

SM5360: "MAKING" INTERACTIVE THINGS

Effective Term

Summer Term 2026

Part I Course Overview

Course Title

"Making" Interactive Things

Subject Code

SM - School of Creative Media

Course Number

5360

Academic Unit

School of Creative Media (SM)

College/School

School of Creative Media (SM)

Course Duration

One Semester

Credit Units

3

Level

P5, P6 - Postgraduate Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

The course provides a hands-on introduction to the resources for designing and fabricating tangible interactive systems, including basic circuit making, sensors and actuators; analog instrumentation; embedded digital processing; and a bit of

digital fabrication; and so on. Emphasis is placed on learning how to use the tools and techniques as well as understanding how they work for the rapid-prototyping process for human-computer interaction (HCI). The development platform could be the open-source hardware platform, for example Arduino and Raspberry Pi. The students will also learn how to evaluate the hardware system from both technical and user-experience perspective.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Identify and understand basic electronic components and principles of electric circuits		x	x	
2	Solve user problems through tangible user interface design		x	x	
3	Create the interactive prototype of tangible user interface		x	x	x
4	Evaluate the tangible user interface technically and from the user-experience perspective.		x	x	x

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

LTAs		Brief Description	CILO No.	Hours/week (if applicable)
1	Lecture	Lecture, In-class discussion and analysis of: working principle of tangible user interfaces, design principle, case studies, an so on.	1, 2, 3, 4	
2	Workshop	In-class exercises of system prototyping, and experiments	1, 2, 3, 4	
3	Critique	Individual feed-back sessions on project progress.	2, 3, 4	

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks ("- for nil entry)	Allow Use of GenAI?
1	Research	1, 2, 3	10	-	No
2	Project Making	1, 2, 3, 4	50	-	Yes

3	Presentation	1, 2, 3	20	-	No
4	Report	1, 2, 3	20	-	No

Continuous Assessment (%)

100

Examination (%)

0

Minimum Continuous Assessment Passing Requirement (%)

0

Minimum Examination Passing Requirement (%)

0

Assessment Rubrics (AR)**Assessment Task**

Research: Case Study on One Existing Tangible User Interface

Criterion

- Provide a clear overview on the case;
- Clearly discuss the pros and the cons
- Well-written report

Excellent

(A+, A, A-)

High

Good

(B+, B, B-)

Significant

Fair

(C+, C, C-)

Moderate

Marginal

(D)

Basic

Failure

(F)

Not even reaching marginal levels

Assessment Task

Project Making: Design, Prototype, and Evaluate One Tangible User Interface to Solve One Specific User Problem In HCI

Criterion

- Clearly identify a user problem
- Reasonable design to tackle the problem
- Proper evaluation of the prototype

Excellent

(A+, A, A-)
High

Good

(B+, B, B-)
Significant

Fair

(C+, C, C-)
Moderate

Marginal

(D)
Basic

Failure

(F)
Not even reaching marginal levels

Assessment Task

Presentation

Criterion

- Live working demo of the system

Excellent

(A+, A, A-)
High

Good

(B+, B, B-)
Significant

Fair

(C+, C, C-)
Moderate

Marginal

(D)
Basic

Failure

(F)
Not even reaching marginal levels

Assessment Task

Report

Criterion

- Well-written report

Excellent

(A+, A, A-)
High

Good

(B+, B, B-)
Significant

Fair

(C+, C, C-)
Moderate

Marginal

(D)
Basic

Failure

(F)
Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

Tangible User Interface, Rapid Prototyping, Electronics, Circuit, Sensor, Actuator

Reading List**Compulsory Readings**

Title	
1	Nil

Additional Readings

Title	
1	Crookes, David, P. J. Evans, Rosie Hattersley, Phil King, Nicola King, K. G. Orphanides, Nik Rawlinson, and Mark Vanstone. "The Official Raspberry Pi Handbook 2023." (2023).
2	O'Sullivan, Dan, and Tom Igoe. Physical computing: sensing and controlling the physical world with computers. Course Technology Press, 2004.
3	Karvinen, Tero, Kimmo Karvinen, and Ville Valtokari. Make: sensors: a hands-on primer for monitoring the real world with Arduino and Raspberry Pi. Maker Media, Inc., 2014.
4	Ullmer, Brygg, Orit Shaer, Ali Mazalek, and Caroline Hummels. Weaving fire into form: Aspirations for tangible and embodied interaction. Morgan & Claypool, 2022.