

SM3804: MATERIALS AND FABRICATION STUDIO

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Materials and Fabrication Studio

Subject Code

SM - School of Creative Media

Course Number

3804

Academic Unit

School of Creative Media (SM)

College/School

School of Creative Media (SM)

Course Duration

One Semester

Credit Units

6

Level

B1, B2, B3, B4 - Bachelor's 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 is a combination of applied material research and digital fabrication techniques, emphasizing their use in Creative Media.

Finding and developing the inherent potential of materials is organizationally framed by a series of digital tooling workshops. The course lectures traverse understanding natural forces as a time-based media and encourage students to explore alternative methods to document the behaviour of materials through either image or form.

Embedded in a strong context of Art History, the course will apply project based skills including 2D and 3D fabrication techniques within a plethora of material explorations. The results will be critically informed by methods of fabrication but also in the context of current cutting-edge media practices.

The format of the course is divided among lectures, discussions, critiques and hands on experiments using the facilities at the School of Creative Media and the wider campus of City University.

Course Intended Learning Outcomes (CILOs)

CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1 Research – Art History, contemporary design Practices, Materials and environmental behaviour, Computer Aided Manufacturing software and hardware		x		
2 Design – Plan and Organise laboratory based prototypes working with a range of materials. Setting up experiments accordingly to material behaviour and designed behaviour.			x	x
3 Make – High fidelity prototype with combination of custom made fabrication and environmental reactive material behaviour as media.			x	x
4 Document – Develop tools to capture the various behaviours and emerging qualities and present the findings in theoretical and applied context.		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.

Teaching and Learning Activities (TLAs)

TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lecture	Lecture, In-class discussion and analysis of: 1) art and design using designed material behaviour; 2) alternative documentation practices; 3) digital fabrication methods and tool-pipelines	1, 2
2	Workshop	In class exercises in additive and subtractive manufacturing methods, tooling paths, material studies, software and hardware introductions	2, 3
3	Lab	Lab facilitating the creation and documentation of an art or design prototype (Individual or/ and small group project).	3, 4
4	Critique	Individual feed-back sessions on project progress with invited guests.	1, 2

Assessment Tasks / Activities (ATs)

ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Research, prepare and organise the material behaviour and design experiment	1, 2	15
2	Fabricate and document design/art prototypes that are a combination of specific material behaviour and digital manufacturing	3, 4	50
3	Reflect and position the prototypes in the context of Culture, Technology and Science	1, 4	35

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)

Assessment Task

1. Research prepare and organise the material behaviour and design experiment

Criterion

Ability to research, organise, and plan the experimental lab workshops for the development of the design prototypes

Excellent (A+, A, A-)

Innovative exploration by combining knowledge from different disciplines and excellent adjustment of plans and strategies in response to resources

Good (B+, B, B-)

good exploration by combining knowledge from different disciplines and resulting adjustment of plans and strategies in response to resources

Fair (C+, C, C-)

fair exploration by combining knowledge from different disciplines and marginal adjustment of plans and strategies in response to resources

Marginal (D)

marginal exploration by combining knowledge from different disciplines

Failure (F)

No exploration and no adjustment of plans and strategies in response to resources

Assessment Task

2. Fabricate and document design/art prototypes that are a combination of specific material behaviour and digital manufacturing

Criterion

Ability to design, make and document accordingly to the behaviour of the material in the design Prototype.

Excellent (A+, A, A-)

Excellent application of the aesthetic and expressive qualities of the material behavior, the digital fabrication and innovative level of documentation

Good (B+, B, B-)

good application of the aesthetic and expressive qualities of the material behavior, the digital fabrication and professional level of documentation

Fair (C+, C, C-)

fair application of the aesthetic and expressive qualities of the material behavior, the digital fabrication and fair level of documentation

Marginal (D)

Marginal application of the aesthetic and expressive qualities of the material behavior, the digital fabrication and adequate level of documentation

Failure (F)

NO application of the aesthetic and expressive qualities of the material behavior, the digital fabrication and missing level of documentation

Assessment Task

3. Reflect and position the prototypes in the context of Culture, Technology and Science

Criterion

Capacity to explain in detail and with accuracy the design decisions and qualities embedded within the work.

Excellent (A+, A, A-)

- Work has strong affective quality and the articulation of personal styles and signature
- Work raises questions and instill insights about the process of conception, creative strategization and production

Good (B+, B, B-)

- Work has good affective quality and the articulation of personal styles and signature
- Work raises marginal questions and instill insights about the process of conception, creative strategization and production

Fair (C+, C, C-)

- Work has some affective quality and the articulation of personal styles and signature
- Work is referenced to culture, science and technology

Marginal (D)

- Work has marginal affective quality and the articulation of personal styles and signature
- Work is poorly referenced to culture, science and technology

Failure (F)

- Work has no affective quality and the articulation of personal styles and signature
- Work is not referenced to culture, science and technology

Additional Information for AR

All A+/A/A- grade assignment should comply with the highest performance of Discovery-oriented learning.

Part III Other Information

Keyword Syllabus

material, digital fabrication, tooling, mediation, art history

Reading List

Compulsory Readings

Title	
1	Nil

Additional Readings

	Title
1	Nil