JC2002: ARTISTS IN THE LABS

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Artists in the Labs

Subject Code
JC - Joint Course
Course Number
2002

Academic Unit
School of Creative Media (SM)

College/School
School of Creative Media (SM)

Co-offering Academic Unit(s)

Academic Unit(s)
Biomedical Sciences
Biomedical Engineering
Chemistry
Materials Science and Engineering
Mathematics

Course Duration
One Semester

Credit Units
3

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

Many artists are now developing rewarding collaborations with scientists in various fields, a tendency that is sometimes described as the Art + Science movement. In this course, each student will (in consultation with a SCM faculty, i.e. the Course Leader) select (at least) one scientist and one topic of research, and then spend the semester working independently with that scientist, in order to make first-hand discoveries about the nature of the relation between art and science.

The scientist will in many instances be a member of the City University faculty, for instance, a biologist, chemist, physicist, mathematician or engineer. The SCM Course Leader will help students to identify and approach potential scientists to work with, and the student will then develop a proposal for collaboration.

During the semester, the student will learn some of the fundamental concepts and methods used by those scientists in their research and then produce an artwork that expresses, utilizes, or responds to those concepts/methods. The emphasis will be on an informed dialogue with science. The student will be expected to achieve at least an introductory understanding of the scientific/mathematical aspects of the work, and to become familiar with methods of data collection, modelling, etc. The student will finally produce an artwork in a medium of her/his choice, such as video documentary, animation, game, interactive installation, sculpture, print(s), photograph(s), etc. The student' s work must show an accurate understanding of the science and an in-depth artistic engagement with it. The student will in many instances identify science students to collaborate with.

Since this course stresses independent work, there will be no regular lectures. Students will meet at least once every three weeks with the Course Tutor. Students will be encouraged to reflect on the nature of the art/science collaboration and theorize its implications for the future of new media art.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Explain the basic concepts and methodologies of the scientific research area that s/he has selected to focus on.	25	x	x	
2	Creative artworks that either explain or apply those concepts and methods.	25	x	x	x
3	Collaborate with scientists.	25	x	x	
4	Reflect on and theorize the interaction between art and science based on the discoveries achieved through first-person interaction with scientists.	25	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	Log book	Laboratory log book	1, 3, 4	1
2	Lab report	Lab reports in written essay or video format	1, 2, 3	1

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Laboratory reports in written and/or video format	1, 3, 4	50	-	Yes
2	Artistic project and statement detailing the aims of the work and the collaboration with scientists.	2, 3, 4	50	-	Yes

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)

Assessment Task

Laboratory reports in written and/or video format

Criterion

Students should demonstrate ability to utilize primary and secondary sources, build up argument and analysis. The threshold of ‘discovery’ lied in a student’s self initiatives to conduct additional research and to personalize theories for her/his personal daily experience.

Excellent (A+, A, A-)

- Rich content, excellent ability to interpret and integrate various resources and to describe and apply scientific concepts and methods;
- Rigorous organization, coherent structure, systematic composition, and clearly stated objectives;
- Precision in argument, well defined and reasoned points of view that articulates a clear research programme.

Good (B+, B, B-)

- Adequate content, sufficient ability to integrate various resources based on demand and to describe and apply the concepts and methods of the relevant science;
- Reasonable organization with balanced structure and composition
- Clear elaboration of ideas that sticks to the point, with clearly differentiated issues, ability to interpret opinions independently

Fair (C+, C, C-)

- Adequate content, fair ability to integrate various resources based on demand and a reasonable ability to execute experiments.
- Fair organization with adequate structure and composition
- Relevant points made to the subject matter in question

Marginal (D)

- Weak content, limited use of laboratory resources
- Poor organization, structure and composition, with a limited ability to articulate a clear research programme
- Relevant points to the subject matter, marginal ability to interpret opinions

Failure (F)

- Inadequate content, no/ irrelevant use of resources, and poor description and application of scientific concepts and methods.
- No organization, structure or/and composition
- Irrelevant points to the subject matter, no ability to interpret opinions

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Assessment Task

Artistic work and statement detailing the aims of the work and the collaboration with scientists

Criterion

Students should demonstrate ability to utilize primary and secondary sources, execute creative ideas and projects. The threshold of ‘discovery’ lies in a student’s proactively turning theory into praxis, to transform course material into self-owned authorship.

Excellent (A+, A, A-)

- Work has strong affective quality and the articulation of personal styles and signature
- Excellent appreciation, exploration and/or application of the aesthetic and expressive qualities of scientific technologies.
- Work raises questions and instill insights about the role of science in the process of conception, creative strategization and production
- Innovative exploration by combining knowledge from different disciplines (e.g. mathematics, psychology, physics, anthropology, etc.) to create an inter-disciplinary project
- Efficient adjustment of plans and strategies in response to resources (time, space, equipment, etc) available with constructive adjustment

Good (B+, B, B-)

- Strong appreciation, exploration and/or application of the aesthetic and expressive qualities of the medium
- Ability to create project/ work that demonstrate the processes of thinking and creative exploration of scientific concepts and processes.
- Proper adjustment of plans and strategies in response to resources (time, space, equipment, etc) available and constructive feedback/ suggestions

Fair (C+, C, C-)

- Basic appreciation and/or application of the aesthetic and expressive qualities of the medium
- Limited ability to create project/ work that demonstrates the integration of scientific concepts and methods.
- Adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

Marginal (D)

- Marginal appreciation of the aesthetic and expressive qualities of the medium
- Marginal ability to create project/ work that demonstrate the processes of thinking and creative exploration through the integration of interdisciplinary concepts and methods.
- Limited adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

Failure (F)

- No appreciation of the aesthetics and expressive qualities of the medium
- Fail to create project/ work that demonstrate the processes of thinking through the integration of art and science.
- Minimal adjustment of plans and strategies in response to resources (time, space, equipment, etc) available

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Assessment Task

Essay drawing general conclusions about the relation of art and science

Criterion

Students should demonstrate ability to utilize primary and secondary sources, build up argument and analysis. The threshold of ‘discovery’ lied in a student’s self initiatives to conduct additional research and to personalize theories for her/his personal daily experience.

Excellent (A+, A, A-)

- Excellent grasp of materials, ability to explain key concepts, assumptions, and debates, demonstrating sound knowledge of the field and a rich integration of diverse disciplines.
- Design and conduct of research which is firmly built on thorough knowledge of scientific concepts and their dialogue with art.
- Evaluative judgments about existing research and demonstrate application of strong critical thinking skills
- Strong organization of research findings with effective organization and procedural clarity at the same time demonstrating the importance of the process
- Insightful suggestion of how the research findings may lead to future research

Good (B+, B, B-)

- Firm grasp of materials, ability to explain key concepts and assumptions that integrate both art and science;
- Adequate content, strong ability to integrate various resources into primary and secondary levels based on demand;
- Design and conduct research built on thorough knowledge of existing theoretical frameworks
- Appropriate judgments about existing research and demonstrate application of critical thinking skills
- Ability to approach a text or a theme using a variety of theories and analytical tools

Fair (C+, C, C-)

- Comprehensive grasp of materials, able to explain key concepts
- Adequate content, fair ability to integrate various resources into primary and secondary levels based on demand
- Design and conduct research which is built on knowledge of theoretical frameworks
- Appropriate judgments about existing research
- Weak ability to approach a text or a theme using a variety of theories and analytical tools

Marginal (D)

- Loose grasp of materials, cannot explain key concepts
- Weak content, with primary and secondary levels
- Design and conduct research which is appropriate for the research objective
- Marginal judgments about existing research
- Poor ability to approach a text or a theme using a variety of theories and analytical tools

Failure (F)

- Poor grasp of materials, inadequate content, without primary and secondary levels
- Fail to design and conduct research which is appropriate for the research objective
- Fail to make reasonable judgments about existing research
- Fail to approach a text or a theme using a variety of theories and analytical tools

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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

- Art + Science
- New artistic media
- Interdisciplinary dialogue and collaboration

- Scientific instruments and concepts as artistic media.
- Art and technology.
- Information Art

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Ascott, Roy. Engineering Nature: art & Consciousness in the post-biological era. Bristol: Intellect, 2006.
2	Benthall, Jonathan, Science and technology in art today. New York: Praeger,1972.
3	Bijvoet, Marga, Art as inquiry : toward new collaborations between art, science, and technology. New York: Peter Lang, 1997.
4	Clarke, Bruce and Linda Dalrymple Henderson (eds.). From Energy to Information: Representation in Science and Technology, Art, and Literature Stanford: Stanford University Press, 2002.
5	Emmer, Michele. Visual Mind II. Cambridge : MIT Press, 2005.
6	Emmer, Michele. Visual Mind: Art and Mathematics. Cambridge : MIT Press, 1993.
7	Miller, A. I. Insights of Genius: Imagery and Creativity in Science and Art. New York : Springer Vertag,1996
8	Scott, Jill, ed. Artists-in-Labs Networking in the Margins. Vienna: Springer-Verlag, 2010.
9	Schlain, Leonard. Art and Physics. New York: Morrow, 1991
10	Snow, C.P. The Two Cultures and the Scientific Revolution Cambridge: Cambridge University Press, 1959.
11	Wilson, Stephen. Information Arts: Intersections of Art, Science, and Technology. Cambridge:, MIT Press 2001
12	Wilson, Stephen. Art+Science Now. London: Thames & Hudson, 2010.