments and applying this knowledge in your assessment tasks.
- Competency in technologies appropriate to design practice.
- Skills required for self-directed and reflective learning, and the ability to conduct appropriate research.
- Openness to ideas and experiences, and a heightened understanding of your own creative potential, and ways of exploring and applying it.

TEACHING STRATEGIES & APPROACH TO LEARNING

This course is designed to facilitate your learning and understanding of the relationships and processes involved in the creation, development and production of programmable visual designs, interactive media and interface design. The demonstrations may cover a wide range of subjects including the role of software and hardware in the most common workflows, contextual examples, working techniques and various sequential procedures and where they maybe used appropriately. It is important to remember that these demonstrations will require you to be actively

involved. You may be required to supplement the demonstration program with readings from the required texts or online resources. Your attendance is essential in order to pass this subject.

Initially, brief lectures will focus on a wide field of applications, from the Dance to Generative Graphics and Wearables to the practical and technical aspects of programmability. Languages such as Java & C will be introduced as to there relation to Processing + Arduino and the Open-source movement. The aim is to give all students a thorough grounding in the technologies and methodologies that underpin the potential of code.

Lab is a time for you to actively work your way through a set of class tasks with the guidance of your tutor. Instrumental learning underpins the approach to the tutorials while there is room at a lyrical level to assess creative problem solving, and our approach to the course will be 'hands-on'. There will therefore be much greater emphasis on devolving responsibility for learning to you. So it obviously important, that you bring your projects and design materials to the class.

ASSESSMENT

The course assessment strategies have been developed to help you develop skills across a range of interactive media types. The skills developed will give you a foundation in digital interactive design practice with particular emphasis on locating and evaluating appropriate information, engaging in creative problem solving and using appropriate software for the project at hand.

The assessment is based on the two projects (60%), the quality and completion of the in class tutorials (40%)

Assessment Task 1(individual)

Title: Weekly Processing Exercises

Due: Weekly

Weighting: 40%

Assessment Brief:

Follow the weekly tutorial and complete tutorial exercises as directed

Submission requirement:
See documentation per tutorials

Assessment Criteria

FOR GRADED TASKS MARKED OUT OF 40 (equal weighting of each criteria):

Assessment Criteria:	F 0-45% ✓	CP 46-49% ✓	PS 50-64% ✓	CR 65-74% ✓	DN 75-84% ✓	HD 85-100% ✓	SCORE %
1. per tutorial requirements							/40
						TOTAL SCORE:	
				Divide total score by 1 for % AVERAGE MARK:			
					RECOMMENDED GRADE:		
FEEDBACK:							

Learning Outcomes assessed in this task:

- Skills required for self-directed and reflective learning, and the ability to conduct appropriate research.

Graduate attributes assessed in this task:

- Able to apply their knowledge and skills to solving problems

- Digitally literate

- Capable of independent, self-directed practice

Feedback strategy:
Students will receive verbal feedback throughout the project during class exercises that support the completion of this task.

Assessment Task 2(individual)

Title: Processing brief

Due: Week 7

Weighting: 20%

Assessment Brief:

See details per course website

Submission requirement:
Specify to project brief

Assessment Criteria

FOR GRADED TASKS MARKED OUT OF 20 (equal weighting of each criteria):

Assessment Criteria:	F 0-45% ✓	CP 46-49% ✓	PS 50-64% ✓	CR 65-74% ✓	DN 75-84% ✓	HD 85-100% ✓	SCORE %
1. Evidence of creative solution development, as exampled by iterative design development.							/10
2. Demonstrates a design engagement with the possibilities of visual/media programming.							/10
						TOTAL SCORE:	
				Divide total score by 2 for % AVERAGE MARK:			
						RECOMMENDED GRADE:	
FEEDBACK:							

Learning Outcomes assessed in this task:

- Evidence of creative solution development, as exampled by iterative design development.
- Evidence of personal and group research as a part of project outcomes.
- Demonstrates a design engagement with the possibilities of visual/media programming.
- How successfully a project is realised in comparison to what was conceptually presented.

Graduate attributes assessed in this task:

- Able to apply their knowledge and skills to solving problems
- Competency in technologies appropriate to design practice.
- Capable of independent, self-directed practice

Assessment Task 3(group)

Title: Arduino brief

Due: Week 14

Weighting: 40%

Assessment Brief:

See details per course website

Submission requirement:
Specify to project brief

Assessment Criteria

FOR GRADED TASKS MARKED OUT OF 40 (equal weighting of each criteria):

Assessment Criteria:	F 0-45% ✓	CP 46-49% ✓	PS 50-64% ✓	CR 65-74% ✓	DN 75-84% ✓	HD 85-100% ✓	SCORE %
1. Evidence of creative solution development, as exampled by iterative design development.							/10
2. How successfully a project is realised in comparison to what was conceptually presented.							/10
3. Demonstrates a design engagement with the possibilities of visual/media programming.							/10
4.Evidence of personal and group research as a part of project outcomes.							/10
TOTAL SCORE:							
Divide total score by 4 for % AVERAGE MARK:							
RECOMMENDED GRADE:							

Learning Outcomes assessed in this task:

- Evidence of creative solution development, as exampled by iterative design development.

- Evidence of personal and group research as a part of project outcomes.

- Demonstrates a design engagement with the possibilities of visual/media programming.

- How successfully a project is realised in comparison to what was conceptually presented.

Graduate attributes assessed in this task:

- Able to apply their knowledge and skills to solving problems

- Digitally literate

- Capable of independent, self-directed practice

Feedback strategy:

Students will receive verbal feedback throughout the project during class exercises that support the completion of this task. Feedback will also be provided during individual consultations and informally

Other Discipline-specific Assessment Criteria

The variety of industry specific criteria encountered in the cross-disciplinary digital environment and continuing development in the field necessitates the flexible interpretation of specific 'criteria' standards.

WEEKLY SCHEDULE

Week 1   **Processing**

Presentation: Processing Open source IDE

Tutorial: Reading required: Using Processing, Structure 1, Shape 1, Data 1, Maths 1, Control 1, Control 2, Activities required: Exercises: 1.1, 1.2, 1.3, 2.1, 2.2, 3.2, 3.3, 4.1, 4.2, 4.3, 5.1, 5.2, 5.3, 6.1, 6.2, 6.3 (Due the following Thursday in class)

Week 2   **Processing**

Presentation: Responsive environments.

Readings required: Shape 2, Maths 2, Colour 1, Image 1, Data 2, Interviews1*
Activities required: Exercises: 7.1, 7.2, 7.3, 8.1, 8.2, 9.1, 9.2, 10.1, 10.2, 10.3, 11.1,

11.2 (Due the following Thursday in class)

Week 3   **Processing**

Presentation: Interactive objects

Readings required: Typography 1, Maths 3, Maths 4, Transform 1, Transform 2, Interviews 2*

Activities required: Exercises: 13.1, 13.2, 13.3, 14.1, 14.2, 15.1, 16.1, 16.2, 16.3, 17.1 (Due the following class)

Week 4   **Processing**

Presentation: Generative Graphics

Readings required: Structure 2, Structure 3, Shape 3, Input 1&2&3, Drawing 1 Development 2*, (Project 1 brief released) Activities required: Exercises: 20.1, 20.2, 21.1, 21.2, 22.1, 22.3, 23.1, 23.2, 25.1, 25.2, 26.1, 26.3, 24.3 (Due the following Thursday in class)

Mid-Semester Break

Week 5   **Processing**

Presentation: Wearables

Readings required: Data 4, Image 2, Image 3, Typography 2, Typography 3, Synthesis 2*, Interview 3* Activities required: Exercises: 33.1, 34.1, 35.2, 36.1,37.1 (Due the following Thursday in class)

Week 6   **Processing**

Presentation: n/a

Readings required: Motion 1, Motion 2.1 (Assignment 1 due online the following week)

In-class feedback of proposed project outcome

Week 7   **non-teaching week!**

Week 8   **Intro to Arduino**

Tutorial: Topic: Project two discussions

The Ardunio Book v3 see class website

Activities required: In lab demo of Arduino

Week 9   **Arduino**

Tutorial: Basic Arduino exercises
Activities required: In lab demo of Arduino

Week 10   **Arduino**

Tutorial: Basic Arduino exercises
Activities required: In lab demo of Arduino and initial project proposals

Week 11   **Arduino**
Project feedback
Tutorial: project development
Activities required: In lab demo of Arduino and initial project proposals

Week 12
Project feedback
Tutorial: project development
Activities required: In lab demo of Arduino and initial project prototyping

Week 13
In-class Project development, problem solving and solution formation

Week 14
In-class Project presentations

CONTINUAL COURSE IMPROVEMENT

Periodically student evaluative feedback on the course is gathered, using among other means, UNSW's Course and Teaching Evaluation and Improvement (CATEI) Process.

Student feedback is 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.

RESOURCES FOR STUDENTS

Prescribed texts:

Processing: A Programming Handbook for Visual Designers and Artists - CFA 005.1/345 D
Physical Computing, Dan O'Sullivan - CFA 004/5

Recommended texts;

Processing, Handbook for Artist and Designers: CFA 005.1/345 D
Design Noir, Anthony Dunne- The secret life of electronic Objects - CFA 745.2/120
Analog in, digital out, Brenda Dawes - CFA 005.72/138
Processing: Creative Coding and Computational Art - CFA 005.1/342
Learning Processing : A Beginner's Guide to Programming Images, Animation, and Interaction UNSW Library ebook
Getting Started with Processing UNSW Library ebook

The **COFA General Student Information** document includes the following information and is available from the COFA Document Library
http://docs.cofa.unsw.edu.au/ All students must read and become familiar with all these administrative aspects of studying at COFA.

• **The College at a glance**
• **Studying during the COFA campus Redevelopment**
• **Student Safety**
Emergencies and evacuation
First Aid Information
Electrical safety
Safety in your courses
Contact details for discipline coordinators for OHS proficiency
Occupational health and safety

• **School Expectations of Students including Assessment Policies**
Attendance
Workload expectations
Completion of set work
Submission of work
Late Submission including Extensions and Special Consideration
Assignment cover sheet
Assessment Feedback
Marking, return and treatment of uncollected assessment items

• CATEI
• The Learning Centre
• Student Counselor

• Academic Honesty and Plagiarism

- Equity and Diversity
- UNSW Assessments Principles and Policy
- Access to Assessment Information
- Results, Assessments and Appeals
- School Contact Information
- Graduate Attributes

EXPECTATIONS OF STUDENTS IN THIS COURSE

An integral part of this course is engagement in class activities. Consequently you may fail the course if you do not attend regularly even if you complete all assignments. You must actively participate in classes and complete all set work to a satisfactory standard as discussed in class. You are expected to spend a minimum total of 11 hours per week completing course related work, for each course you undertake, this includes your class time. Each week students are expected to spend 2 hours in the studios and approximately 3 hours online, attend teamwork meetings and engage in other activities required to inform and complete assignment work. A comprehensive list of expectations is available in the "essential course information" section of the course website .

Where, because of illness or misadventure, you cannot hand in an assignment on time, or your work has suffered to a substantial degree, you can apply for Special Consideration. Please note that you must apply no later than 3 days prior to the due date of the assessment. For information on Special Consideration see:
https://my.unsw.edu.au/student/atoz/SpecialConsideration.html